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UNIVERSITY OF CALIFORNIA
SANTA CRUZ

ON THE MAPPING FROM SYNTAX TO MORPHOPHONOLOGY

A dissertation submitted in partial satisfaction of the
requirements for the degree of

DOCTOR OF PHILOSOPHY

in

LINGUISTICS

by

Boris Harizanov

June 2014

The Dissertation of Boris Harizanov
is approved:

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Dean Tyrus Miller
Vice Provost and Dean of Graduate Studies

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Abbreviations

ACC	accusative
DAT	dative
DEF	definiteness marker
F	feminine
GEN	genitive
G:IMPF	imperfective (grammatical aspect)
G:PF	perfective (grammatical aspect)
IMPF:1	primary imperfective
IMPF:2	secondary imperfective
M	masculine
NAT	nationality
N	neuter
NMNLZR	nominalizer
PASS	passove
PAST	past
PF	perfective
PL	plural
POSS	possessive
PRES	present
Q	question particle
REFL	reflexive
SG	singular

Abstract

On the Mapping from Syntax to Morphophonology

by

Boris Harizanov

If both words and phrases are internally complex and can be decomposed into hierarchically organized constituents, what is the relation between the syntactically motivated constituency of phrases and the morphophonologically motivated constituency of words? In particular, is the correspondence between syntactic atoms and morphophonological words one-to-one or, in other words, does syntax only manipulate objects that are as small as words? These questions have generated a long line of productive research that has identified various mismatches between syntax and morphophonology: e.g. while some syntactic atoms are realized as autonomous morphophonological words, others are realized as subparts of words. Such results have, in turn, motivated approaches to word construction that are syntactic in nature.

In this dissertation I provide novel evidence that the atoms of syntax are smaller than morphophonological words, which leads to the conclusion words are built out of syntactic objects and, at least in part, by syntactic mechanisms. As far as the cases investigated here are concerned, what gives words their distinctive character and causes them to behave differently from phrases with respect to morphophonology is the application of Morphological Merger. Specifically, syntactically independent objects become the constituent parts of mor-

phophonological words as the result of Morphological Merger, an operation that produces complex heads as part of the mapping from syntax to morphophonology.

The evidence I provide in this dissertation allows a particularly direct diagnosis of the syntactic independence of various subconstituents of morphophonological words. More specifically, it involves, for example, the interaction of subwords with syntactic operations (like movement), quantifier stranding, various kinds of binding, and thematic interpretation. Furthermore, while much previous work on complex word formation has centered on words constructed by the combination of a head with its complement (e.g. "incorporation") or with the head of its complement (e.g. "head movement"), this dissertation focuses on a less studied correspondence between syntax and morphophonology: words constructed out of a head and its specifier.

The particular view of the syntax-morphophonology interface espoused in this dissertation is developed on the basis of case studies from Bulgarian, a South Slavic language. As a result, a major concern throughout is the description and analysis of a number of important phenomena attested in Bulgarian: cliticization and clitic doubling, deverbal nominalization, and denominal adjectivization, among others. This dissertation provides a unified understanding of these phenomena to the extent that they all involve the syntactic construction of morphophonological words, which are produced by a mapping procedure that involves the application of Morphological Merger.

На моите родители.

To my parents.

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I am also very grateful to the other members of my dissertation committee, Jorge Hankamer and Jim McCloskey, for many hours of fruitful discussion, penetrating comments, and excellent advice. I thank Jorge for always asking the right questions at exactly the right time, and for forcing me to re-examine at every step even the most basic and deeply rooted assumptions and beliefs. I thank Jim for entertaining every one of my ideas and for sharing many of his own, as well as for being an inspiration to me on how to productively combine extremely careful empirical work with rigorous analytical work.

This dissertation would certainly have not been possible had I not met Masha Polinsky and Andrew Nevins as an undergrad at Harvard. I owe my transition from computer science into linguistics to their contagious excitement for lan-

guage and linguistics and to their encouragement. Thanks, Masha, for your unflagging enthusiasm for my work, for all the wisdom and support over the years, for being such a great collaborator and friend. Thanks, Andrew, for the most inspiring Introduction to Linguistics course I could've asked for and for sparking my interest in morphophonology in the first place.

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Some of the material in Chapter 2 "Clitic Doubling" is the subject of the

following paper:

Harizanov, Boris. To appear. Clitic doubling at the syntax-morphophonology interface: A-movement and morphological merger in Bulgarian. *Natural Language & Linguistic Theory*.

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Finally, my deepest thanks go to my parents—сърдечни благодарности за всичко; and to Eirene—ευχαριστώ για τα πάντα.

Chapter 1

Introduction

1.1 Overview

What are the atoms of syntax and how do they correspond to morphophonological words? In the generative tradition a certain kind of mismatch between syntactic terminals and words has often been the focus of investigation: while some terminals are realized as autonomous morphological words, others are realized as subparts of words (Baker 1985, 1988, Pollock 1989, Belletti 1990, Chomsky 1991). The syntactic decomposition of morphophonological words has led to the syntactic treatment of at least some aspects of word formation. Likewise, in theories of morphology like Distributed Morphology (Halle & Marantz 1993, 1994), which adopt a strictly syntactic approach to word formation, words are built out of syntactic terminals by the application of operations acting on syntactic representations. As a result, terminals that are realized as parts of words are

treated no differently from terminals which are realized as autonomous words.

In this dissertation I identify a different kind of mismatch between the set of objects that narrow syntax manipulates and morphophonological words, and use these findings to develop a particular theory of the aspects of the syntax-morphophonology mapping that are responsible for this kind of mismatch. In particular, I demonstrate empirically that certain parts of words can behave syntactically as phrases. I attribute this kind of mismatch to the application of *morphological merger* (cf. Marantz 1984, Hale & Keyser 2002, Matushansky 2006), an operation that is part of the mapping from syntax to morphophonology, which takes a syntactic phrase and a syntactic head that stand in a certain structural relation and creates a morphophonologically atomic unit. The present investigation contributes to a long line of research on what have traditionally been viewed as mechanisms of syntactic word formation, such as head-to-head movement (Baker 1985, 1988) and merger under adjacency (Marantz 1984, 1988), which have traditionally been taken to be two mechanisms of syntactic word formation.

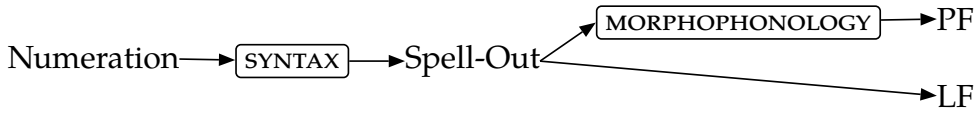
The result of this investigation is a view of the syntax-morphophonology interface where the output of narrow syntax serves as the input to a mapping procedure that produces morphophonological representations. The operations that apply as part of this mapping, including morphological merger, are intended to account for any mismatches between syntactic and morphophonological structure. I provide extensive empirical evidence from Bulgarian that such mismatches exist in the context of clitic doubling, deverbal nominaliza-

tions and denominal adjectives, and develop a theory of the relevant aspects of the interface, which accounts for the observed mismatches.

1.2 Theoretical background

This questions I address in this dissertation are part of the more general study of the syntax-morphophonology interface and in particular of how syntactic representations are mapped to morphophonologal ones. The context for posing questions like these is the modular model of grammar in figure (1).

(1)



In this model, syntax and morphophonology are independent components of grammar, and syntax feeds morphophonology, which in turn produces the PF representations that interface with the articulatory system. Broadly speaking then this dissertation is about the mechanisms that translate the hierarchical, recursive structures of syntax into the kind of representations that the motor system can manipulate.

Here, I outline some assumptions about the syntactic and morphophonological components of grammar that are repeatedly made use of in the rest of the dissertation. Further elaborations and modifications are introduced as they become necessary in each of the following chapters.

Every syntactic atom in a derivation belongs to a numeration: a multiset that contains lexical items selected from the lexicon (a set itself). The numeration can

thus be formalized as a function form the lexicon to the natural numbers, which, given a lexical item, returns the number of times it occurs.

Syntactic objects are either (i) lexical items, or (ii) sets constructed from other syntactic objects.

The basic structure building operation of syntax is `Merge`. It combines two (or more) syntactic objects into a set and can be viewed as a function that maps the syntactic objects in its input to the set that contains them as members (a new syntactic object). `External Merge` manipulates syntactic objects, at least one of which is a lexical item. All other instances of `Merge`—referred to as `Internal Merge`—lead to the association of a syntactic object with more than one position in syntactic structure (i.e. syntactic movement). One of the syntactic objects that `Merge` takes as its input must be the largest syntactic object already constructed (i.e. the root). The result is that both the addition of lexical items (`External Merge`) and the movement of elements (`Internal Merge`) target the root node and thereby extend the tree. For present purposes, any implementation that achieves this result will be sufficient.

I assume that thematic relations are established between predicates and their arguments upon `External Merge` of a nominal phrase (the argument) with a constituent that represents the (unsaturated) predicate (Hale & Keyser 1993, Chomsky 1995, Heim & Kratzer 1998, Harley 2011). The selectional requirements of a syntactic object are encoded via one or more features of that syntactic object (cf. Adger 2003). Such features are satisfied by the merger of the syntactic object with the kind of object(s) required by the features. In other words,

thematic saturation drives `External Merge`.

Syntactic movement qua `Internal Merge` can also be seen as being driven by the selectional features of a syntactic object. In particular, if a head is endowed with an EPP-feature (OCC(urrence) in Chomsky 2004:p. 24) it could potentially trigger movement of some accessible constituent. For expository reasons, I adopt the Copy Theory of Movement whereby each instance of `Internal Merge` creates a copy of the moved syntactic object. Following Chomsky (2001), p. 39-40, a copy of a syntactic object created by `Internal Merge` differs from other copies of this object only with respect to its sisterhood relations. Which copy of the displaced element is to be spelled out in is left to the morphophonological component of grammar.

The label of a syntactic object determines the syntactic properties of this object; in this sense, the label is related to the notion of projection. The label of a lexical item is the lexical item itself, while the label of a syntactic object constructed from α and β is the label of either α or β (Chomsky 2000:p. 133). How labeling is implemented does not matter here as long as it gives this result.

Various relations among syntactic objects can be defined over the structures produced by `Merge`. `Merge` produces two local binary relations: DOMINATES (D) and SISTER-OF (S). From these, CONTAIN (C) can be derived: (D$\circ$D)$\cup$D (i.e. CONTAIN is the transitive closure of DOMINATE). C-COMMAND can then be defined as the composition of sisterhood and containment combined with sisterhood: (S$\circ$C)$\cup$S. In other words, a node α c-commands a node β if and only of β is α's sister or is contained within α's sister.

`Agree` is a relation between two (or more) constituents. The probe is a head with a set of features that must be matched or valued by the features of an accessible constituent, the goal. An `Agree` relation can only be established between a probe α and a goal β if α c-commands β (see Chomsky 2001, p. 39). Thus, a probe with a particular type of unvalued features searches within its c-command domain for a goal with valued features of a matching type. If an `Agree` relation is successfully established between the probe and the goal, it results in the valuation of the relevant features on the probe.

I assume a realizational piece-based approach to morphology, specifically the theory of Distributed Morphology (Halle & Marantz 1993, 1994 *et seq*). In this framework, morphology interprets syntax; i.e. phonological material is not present in the syntactic structure but is supplied post-syntactically by the insertion of Vocabulary Items into terminal nodes. For a Vocabulary Item to be inserted into a terminal node, the identifying features of the Vocabulary Item must be a subset of the features comprising the terminal node. Since Vocabulary Items can be underspecified in this way, it is possible for more than one Vocabulary Item to compete for insertion at a given terminal node. In cases of such competition, the most highly specified Vocabulary Item gets inserted (a form of the Elsewhere Principle). Underspecification of Vocabulary Items accounts for certain mismatches between morphological representations and representations that can be motivated syntactically. The residue is handled by morphological operations that manipulate syntactic terminals to derive the surface morphophonological strings. These operations involve feature (bundle)

deletion, insertion, or copying, fission or fusion, as well as various kinds of displacement.

1.3 Language background

The majority of this dissertation relies on data from Modern Bulgarian, an Eastern South Slavic language. Three major sources of data have been used: (i) grammaticality judgments (these include judgments obtained in consultation with native speakers as well as the author's own judgments); (ii) the Bulgarian National Corpus (1.2 billion words from more than 240,000 text samples from the middle of the 20^{th} century to the present; `http://ibl.bas.bg/en/BGNC_en.htm`); (iii) several Bulgarian grammars (e.g. Andrejčin, Asenova, Georgieva, Ivanova, Nicolova, Pašov, Părvev, Rusinov, Stankov, Stojanov & Čolakova 1983, Scatton 1984, Hauge 1999).

1.4 Outline

Chapter 2 (*Clitic Doubling*) demonstrates that object clitics in Bulgarian are parts of morphophonological words but that they also behave syntactically like independent nominal projections, as it becomes apparent in clitic doubling configurations. I reconcile this apparent paradox by treating clitics as nominal phrases in the syntax, which morphological merger reduces to parts of words in the morphophonological component. Clitic doubling is then analyzed as the mor-

phophonological reflex of a movement relation that holds between a doubled argument and a head in the extended verbal projection, and the clitic itself is the reduced articulation of the raised argument's higher copy. This approach views clitic doubling as an interface phenomenon which results from the interaction of independently motivated syntactic and morphophonological operations. The former explain the syntactic properties of clitics while the latter explain the morphophonological ones.

One of the means of expressing arguments in Bulgarian complex event nominals involves cliticization and concomitant clitic doubling. Chapter 3 (*Event Nominalizations*) shows that the theory of cliticization and clitic doubling developed in the context of clausal objects automatically explains the distribution of clitics within nominals. In particular, clitic doubling involves syntactic movement of an argument to the specifier of a functional head, followed by the application of morphological merger. The difference between clitic doubling in clauses and nominals then reduces to the nature of the functional head that is the locus of syntactic movement and morphological merger. In clauses it is a head in the extended verbal projection (v), while in nominalizations it is a head in the extended nominal projection (D). The portability of this theory across syntactic domains provides further support for the proposed treatment of cliticization and clitic doubling.

Chapter 4 (*Denominal Adjectives*) focuses on another kind of element that is realized as a subpart of a morphological word but is characterized by a significant degree of syntactic independence. In particular, while denominal adjec-

tives in Bulgarian are morphophonological words, their nominal component is syntactically active in ways expected of typical nominal phrases. Therefore, I treat denominal adjectives as underlying nominal phrases that are converted into adjectives by morphological merger in the course of the derivation, as part of the word formation process which combines the nominal phrases with adjectivizing derivational morphology. The applicability of morphological merger outside of the context of clitic doubling constitutes independent empirical support for the relevance of this operation as part of the mapping from syntax to morphophonology.

Chapter 5 (*Concluding Remarks*) summarizes the empirical and theoretical results of the dissertation, as well as the emerging picture of the syntax-morphophonology interface.

Chapter 2

Clitic doubling

In this chapter I identify a certain kind of mismatch between the set of objects that narrow syntax manipulates and morphophonological words. In particular, I demonstrate that object clitics in Bulgarian are parts of words with respect to a number of morphophonological criteria but, at the same time, are characterized by a significant degree of syntactic independence. I use these findings to develop a particular theory of the aspects of the syntax-morphophonology mapping that are responsible for this kind of mismatch. Specifically, I attribute this kind of mismatch to the application of `m-merger`, an operation that is part of the mapping from syntax to morphophonology, which takes a syntactic phrase and a syntactic head that stand in the specifier-head relation and creates a morphophonologically atomic unit. Thus, the analysis developed in this chapter treats Bulgarian object clitics as underlying nominal phrases that are converted into subword elements by `m-merger` in the morphophonological component of

the grammar.

Particularly strong evidence for the syntactic behavior of clitics as independent nominal phrases comes from clitic doubling configurations. Clitic doubling involves the multiple expression of a single argument in different structural positions: the clitic expresses features of its full nominal phrase associate, which occupies an argument position. I show that, at least in Bulgarian, the clitic and its associate are related via syntactic movement and that clitic doubling involves the simultaneous realization of both the head and the foot of a movement chain. I argue against a base-generation analysis of clitic doubling in Bulgarian, whereby the clitic is the manifestation of an agreement relation between a verb and the associate (as is standardly assumed for this language). I consider a number of diagnostics which distinguish between clitics that reflect agreement processes and clitics that do not. When applied to Bulgarian, these diagnostics reveal that the full nominal phrase associate is syntactically represented in its entirety in the position of the doubling clitic.

I analyze clitic doubling as the morphophonological reflex of a movement relation that holds between a doubled argument and a head in the extended verbal projection. The clitic itself is the reduced articulation of the raised argument's higher copy. This reduction, as well as the multiple expression of a single verbal argument, result from the application of `m-merger`. Thus, the proposed analysis treats clitic doubling as an interface phenomenon which is the result of an interaction between two independently motivated operations of the syntactic and morphophonological components of grammar: A-movement and

m-merger. The former explains the syntactic properties of clitics while the latter explains the morphophonological ones. This treatment not only accounts for the dual behavior of clitics across grammatical components but also provides an insightful analysis of clitic doubling as the morphophonological reflex of syntactic movement. This chapter then constitutes support for a theory of the syntax-morphophonology mapping that incorporates m-merger. The rest of this dissertation provides further support for this theory by applying it in other contexts and extending its scope beyond cliticization and clitic doubling.

2.1 Types of clitic constructions

The argument of the verb in (1a) occupies its canonical postverbal position. On the other hand, (1b) involves a clitic in the immediately preverbal position, which leads to a third person masculine interpretation of the argument of the verb.

(1) a. *Decata vidjaha Ivan.*
the.children saw Ivan
'The children saw Ivan.'

b. *Decata* ***go*** *vidjaha.*
the.children 3.SG.M.ACC saw
'The children saw him.'

Object clitics in Bulgarian bear ϕ-features, as shown below. While the language lacks case marking outside of the pronominal system, the forms of the clitics distinguish between direct and indirect object associates. I take this to be a mor-

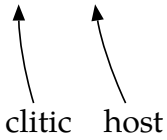
phophonological difference between accusative and dative case.

(2) *Object clitics in Bulgarian*

	1.SG	2.SG	3.SG.M/N	3.SG.F	1.PL	2.PL	3.PL
ACCUSATIVE	*me*	*te*	*go*	*ja*	*ni*	*vi*	*gi*
DATIVE	*mi*	*ti*	*mu*	*i*	*ni*	*vi*	*im*

I adopt a purely phonological conception of what clitics are and define them as phonological forms (realizing morphosyntactic elements) which are deficient in prosodic structure at the level of the Prosodic Word (see Harizanov to appear b and Anderson 2011 for a similar view). In other words, a clitic is a phonological string "whose segmental content may be organized into syllables and possibly feet but which is not lexically assigned the status of a P[rosodic]Word" (Anderson 2011, p. 2004). The phonological host of clitics in Bulgarian is the verb:[1]

(3) *Decata* (*go vi'djaha*) (cf. (1b))

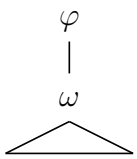


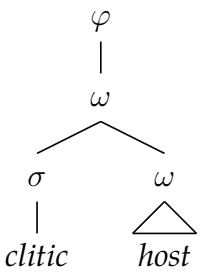
The analysis of clitics is usually complicated by the fact that the proper characterization of clitics across languages appears to require reference to both syntax and phonology. As far as their phonological behavior is concerned, clitics can be characterized by different degrees of phonological "closeness" to their host. For example, it is possible that a clitic does not allow its host to be parsed in a

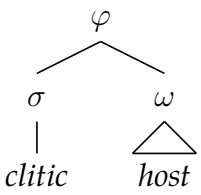
[1] I am not concerned with non-verbal predicates here.

separate prosodic word (ω)—(4a), or that it instead adjoins to the prosodic word of its host, either becoming a segment in a larger prosodic word—(4b), or being directly dominated by a phonological phrase (φ)—(4c). See Harizanov (to appear b) for relevant discussion in the context of Bulgarian and Macedonian.

(4) *Clitics in phonology* (Selkirk 1995, Ito & Mester 2009)

a. 

b. 

c. 

Investigation of the typology of the prosodic attachment of clitics to their lexical hosts can, however, be seen as quite separate from questions about the syntactic behavior of clitics. In particular, if the clitic is a complement to the verb, it can be argued that it moves to its pre-verbal position from the canonical postverbal position of verbal complements:

(5) *Decata go vidjaha ~~go~~* (1b)

Therefore, cliticization exhibits properties of both subword elements (e.g. morphophonological atomicity) and syntactic nominal phrases (e.g. apparent thematic relatedness to the verb, syntactic movement). A central concern in the study of clitics has been how to account for both properties simultaneously. According to one major approach, the *base-generation approach*, the [*clitic host*]

complex is directly inserted from the lexicon. This approach is rather successful at explaining the morphophonological behavior of clitics as parts of words. On the other hand, according to the *movement approach*, the clitic is syntactically independent and undergoes syntactic movement to its phonological host from the base position in which it receives a θ-role. The phenomenon of clitic doubling is of central importance to the question of whether the base-generation or the movement approach is to be adopted in the analysis of the clitics in a particular language.

2.1.1 Clitic doubling

Bulgarian exhibits clitic doubling with both direct and indirect objects:

(6) a. *Decata* ***ja*** *običat* ***neja***.
the.kids 3.SG.F.ACC love her
'The kids love her.'

b. *Marija* ***mu*** *izprati pismo* ***na rabotnika***.
Maria 3.SG.M.DAT sent letter to the.worker
'Maria sent a letter to the worker.'

In what I call *true clitic doubling*, the clitic (a phonologically bound morpheme) expresses the Case- and ϕ-features of its associate (a full nominal phrase), as schematized in (7). Since, a defining property of true clitic doubling is that the associate is base-generated in argument position (Anagnostopoulou 2007), it is to be distinguished from superficially similar but distinct phenomena which involve a clitic and a non-argument associate base-generated in adjunct position

(cf. §2.1.2).

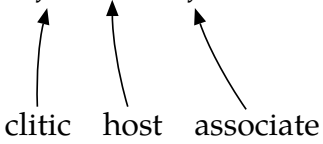
(7) *True clitic doubling*

… clitic$_{[\phi,\text{CASE}]}$+host … associate$_{[\phi,\text{CASE}]}$ …

(where the associate is in argument position)

True clitic doubling results in the double expression of the features of the associate: once on the full nominal phrase itself and once more on the clitic, as in (8). This chapter focuses on whether true clitic doubling in a given language is the semantically uninterpretable redundant expression of such features (akin to agreement morphology) or whether it makes its own additional contribution to interpretation.

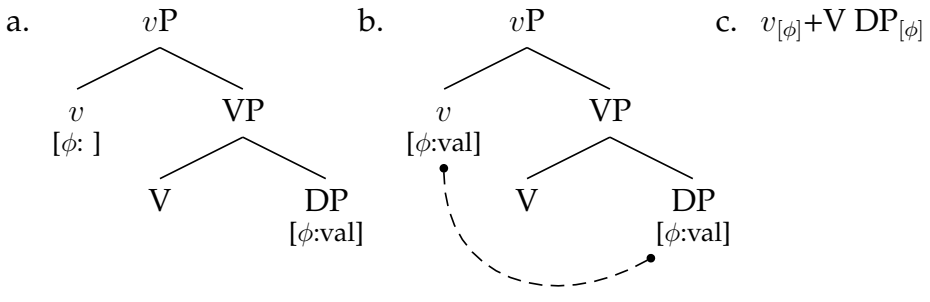
(8) *Decata **ja** običat **neja*** (cf. (6a))



The complementarity between clitics and full DP associates in a language has been taken as evidence for the movement approach to cliticization and against the base-generation approach (e.g. Browne 1974, Kayne 1975, a.o.): if the clitic moves from an argument position, a full DP associate cannot be generated in that same argument position. This approach has been challenged on the basis of clitic doubling languages such as Spanish, Romanian, and Modern Hebrew (e.g. Jaeggli 1982, a.o.): since the full DP associate in these languages occupies an argument position, it cannot be the source of the moving clitic, which must instead be base generated in its surface position.

A specific instantiation of the base-generation approach to cliticization treats clitic doubling as agreement (e.g. Borer 1984 and Jaeggli 1986, a.o.). Agreement can be implemented in terms of an `Agree` relation between a functional head and a nominal phrase (Chomsky 2000, Chomsky 2001). A probe (the functional head) with a particular type of unvalued features searches within its c-command domain for a goal (the nominal phrase) with valued features of a matching type. An `Agree` relation is established between the probe and the goal, which results in the valuation of the relevant features on the probe. In the case of object agreement, illustrated in (9), the probe v finds the ϕ-features of a DP in argument position and they are spelled out on v as a clitic (a phonologically bound object agreement marker). Since ϕ-features on v are uninterpretable, they receive no interpretation at LF (Chomsky 2000:p. 119)—i.e. agreement is semantically vacuous unless it is accompanied by movement of interpretable material (see Baker 1996:p. 32, and Rezac 2011:p. 14). The predictions generated by this treatment of agreement as the redundant expression of a set of ϕ-features are explored below in the context of true clitic doubling in Bulgarian.

(9) *Clitic doubling as (object) agreement*



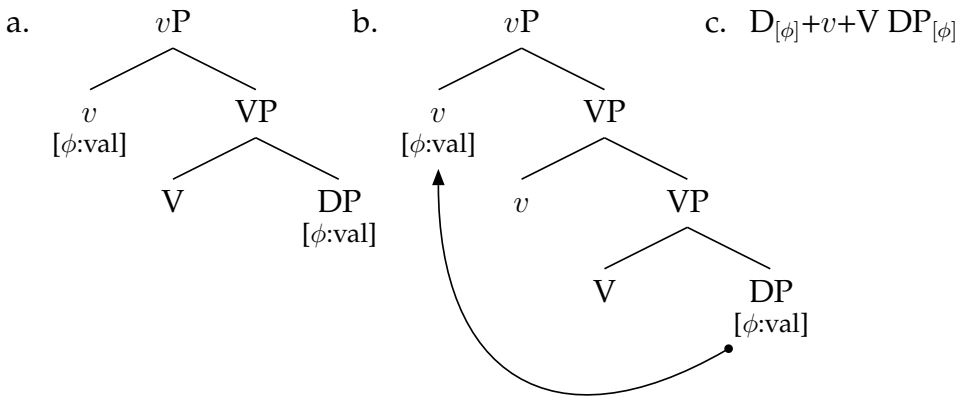
Alternatively, clitic doubling can be treated as resulting from movement (e.g. Sportiche 1996 and Anagnostopoulou 2003, a.o.) and multiple spell-out of an argument. Multiple spell-out arises when a nominal phrase is associated with more than one structural position and it is spelled out in more than one of these positions. A phrase can come to be associated with more than one position in syntactic structure as the result of syntactic movement, which can be implemented as the combination of Agree and Merge (Chomsky 2000:p. 101-102, Chomsky 2001:p. 10). If an Agree relation holds between a functional head and a nominal phrase, the nominal phrase can move to the specifier of the functional head—under this view, while Agree does not force movement, it is a precondition for movement.[2] Thus, once Agree is established between v and DP, the DP can undergo movement to the specifier of v, as in (10).[3] The decision about which position(s) the displaced element is to be spelled out in is left to the morphophonological component of grammar. Clitic doubling is the outcome of syntactic movement in which the displaced element undergoes multiple spell-out: once (in its entirety) in the base position and again (as a clitic) in its derived

[2] More recently it has been argued that only some, but not all, syntactic movements are parasitic on Agree. For example, Chomsky (2008) (p. 150-152; fn. 49) proposes that at least some kinds of $\overline{\text{A}}$-movement are triggered by an edge feature EF without Agree (see Roberts 2010:p. 208-209, for discussion). Additionally, Preminger (2011) (§4) argues not only that the contingency of movement on Agree is not a property of all types of syntactic movement but that it is also subject to parametric variation.

[3] For a multidominance approach to movement in the context of clitic doubling, see Harizanov (to appear a). For present purposes, the choice of the Copy Theory of Movement is an expository one and nothing essential hinges on it to the extent that the Multidominance Theory of Movement and the Copy Theory of Movement provide identical empirical coverage in the domain under discussion (consult Vicente 2009 for comparison of the two implementations in the context of $\overline{\text{A}}$-movement).

position. Therefore, true clitic doubling is expected to affect interpretations involving, for example, scope and binding, and generally exhibit properties characteristic of movement and not agreement (Chomsky 1986b, Chomsky 2001:33).

(10) *Clitic doubling as movement*



One of the goals of this chapter is to explore the predictions of these two models with respect to the morphosyntactic properties and behavior of true clitic doubling. The data I discuss below supports the movement approach to Bulgarian clitics, which pattern with independent nominal phrases in the syntax despite their morphophonologcal subword status. I account for the dual properties of clitics and clitic doubling by distributing the burden of explanation over distinct (but interacting) components of grammar, namely, syntax and morphophonology. This approach demonstrates the compatibility of clitic doubling with the results of the earliest research on cliticization as movement (Browne 1974, Kayne 1975) and emphasizes the need for an articulated understanding of the mapping from syntax to morphophonology.

A further note is in order on the connection between this approach and earlier research. There is a long tradition in research on clitic doubling in the languages of the Balkans and Bulgarian in particular; recent examples include Guentchéva 1994, 2008, Vakareliyska 1994, Alexandrova 1997, Leafgren 1997, Rudin 1997, Dimitrova-Vulchanova & Hellan 1999, Franks & Rudin 2005, Pancheva 2005, Krapova & Cinque 2008 (see Franks & King 2000 for an overview). Much attention has been devoted to the information structural factors that license or require the cooccurrence of a clitic and a full nominal phrase associate—an area of language specific and cross-linguistic research characterized by much debate in the literature. The general conclusion in the context of Bulgarian is that a fairly complex set of factors interact in the licensing of clitic doubling. However, it has been difficult to characterize the relevant factors precisely, in part because of the elusive nature of the information structural notions involved and also the observed dialectal and intra-speaker variation (Leafgren 1997:p. 121; Guentchéva 2008:p. 209). It has been proposed that clitic doubling in Bulgarian occurs when the associate is definite (Cyxun 1962), specific (Rudin 1997, Guentchéva 2008), topical (Leafgren 1997, Rudin 1997, Guentchéva 2008), or a combination of these (Rudin 1997). However, there are well-known exceptions to the most straightforward interpretations of all these requirements, involving doubling of indefinite objects (Leafgren 1997), non-specfic generics (Guentchéva 1994, Alexandrova 1997) and focused (and presumably non-topical) *wh*-phrases (Dimitrova-Vulchanova & Hellan 1999). Furthermore, the existence of predicates which require the presence of a (doubling) clitic regard-

less of the associate's definiteness, specificity, or topicality has been taken as an indication that these notions are altogether irrelevant for the characterization of clitic doubling (Krapova & Cinque 2008). This chapter will have little to contribute to the debate about the information structural conditions on clitic doubling and their proper characterization. Such an investigation is orthogonal to the chapter's main concern, the morphosyntactic mechanisms behind clitic doubling (see Franks & King 2000:p. 250, on the independence of these two classes of questions). Combining the insights of both pursuits in the hopes of better overall understanding of the clitic doubling phenomenon should, however, be the goal of future work.[4]

2.1.2 CLLD and CLRD

Given definition (7), the question arises of whether every example in which a doubling clitic is followed by a nominal phrase associate, as in (6), is an instance of true clitic doubling. Crosslinguistically, at least two distinct constructions

[4]It might be tempting to take this sensitivity to information structure as evidence against the agreement analysis of true clitic doubling in Bulgarian. However, although agreement does not canonically depend on information structural factors or the features of the controller of the agreement (Corbett 2006:p. 26-7), there are clear exceptions. For instance, it has been argued that properties of the controller of agreement (specificity, definiteness, animacy, or a combination of these) determine object agreement morphology in languages such as the Potreño dialect of Spanish (Suñer 1988), Swahili (Suñer 1988), and Hungarian (Coppock & Wechsler 2012). Furthermore, Corbett (2006) discusses a number of languages in which agreement is sensitive to information structural factors such as topicality and/or focus (p. 197-204): Tsez, Khanty, Rural Palestinian Arabic. These exceptions can be taken as evidence that licensing conditions of this kind are not a reliable diagnostic of agreement vs. non-agreement processes. However, it is possible that in these cases information structural factors do not directly affect agreement but the structural configurations that license agreement.

with distinct syntactic properties have been implicated in examples with an anticipatory clitic of this kind. In one, the associate is introduced in the derivation as an argument—this corresponds to true clitic doubling as defined above; in the other one, which has been dubbed Clitic Right Dislocation (henceforth, CLRD), the associate occupies an adjunct position on the surface.[5] Anagnostopoulou (2007) identifies the following as distinctive properties of CLRD:

1. The associate in CLRD is necessarily parsed in a separate prosodic constituent but the associate in true clitic doubling is not (see also Philippaki-Warburton, Varlokosta, Georgiafentis & Kotzoglou 2004:p. 965, fn. 1).

2. CLRD is not subject to Kayne's generalization in the languages in which true clitic doubling is (e.g. Rioplatense Spanish).

Based on these differences it has been argued that true clitic doubling and CLRD deserve distinct syntactic treatments: the object is generated as a complement of the verb in the former but as a VP-external adjunct in the latter (Jaeggli 1982, 1986, Borer 1984, among others). Alternatively, CLRD could be characterized by the same base structure as true clitic doubling but differ from it on the surface (Kayne 1994:p. 82-3; Zubizarreta 1998:p. 198). According to the latter approach, CLRD is derivationally related to clitic doubling via movement of the associate to its right-adjoined surface position. As far as Bulgarian is concerned, the following examples demonstrate that CLRD is an independently attested

[5]The surface adjunct position of the associate in CLRD can, in principle, be the result of either base-generation or movement.

phenomenon in the language and involves the special prosodic phrasing described as property 1 above:[6]

(11) a. *decata ja običat* ($_{\varphi}$ *Marija*)$_{\varphi}$
the.kids 3.SG.F.ACC love Maria
'The kids love her, Maria.'

b. *Marija mu izprati pismo* ($_{\varphi}$ *na rabotnika*)$_{\varphi}$
Maria 3.SG.M.DAT sent letter to the.worker
'Maria sent a letter to him, the worker.'

Another question that arises given the definition of clitic doubling in (7) is whether examples like (12a) and (12b) actually involve true clitic doubling. In other words, does an associate that precedes its doubling clitic on the surface occupy an argument position at an earlier derivational stage?

(12) a. *Ivan go tărsjat.*
Ivan 3.SG.M.ACC they.seek
'They're looking for Ivan.'

b. *Na nego mu văzložiha trudna zadača.*
to him 3.SG.M.DAT they.gave difficult task
'They gave him a difficult task.'

Such examples, where the clitic follows its associate, are instances of a phenomenon called Clitic Left Dislocation (henceforth, CLLD; Cinque 1990). CLLD is an unbounded dependency which is sensitive to locality constraints on movement (i.e. islands) and exhibits connectivity effects (e.g. case matching).[7] Given

[6]Cf. (6a) and (6b) where no prosodic boundary is found in front of the associate; see Krapova & Cinque 2008 for a different characterization.

[7]CLLD is to be distinguished from a superficially similar construction called Hanging Topic Left Dislocation, which is a root-only phenomenon that is not sensitive to islands and does not

the cooccurrence of a clitic and a full nominal phrase, it is worth asking whether CLLD is related to true clitic doubling and CLRD. Based on the four observations below (Anagnostopoulou 2007), it has been argued that CLLD is not derivationally related to the constructions in which the clitic precedes the associate (Cinque 1990, Anagnostopoulou 1994, Iatridou 1995):

1. There are languages with CLLD but no clitic doubling (e.g. Italian).

2. There are languages in which clitic doubling is subject to Kayne's generalization but CLLD is not (e.g. Rioplatense Spanish).

3. There are languages in which clitic doubling is limited to nominal phrases but CLLD is not (e.g. Italian).

4. There are languages in which clitic doubling is limited to certain semantic classes of associates but CLLD is not (e.g. Modern Greek).

The analysis that usually emerges from the claim that CLLD and true clitic doubling are unrelated is that CLLD involves base-generation of the nominal phrase in the left periphery—such an approach, however, must resort to special mechanisms in order to account for the aforementioned connectivity effects. It is the observed connectivity that has led others to conclude that CLLD and true clitic doubling are, in fact, derivationally related. According to this alternative approach, CLLD is the result of fronting a clitic-doubled associate to the left periphery (Agouraki 1992, Kayne 1994, Sportiche 1996, Cecchetto 2000).

exhibit connectivity effects. Hanging Topic Left Dislocation is discussed in §2.2.2.

True clitic doubling has been defined in this chapter in terms of the base position of the associate (argument). On the other hand, CLLD and CLRD have been defined in terms of the surface position of the associate (adjunct in both). This view allows, although it does not require, treatment of CLLD and CLRD as derivationally related to clitic doubling in any given language. As far as CLLD is concerned, I contend that relating it derivationally to clitic doubling is also possible in Bulgarian. First, observation 1 above cannot be an argument against treating (12a) and (12b) as involving clitic doubling because it relies on the assumption that Italian CLLD and Bulgarian examples like (12a) and (12b) are derived via the same mechanism—an assumption in need of independent motivation. Second, 2 is irrelevant in Bulgarian because the language is not subject to Kayne's generalization in the first place. Furthermore, 3 and 4 cannot be applied in Bulgarian either, since both clitic doubling and CLLD are found with the same kinds of phrases in the language. Even if such differences existed, however, they could readily be captured by an analysis which treats CLLD as derivationally related to clitic doubling. Specifically, as long as CLLD involves an additional operation, such as $\overline{\text{A}}$-movement fed by clitic doubling, for instance, this subsequent $\overline{\text{A}}$-movement could be the locus of any differences between the two types of examples. The connection between clitic doubling, as understood here, and CLLD is discussed in more detail in §2.5.3, which explores the interaction of clitic doubling with $\overline{\text{A}}$-movement more generally. Below, I leave CLRD aside and focus on true clitic doubling examples like (6a) and (6b) where the associate is demonstrably (base-generated) in argument position, as

argued on the basis of the extensive evidence provided in §2.2.[8]

2.2 The status of the clitic doubled associate

The set of diagnostics discussed in this section is intended to determine whether Bulgarian exhibits true clitic doubling or not—i.e. whether the associate in clitic doubling configurations is a syntactic argument of the verb or an adjunct. The status of the associate has direct consequences for the analytical treatment of the doubling clitic. In particular, if the associate can be shown to occupy an argument position at some point in the derivation (Borer 1984, Jaeggli 1982, 1986, Anagnostopoulou 1999, Alexiadou & Anagnostopoulou 2000), it can be concluded that the clitic is not an argument itself. Then the two possibilities discussed in §2.1.1 arise: the clitic could be either the reflex of verbal agreement with the associate or the pronominal movement copy of the associate itself. If, instead, the associate can be shown to be an adjunct (see Aoun 1999 and Philippaki-Warburton et al. 2004, among others, for relevant discussion), the

[8] Krapova & Cinque (2008) slice the terminological pie slightly differently. They reserve the term "clitic doubling" only for cases where the presence of a clitic is required (experiencers of psych and perception predicates). All other examples where the clitic precedes the associate are considered instances of CLRD. Therefore, for Krapova & Cinque (2008) CLRD cannot be defined on the basis of the associate's status as an argument or adjunct (Krapova & Cinque (2008), in fact, seem to treat it as an argument; e.g. Krapova & Cinque 2008:p. 257). If the argument/adjunct status of the associate is, instead, taken as the defining characteristic of clitic doubling, as it is in the present chapter, doubling with psych and perception predicates is simply an instance of obligatory true clitic doubling. This obligatoriness is independent of the morphosyntactic mechanism behind clitic doubling, however, and is plausibly tied to the predicate type involved. This possibility is explored in more detail in §2.4.1, after the present analysis has been fully laid out.

question arises of what the actual syntactic argument of the verb is.[9] This result may suggest a treatment of the clitic itself as a pronominal argument of the verb which is either base-generated in its surface position or raises to it.

This section catalogues a number of diagnostics which aim to determine the nature of the associate in clitic doubling configurations in Bulgarian. They rely on the syntactic differences independently observed to hold between arguments and adjuncts in terms of extraction possibilities (§2.2.1), case assignment (§2.2.2), and word order (§2.2.3). The results described below indicate that the associate in Bulgarian actually occupies an argument position, in agreement with Rudin (1997) and Franks & Rudin (2005). This is the kind of result that has also been obtained in languages like Macedonian (Franks 2009), Romanian, Modern Hebrew, and Lebanese Arabic.[10]

2.2.1 Islandhood

Adjuncts are observed to often be islands for extraction and, specifically, prohibit $\overline{\text{A}}$-dependencies crossing their boundaries (e.g. Huang 1982 and Chomsky 1986a, but see Szabolcsi 2006 and Truswell 2011):

(13) a. * Which concert did you sleep during?

[9]This question arises only if one can reliably exclude the possibility that the associate is a semantic argument of the verb despite its syntactic status as an adjunct. If that is the case, and the associate is not a restrictive modifier, it would be sufficient to saturate the predicate. Chung & Ladusaw (2004) (p. 94) present a number of tests to determine whether syntactic adjuncts behave like semantic arguments in Chamorro, which probe the semantic restrictions that the verb imposes on its internal argument(s).

[10]Modern Greek is a language for which mixed results have been reported (compare Alexiadou & Anagnostopoulou 2000 and Philippaki-Warburton et al. 2004).

b. * How did you leave before fixing the car?

Analytically, the status of adjuncts as islands could be made to follow from the Condition on Extraction Domain (Huang 1982, Chomsky 1986a) or its minimalist descendants. Adjuncts in Bulgarian are barriers to $\overline{\text{A}}$-movement, while elements in argument (complement) position are not. This contrast can serve as a diagnostic for the syntactic argumenthood of associates in clitic doubling configurations. First, I will establish that certain kinds of possessors can be extracted from nominal phrases in argument positions but not from nominal phrases in non-argument positions. Second, I will show that associates pattern with arguments with respect to extractability: i.e. they are not islands for extraction.

Non-clitic possessors in Bulgarian (14a) originate within nominal phrases in argument position and are introduced by the element *na*. These possessors can appear prenominally, as in (14b), and clause initially, as in (14c) and (14d).

(14) a. *Popravih dvigatelja na bežovija Moskvič.*
I.repaired the.engine of the.beige Moskvitch
'I repaired the engine of the beige Moskvitch.'

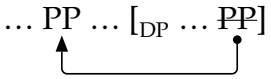
b. *Popravih na bežovija Moskvič dvigatelja.*
I.repaired of the.beige Moskvitch the.engine

c. *Na bežovija Moskvič popravih dvigatelja.*
of the.beige Moskvitch I.repaired the.engine

d. *Na koj avtomobil popravi dvigatelja?*
of which automobile you.repaired the.engine
'Of which automobile did you repair the engine?'

(14b) can be analyzed as derived from (14a) via movement of the possessor from its postnominal base position to the specifier of DP (or via left adjunction to DP). (14c) can be analyzed as derived by movement of the possessor to a clause-initial focus position (presumably with (14b) as an intermediate stage). Finally, in (14d) the possessor undergoes *wh*-movement. The movement analysis of these examples can be schematically represented as follows:

(15) *PP possessor raising: movement analysis*



As expected, this movement observes the coordinate structure constraint. Movement of the possessor out of the first conjunct is impossible, as (16b) and (16c) show, while across-the-board movement of the possessor is possible, as in (16d) and (16e).

(16) a. *Pročetoh stihosbirkata na Botev i romana na Vazov.*
I.read the.collection.of.poems of Botev and the.novel of Vazov
'I read Botev's collection of poems and Vazov's novel.'

b. * *Na Botev pročetoh stihosbirkata i romana na Vazov.*
of Botev I.read the.collection.of.poems and the.novel of Vazov
'I read Botev's collection of poems and Vazov's novel?'

c. * *Na kogo pročete stihosbirkata i romana na Vazov?*
of whom you.read the.collection.of.poems and the.novel of Vazov
'Of whom did you read the collection of poems and the novel of Vazov?'

d. *Na Vazov pročetoh novija roman i starata stihosbirka.*
of Vazov I.read the.new novel and the.old collection.of.poems

'I read Vazov's new novel and old collection of poems.'

e. *Na kogo pročete njakolko romana i stihosbirki?*
of whom you.read several novels and collection.of.poems
'Of whom did you read several novels and collections of poems?'

Further evidence for a movement analysis of prenominal *na*-phrase possessors comes from an intervention effect. Consider the sentences in (17), which showcase a configuration that prevents the possessor from appearing prenominally. What these sentences have in common is that the DP containing the possessor phrase contains a demonstrative as well. Thus, it appears that prenominal possessors do not cooccur with demonstratives.

(17) a. *Polzvah tazi čaša na Ivan.*
I.used this cup of Ivan
'I used this cup of Ivan.'

b. * *Polzvah na Ivan tazi čaša.*
I.used of Ivan this cup

c. * *Na Ivan polzvah tazi čaša.*
of Ivan I.used this cup

d. * *Na kogo polzva tazi čaša?*
of whom you.used this cup
'Of whom did you use this cup?'

It appears that the demonstrative blocks the movement of the *na*-phrase possessor. It is much less clear how this effect could be explained if prenominal *na*-phrase possessors were base-generated in their surface position. Under the movement approach, on the other hand, this blocking effect is expected under the following two plausible assumptions: (i) movement out of DP must pro-

ceed through Spec,DP (guaranteed if Bulgarian DPs are phases in the sense of Chomsky 2000, 2001), and (ii) demonstratives in Bulgarian occupy Spec,DP (see Dimitrova-Vulchanova & Giusti 1995, 1998, Giusti 1997, Giusti & Stavrou 2008, Harizanov 2011, 2013). In other words, Spec, DP serves as an escape hatch for movement out of the DP phase (Giorgi & Longobardi 1991, Cinque 1980, 2011), and extraction of a *na*-phrase out of DP is possible only if an unoccupied Spec,DP is available:[11]

(18) a. … PP … [$_{DP}$ [$_{D}$ … ~~PP~~]]

b. … [$_{DP}$ demonstrative [$_{D}$ … PP]]

Having established that prenominal *na*-phrase possessors undergo movement, the behavior of arguments and adjuncts with respect to this movement can be now compared. While possessor movement out of a DP is possible if the DP is in argument position (as the examples above showed), such movement is impossible out of an adjunct:

(19) a. * *Na kogo Marija si trăgna sled kato podari kolelo?*
to whom Maria REFL left after when she.gave bike
'Who did Maria leave after she gave a bike to as a present?'

[11]Unlike demonstratives, the quantifier *vsički* 'all' does not block extraction out of DP (cf. (17d)):

(i) *Na kogo polzva vsičkite čaši?*
of whom you.used the.all cups
'Whose cups did you use all?'

Given the analysis of intervention proposed in the main text, that quantifiers like *vsički* 'all' do not intervene follows from the assumption that they are heads in the extended nominal projection and not phrasal in nature (see Dimitrova-Vulchanova & Giusti 1995 for argumentation). As such, they are not specifiers and do not occupy the escape hatch that the *wh*-phrase in (i) moves through on its way out of the nominal phrase.

b. * *Kogo Marija si trăgna predi da iznenadat?*
who Maria REFL left before to they.surprised
'Who did Maria leave before they surprised?'

c. * *Kakvo Marija otide na učilište nosejki na gărba si?*
what Maria went to school carrying on back REFL
'Who did Maria go to school carrying on her back?'

In addition to the adjunct island violations in (19), consider the attempted possessor movement out of the adjunct *prijatelja na Sonja* 'Sonia's friend' in (20). Unsurprisingly, extraction of a possessor out of a DP argument contained within an adjunct is also impossible—(21). The observed ungrammaticality is expected under standard assumptions about the locality of movement in Bulgarian: i.e. adjuncts are islands for extraction.

(20) a. * *na Sonja reporteră intervjuira Ivan,* [*prijatelja ~~na Sonja~~*]
of Sonia the.reporter interviewed Ivan the.friend
'Sonia, the reporter interviewed Ivan, the friend of _'

b. * *na kogo reporteră intervjuira Ivan,* [*prijatelja ~~na kogo~~*]
of whom the.reporter interviewed Ivan the.friend
'Who did the reporter interview Ivan, the friend of _?'

(21) a. * *na bežovija Moskvič si trăgnah* [*sled kato popravih dvigatelja*
of the.beige Moskvitch REFL I.left after when I.repaired the.engine
~~na bežovija Moskvič~~]

'I left after I repaired the engine of the beige Moskvitch'

b. * *na koj avtomobil si trăgna* [*predi da popraviš dvigatelja*
of which automobile REFL you.left before to you.repaired the.engine
~~na koj avtomobil~~]

'of which automobile did you leave before you repaired the engine?'

Turning now to the associate in clitic doubling configurations, notice that it patterns with arguments with respect to this diagnostic: possessors can properly exit the associate nominal phrases that they originate within, as demonstrated in (22).[12]

(22) a. *na Sonja Marija* ***go*** *vidja* [***prijatelja*** ~~***na Sonja***~~]
of Sonia Maria 3.SG.M.ACC saw the.friend
'Sonia, Maria saw the friend of'

b. *na Ivan* ***gi*** *polzvah* [***instrumentite*** ~~***na Ivan***~~]
of Ivan 3.PL.ACC I.used the.instruments
'I used Ivan's instruments'

c. *na koi tvoi učenici* ***gi*** *poznavaš* [***roditelite*** ~~***na koi ...***~~]*?*
of which your students 3.PL.ACC you.know the.parents
'Which of your students do you know the parents of?'

d. *na koj ot predstavenite na festivala avtori Marija* ***ja*** *beše*
of who of the.introduced at the.festival authors Maria 3.SG.F.ACC was
pročela [***naj novata kniga*** ~~***na koj ...***~~]*?*
read most the.new book

[12] An anonymous NLLT reviewer observes that *wh*-movement out of clitic-doubled associates is not always acceptable, providing the following example:

(i) * *Na kogo ja pročete knigata na studentite?*
of whom 3.SG.F.ACC you.read the.book to the.students
'Whose book did you read to the students.'

In my experience four out of five native speakers judge (22c) and (22d) as fully acceptable. Movement of non-*wh*-phrases out of clitic-doubled associates, on the other hand, is always possible, as in (22a) and (22b). How exactly the two types of movement differ and what factors determine the acceptability of *wh*-movement is far from clear. Yet, the fact that there are grammatical instances of both *wh*-movement and non-*wh*-movement out of clitic-doubled associates lends support to the hypothesis that the associates occupy an argument position.

'The newest book of which of the authors introduced at the festival had Maria already read?'

This evidence from extraction confirms that associates in clitic doubling configurations in Bulgarian are in argument (complement) position, and not adjuncts.

2.2.2 Case assignment

In Bulgarian, arguments and adjuncts contrast with respect to case assignment. Specifically, while the verb assigns case to nominal phrases in argument position, it cannot assign case to any nominal phrases in adjunct position. Thus, arguments are expected to be obligatorily case marked by the verb while adjuncts are not. Bresnan & Mchombo (1987) use this diagnostic in Chicheŵa to distinguish between object agreement markers and object pronouns that are incorporated into the verb. They observe that in Chicheŵa the verb cannot assign case to full nominal phrases that are anaphorically linked to incorporated pronouns. Their conclusion is that these incorporated pronouns are the actual arguments of the verb and not the full nominal phrases. This diagnostic can be applied in the context of clitic doubling as well: if the associate is dependent on the verb for case assignment, it must be an argument; if it is not, it must be an adjunct. This conclusion follows under the assumption that nominal phrases in argument positions must bear the case assigned to them by the verb while nominal phrases in adjunct positions are assigned case in a different way (for

example, they might bear default case).[13]

Relying on the results of Krapova & Cinque 2008, I will examine Hanging Topic Left Dislocation in Bulgarian (henceforth, HTLD; Riemsdijk & Zwarts 1997 among others) and compare hanging topics with clitic doubled associates in terms of case assignment. HTLD will be argued to involve adjunction of the hanging topic in a clause-peripheral position; crucially for present purposes, no case connectivity effects are observed with this type of left dislocation in Bulgarian.[14] For example, (23a) demonstrates that the left-dislocated nominal phrase can appear in the default nominative case even though it is anaphorically linked to a dative argument. In addition, (23b) and (23c) make the same point for left-dislocated nominal phrases that are anaphorically linked to accusative arguments: the left-dislocated pronoun is in the nominative case (cf. Krapova & Cinque 2008:p. 260).[15]

(23) a. *Ivan, Marija mu podari kolelo za koleda.*
Ivan Maria 3.SG.M.DAT gave bike for christmas

[13]Crucially, for the conclusion to hold, case cannot be allowed to be assigned "freely" to adjuncts under some matching requirement. This solution is suggested by Philippaki-Warburton et al. 2004:p. 976, for certain adjuncts in Modern Greek, which they argue do receive nominative case but not via government or spec-head agreement.

[14]As discussed in Section 2.1.2, CLLD and CLRD show connectivity effects unlike HTLD. Based on this fact, they could be argued to involve movement of the dislocated constituent to its surface position as opposed to base generation (though see Section 2.1.2 for discussion of alternatives). This possibility, in turn, renders CLLD and CLRD unhelpful with respect to determining whether clitic-doubled associates are adjuncts or not.

[15] I assume that the argument of the verb in the examples of (23) is a null pronoun and not the clitic itself—note that this pronoun may actually receive pronunciation as a strong pronoun: (25a). Therefore, all clauses in which a verb-argument relation is signaled only by the presence of a clitic, in fact, involve clitic doubling of a null pronominal associate. Since this kind of object pro-drop is only possible in the presence of a doubling clitic, clitic doubling of null pronouns must be obligatory—just like clitic doubling of overt strong pronouns (unless they are contrastively focused).

'Ivan, Maria gave him a bike for Christmas.'

b. *Toj do kolkoto znam sa go videli včera.*
he as far as I.know they.have 3.SG.M.ACC seen yesterday
'Him, as far as I know, they saw him yesterday.'

c. *Tja i bez tova ne moga da ja nakaram da jade.*
she and without that not I.can to 3.SG.F.ACC make to eat
'Her, I can't make her eat anyway.'

(Krapova & Cinque 2008:p. 257)

The absence of case connectivity effects can be accounted for if hanging topics are assumed not to have occupied an argument position at any point in the derivation, i.e. they are base-generated in the left periphery of the clause. As a result, they surface in the default nominative case.

(24) *Hanging Topic Left Dislocation: base-generation analysis*

hanging-topic^{i} [$_{CP}$ … clitic$^{i}_{[\phi]}$+verb … associate$^{i}_{[\phi]}$ …]

One piece of evidence for a base-generation analysis of hanging topics is that a full tonic pronoun or an epithet coindexed with the hanging topic can appear as the associate doubled by the clitic (cf. Krapova & Cinque 2008:p. 261):

(25) a. *Ivan, Marija **mu** podari kolelo **na nego** za koleda*
Ivan Maria 3.SG.M.DAT gave bike to him for christmas
'Ivan, Maria gave him a bike for Christmas'

b. *Ivan, az **go** predupredih **toja glupak** ošte minalata godina*
Ivan I 3.SG.M.ACC warned this fool already last year
'Ivan, I warned the fool last year already'

The possibility of clitic doubling in the presence of a hanging topic would be unexpected if the hanging topic occupied an argument position and underwent

movement to its surface position. Insensitivity to (strong) islands furnishes additional evidence that the hanging topic is base-generated in a clause peripheral position (cf. Krapova & Cinque 2008:p. 263):

(26) a. *Ivan, ne znam kakvo mu podari Marija za koleda.*
Ivan not I.know what 3.SG.M.DAT gave Maria for christmas
'Ivan, I don't know what Maria gave him for Christmas.'

b. *Ivan, poznavam ženata, kojato mu podari kolelo za koleda.*
Ivan I.know the.woman who 3.SG.M.DAT gave bike for christmas
'Ivan, I know the woman that gave him a bike for Christmas.'

c. *Ivan, Marija si trăgna sled kato mu podari kolelo.*
Ivan Maria REFL left after when 3.SG.M.DAT gave bike
'Ivan, Maria left after she gave him a bike as a present.'

This behavior of (this particular kind of) adjuncts is to be compared with the behavior of associates in clitic doubling configurations. In contrast, such nominal phrases do exhibit case connectivity effects and cannot appear in the default nominative case. For example, the marker of dative case *na* is required in (27a). Similarly, (27b) demonstrates that a direct object associate requires accusative case.

(27) a. *Marija **mu** podari kolelo *(**na**) **Ivan** za koleda.*
Maria 3.SG.M.DAT gave bike to Ivan for christmas
'Maria gave Ivan a bike for Christmas.' (cf. (23a))

b. *Do kolkoto znam, sa **go** videli **nego**/*__toj__ včera.*
as far as I.know they.have 3.SG.M.DAT seen him/*he yesterday
'As far as I know, they saw him yesterday.' (cf. (23b))

The associate in clitic doubling configurations cannot surface in the nominative case; instead, it must bear the case assigned to it by the verb. Since such behavior is characteristic only of arguments, not adjuncts, clitic-doubled associates must occupy argument positions.[16]

2.2.3 Word order

A final difference between the behavior of arguments and adjuncts that will be examined here has to do with word order at the right edge of VP. Since direct and indirect object arguments occupy VP-internal positions, they are expected to precede any material that marks the right edge of VP. Right-adjuncts (to VP or vP), on the other hand, are expected to follow such material. I will use this contrast to argue that the associates in clitic doubling configurations behave like arguments and cannot be (right) adjoined to VP or vP.

The markers of the right edge of VP that will be used here are embedded clause complements to object control verbs. The relative order of a clitic-doubled associate and a complement clause has been used as a diagnostic for the nature of the associate in Greek by Schneider-Zioga (1994) and Sportiche (1996). They argue that clitic-doubled elements in Greek occur in positions where adjuncts are not tolerated: i.e. as exceptionally case marked (ECM) subjects and as objects in object control constructions (see also Anagnostopoulou 1999:p. 766,

[16]Case connectivity is also observed in CLLD and CLRD, which can be taken as evidence that the dislocated constituent is case licensed as an argument and undergoes movement its adjoined surface position (see Section 2.1.2 and references therein).

and Alexiadou & Anagnostopoulou 2000 for a similar argument).

(28) a. *O Jannis tin ekane tin Maria na klapsi.*
the Jannis 3.SG.F.ACC made the Maria to cry
'Yannis made Maria cry.' Modern Greek (Schneider-Zioga 1994)

b. *O Jorgos tin perimene tin Maria na paraponiete.*
the Jorgos 3.SG.F.ACC expected the Maria to complain
'Yorgos expected Maria to complain.'
Modern Greek (Sportiche 1996)

Franco (2000) provides a parallel argument involving ECM constructions in Spanish. He uses the grammaticality of clitic doubling in ECM contexts to argue that the associate in these constructions does not occupy an adjunct position:

(29) *Le dejó a Pedro terminar el asunto.*
3.SG.M.ACC let Pedro finish the issue
'He let Pedro finish the issue.' Spanish (Franco 2000:p. 154)

These authors take the possibility of clitic doubling of an ECM subject or an object controller as evidence that the associate in clitic doubling configurations is not an adjunct. The claim is that the associate cannot be right-adjoined (to VP or vP) because, then, it would have to follow the VP-internal complement clause (but see Philippaki-Warburton et al. 2004:p. 977-8, for an alternative view).

In Bulgarian, an object control verb takes a nominal object argument followed by a complement clause containing the subjunctive particle *da* and a fully inflected embedded verb.[17] In these circumstances, clitic doubling of the nomi-

[17] There is no non-finite complementation in Bulgarian and the embedded verb always bears ϕ-feature agreement. The subjunctive particle *da* is glossed as *to*; the term "subjunctive" is somewhat controversial but this is inconsequential here.

nal object is possible:

(30) a. *Ivan* ***ja*** *pomoli* ***Marija*** *da posviri na pianoto.*
Ivan 3.SG.F.ACC asked Maria to play on the.piano
'Ivan asked Maria to play the piano.'

b. *Učitelja* ***go*** *ubedi* ***Ivan*** *da se javi na izpita.*
the.teacher 3.SG.M.ACC persuaded Ivan to REFL appear at the.exam
'The teacher persuaded Ivan to show up at the exam.'

c. *Narediha* ***im*** ***na vojnicite*** *da se strojat v redica.*
they.ordered 3.PL.DAT to the.soldiers to REFL order in row
'They ordered the soldiers to line up in a row.'

d. *Učitelja* ***mu*** *razreši* ***na Ivan*** *da zavărši izpita.*
the.teacher 3.SG.M.DAT allowed to Ivan to finish the.exam
'The teacher allowed Ivan to finish the exam.'

Assuming that the embedded clause complement in object control constructions marks the right edge of VP, as schematized in (31), the fact that the clitic-doubled associate precedes it indicates that the associate is VP-internal. This, in turn, eliminates the possibility that the associate is (right) adjoined to VP or *v*P.

(31) *Object Control VP structure*

clitic$^{i}_{[\phi]}$ [$_{\text{VP}}$ verb associate$^{i}_{[\phi]}$ [embedded complement]]

As expected, given this analysis, right-adjoined VP adverbs modifying the matrix VP cannot intervene between an associate and a non-extraposed clausal complement:

(32) a. ?? *Kakvo kazaha, če sa* ***go*** *pomolili* ***Ivan*** *ljubezno da*
what they.said that have 3.SG.M.ACC asked Ivan politely to

napravi?
do

'What did they say they have politely asked Ivan to do?'

b. ?? *S kogo kazaha, če sa* ***ja*** *ubedili* ***neja*** *bărzo da se sreštne?*
with whom they.said that have 3.SG.F.ACC persuaded her quickly to REFL meet

'Who did they say they have quickly persuaded her to meet up with?'

A possible objection to the analysis in (31) could be that the observed word order results, instead, from right adjoining the clitic-doubled associate to VP or vP and extraposing the complement clause to its right:[18]

(33) *Object Control VP structure (alternative version)*

clitic$^{i}_{[\phi]}$ [$_{\text{VP}}$ verb] associate$^{i}_{[\phi]}$ [embedded complement]

[18]This is, presumably, the analysis of sentences like (i), which exhibit the "clitic—verb—associate—clausal complement" order, in Italian, a language claimed not to exhibit true clitic doubling with an associate in argument position. The direct object *Maria* participates in CLRD, as evidenced by the presence of a clitic (Cardinaletti 2002), which, in turn, means that the clausal complement *piángere* has itself been moved to a VP-external position.

(i) *Io non l' ho mai lasciáta/vísta, Maria, piángere.*
I not her I.have ever let/see Maria cry

'I never let/saw Maria cry.' [Italian; Krapova & Cinque 2008 (p. 273)]

In light of the existence of such examples in a language without true clitic doubling, Krapova & Cinque 2008 (p. 272) argue that their existence in Bulgarian cannot be taken as conclusive evidence that the language exhibits true clitic doubling. However, while equivalent in terms of surface word order, the relevant examples in Italian and Bulgarian have distinct properties suggesting that distinct underlying structures must be involved. In particular, an analysis of the Italian (i) as an instance of the structure in (33) generates the following two predictions. First, (i) will be characterized by the intonation typical of CLRD (see Section 2.1.2). This seems to be the case, taking the commas in (i) as indicative of the expected prosodic boundaries (see also Cornilescu & Dobrovie-Sorin 2008:p. 302, fn. 16, for a similar point). Second, extraction out of the clausal complement in (i) should be impossible, as it is from any right-dislocated clause in Italian (Cardinaletti 2002). Crucially, these predictions are not borne out in Bulgarian, suggesting it instantiates the structure in (31)—see the main text. Thus, the existence of structure (33) in Italian does not bear directly against the existence of (31) in Bulgarian.

If (33) were the underlying structure of the object control examples in (30), the following two expectations arise. First, (33) is a CLRD structure, which, as discussed in Section 2.1.2 and illustrated in (11), should be characterized by special prosodic phrasing with intonational boundaries around the associate. No such prosodic boundaries are observed in (30) around the clitic-doubled associate or at the left edge of the embedded clause complement. The absence of prosodic boundaries around associates has been used as an argument against an adjunction analysis in at least two other Balkan languages: Modern Greek (Anagnostopoulou 1999) and Romanian (Cornilescu & Dobrovie-Sorin 2008). Second, according to (33), the embedded complement clause has been dislocated to the right and extraction out of it should be impossible as an instance of the Freezing Principle (Wexler & Culicover 1977, 1983). Such extraction, however, is possible, as the following examples demonstrate:

(34) a. *Kakvo kazaha, če sa* ***go*** *pomolili* ***Ivan*** *da napravi?*
what they.said that have 3.SG.M.ACC asked Ivan to do
'What did they say they have asked Ivan to do?'

b. *S kogo kazaha, če sa* ***ja*** *ubedili* ***neja*** *da se sreštne?*
with whom they.said that have 3.SG.F.ACC persuaded her to REFL meet
'Who did they say they have persuaded her to meet up with?'

The grammaticality of such extraction in the presence of a clitic-doubled associate indicates that the embedded clause is not adjoined to VP and must be in its

base argument position.[19] Thus, neither of the predictions of (33) is borne out in Bulgarian, suggesting that the underlying structure of the object control examples in (30) is (31), where the complement clause is VP-internal and marks the right edge of VP. Therefore, the observed word order confirms the VP-internal position of the clitic-doubled associate.

2.2.4 Summary

In short, the associate in clitic doubling configurations in Bulgarian is a syntactic argument of the verb, exhibiting none of the characteristic behaviors of adjuncts:

(35) *Results*

DIAGNOSTIC	ARGUMENTS	ADJUNCTS	ASSOCIATES
allow extraction	yes	no	yes
are assigned case by V	yes	no	yes
are VP-internal	yes	no	yes

[19] In contrast, extraction is impossible when the complement clause is dislocated, as expected:

(i) * [*na kakăv intrument*]$_i$ *ti kazaha, če mu narediha na Ivan spešno predi*
on what instrument you they.told that 3.SG.M.DAT made to Ivan urgently before
koncerta [*da sviri* t_i]
the.concert to play
'What instrument did they tell you they made Ivan play urgently before the concert?'

However, this varies across speakers and extraction out of dislocated complement clauses is possible at least for some speakers: about half of the native speakers I have consulted consistently reject examples of extraction out of dislocated complement clauses while the others consistently accept them. For speakers who find such extraction grammatical regardless of the surface position of the dislocated complement clause, examples like (34) cannot be used as an argument for the VP-internal surface position of the complement clause and the prosodic evidence discussed above becomes much more relevant. However, for those who accept (34) but reject (i), both types of evidence suggest that the embedded complement clause is VP-internal.

First, $\overline{\text{A}}$-movement of material within the associate is possible, as it is with material within arguments in general. Second, like arguments, clitic-doubled associates are dependent on the verb for case assignment. Finally, since it can appear to the left of subjunctive complement clauses in object control constructions, the associate cannot be (right) adjoined to VP or vP. In other words, Bulgarian exhibits true clitic doubling.[20]

2.3 The status of the clitic–associate relation

Clitic doubling of the Bulgarian type, then, involves a relation between a clitic and a full nominal phrase associate in argument position within its c-command domain. Given this much, there are at least two initially plausible analyses of the clitic, outlined in §2.1.1. First, the clitic could be the morphophonological reflex of an `Agree` relation between the v head and an associate in argument po-

[20] There are at least a couple of diagnostics that can be useful in principle but could not be fruitfully utilized in the present investigation. For instance, prosodic and intonational evidence, often taken to be quite revealing of the argument vs. adjunct status of phrases, could not be reliably used in the context of Bulgarian due to the lack of deep understanding of the prosodic characteristics of arguments in the language. Another diagnostic, inapplicable in Bulgarian, relies on the assumption that, since anaphors must be A-bound, if the clitic-doubled associate can serve as the antecedent of an anaphor, it must occupy an A-position. However, anaphors are uniformly subject-oriented in Bulgarian, rendering this diagnostic uninformative in the context of object clitic doubling. Relatedly, reflexive binding cannot be utilized either, since in all clitic doubling configurations, it would always be possible to maintain that it is the clitic that licenses the appearance of the reflexive and not the associate (assuming the clitic c-commands the associate). Thus, this type of diagnostics will not reveal much about the status of the associate. Finally, clitic-doubled associates can undergo (island-sensitive) *wh*-movement under certain conditions. While this does not rule out adjunction in general as an analysis of the associate in clitic doubling configurations, it does indicate that the associate is not an appositive or an extra-clausal base-generated adjunct (e.g. a hanging topic; see §2.2.2), which resists extraction.

sition. Second, the clitic could be the result of multiple spell-out of an argument that has undergone movement. Determining what mechanism is instantiated in Bulgarian is the focus of this section.

The existence of true clitic doubling in a given language has often been taken as an unequivocal indication that the clitic is an object agreement marker. That is, the non-complementarity of an associate in argument position and a clitic is assumed to make implausible an analysis of the clitic according to which it is a (pro)nominal element itself. This kind of reasoning assumes that, if the clitic is a pronoun cooccurring with an associate that is an argument of the verb, the θ-Criterion (or the principles of Full Interpretation and Economy of Representation) would be violated. However, this is not necessarily the case. If the relation between the clitic and the nominal argument is one of movement, there would be no violation of the θ-Criterion: only one θ-role would be assigned to the resulting two-link "movement chain"—namely, to the foot of the chain (i.e. the associate, upon first `Merge`).[21] Moreover, relating the clitic and its associate via movement explains the absence of a Condition C violation which is otherwise expected if the clitic is assumed to be a (pro)nominal element c-commanding the associate.[22]

[21]The term "chain" is used here and throughout for descriptive purposes only and no analytical content is attributed to it; i.e. chains are not considered to be part of the representational vocabulary available to the grammar (see Chomsky 2001:p. 41).

[22]If one is to maintain that the clitics, like (pro)nominal elements, carry interpretable ϕ-features, another analytical option becomes available besides relating the clitic to its associate via movement. Note that clitic doubling configurations would not violate the θ-Criterion if the clitic does not saturate but *restricts* the internal argument position in the sense of Chung & Ladusaw 2004. Under this view, the clitics would be treated as interpretable features on a functional head which receive semantic interpretation but do not saturate an argument position (this dif-

This section explores the predictions of the agreement and movement analyses of clitic doubling, adding to a growing body of recent literature on the issue (e.g. Preminger 2009, Nevins 2011, Harizanov (to appear a), Kramer (to appear)). I give arguments that an A-movement relation holds between the clitic and the associate, concluding that, at least in Bulgarian, contrary to what is standardly assumed for this language (Rudin 1997, Franks & King 2000, Pancheva 2005), clitic doubling does not involve agreement (but see Franks & Rudin 2005 for a movement analysis, and §2.5.5 for a discussion of their analysis). The major syntactic arguments rely on well-established differences between movement and agreement relations with respect to binding (§2.3.1) and the licensing of stranded quantifiers (§2.3.2).[23]

This result replicates the findings of Anagnostopoulou (2003) who argues that clitic doubling in Modern Greek has the properties of an A-movement chain where the clitic spells out the head of the chain and the associate spells out the foot of the chain. On the other hand, this behavior should be contrasted with that of doubling clitics in Macedonian, which Franks (2009) argues are (becoming) agreement markers. The constellation of properties characteristic of Bulgarian clitic doubling is, in addition, similar to, although distinct in important

fers from pure agreement, which involves instead semantically inert uninterpretable features). Legate (2012) entertains a similar proposal for "agent agreement" in Acehnese. While the numerous intriguing questions that such a proposal raises should be investigated in future work, it finds little empirical motivation in the context of Bulgarian where, as shown in the rest of §2.3, doubling clitics do not simply restrict.

[23] Additional evidence, which relies on the application of various morphosyntactic diagnostics to the clitic itself, is offered in Appendix A. It is highly suggestive that the clitics are not agreement markers, as they are shown to exhibit behaviors that are crosslinguistically uncharacteristic of agreement.

ways from, that of Germanic Object Shift where the head of the A-movement chain is a branching phrase, not a clitic—see Sportiche 1996 and Alexiadou & Anagnostopoulou 1998 for explicit attempts at unifying this type of object clitic doubling with the Germanic type of Object Shift, and §2.5.4 for further discussion.

2.3.1 Binding

Here I demonstrate that the relation between the clitic and its associate involves the kind of expansion of binding possibilities that is characteristic of A-movement. This behavior is unexpected of an object agreement marker. The crucial observation is that pronouns can be bound from the landing site of A-movement but not by an agreement marker which is the morphophonological reflex of `Agree` (or from the landing site of $\overline{\text{A}}$-movement if only argument positions are assumed to be possible binding antecedents).[24]

Consider the creation or repair of weak crossover (WCO) violations in English. Movement to an $\overline{\text{A}}$-position induces a WCO violation, as in (36a), where coreference between *who* and *his* is impossible. On the other hand, movement

[24]This is, of course, the expected behavior only of object agreement markers that are the morphophonological reflex of an `Agree` relation which values the uninterpretable features on a v head (see discussion in §2.1.1 and references therein). It is, however, conceivable that other kinds of "agreement" behave differently. In particular, no claim is made here about the phenomenon of "anaphoric agreement" in the sense of Bresnan & Mchombo (1987), whereby the agreement marker on the verb is an incorporated pronominal argument of the verb, while the coreferential full nominal phrase is a non-agument. For some discussion of the possible diachronic link between anaphoric agreement and true clitic doubling of the Bulgarian kind, see §2.6.

to an A-position (the matrix clause subject position), as in (36b), does not induce such a violation. In other words, pronouns can be bound only from the landing site of the kind of movement observed in (36b).

(36) a. * who$_i$ does [his$_i$ mother] love ~~who$_i$~~

b. who$_i$ ~~who$_i$~~ seems to [his$_i$ mother] [~~who$_i$~~ to be intelligent]

In this section, I first establish that binding violations of the relevant kind do arise in Bulgarian, and then use them to probe the nature of the relation that holds between the clitic and its associate. This kind of approach has been used for similar purposes in other languages. For instance, Mahajan (1990) argues that clause-internal scrambling in Hindi is an instance of A-movement based on the fact that it does not show WCO effects. (37a) shows that the quantified direct object induces WCO effects when it follows an indirect object containing a coindexed pronoun. (37b) shows that scrambling of the direct object to the clause-initial position and over the indirect object suppresses the WCO violation.

(37) a. * *raajaa-ne* [*unke$_i$ pitaa-ko*] [*sab daasiyaaN*]$_i$ *loTaa diiN*
king their father all maids return give
'The king returned all the maids$_i$ to their$_i$ father.'
Hindi (Mahajan 1990:p. 27)

b. [*sab daasiyaaN*]$_i$ *raajaa-ne* [*unke$_i$ pitaa-ko*] *loTaa diiN*
all maids king their father return give
'The king returned all the maids$_i$ to their$_i$ father.'
Hindi (Mahajan 1990:p. 28)

The grammaticality of (37b) can be explained if the scrambled indirect object

sab daasiyaaN 'all maids' comes to occupy the same kind of position that *who* occupies in (36b), i.e. an A-position. Alexiadou & Anagnostopoulou (1998) analyze Germanic scrambling in a similar manner and draw a parallel between Germanic scrambling and clitic doubling in Modern Greek based on the parallel behavior of the two constructions with respect to the repair and creation of WCO effects.

Turning to Bulgarian, consider first that in the two kinds of passives in Bulgarian, the quantified surface subject is able to bind a pronoun contained within an internal argument of the main verb.[25] However, a pronoun within the subject cannot be bound by a quantified VP-internal object:

(39) a. [*vsjaka kola*]$_i$ *beše vărnata* [*na nejnija*$_i$ *sobstvenik*] *včera*
every car was returned to its owner yesterday
'every car$_i$ was returned to its$_i$ owner yesterday'

b. [*vsjaka kola*]$_i$ *se vărna* [*na nejnija*$_i$ *sobstvenik*] *včera*
every car REFL returned to its owner yesterday
'every car$_i$ was returned to its$_i$ owner yesterday'

[25] There are two kinds of passive constructions in Bulgarian. One type features the *be*-auxiliary and the past passive participle, both of which show agreement with the surface subject—(38a). The other type of passive features the reflexive morpheme *se* (non-active morphology in the sense of Embick 2004) and an agreeing form of the verb—(38b). Both types of passive are compatible with a *by*-phrase (*ot*-phrase).

(38) a. *knigata beše pročetena (ot studentite)*
the.book be.3.SG read.F.SG by the.students
'the book was read (by the students)'

b. *knigata se pročete (ot studentite)*
the.book REFL read.3.F.SG by the.students
'the book was read (by the students)'

(40) a. * [*nejnija*$_i$ *ček*] *šte bǎde izpraten* [*na vsjaka žena*]$_i$ *utre*
her check will be sent to every woman tomorrow
'her$_i$ check will be sent to every woman$_i$ tomorrow'

b. * [*nejnija*$_i$ *ček*] *šte se izprati* [*na vsjaka žena*]$_i$ *utre*
her check will REFL send to every woman tomorrow
'her$_i$ check will be sent to every woman$_i$ tomorrow'

These facts could be understood by assuming that a quantified antecedent in Bulgarian must c-command a pronoun coindexed with it. The same facts hold in double object constructions in which the two objects can be reordered: (41) features a quantified direct object and a pronoun inside the indirect object; (42) features a quantified indirect object and a pronoun inside the direct object. In both cases, the quantified nominal expression must c-command the pronoun that it binds (assuming that c-command maps directly to precedence).

(41) a. *Petăr vărna* [*vsjaka kola*]$_i$ [*na sobstvenika i*$_i$] *včera*
Peter returned every car to the.owner its yesterday
'Peter returned every car$_i$ to its$_i$ owner yesterday'

b. * *Petăr vărna* [*na sobstvenika i*$_i$] [*vsjaka kola*]$_i$ *včera*
Peter returned to the.owner its every car yesterday
'Peter returned every car$_i$ to its$_i$ owner yesterday'

(42) a. *Ivan izprati* [*na vsjaka žena*]$_i$ [*nejnija*$_i$ *ček*] *včera*
Ivan sent to every woman her check yesterday
'Ivan sent every woman$_i$ her$_i$ check yesterday'

b. * *Ivan izprati* [*nejnija*$_i$ *ček*] [*na vsjaka žena*]$_i$ *včera*
Ivan sent her check to every woman yesterday
'Ivan sent every woman$_i$ her$_i$ check yesterday'

In short, pronominal binding by a quantificational element is sensitive to the relative structural positions of the pronoun and its antecedent at the relevant level of representation.

We are now in a position to examine how clitic doubling interacts with this kind of binding. First, note that if the quantified object participates in clitic doubling, it can bind a pronoun even if it does not itself c-command the pronoun:[26]

(43) *Petăr* ***ja***$_i$ *vărna* [*na sobstvenika* i_i] [***vsjaka kola***]$_i$ *včera*
Peter 3.SG.F.ACC returned to the.owner its every car yesterday
'Peter returned every car$_i$ to its$_i$ owner yesterday' (cf. (41b))

(44) *Ivan* ***i***$_i$ *izprati* [*nejnija*$_i$ *ček*] [***na vsjaka žena***]$_i$ *včera*
Ivan 3.SG.F.DAT sent her check to every woman yesterday
'Ivan sent every woman$_i$ her$_i$ check yesterday' (cf. (42b))

Apparently, the presence of the clitic in a position c-commanding the indirect object in (43) or the direct object in (44) repairs what would otherwise be a binding violation. This is the expected outcome if the clitic-doubled associate comes to occupy a higher A-position at the relevant level of representation, creating a configuration where the quantified object c-commands the pronoun that it binds.[27] A parallel situation occurs in English where movement of a quanti-

[26] Four out of five native speakers I have consulted judge these, and other similar examples as fully acceptable with the intended interpretation. Thus, the pattern described in the main text can be robustly documented (see, in addition, Slavkov 2008 for further corroboration based on related data) but there appears to be inter-speaker variation. The unacceptability of (43) and (44) for those speakers that do not accept them may indicate (at least) a difference in the binding patterns in double-object constructions or a difference in the behavior of cliticization. The latter possibility seems less likely given that all consulted speakers agree on the judgments of (47) and (48) discussed below in the main text (see also footnote 28).

[27] This A-movement is assumed to target a specifier in which the object, once moved, is re-

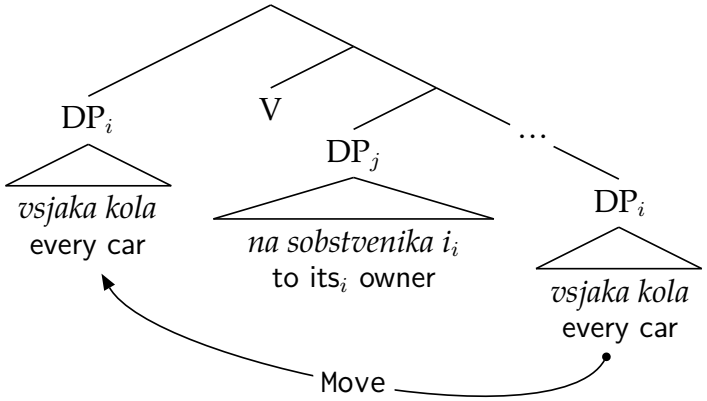
fied embedded subject to an A-position allows it to bind the pronoun inside the indirect object:

(45) a. * it seems to [his$_i$ mother] that [every child]$_i$ is intelligent
b. [every child]$_i$ seems to [his$_i$ mother] ~~[every child]$_i$~~ to be intelligent

An A-movement analysis of clitic doubling (as shown below) according to which the associate moves to the position of the clitic allows us to understand the fact that clitic doubling repairs the binding violations observed above. A sentence like (43) involves movement of the quantified direct object to a position c-commanding the indirect object that contains the pronoun. This movement yields (46a), resulting in successful binding. It is then the morphophonological component which triggers the pronunciation of the higher copy of the direct object as a clitic, as in (46b), which represents the relevant substructure for (43) (for details, see §2.4).

duced to a clitic—an interaction discussed explicitly in §2.4. So, in a certain sense, the clitic marks the A-position from which a clitic-doubled object c-commands the other object. The conclusions presented here hold regardless of whether the Bulgarian binding facts are explained in terms of c-command or precedence. What seems unquestionable is that in clitic doubling configurations, the associate is interpreted higher for the purposes of binding. Whether conditions on binding in Bulgarian need to be stated in terms of c-command or precedence does not affect the argument that the relation between the clitic and its associate is one of movement (see Gerassimova & Jaeger 2002 for discussion of the conditions on binding in Bulgarian, and Williams 1997 for a potentially relevant linear condition.).

(46) a.



b. ***ja***$_i$ *vărna* [*na sobstvenika* i_i]$_j$ [***vsjaka kola***]$_i$ =(43)

Note, in addition, that the reverse effect is also observed in Bulgarian: the pronoun contained in the direct object in (47a) can be bound by the quantified indirect object unless the direct object is clitic doubled. When the direct object is clitic doubled, this binding relation is ill-formed, as (47b) shows. The same behavior is observed with a quantified direct object in (48b).[28]

(47) a. *Ivan predstavi* [*na vsjaka žena*]$_j$ [*nejnija*$_j$ *bădešt săprug*]$_i$
Ivan introduced to every woman her future husband
minalata godina
last year
'Ivan introduced to every woman$_i$ her$_i$ future husband last year'

b. * *Ivan go*$_i$ *predstavi* [*na vsjaka žena*]$_j$ [*nejnija*$_j$ *bădešt*
Ivan 3.SG.M.ACC introduced to every woman her future
săprug]$_i$ *minalata godina*
husband last year
'Ivan introduced to every woman$_i$ her$_i$ future husband last year'

(48) a. *Ivan predstavi* [*vsjaka žena*]$_j$ [*na nejnija*$_j$ *bădešt săprug*]$_i$
Ivan introduced every woman to her future husband

[28] All consulted speakers agree on the reported judgments for these, and other similar examples.

minalata godina
last year

'Ivan introduced every woman$_i$ to her$_i$ future husband last year'

b. * *Ivan mu$_i$ predstavi* [*vsjaka žena*]$_j$ [*na nejnija$_j$ bădešt săprug*]$_i$ *minalata godina*
Ivan 3.SG.M.DAT introduced every woman to her future husband last year

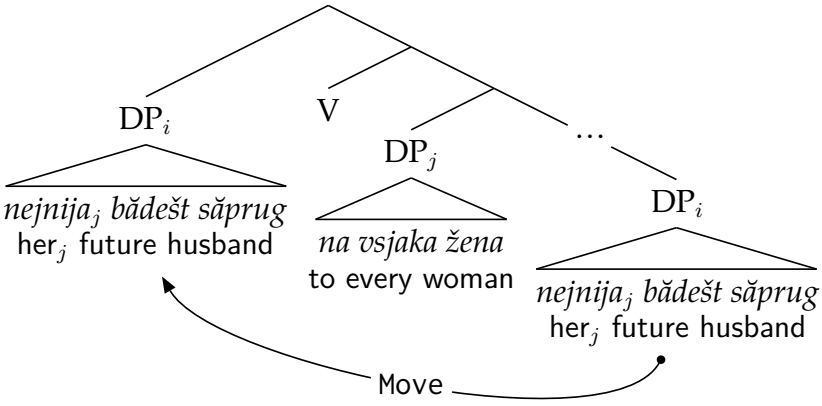
'Ivan introduced every woman$_i$ to her$_i$ future husband last year'

This contrast shows that the presence of the clitic in a position c-commanding the direct object gives rise to a binding violation, i.e. (47b) has the same status as (41b). Again, this is expected if the associate undergoes A-movement to a higher c-commanding position and is parallel to the pattern found in English:

(49) a. it seems to [every mother]$_j$ that [her$_j$ child]$_i$ is intelligent
b. * [her$_j$ child]$_i$ seems to [every mother]$_j$ ~~[her$_j$ child]$_i$~~ to be intelligent

The A-movement analysis of clitic doubling attributes the following representation to example (47b) and explains its ungrammaticality in terms of the constraints on binding in Bulgarian:

(50) a. *



b. * ***go***$_i$ *predstavi* [*na vsjaka žena*]$_j$ [***nejnija***$_j$ ***bădešt săprug***]$_i$ =(47b)

The evidence provided so far shows that clitic doubling in Bulgarian creates new binding possibilities by forcing the clitic-doubled associate to be interpreted in a higher c-commanding position marked by the clitic. Thus, the relation between the associate and the clitic is taken to be one of A-movement. The ungrammaticality of examples (47b) and (48b) is particularly strong evidence against an agreement analysis of clitics: for a binding violation to arise in these examples as the result of clitic doubling, what gets spelled out as a clitic must be underlyingly associated with the fully articulated internal structure of the nominal phrase associate, as indicated in (50a). Moreover, examples (47b) and (48b) provide evidence against other movement accounts of clitic doubling, which do not assume that the complete internal structure of a doubled associate is preserved in the position of the clitic. For further discussion of this particular shortcoming of the "stranding" analysis of clitic doubling, see §2.5.5.

2.3.2 Quantifier stranding

Quantifiers that appear separated from the nominal phrase they quantify over (henceforth, stranded quantifiers) can also be brought to bear on the nature of clitic doubling in Bulgarian. I will address two questions using facts about quantifier stranding: first, is the clitic an agreement marker or a (pro)nominal element that has undergone movement to its surface position? and, second, what kind of movement relates the position of the clitic and the base position of its

associate?

Observe that agreement does not license stranded quantifiers while (pro)nominal elements in A-position do (Rezac 2010):

(51) a. Gift-boxed CDs of Beethoven quartets are available for purchase.
b. There are available for purchase gift-boxed CDs of Beethoven quartets.

(52) a. Gift-boxed CDs of Beethoven quartets are all available for purchase.
b. * There are all available for purchase gift-boxed CDs of Beethoven quartets.

In (52a) the quantifier *all* appears separated from the nominal phrase it quantifies over, *gift-boxed CDs of Beethoven quartets*, which occupies the surface subject position (an A-position). The grammaticality contrast between this example and (52b) indicates that the agreement on the auxiliary is not sufficient to license the appearance of the quantifier in the immediately preverbal position. The fact that clitic doubling in Bulgarian licenses stranded quantifiers will be taken as evidence that the clitic occupies an A-position as the result of movement of the quantified nominal phrase (the associate).

A- and $\overline{\text{A}}$-movement contrast in that only the former kind of movement appears to license stranded quantifiers crosslinguistically (see Bobaljik 2003 for an overview and McCloskey 2000 for a counterexample). Consider the following examples (Déprez 1989):

(53) a. * these students, John has all met

b. * which books did John all buy

The generalization is that stranded quantifiers are incompatible with $\overline{\text{A}}$-movement, as in (53), but compatible with A-movement, as in (52a). Thus, whether quantifier stranding is licensed in a language or not has been used as an A-movement diagnostic for control (Hornstein 2001) and for object shift and clitic doubling (Alexiadou & Anagnostopoulou 1998).

Turning to the relevant Bulgarian data, the quantifier *vsički* 'all' appears stranded, i.e. not immediately followed by the nominal phrase it quantifies over, under two scenarios: (i) A-movement, and (ii) clitic doubling. The following examples show that quantifiers can be stranded under A-movement in passives (see also Dimitrova-Vulchanova & Giusti 1995):

(54) a. *Marija pročete vsičkite *(knigi)*
Maria read the.all books
'Maria read all the books'

b. *knigite bjaha pročeteni vsičkite*
the.books were read the.all
'all the books were read'

c. *knigite se pročetoha vsičkite*
the.books REFL read the.all
'all the books were read'

However, $\overline{\text{A}}$-movement does not license stranded quantifiers in Bulgarian, as the following examples of topicalization, relativization, and *wh*-questions show:

(55) a. * *knigite, Marija pročete vsičkite*
the.books Maria read the.all
'the books, Maria read all (of them)'

b. * *tova sa knigite, koito Marija pročete vsičkite*
this are the.books which Maria read the.all
'these are the books which Maria read all (of them)'

c. * *koi učenici vidja Marija vsičkite*
which students saw Maria the.all
'which students did Maria see all (of them)'

Minimally different examples which involve clitic doubling of the $\overline{\text{A}}$-moved constituents are grammatical, as expected if clitic doubling necessarily involves A-movement:

(56) a. ***knigite**, Marija **gi** pročete vsičkite*
the.books Maria 3.PL.ACC read the.all
'the books, Maria read them all'

b. *tova sa **knigite**, koito Marija **gi** pročete vsičkite*
this are the.books which Maria 3.PL.ACC read the.all
'these are the books which Maria read them all'

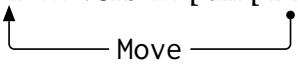
c. ***koi učenici gi** vidja Marija vsičkite*
which students 3.PL.ACC saw Maria the.all
'which students did Maria see them all'

The conclusion from the data above must be that clitic doubling configurations behave like A-movement with respect to the licensing of stranded quantifiers in Bulgarian (see Tsakali 2008 for discussion of clitic doubling and stranded quantifiers in other Balkan languages). This would be the expected outcome if the position of the quantified nominal phrase (overt or not) and the clitic are related via A-movement, as shown in (57). Here, I assume a "stranding" approach to the phenomenon (originated by Sportiche (1988) and further developed by oth-

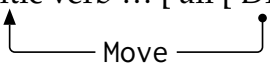
ers), which posits that the quantifier forms a constituent with the corresponding nominal phrase. The nominal phrase undergoes A-movement out of this larger constituent, stranding the quantifier:

(57) *Quantifier stranding: A-movement analysis*

a. *Passives* … DP … verb … [all [~~DP~~]] …



b. *Clitic doubling* … clitic verb … [all [DP]] …



Thus, I assume that the quantifier *vsički* 'all' initially combines with a nominal phrase, which may subsequently undergo A-movement to the preverbal position where it is pronounced as a clitic (for the details of these derivations, see §2.4 and, in particular, §2.5.3 on the interaction between clitic doubling and the $\overline{\text{A}}$-movement in (56)).[29]

While quantifier stranding may involve double expression of the definiteness marker, once on the quantifier and once on the moved nominal (e.g. (54b) and (54c)), it is spelled out just once in non-stranding contexts like (54a). In other words, we never find the order *[Q-DEF DP-DEF] where Q is the quantifier (e.g. **vsički-te knigi-te* 'all the books'). The unavailability of the *[Q-DEF DP-DEF]

[29]The "adverbial" approach to quantifier stranding is another major way of understanding the phenomenon. It treats the quantifier as an adjoined element that requires the constituent it adjoins to to contain a trace of movement (Kayne 1984:chap. 4): [the children]$_i$ must [all] [~~the children~~$_i$ have gone to bed]. For concreteness, here I assume the stranding approach although further investigation might be required to determine its validity in the case of Bulgarian (see Dimitrova-Vulchanova & Giusti 1995 and Tsakali 2008). What is significant for present purposes, however, is that both the stranding and the adverbial approaches could be construed as involving A-movement.

order as a legitimate surface structure, however, is fully consistent with a movement account of quantifier stranding. Such a movement account is, in fact, independently supported by examples where the definite DP and the definite Q do surface as a constituent. More specifically, assume that Q takes a definite DP complement and that the expression of the definiteness marker on Q is a reflex of raising of the DP, as suggested by Dimitrova-Vulchanova & Giusti (1995). Then, we do not expect to find double definiteness marking without movement of the DP complement. Dimitrova-Vulchanova & Giusti (1995) assume, in particular, that the definiteness marker on the quantifier Q is the morphophonological realization of definiteness agreement/concord triggered by movement of its DP complement through Spec,QP. This movement transforms the base structure (58a) into (58b):

(58) a. $[_{QP}$ Q DP[DEF]]

b. $[_{QP}$ DP[DEF] [Q[DEF] ~~DP[DEF]~~]]

At this point, either the DP in Spec,QP or the container nominal phase can raise if attracted by a higher head, as they are equidistant to any such head. Movement of just the DP in Spec,QP produces the quantifier stranding patterns in (54) and (56); movement of the container nominal phrase, on the other hand, derives the following examples, which instantiate the order [DP-DEF Q-DEF]:

(59) a. *knigite* *vsičkite bjaha pročeteni*
the.books the.all were read
'all the books were read'

b. *knigite vsičkite se pročetoha*
the.books the.all REFL read
'all the books were read'

c. *knigite vsičkite, Marija gi pročete*
the.books the.all Maria 3.PL.ACC read
'the books, Maria read them all'

Thus, while there might be much that remains mysterious about quantifier stranding in Bulgarian and cross-linguistically, the unavailability of the *[Q-DEF DP-DEF] order does not undermine the conclusion that clitic doubling patterns with A-movement with respect to the licensing of stranded quantifiers, especially in light of the existence of the [DP-DEF Q-DEF] order. Such behavior is unexpected if the clitics were the reflex of an Agree relation between a probe and a goal.

2.3.3 Summary

The aim of this section was to diagnose whether the relation between the clitic and the associate in Bulgarian clitic doubling configurations is one of movement, or whether it could be characterized just as an Agree relation. It was determined that clitic doubling behaves like A-movement with respect to the expansion of the binding possibilities of the associate and the licensing of stranded quantifiers:

(60) *Results*

DIAGNOSTIC	A-MOVEMENT	AGREEMENT	CLITIC DOUBLING
affects binding	yes	no	yes
licenses Q-stranding	yes	no	yes

I take the evidence presented in this section and in appendix A as a whole to require A-movement as a component of the analysis of clitic doubling, which is developed next.[30]

[30]Two other hypotheses can be rejected based on the locality conditions on clitic doubling. First, "clitic climbing" out of a clausal complement into the matrix clause (as in Italian, Spanish, Serbo-Croatian) is impossible in Bulgarian: (i); however, *wh*-movement and topicalization out of clausal complements is generally possible: (ii). The unavailability of clitic climbing of doubling clitics demonstrates that the relation between a doubling clitic and its associate is subject to different (stricter) locality conditions from those that constrain $\overline{\text{A}}$-movement—an expected result if clitic doubling involves clause-bounded A-movement.

(i) * *az* ***mu*** *iskam da dam knigata* ***na Ivan***
I 3.SG.M.DAT want to give the.book to Ivan
'I want to give the book to Ivan'

(ii) *kakvo iskaš* *da* ***mu*** *dadeš* ***na Ivan***
what you.want to 3.SG.M.DAT give to Ivan
'what do you want to give to Ivan'

Second, clitic doubling of only one of the conjuncts in a coordinate structure, as in (iii), is impossible. Therefore, the relation between the clitic and the associate cannot just involve (stipulated) coreference whereby the clitic and the associate simply refer to the same entity. This hypothesis could be rejected based on the coordination data, since coreference is not expected to be sensitive to the syntax of coordination and the ungrammatical examples in (iii) should be grammatical. If the clitic simply corefers, there is no reason why it should not be able to refer to an entity that one of the conjuncts also refers to. This fact, however, is predicted by the A-movement analysis of clitic doubling.

(iii) *vidjah* ***gi/*go/*ja*** ***Ivan i Marija***
I.saw 3.PL.ACC/3.SG.M.ACC/3.SG.F.ACC Ivan and Maria
'I saw Ivan and Maria'

While these locality-based diagnostics rule out $\overline{\text{A}}$-movement and coreference as the mechanisms behind true clitic doubling, in general, they cannot tease apart the movement and agreement analyses. To the extent that A-movement is parasitic on the successful establishment of an `Agree` relation (see the discussion in §2.1.1 and footnote 2), the locality constraints on A-movement are expected to be a subset of those that agreement is subject to.

2.4 The morphosyntax of clitic doubling

An analysis of clitic doubling in Bulgarian must capture the A-movement properties of the relation between the clitic and its associate. Assuming that verbal arguments are A-chains with one or more members (Chomsky 1986b; Chomsky 2001:p. 33), the clitic and its associate in a clitic doubling configuration must then constitute a single argument of the verb. Following the assumptions in Chapter 1 (§1.2), the position of first `Merge` (the foot of the chain) determines interpretation with respect to θ-role assignment while the movement-derived position (the head of the chain) determines interpretations involving (at least) scope, binding, and information structure. Further questions arise, however: if these two positions are related via movement, why is a single argument of the verb expressed more than once (both by the clitic and by the associate)? In addition, and related to this, how is the pronominal nature of the higher copy of the argument (the clitic) to be explained?

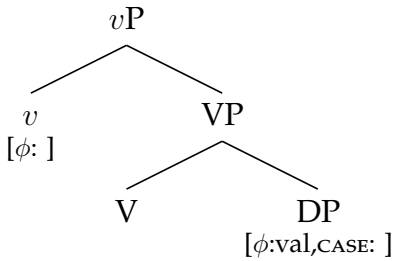
I assume that what gives rise to clitic doubling in Bulgarian is the A-movement of a nominal argument of the verb to a VP-external position (§2.4.1). It is then the morphophonological component that determines the particular pronunciation of the resulting non-trivial movement chain: reduced pronunciation of the higher copy and full pronunciation of the lower one—the details are made precise in §2.4.2 and §2.5.2. Thus, the analysis of true clitic doubling developed here treats the phenomenon as the result of an interaction between syntax and morphophonology (cf. Matushansky 2006, and Nevins 2011, Kramer

to appear). Its main ingredients are syntactic movement and complex head formation (affixation). Since A-movement is a crucial component of clitic doubling (cf. Sportiche 1996 and Anagnostopoulou 2003), §2.5.3 and §2.5.4 explore the relation between clitic doubling and other types of syntactic movement ($\overline{\text{A}}$-movement, head movement) as well as Object Shift, another phenomenon often claimed to involve A-movement. Finally, §2.5.5 compares the present analysis to other treatments of clitic doubling.

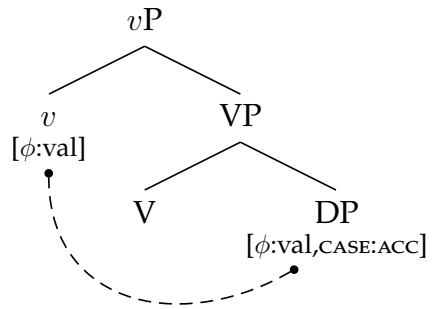
2.4.1 Syntactic movement

The external-argument introducing little v head contains unvalued ϕ-features and probes into its c-command domain for a valued set of features of a matching type, as shown in (61a). It finds the verbal complement DP, which has valued ϕ-features and unvalued Case features, and they enter into an `Agree` relation. As a result, the ϕ-features and the Case-features of the probe and the goal, respectively, are valued:

(61) a.



b.

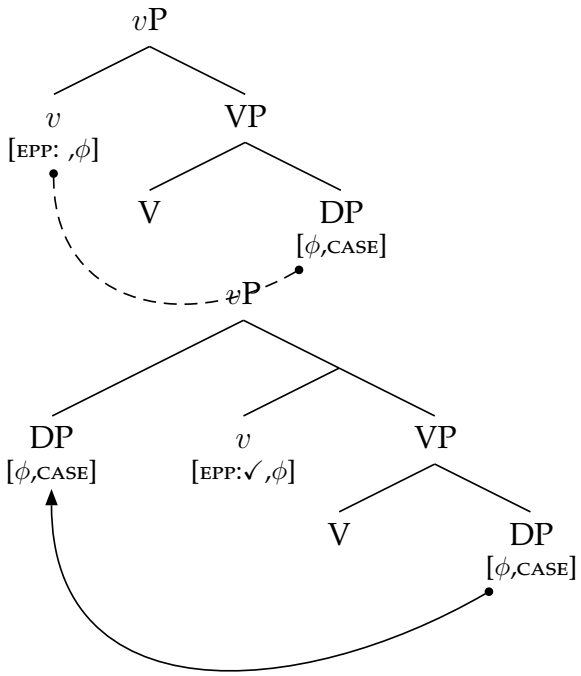


In addition, the little v head can optionally be endowed with an EPP-feature (occ(urrence) in Chomsky 2004:p. 24), which encodes the c-selection of a specifier which can potentially be targeted by movement (see Chapter 1, §1.2). This feature triggers movement of the DP to the specifier of v creating the representation in (62b).[31] Following Chomsky (2001), p. 34-5, I assume that optional operations, such as the one that assigns an EPP-feature to v, can apply only if they have a semantic effect on the outcome. In this case, v can optionally be assigned an EPP-feature, since this feature has an effect on the information structural interpretation of the associate by triggering its movement to the VP-external Spec,vP (see §2.1.1). In other words, the complex interaction of clitic doubling with specificity and topicality can be derived from independent principles governing the mapping of syntax to information structure (see Diesing 1992, Rizzi 1997, Neeleman & van de Koot 2008, Kechagias 2011, Neeleman & Vermeulen 2013) and no special marking on the moved constituents themselves

[31] An alternative, suggested by Anagnostopoulou (2003), involves feature movement of the formal features of the in-situ argument. While I assume, along with (Chomsky 2000:p. 119), that feature chains do not exist, the present analysis preserves the insight of Anagnostopoulou's (2003) account. An empirical argument against feature movement in the case of clitic doubling in Bulgarian comes from examples (47b) and (48b) in §2.3.1, which demonstrate that the clitic is associated not just with the features of its associate but with the full internal structure of the associate.

seems necessary (Chomsky 2008:p. 151).

(62) a.



b.

I have excluded the external argument from consideration here. Presumably, it is merged first as a specifier of v, receiving its θ-role in this position, while the object becomes the additional EPP specifier of v as a result of "tucking in" in the sense of Richards (2001).[32] This order of `Merge` is expected if the thematic requirements of v are satisfied prior to its morphosyntactic requirements. Alternative approaches that yield the same results are also viable—see Chomsky 1995:p. 358-9, for discussion.

Some predicates (e.g. psych and perception predicates) require the obligatory clitic doubling of their dative or accusative experiencers regardless of the information structural factors that appear to license it otherwise (for discussion,

[32]On the possibility of multiple A-specifiers, required by this analysis, see Ura 1996. The details of verb movement have been omitted in (62b) (but see §2.5.3).

see Krapova & Cinque 2008). In such cases the verb bears the ϕ-features of the nominative argument, as in (63a), or is 3.SG in the absence of a nominative argument, as in (63b).

(63) a. *filmite* *(***i***) *haresaha* ***na Marija***
the.movies 3.SG.F.DAT they.pleased to Maria
'Maria liked the movies'

b. *mnogo li* *(***te***) *e jad* ***tebe***
much Q 2.SG.ACC is anger you
'are you very angry'

The obligatory presence of a clitic associated with the experiencer argument of such predicates is ubiquitous across clitic doubling languages. In addition to Bulgarian (Krapova & Cinque 2008), it has been reported at least in Albanian (Kallulli 2000), Amharic (Kramer to appear), Greek (Anagnostopoulou 2003), Macedonian (Krapova & Cinque 2008), and Romanian (Dobrovie-Sorin 1994). According to the definition of clitic doubling from §2.1.1, such examples are genuine instances of true clitic doubling, as there is no reason to suppose the associate is not an argument.[33]

Given that in the present analysis clitic doubling results from A-movement of an argument to Spec,vP, it must be the case that psych and perception predicates obligatorily participate in experiencer raising derivations. In other words, these predicates involve obligatory introduction of an EPP-bearing little v which

[33]This terminology differs from the one espoused in Krapova & Cinque 2008, where the defining characteristic of clitic doubling is obligatoriness and insensitivity to information structural factors. Thus, for these authors, (63) are instances of "clitic doubling", while the examples in which the presence of the clitic is not required are instances of CLRD (or CLLD).

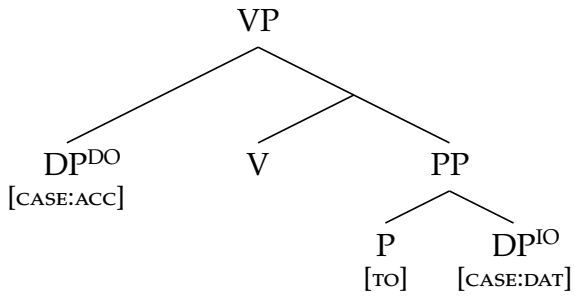
forces A-movement and subsequent clitic doubling of the experiencer argument. Since the presence of this EPP feature is obligatory with the predicates in question, it cannot encode any interpretive distinctions, e.g. in terms of information structure (Chomsky 2001:p. 34-5). This explains why true clitic doubling has information structural consequences only in cases when it is not required.[34] A deeper understanding of the connection between the obligatory presence of an EPP feature and psych and perception predicates is beyond the scope of this chapter but one possibility will be mentioned. It is based on Anagnostopoulou's (2003) observation that clitic doubling (in Modern Greek) is obligatory whenever a lower argument undergoes A-movement across a higher one. This relies on Anagnostopoulou's (2003) claim that, since clitic doubling establishes an A-movement chain and only the head of an A-chain is visible for `Agree`, clitic doubling of an argument allows another, lower argument to interact with probes at or below the position of the doubling clitic. In this context, Anagnostopoulou (2003) and Kramer (to appear) suggest that clitic doubling of a higher experiencer allows the lower argument to interact with a higher head. The agreement with the lower nominative argument found on the verb in (63a) may be viewed as independent evidence for such an interaction.

The configurations discussed so far involve a transitive little v and a single internal argument of a verb. However, the account can be easily generalized

[34]Compare this situation to Object Shift in Icelandic. When Object Shift is available, it correlates with specificity/non-specificity—i.e. it has an interpretive consequence. However, when Object Shift is blocked, an unshifted object is compatible with both a specific and a non-specific interpretation.

to ditransitive constructions. I assume that ditransitive verbs in Bulgarian can merge directly with the indirect object, which is introduced in a dative PP and c-commanded by the direct object. That is, Bulgarian ditransitives employ the *to*-dative structure in (64).[35] In (64) the phonologically null P introduces the indirect object DP and idiosyncratically θ-marks it, assigning lexical/oblique dative case to it.[36] The direct object in Spec,VP, on the other hand, receives accusative case from the higher functional head v (not shown):

(64)



First, when both objects raise, as in (65), I assume that they target specifiers of the same v head.[37] This is a case of a single probe interacting with multiple goals—a phenomenon extensively explored in the context of movement of more than one phrase to multiple specifiers of the same head, as in Bulgarian *wh*-movement, for instance (e.g. Bošković 1999). Such interactions have received

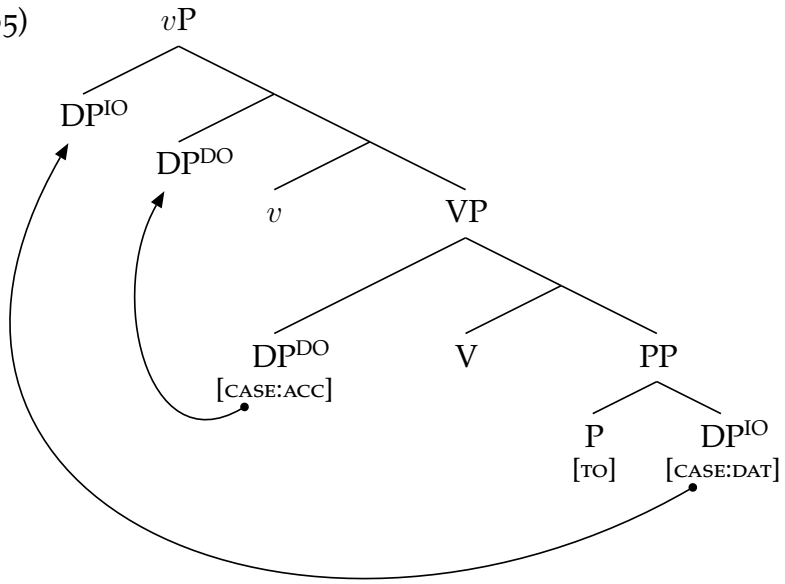
[35]Double-object structures involving applicative heads may or may not be available in Bulgarian—see below (Pylkkänen 2002; see Slavkov 2008 on Bulgarian).

[36]The [TO] feature specification on P is shorthand for whatever features are bundled together as the phonologically null preposition which θ-marks and assigns case to its indirect object sister.

[37]I remain neutral on the order of the multiple specifiers of v and whether the surface order of the corresponding verbal clitics is derived from the syntax or results from a morphophonological template. The issue is related to the question of how multiple specifiers are linearized more generally and, in particular, how "tucking in" (if and when it applies) interacts with linearization. In this connection, see the discussion of external arguments above.

various formal treatments in terms of, for example, Multiple Agree/Move (Ura 1996, Hiraiwa 2001, 2004, Nevins 2007) or Attract-All (Bošković 1999). For present purposes I will simply assume that ditransitive v can have a property which forces any goals within its c-command domain (subject to additional locality constraints, of course) to undergo movement into its specifier. Note, in addition, that, since both objects in these constructions check features against v simultaneously, Person-Case Constraint effects are expected to arise under the assumption that such constraints arise in "two arguments against one head" contexts (Anagnostopoulou 2003, 2005). As discussed in appendix A, Bulgarian does exhibit the Strong PCC, lending further support to the proposal.

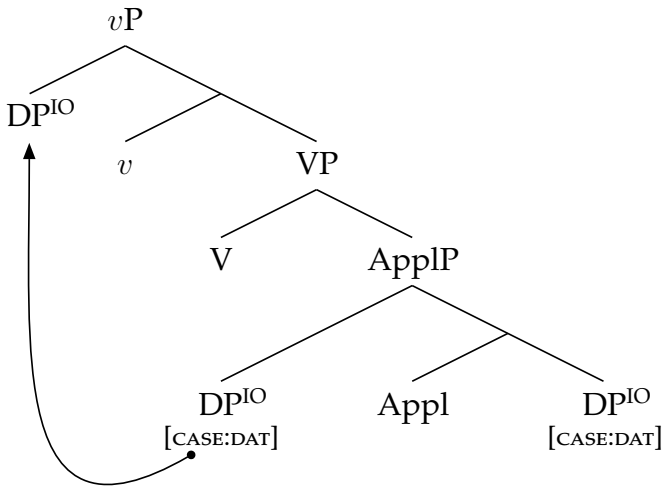
(65)



Second, each of the objects must also be able to move on its own, since clitic doubling does not have to involve both objects. When only the direct object moves, v attracts the closest argument it c-commands. When only the indirect object moves, the question arises of why the indirect object does not intervene

and block this movement. This question can be answered in at least two ways that are consistent with the binding patterns in double-object constructions detailed in §2.3.1—see Anagnostopoulou 2003:p. 166-7, and Preminger 2010, for discussion of the absence of intervention of A-movement with certain kinds of ditransitives. First, a different base-structure could be involved where the direct object is, in fact, closer to the probe (Slavkov 2008):

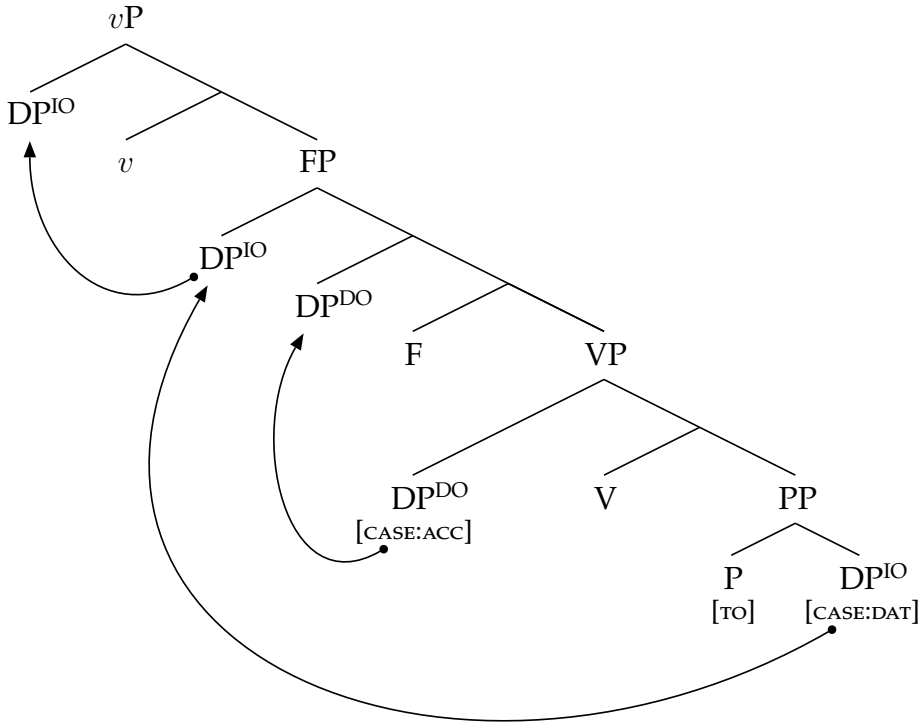
(66)



Second, the direct object could undergo movement to an intermediate Spec,FP (attracted by an EPP-feature which ensures successive A-movement) which places it in a position from which it can enter an `Agree` relation with v (see Doggett 2004:p. 19, for an outline). Note that the direct object must also become a specifier of the same functional head if the indirect object is to be able to move to it, since a locality violation would arise otherwise. Therefore, the functional head F must be endowed with an [EPP] feature that attracts all DP goals within its c-command domain. Since the direct and indirect objects are equidistant to v after this movement, the indirect object can enter into a relation

with v that results in cliticization and clitic doubling.[38]

(67)



Both of these candidate structures receive empirical support by the availability of the IO-DO order discussed in the context of binding in §2.3.1 and it is not the goal of this chapter to distinguish between them. A preliminary argument for the latter is provided in Chapter 3 (§3.3.1.2), where the structure in (67) forms the basis of an elegant explanation of why indirect objects in nominalizations cannot be clitic doubled (tied to the absence of F in nominalizations). For the remainder of the discussion I only consider transitive v with a single internal argument.

[38]The intermediate stage (67), derived via movement to Spec,FP may, in fact, be also involved in the derivation of the configurations where both objects are clitic doubled simultaneously—cf. (65).

2.4.2 Morphological merger

The configuration created by A-movement constitutes the output of narrow syntax, which is further interpreted by the post-syntactic morphophonological component. First of all, I assume that one of the ways in which abstract Case on a DP can be morphophonologically expressed involves the insertion of a K head as a sister to that DP, as in (68). `K-insertion` in the context of a DP is triggered by the presence of an accusative or dative Case feature on that DP or, in other words, by the language-particular need for these features to be expressed via inflectional morphology.

(68) *K-insertion (in Bulgarian)*

$DP_{[CASE]} \rightarrow [\ K\ DP_{[CASE]}\ ]$, where CASE $\in$ {accusative,dative}

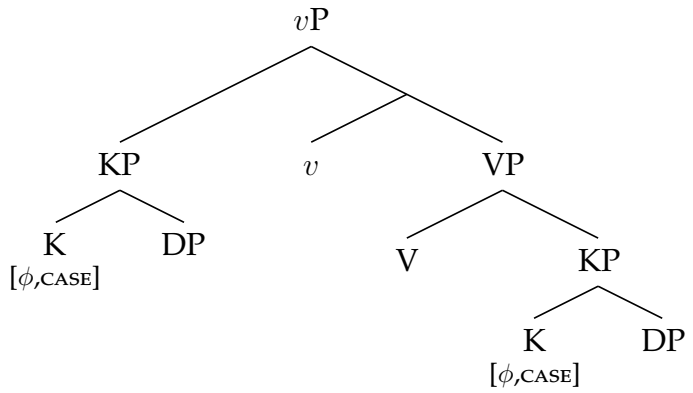
Since it is inserted after narrow syntax but before lexical insertion, this K head is a dissociated morpheme in the sense of Distributed Morphology (Embick 1997, Harley & Noyer 1999, Embick & Noyer 2001). Once inserted it inherits the Case- and ϕ-features of its sister DP, as a result of the following rule, and it subsequently receives a language particular exponent. This kind of insertion of a dissociated morpheme followed by feature copying has been used in Distributed Morphology implementations of various kinds of agreement (see e.g. Halle & Matushansky 2006 on DP-internal agreement in Russian, and Kramer 2009 on definiteness agreement in Amharic).

(69) *Feature copying*

$[\ K\ DP_{[\phi,CASE]}\ ] \rightarrow [\ K_{[\phi,CASE]}\ DP\ ]$

In Bulgarian clitic doubling configurations, such as (62b), a K head is inserted as a sister to both copies of the object, acquiring their Case- and ϕ-features:

(70)



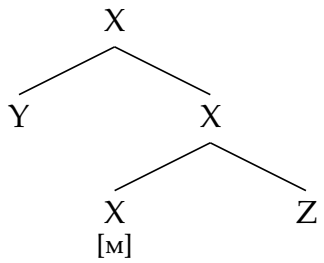
Clitic doubling involves the post-syntactic formation of a complex head that includes the morphophonological counterparts of the verb and the higher copy of the raised object in Spec,vP. I assume that a complex head of the relevant kind is the output of the operation `m-merger` (cf. Matushansky 2006), which rebrackets a head and its specifier, adjoining their labels—(71). Therefore, for present purposes the morphophonological counterparts of the verb and the higher copy of the raised object are their labels. Assuming that syntactic objects are either (i) lexical items, or (ii) sets constructed from given syntactic objects α and β, the label of a lexical item is the lexical item itself, while the label of a syntactic object constructed from α and β is the label of either α or β (Chomsky 2000:p. 133). I assume that `m-merger` is triggered by a morphophonological requirement of v in Bulgarian to the effect that it forms a word with its specifier.[39] In the following

[39]The external argument is introduced as the first specifier of v while the EPP specifiers of v undergo "tucking in" (see the discussion of external arguments above and footnote 37).

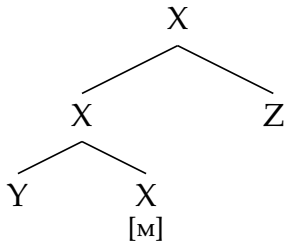
definition of the operation, stated in terms of Bare Phrase Structure (Chomsky 1995), this requirement is encoded by the presence of the [M] feature.

(71) *M-merger*

a. *Input*



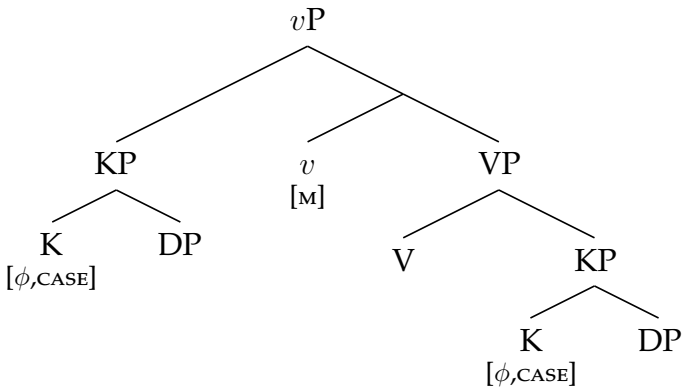
b. *Output*



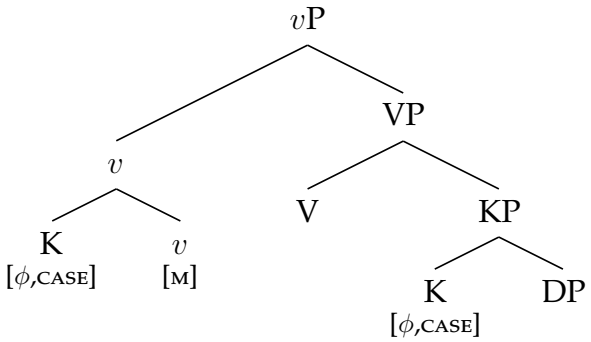
The output of `m-merger` is a complex head containing the label of the specifier and the label it is adjoined to, as in (71b). Thus, when a branching projection undergoes `m-merger`, a reduced version of the branching projection—its label—is adjoined to the head. In Bulgarian clitic doubling configurations, the application of `m-merger` to v and the potentially branching KP in its specifier results in the pronunciation of a reduced version of the object as the clitic—i.e. only the Case- and ϕ-features of the object that constitute its label K:[40]

[40]Since `m-merger` reduces potentially branching phrases to their labels, a condition might be necessary that ensures the recoverability of the "lost" material. In clitic doubling configurations, this material is recoverable by virtue of its overt expression in the base θ-position by the fully pronounced associate. Thus, the recoverability constraint that restricts `m-merger` could be related to the general mechanism that regulates pronunciation of multiple copies of a constituent. These issues are explored in §2.5.2 (see footnote 47 in particular.)

(72) a. *Input*



b. *Output*



The application of `m-merger` is then the step in the derivation that gives rise to the head-like behavior of the verb+clitics cluster and the multiple expression of a single argument in clitic doubling configurations. In addition, it offers a way to understand the apparent head movement characteristics of clitic doubling that have been documented crosslinguistically (see Anagnostopoulou 2007:Section 3.3.2.3, for an overview, and Chomsky 1995:p. 249, for discussion).

The representation in (72b) serves as the input to the procedure of lexical insertion. To model this aspect of the mapping from syntax to phonology, I as-

sume that the K head in the base θ-position and the one adjoined to v as the result of `m-merger` receive distinct exponents determined by the structural context in which each of them appears. In particular, the K that is adjoined to v is spelled out as the clitic while the K in the branching maximal projection in the argument's θ-position receives the "elsewhere" spell-out as null (if accusative) or as *na* (if dative). This follows from the interaction among the following Vocabulary Items, since the clitics are more highly specified than the case markers on full nominal phrases (73h,74h):[41]

(73) *Accusative*

a.	/me/	↔	[1,ACC]/__ v
b.	/te/	↔	[2,ACC]/__ v
c.	/go/	↔	[3,ACC]/__ v
d.	/ja/	↔	[3,ACC,FEM]/__ v
e.	/ni/	↔	[1,PL]/__ v
f.	/vi/	↔	[2,PL]/__ v
g.	/gi/	↔	[3,ACC,PL]/__ v
h.	$\emptyset$	↔	[ACC]

(74) *Dative*

a.	/mi/	↔	[1]/__ v
b.	/ti/	↔	[2]/__ v
c.	/mu/	↔	[3]/__ v
d.	/i/	↔	[3,FEM]/__ v
e.	/ni/	↔	[1,PL]/__ v
f.	/vi/	↔	[2,PL]/__ v
g.	/im/	↔	[3,PL]/__ v
h.	/na/	↔	[ ]

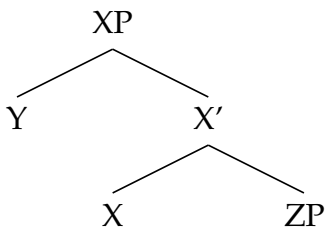
The `m-merger` operation proposed here is a generalization of the operation proposed by Matushansky (2006). Matushansky's `m-merger` results from a rethinking of the role and mechanics of head movement in syntax. Specifically,

[41]Since the first and second person plural dative clitics are syncretic with their accusative counterparts, a single Vocabulary Item is associated with each of them (e, f).

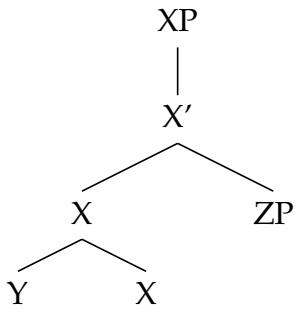
Matushansky (2006) reduces head movement to movement of a phrase to a specifier of some head, followed by `m-merger` of the head and the specifier. This reanalysis of head movement ensures that the effect of such movement is achieved without violating the Extension Condition (Chomsky 1995). According to Matushansky's (2006) proposal, `m-merger` applies to a head and a *non-branching* maximal projection in its specifier:

(75) *M-merger* (Matushansky 2006)

a. *Input*



b. *Output*



A crucial difference between Matushansky's (2006) version of `m-merger` and the one I propose here is that hers is specified to apply to non-branching specifiers only. This restriction makes it impossible to apply that version of the operation to the configurations that arise as the result of A-movement of an object to Spec,vP in Bulgarian, since the structural description of Matushansky's `m-merger` is not necessarily met. In particular, the displaced KP in (62b) could be a branching maximal projection. Thus, the version of `m-merger` I propose can be viewed as a reformulation of the operation so that it can apply not just to non-branching specifiers but to branching ones as well. This effect is

achieved by requiring `m-merger` to adjoin the labels of its input categories (see (71)). This formulation of `m-merger` allows the operation to apply in the context of non-branching specifiers, as well as to branching specifiers, as intended in Matushansky 2006. In other words, the current version of the operation is not constrained with respect to its input. This is a welcome result, since to restrict the input of `m-merger` to a particular kind of specifier (in the way Matushansky (2006) does) would be a stipulation.[42]

Finally, as noted by Matushansky (2006), it is quite possible that the operation described above is equivalent to (a subcase of) Marantz's (1984, 1988, 1989) Morphological Merger:

(76) *Morphological Merger* (Marantz 1988:p. 261)

> At any level of syntactic analysis (D-Structure, S-Structure, phonological structure), a relation between X and Y may be replaced by (expressed by) the affixation of the lexical head of X to the lexical head of Y.

This possibility is quite clear in the present context. In the analysis proposed above, the specifier-head relation between v and its argument that is introduced as the result of movement is traded for the formation of a complex head which contains v and the label of the argument. Thus, the merger of the labels of two elements in the morphophonology expresses the underlying specifier-head relation in which they stand in the syntax. In fact, Marantz himself accounts for

[42]Given this formulation of `m-merger`, the question arises of whether other instances of apparent head movement can be viewed as movement of a phrase followed by the application of `m-merger` to the moved phrase. For discussion of this issue, see §2.5.3.

the distribution of head-adjacent clitics in terms of Morphological Merger in conjunction with additional principles (Marantz 1988:p. 263). The mechanism proposed here could be seen as a particular implementation of Marantz's general idea, which preserves his insight into the nature of the mapping from syntactic to morphophonological structures.[43]

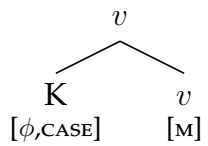
2.5 Analytical consequences

2.5.1 Complex head formation

The application of `m-merger` is the step in the derivation that not only explains how the higher copy of a raised object is reduced to a bundle of Case- and ϕ-features K but also accounts for the behavior of the resulting verb+clitics cluster as a morphophonological unit. In particular, since `m-merger` is a word-building operation that produces a complex head, the internal structure of the derived complex head is opaque although the derived complex head as a whole is accessible to further operations (cf. Matushansky 2006 and Nevins 2011). In this subsection I discuss a number of ways in which the derived complex head containing the clitic(s) and the verb (77) is morphophonologically atomic.

[43]For further discussion of the connection between my proposal and Marantz's (1984) generalization of the Projection Principle to PF as well as Baker's (1988) principle of PF Identification, see Chapter 4 (§4.2.2.2).

(77)



First, as the following contrasts demonstrate, no prosodically independent material is able to intervene between a clitic (or a clitic cluster) and the verb in Bulgarian. Such adjacency, which is otherwise not necessarily expected to be required between a head and its specifier, follows from the application of `m-merger`.[44]

(78) a. *věra Mimi **mu** **go** dade*
yesterday Mimi 3.SG.M.DAT 3.SG.M.ACC gave
'Mimi gave it to him yesterday'

b. * *Mimi **mu** **go** včera dade*
Mimi 3.SG.M.DAT 3.SG.M.ACC yesterday gave

c. * *Včera **mu** **go** Mimi dade*
yesterday 3.SG.M.DAT 3.SG.M.ACC Mimi gave

Second, the complex head that is the output of `m-merger` in Bulgarian can undergo further head movement in questions and imperatives, as shown in (79). In such cases the clitic(s) and the verb undergo movement as a unit—i.e. it is not possible to excorporate either the clitic(s) or the verb.[45]

[44]For discussion of how exactly the complex head formed by `m-merger` is mapped to phonology/prosody, see Harizanov (to appear b).

[45]The question particle *li* intervenes between the verb and the object clitic in (79a). I assume that it is an enclitic element of category C whose placement is prosodically driven. Specifically, it inverts with the prosodic word to its right, which in (79a) happens to contain only the verb (see Rudin, Kramer, Billings & Baerman 1999 and Franks 2006, among others).

(79) a. *Polar questions with the question particle* li *in C and V-to-C movement*
[*Dade li* ***mu***] *Maria knigata?*
gave Q 3.SG.M.DAT Maria the.book
'Did Maria give him the book?'

b. Wh-*questions with* wh-*movement to Spec,CP and V-to-C movement*
Kakvo [***mu*** *dade*] *Maria?*
What 3.SG.M.DAT gave Maria
'What did Maria give him?'

c. *Imperatives with V-to-C movement*
[*Donesi* ***mi*** ***go***] *bărzo!*
bring 1.SG.DAT 3.SG.M.ACC quickly
'Bring it to me quickly!'

Descriptively, head movement of this type affects the whole complex head or, equivalently, what Embick & Noyer (2001) call the *morphosyntactic word* that contains the clitic(s) and the verb. Given the definition below, the highest v in (77) is a morphosyntactic word but the lower (terminal) v and K are not. The more general empirical question is whether head movement affects only morphosyntactic words or whether it can displace an element contained within a morphosyntactic word. In other words, is excorporation allowed? If excorporation is not allowed, the related theoretical question concerns the grammatical mechanisms that render the morphosyntactic word opaque for further manipulation by head movement. For relevant discussion, see Matushansky 2006.

(80) *Morphosyntactic word (definition)* (Embick & Noyer 2001, p. 574)
A node X^0 is a morphosyntactic word if and only of X^0 is the highest segment of an X^0 not contained in another X^0.

The behavior of V-to-C movement in Bulgarian reveals an interesting consequence of the m-merger approach to cliticization and clitic doubling in Bulgarian for the nature of this type of head movement. In particular, since m-merger constructs the morphosyntactic word v that serves as the input to head movement of v to C, this movement must follow m-merger in the derivation. At the same time, we know that m-merger is an operation of the morphophonological component for at least two reasons: (i) it is not equivalent to either of the only two syntactic operations, Agree and Merge, and (ii) it does not interact with binding, which is presumably computed (at least in part) in the interpretive component of grammar. Therefore, head movement of the type that fronts the verb in Bulgarian questions and imperatives must also be an operation of the morphophonological component. In this way, the interaction between cliticization and verb movement in Bulgarian constitutes an argument for Chomsky's (2000) conjecture that at least some types of head movement are not syntactic and must be relegated to the morphophonological branch of the grammar (but see Matushansky 2006 for counterarguments). In this connection, it remains to be seen whether other putative cases of head movement crosslinguistically have the same properties as V-to-C raising in Bulgarian and should be treated as part of the morphophonology. Some candidates include incorporation, "long head movement" (which does not obey the Head Movement Constraint), and roll-up verb movement (which picks up inflectional morphemes and is often postulated to apply vacuously in head-final languages).

2.5.2 Multiple spell-out

In addition to deriving the atomicity of the derived complex head that contains the clitic(s) and the verb, the application of `m-merger` is furthermore intended to explain the multiple pronunciation of arguments in clitic doubling configurations. In the analysis presented here, the nominal argument first merges in its θ-position and then merges again as the specifier of v if attracted by an EPP-feature. Then, the higher copy of the argument is reduced to its K head (i.e. Case- and ϕ-features) by the application of `m-merger`, while the lower copy (which may be a null pronoun as discussed in footnote 15) is pronounced in full.[46] As a result, clitic doubling of the kind found in Bulgarian involves, descriptively speaking, spelling out both the head and the foot of a movement chain. This approach to clitic doubling bears a certain similarity to analyses of resumption in languages where the resumptive pronoun behaves as a trace of movement that receives phonetic realization (e.g. Engdahl 1985, Demirdache 1991; see Anagnostopoulou 2003:p. 211, for further discussion). Berent (1980), in fact, analyzes all pronominal clitics in Macedonian as phonetically realized traces. This class of approaches to such doubling phenomena places the burden of explaining the phonological shape of the multiple copies of the same phrase (full vs. clitic) on the mechanism of spell-out. Thus, the decision about which

[46]The opposition between "full pronunciation" and "reduced pronunciation" concerns the phrase structural status of constituents and, intuitively, how much of them is subject to association with phonological material. The building of prosodic constituents and the assignment of intonational contours, however, operate on the output of operations like `m-merger` and are affected by various other factors—see footnote 44. Thus, a fully pronounced copy of some constituent can be associated with distinct intonational and prosodic properties.

copy gets pronounced in a reduced form, the head or the foot of the chain (in doubling vs. resumption, respectively), is made post-syntactically, by the morphophonological component. This section discusses the conditions which bring about the multiple pronunciation of a single verbal argument.

In general, only one link of a movement chain is pronounced. Chomsky (1995) and Nunes (1999, 2004) suggest this is so because the phonological component requires a strict total order on any set of terminals and, thus, structures in which a single element both precedes and is preceded by another element simply cannot be linearized. However, there are cases when more than one link of a movement chain appears to be phonetically realized. Chomsky (1995) (p. 337) suggests that in these cases the morphophonological component has rendered one or more copy of some constituent invisible to the linearization algorithm. Following this suggestion, Nunes (1999, 2004) attempts to account for the pronunciation of intermediate copies of *wh*-phrases in some varieties of German:

(81) a. ***Wen*** *glaubt Hans* ***wen*** *Jakob gesehen hat?*
whom thinks Hans whom Jakob seen has
'Who does Hank think Jakob saw?'
German, Cologne area (McDaniel 1989:p. 569)

b. ***Welchen Mann*** *denkst du* ***wen*** *er kennt?*
which man think you who he knows
'Which man do you think he knows?'
German, Lower Rhine area (Fanselow & Cavar 2001:p. 133)

For Nunes (1999, 2004) the intermediate *wh*-phrase in German is realized be-

cause it undergoes morphological restructuring with the embedded $C_{[-WH]}$, which converts the boxed structure into a phonological word not subject internally to linearization:

(82) $[_{CP}$ *wh*-phrase $[\,[_{C}\ Q\ ]\ \ldots\ [_{CP}\ \boxed{\textit{wh}\text{-phrase}\ [\,[_{C}\ C_{[-WH]}\ ]\,]}\ [_{TP}\ \ldots\ \textit{wh}\text{-phrase}\ \ldots\ ]$
$]\,]\,]\,]$

The linearization algorithm does not have access to the internal structure of the boxed complex head and eliminates only one of the remaining two copies of the *wh*-phrase (the lower one), allowing the intermediate copy to be phonetically realized.[47] This treatment makes the prediction that the additional copies that are spelled out must be parts of complex heads and, thus, heads themselves. In other words, the prediction is that a branching maximal projection will never double another branching maximal projection. This is the case in German:

(83) a. * ***Wessen Buch*** *glaubst du* ***wessen Buch*** *Hans liest?*
whose book think you whose book Hans reads
'Whose book do you think Hans is reading?'
German (McDaniel 1986)

b. * ***Welchen Mann*** *glaubst du* ***welchen Mann*** *sie liebt?*
which man believe you which man she loves
'Which man do you believe that she loves?'

[47] Linearizability imposes an upper bound on the number of copies of a constituent that can be pronounced. However, a lower bound is necessary in addition, so that information is not actually lost. Thus, the interpretation of movement chains by the morphophonological component and the concomitant non-pronunciation of movement copies must be subject to a recoverability constraint, which ensures that at least one copy is pronounced. This constraint could, perhaps, be assumed to also restrict `m-merger`, which involves partial non-pronunciation of movement copies, and prevent its over-application (see footnote 40). For discussion of how to appropriately characterize such a constraint, see Nunes 2004 and Landau 2006, among others.

If clitic doubling is to be understood in a parallel way, the higher copy of a clitic doubled associate must be rendered invisible to the linearization algorithm by morphological restructuring. I propose that the relevant kind of morphological restructuring is the result of `m-merger`, which rebrackets a head and its specifier to create a complex new head:[48]

(84) $[_{vP}\ \boxed{[_{v}\ \text{K}\ [_{v}\ v\ ]\ ]}\ [_{\text{VP}}\ \ldots\ \text{KP}\ \ldots\ ]\ ]$

The derived complex head is not subject internally to linearization. Thus, in the case of clitic doubling, the copy of the argument that occupies the base θ-position is phonologically realized, since it is the only copy visible to the linearization algorithm.

2.5.3 Clitic doubling and other movements

A full nominal phrase associated with a clitic does not always surface in an argument position, as in the examples discussed so far. The associate of the clitic in CLLD (e.g. (12a) and (12b) in §2.1), quantifier stranding contexts (e.g. (56) in §2.3.2), and *wh*-questions (e.g. (i) in footnote 20, §2.2.4) appears in a fronted position. So does the associate in the following examples of these constructions (all such examples are sensitive to islands and exhibit connectivity effects):

[48] Another option proposed and discussed by Nunes (2004) and Kandybowicz (2007), among others, is that the complex head is formed as the result of the Distributed Morphology operation `fusion` (Halle & Marantz 1993:p. 136; Halle & Marantz 1994:p. 277) which produces a single terminal node out of two sister terminal nodes prior to Vocabulary Insertion.

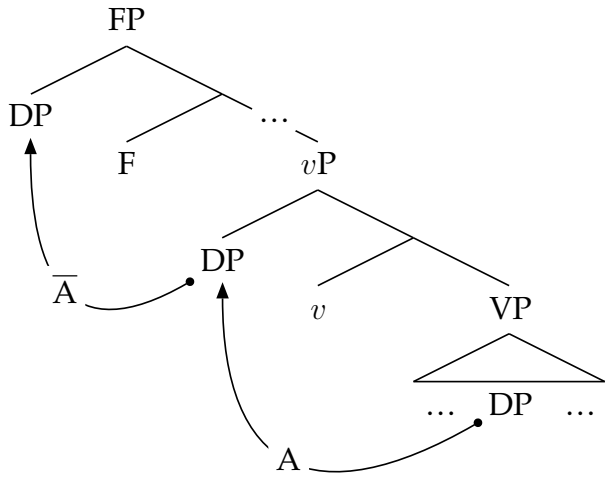
(85) a. ***Šejnata*** *az* ***ja*** *nosih na răce.*
the.sled I 3.SG.F.ACC carried on arms
'The sled, I carried in my arms.' (Bulgarian National Corpus)

b. ***Želanijata mu gi*** *prenebregnaha vsičkite.*
the.wishes his 3.PL.ACC they.ignored the.all
'They ignored all his wishes.'

c. *Če* ***kogo*** *ne* ***go*** *pritiskat?*
but who not 3.SG.M.ACC they.pressure
'But who don't they pressure?' (Bulgarian National Corpus)

How are these sentences to be derived under the assumption that they involve an associate base-generated in argument position, which undergoes clitic doubling (i.e. A-movement and `m-merger`) and $\overline{\text{A}}$-movement to a clause-peripheral position (Agouraki 1992, Kayne 1994, Sportiche 1996, Cecchetto 2000)? First, the [EPP] feature on v attracts the object DP to its specifier; this configuration will feed the application of `m-merger` and give rise to clitic doubling in the morphophonology. However, before the syntactic structure is sent to the morphophonological component, the $\overline{\text{A}}$-probe F in the left periphery of the clause searches its c-command domain. It finds the closest copy of the object DP in Spec,vP and it is that copy that undergoes $\overline{\text{A}}$-movement to Spec,FP (see Cecchetto 2000 for a similar derivation of CLLD in Italian):

(86)



Note that `m-merger` in the Spec,vP position does not interfere with the $\overline{\text{A}}$-movement step which originates in that position, since syntactic movement precedes the post-syntactic application of `m-merger`. A straightforward way to ensure this timing between the two operations is to assume that the vP (and, in particular, its head and specifier) is not sent to the morphophonology before F is merged and gets a chance to probe. Then, the `m-merger` of v and the DP in its specifier would not bleed the attraction of this DP to Spec,FP.

When linearization applies to the resulting structure in the morphophonology, it has access to both the KP copy in Spec,FP and to the one in the base θ-position but not to the one in Spec,vP, which has been subjected to `m-merger`. In a certain sense, this intermediate syntactic copy of KP is no longer a copy of KP after the application of `m-merger` (see Kramer to appear for discussion). Note that for the purposes of linearization the whole structure in (87) must be globally evaluated in order for the algorithm to result in the pronunciation of the c-commanding copy of KP (in Spec,FP), in accordance with the general principles

governing morphophonological interpretation of movement chains in Bulgarian.

(87) $[_{FP}$ KP [F … $[_{vP}$ $\boxed{\text{K(P)}\ [\ v\ ]}$ $[_{VP}$ V ~~KP~~]]]]]

This analysis is consistent with the post-syntactic treatment of head movement of the verb in questions and imperatives, which bring clitics along (§2.5.1).

Given that no constraints have been imposed on the input of `m-merger` and the operation can, in principle, reduce any branching XP to its label X, the question arises of whether other instances of apparent head movement can be reanalyzed as XP movement followed by `m-merger`. For example, is there a legitimate derivation of V-to-v movement as XP movement of the whole VP to Spec,vP followed by `m-merger` which reduces the VP to just V? One possibility is that, as dictated by anti-locality (Abels 2003, among others), such a derivation is impossible because the movement of a complement of a head to the head's specifier is "too local". Therefore, V-to-v movement must be an instance of true head movement. On the other hand, an XP that skips at least one specifier will be able to move unproblematically in its entirety, with possible `m-merger` reducing it to X in its derived position.[49] It might be hypothesized, then, that true head movement only applies if phrasal movement (followed by `m-merger`) is impossible for some reason, such as anti-locality. This echoes Pesetsky & Torrego's (2001) conclusion that head movement is possible when phrasal movement is not, and

[49]The question of how the pronunciation of multiple copies of X created by XP movement is to be negotiated at PF raises non-trivial issues for this approach.

vice versa (see also Matushansky 2006:p. 74). As to why phrasal movement is, in a sense, the default, see for example Roberts 2010, where pied-piping is enforced by the A-over-A principle, which requires any operation targeting A to target the maximal phrase of category A (see also Bresnan 1976).

According to this view, clitic doubling is not subject to the Head Movement Constraint because it involves phrasal movement that escapes the phrase within which it originates (VP) in accordance with the anti-locality constraint. On the other hand, true head movement only applies when anti-locality prohibits phrasal movement: such movement, therefore, necessarily targets the next c-commanding head up. Consequently, the Head Movement Constraint is a side effect of the complementarity between XP and X movement (and its dependence on anti-locality). In conjunction with a ban on excorporation, this predicts that all apparent violations of the Head Movement Constraint (so-called "long head movement") involve not true head movement but phrasal movement followed by `m-merger`. My goal here is simply to suggest a theoretical possibility that becomes available within the general framework of assumptions espoused in this chapter. Exploring the empirical consequences of the conjecture described above and whether true and apparent head movement are subject to different locality conditions is left for future work.

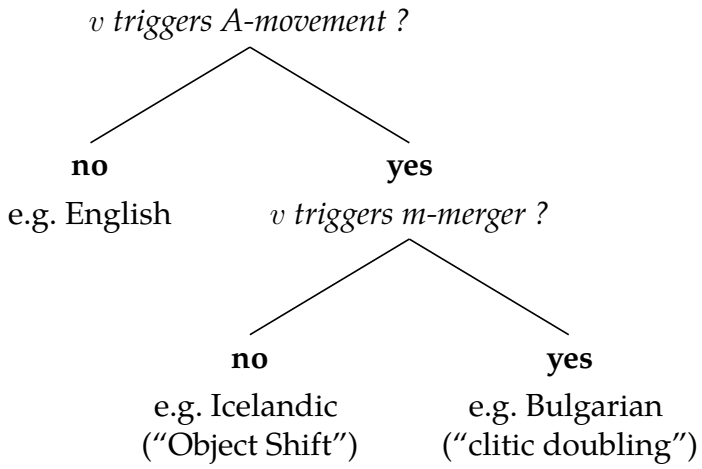
2.5.4 Clitic doubling vs. Object Shift

Syntactic accounts of Object Shift in the Germanic languages assume that Object Shift involves the A-movement of an internal argument to a VP-external position (e.g. Holmberg 1986, Chomsky 2001). The assumption that clitic doubling, as advocated in the analysis presented here, involves A-movement to Spec,vP might explain a number of similarities between the interpretive consequences of the two phenomena, which have to do with binding and the specificity/definiteness of the affected nominal phrase (Diesing 1992). Such similarities have motivated explicit attempts to unify the syntax of clitic doubling with that of Object Shift and object scrambling more generally (e.g. Sportiche 1996, Alexiadou & Anagnostopoulou 1998, Suñer 2000).

The analysis from §2.4 decomposes clitic doubling of the Bulgarian kind into the syntax of A-movement and the morphophonology of complex head formation. Pursuing the parallel between clitic doubling and Object Shift further, assume that Object Shift involves the same type of syntactic movement as clitic doubling (Nevins 2011, Kramer to appear). Such decomposition of clitic doubling, then, locates the difference between Object Shift languages and clitic doubling languages in the morphophonology: in the former, `m-merger` does not apply. Thus, it appears that there are two interacting parameters: (i) the assignment of an EPP-feature to v, which triggers A-movement of objects, and (ii) the application of `m-merger` to EPP specifiers of v (i.e. the presence of the [M] feature on v). The interaction of these two parameters slices the typological space as

follows:

(88)



Under this view, the difference between clitic doubling languages and Object Shift languages has to do with morphophonology, as pointed out earlier. The difference between non-Object Shift languages like English (assuming it does not exhibit Object Shift of the relevant type) and Object Shift languages has to do with the assignment of an EPP-feature to v (which triggers A-movement of the relevant type; see Chomsky 2001).[50]

[50] A familiar area of variation with respect to Object Shift in the Germanic languages has to do with the nature of the nominal phrases that undergo Object Shift (see Thráinsson 2001 for an overview). Icelandic is usually considered to be the only modern Germanic language which exhibits Object Shift with both pronouns and full nominal phrases. On the other hand, the Mainland Scandinavian languages (Danish, Norwegian, Swedish) do not permit Object Shift with full nominal phrases. Interestingly, a comparison between the behavior of cliticization in Bulgarian and French reveals that this kind of variation is not limited to the "Object Shift" languages in (88) but extends to the "clitic doubling" languages as well. French clitics undergo `m-merger` and become part of a complex head containing both them and the verb (Matushansky 2006:p. 84). Yet, French has been argued to exhibit clitic doubling of the Bulgarian kind only with pronouns but not with full nominal phrases (Kayne 2000:p. 164-5; see Anagnostopoulou 2007:p. 523, for an overview). This fact could be explained if A-movement of the relevant type in French does not affect full nominal phrases but only pronouns. Thus, the difference between Bulgarian and French is in the kind of nominal phrases attracted to v—the same area of crosslinguistic variation observed among the Scandinavian languages. Similar observations are independently made by Anagnostopoulou (2003), p. 163-164; see also Anagnostopoulou 2012

Yet, there are certain obstacles to the complete analytical assimilation of the two phenomena. First, recall that in a double object construction in Bulgarian, either of the arguments can be clitic doubled and, in particular, an object can be clitic doubled across an intervening, hierarchically higher object (see §2.4.1). On the other hand, Object Shift cannot raise a lower argument across a higher one (Collins & Thráinsson 1996). Thus, the application of `m-merger` cannot be the only relevant difference between the Object Shift and the clitic doubling languages, and any attempt to unify the syntax of Object Shift and clitic doubling must account for such empirical differences.

Second, the analysis of clitic doubling as the combination of A-movement and `m-merger` with a functional head allows a certain flexibility with respect to what the relevant functional head might be—a desirable property given the existence of clitic doubling of non-objects. In particular, if clitic doubling of objects involves `m-merger` with v, the present analysis can be extended to clitic doubling of subjects and possessors by positing `m-merger` with different functional heads (e.g. T and D) with no modifications to other aspects of the analysis (see §2.5.5 for further discussion and Chapter 3 for such an extension). Tying clitic doubling more generally to Object Shift, on the other hand, would preclude straightforward extension of the analysis to the phenomenon as it is instantiated across distinct syntactic domains.

(p. 25-27) for actual examples from all relevant languages.

2.5.5 Alternatives approaches

Historically, the complementarity between clitics and coindexed full nominal phrases in languages without clitic-doubling has been taken as a compelling argument for movement of the clitic from an argument position to its surface position. On the other hand, the base generation of the clitics in their non-argument surface position has seemed more suitable for clitic doubling languages, since the doubled associate is the one that occupies an argument position which, therefore, cannot be the source of the clitic. The present analysis belongs to a strand of research initiated by Sportiche (1996), who attempts to combine the movement and base-generation approaches to cliticization. According to Sportiche (1996), clitics are heads of phrases (ClP) in the extended projection of the verb; an XP associate in argument position moves to Spec,ClP and enters into a spec-head agreement relation with the clitic. This XP-movement can be either covert or overt, resulting in clitic doubling or CLLD, respectively. In an attempt to unify the syntax of object shift/scrambling and clitic doubling, Sportiche (1996) further assumes that the clitic head and the moving XP can be either covert or overt: object shift/scrambling is overt movement of an overt XP to the specifier of a null clitic head while clitic doubling is covert movement of an overt XP to the specifier of an overt clitic head.

A major difference between Sportiche's analysis and the one developed here is that the former attributes little to morphophonology in its account of the behavior of clitics, relying exclusively on syntactic mechanisms and, in particular,

the distinction between overt and covert syntactic movement. In the present analysis, this distinction is not one of derivational timing and, thus, overt and covert movement do not differ in terms of syntax—instead, the difference lies in the interpretation of movement chains by the morphophonological component. More specifically, the present analysis relies on the `m-merger` operation, whose application explains two properties of clitic doubling simultaneously: (i) the presence of a clitic (i.e. the multiple spell-out of a moved object), and (ii) the formation of a complex head containing the clitic and the verb. Thus, no additional mechanisms are required to account for the prosodic and morphophonological atomicity of the complex heads that contain clitics—a central property of cliticization. Furthermore, both A-movement and `m-merger` of an object to a VP-external position, the two crucial ingredients of the present analysis, are independently motivated operations of the syntactic and morphophonological components of grammar, respectively (on the application of `m-merger` outside of the context of clitic doubling, see Chapter 4). As a result, there is no need to resort to any special mechanisms or properties of phrase structure that are specific to clitic doubling.

Another difference between the present set of assumptions and Sportiche's (1996) is that nothing essential hinges on the specific syntactic structure that gives rise to doubling. In particular, as long as a syntactic configuration contains an argument DP and a head that attracts this DP and triggers `m-merger`, the present analysis predicts the emergence of clitic doubling. In the case study presented here, the head in question happens to be little v but it might conceiv-

ably be another functional head, such as D, T, or C, for instance. In fact, D is a particularly likely candidate in Bulgarian, since the language exhibits clitic doubling of DP-internal possessors where the clitic surfaces adjacent to the definiteness marker, presumably the spell-out of a D head (see Chapter 3 for detailed discussion):

(89) *nova-ta* ***mu*** *kăšta* ***na učitelja***
new-the 3.SG.M.DAT house to the.teacher
'the new house of the teacher'

As pointed out in §2.5.4, the flexibility afforded by the `m-merger` analysis is a desirable property, as it would allow for an understanding of different types of clitic doubling in terms of the same syntactic and morphophonological mechanisms simply applying in different domains. On the other hand, Sportiche's (1996) analysis crucially relies on a set of assumptions about clausal structure and the functional heads in the extended verbal projection.[51] In such a framework, any attempt to unify the treatment of doubling phenomena across different syntactic domains will require the postulation of phrase structural parallels across those domains (in addition to the application of the same operations)—see Kallulli & Tasmowski 2008:p. 8-9, for a similar point.

Finally, related to the reliance of the present analysis on just A-movement and `m-merger` are the restrictive typological predictions that it makes. As dis-

[51] An independent objection to the representational assumptions of Sportiche's (1996) analysis, voiced in Matushansky 2006:p. 84, is that the postulated clitic heads (i) are part of the extended verbal projection but have nonverbal semantics, and (ii) are morphosyntactically and phonologically very similar to nominals.

cussed in §2.5.4, only two parameters might be enough to describe some of the major differences between Object Shift and clitic doubling. A system of at least three independent binary parameters such as Sportiche's (1996) is certainly equipped to handle much of the observed variation but, perhaps, risks predicting a larger variety of language types. And at least some of those might pose learnability issues (e.g. overt movement of covert phrases).[52]

Another type of analysis has often been put forward to account for various kinds of doubling phenomena. It claims that what appear to be multiple copies of a single constituent on the surface actually start out as one larger constituent containing all of the visible copies (e.g. Kayne 1994, Uriagereka 1995, Torrego 1998, Papangeli 2000, Nevins 2011). According to one interpretation of this type of approach to clitic doubling, the clitic is a K head that forms a constituent with its DP associate and undergoes movement to its verbal host, stranding the rest of this constituent, which appears as the associate (for a specific implementation in the context of Bulgarian, see Franks & Rudin 2005):

(90) … K V … [$_{KP}$ ~~K~~ [$_{DP}$ …]] …
Move

This analysis is clearly quite similar to the stranding analysis of quantifier stranding discussed in §2.3.2, according to which the quantifier and its associate form a constituent which is broken up by movement. While the stranding approach

[52] In addition to the three parameters, Sportiche's (1996) analysis requires some ancillary assumptions: (i) relaxation of the Mirror Principle, (ii) relaxation of the Head Movement Constraint, (iii) lowering of clitics in certain circumstances.

to cliticization and clitic doubling might be adequate for Romance, it is unclear that it is empirically supported in Bulgarian. The specific empirical issue that arises in Bulgarian is that the K head which is spelled out as the clitic when adjoined to the verb is, in fact, spelled out twice. This is most clearly seen in the context of the dative *na* K head where K receives double expression, once as the clitic and once as *na*:

(91) *Marija mu izprati pismo na nego*
Maria 3.SG.M.DAT sent letter to him
'Maria sent a letter to him'

Therefore, it cannot be maintained that the clitic has been separated from some constituent via movement.[53] Additional questions arise about the syntactic mechanism behind this kind of stranding. For example, it is unclear how the A-movement properties of clitic doubling would be accounted for, since those require the clitic to form a chain with the stranded associate and not just with itself. Relatedly, if the clitic is simply a K head, it remains mysterious why clitic doubling would create binding violations as in examples (47b) and (48b)—it was established in Section 2.3.1 that such examples provide particularly strong evidence that the clitic is underlyingly associated with the complete internal structure of its associate. Furthermore, an explanation is necessary of how a

[53]This empirical fact can be handled successfully by more recent implementations of the stranding approach to clitic doubling (e.g. Nevins 2011; see Roberts 2010 for discussion). In particular, the clitic K would be base-generated either as adjoined to a KP forming a larger KP or as a head of a KP with another KP as its complement: $[_{KP}$ K $[_{KP}$ K DP $]$ $]$. Consequently, KP-internal agreement/concord would ensure the two K heads match in Case (and ϕ) features, which results in the double expression of case after movement of the higher K in examples like (91).

head (the clitic) in (90) can move out of a phrase (that it is adjoined to or that it is the head of). Is this the result of head movement, phrasal movement, or some hybrid type of movement? This last issue is resolved in Franks & Rudin 2005 by adopting the base structure in (90) and assuming that the DP complement of the clitic K vacates the KP first (although it is unclear where the DP moves to). Only then, is the clitic, now a non-branching K/KP, free to undergo (remnant) head movement to its verbal host. However, such an analysis faces a novel difficulty: why does the DP move in clitic doubling configurations rather than the KP that contains it? More generally, according to the stranding approach, what undergoes movement is a subpart of the nominal phrase containing the clitic and the associate. But what prevents movement of the whole nominal phrase constituent; i.e. why is pied piping not an option?[54]

2.6 Conclusion

This chapter has investigated the relation between the clitic and its full nominal phrase associate in clitic doubling configurations in Bulgarian, a language that exhibits true clitic doubling (§2.2). Evidence was provided for treating this relation as an instance of A-movement (§2.3) whereby a verbal complement raises to a VP-external position (§2.4.1). This movement creates two copies of the raised object and it is left to the morphophonological component to determine their

[54]See Franks & Rudin 2005 and Nevins 2011 for discussion of this issue; on the shortcomings of a stranding analysis in the context of Amharic, see Kramer to appear.

pronunciation. Thus, multiple spell-out of the raised object, once in its base θ-position and once in Spec,vP (as the clitic), is the result of interactions between the syntactic and the morphophonological components of grammar. Clitic doubling was claimed to arise in languages where `m-merger` reduces the higher copy of the object to its Case- and ϕ-features (i.e. the clitic), giving rise to the expression of the same element in multiple structural positions (§2.4.2 and §2.5.2). According to the proposed analysis, clitic doubling is an interface phenomenon that emerges as the result of the interaction between A-movement and a certain kind of complex head formation, two independently motivated mechanisms of the syntactic and morphophonological components of grammar, respectively. The analysis captures, without recourse to any additional mechanisms, both the A-movement properties of clitic doubling and the bound-morpheme properties of the clitic. It should be noted that this analysis is only intended to be valid in languages where clitic doubling exhibits the set of properties identified in Bulgarian. It is possible, and highly likely, in fact, that crosslinguistic instances of what is usually termed "clitic doubling" are the result of quite disparate underlying syntactic and morphophonological mechanisms (potentially even within a single language), with "clitic doubling" as nothing more than a descriptive umbrella term. The goal of this chapter was to explore one of the ways in which true clitic doubling, a particular instance of doubling in general, may come about.

The two parametric options whose interaction gives rise to true clitic doubling are: the presence of an EPP feature on v (triggering A-movement in the

syntax) and the presence of an M feature on v (triggering the application of `m-merger` to the raised object adjoining its label to v). §2.5.4 discussed how the interaction between these two parameters can explain certain similarities and differences between clitic doubling languages and Object Shift languages. Furthermore, if the application of `m-merger` is taken to depend on some property of v, it might be expected that other heads can be characterized by the same property and cause clitic doubling in other syntactic domains. It is demonstrated in Chapter 3, for example, that definite D in Bulgarian is involved in clitic doubling within nominal phrases (cf. 2.5.5). In addition, the hypothesis that T can also be endowed with the `m-merger` triggering feature M could be tested in languages which exhibit clitic doubling of subjects: some Northern Italian dialects (Brandi & Cordin 1989, Suñer 1992, Poletto 2000), Rhaeto-Romance (Haiman & Benincà 1992), and Basque (Arregi & Nevins 2008, Preminger 2009); or, more generally, in consistently null-subject languages. Similarly, in addition to languages with partial *wh*-movement, `m-merger` in the domain of C could be investigated in the context of certain instances of *wh*-expletives. Future work along these lines could reveal the extent to which these, or any other phenomena, can be understood in terms of the mechanism that was argued to give rise to clitic doubling in Bulgarian.

In addition, relating A-movement and `m-merger` in the way outlined above could allow for an understanding of the diachronic path that takes a language from a stage featuring scrambling of objects through a later stage featuring (true) clitic doubling to a still later stage featuring object agreement. Consider the pos-

sibility that, even in the history of Bulgarian, object shift/scrambling was independent of complex head formation of the kind found in the present-day language. Based on data from 10-19 c. Bulgarian, Pancheva (2005) (p. 148) shows that movement of clitic pronouns to the left of the verb did not need to be followed by the formation of a complex head with the verb. Evidence for this claim involves material intervening between the clitics and the verb such as various XPs or adverbials (p. 133-4):

(92) *počto mi trudy daeši?*
why 1.SG.DAT hardship give
'Why are you giving me hardship?' Bulgarian, 10th century (EJ[55])

Examples like these could be seen as involving movement of the clitic, which at this stage was a true pronominal argument of the verb and not the result of `m-merger`, and failure of `m-merger` to apply (see the discussion in Pancheva 2005).[56] Thus, treating the syntactic movement of objects as separate from `m-merger` may allow for an understanding of the transition from object shift/scrambling to cliticization and true clitic doubling (see Matushansky 2006:p. 85-6, for a similar point in the context of Classical French). Finally, under the present analysis the clitic is a K head with interpretable content (ϕ-features) which forms a morphophonological word with the verb. Agreement markers, on the other

[55] *Eulogy of Evangelist John the Theologian* by Ioan Exarch. In *Kiril and Methodius: Founders of Slavonic Writing. A collection of Sources and Critical Studies* ed. Ivan Duichev. 1985. New York: Columbia University Press.

[56] Note that the failure `m-merger` to apply here is consistent with the observation that true clitic doubling with full nominal phrases is not encountered until much later 17 c. texts, which is expected if the clitics are arguments (Pancheva 2005:p. 121).

hand, are the phonetic realization of uninterpretable, and thus semantically inert, ϕ-features on the verb. Therefore, echoing Bresnan & Mchombo's (1987) and Rezac's (2010) conclusions, the final step in the diachronic path from clitic doubling to agreement appears to involve the loss of the interpretable content of the clitic. What is, at one point, analyzed as multiple pronunciation of some constituent, later becomes the redundant expression of features of some constituent on another one.

Chapter 3

Event nominalizations

The investigation of cliticization and clitic doubling in Chapter 2 led to an analysis that makes crucial use of `m-merger`, an operation implicated in word formation. In this chapter I further explore the role of this operation in the mapping from syntax to morphophonology. I do so by examining the consequences of the analysis of clitic doubling developed in the previous chapter for our understanding of clitic doubling in another syntactic domain—nominal phrases. Bulgarian has nominalizations which are complex event nominals and have true arguments in the sense of Grimshaw (1990). One of the means of expressing the arguments of such nominalizations involves cliticization and concomitant clitic doubling. Here I show that the theory of cliticization and clitic doubling developed in the context of objects of clauses in Chapter 2 automatically explains the distribution of clitics within nominals. In particular, clitic doubling involves syntactic A-movement of an argument to the specifier of a functional head, fol-

lowed by the application of m-merger. The difference between clitic doubling in clauses and nominals then reduces to the head that is the locus of the syntactic and morphophonological components of the phenomenon, namely A-movement and m-merger. In clauses this head is a head in the extended verbal projection (v), while it is a head in the extended nominal projection in nominalizations (D). No additional assumptions are needed to predict that in nominals D may attract some argument DP (subject to relative and absolute locality constraints such as closest c-command and phasehood), which is then reduced to a clitic in the morphophonological component. As in clauses, a copy of the full nominal phrase associate remains in its base argument position and is pronounced in its entirety, either as an overt nominal phrase or a phonologically null pronoun. The portability of this theory across syntactic domains provides further support for the proposed treatment of clitic doubling, at least within languages of the Bulgarian type. In particular it highlights the relevance of m-merger as an operation of the mapping from syntax to morphophonology, setting the stage for the exploration of its role outside the context of cliticization in Chapter 4.

Another major goal of this chapter is to explore the other syntactic means for expressing arguments in nominalizations and, more generally, how argument structure is realized morphosyntactically.

Finally, the investigation of Bulgarian nominalizations in this chapter is a case study of the extent to which the syntactic structure of nominal phrases parallels that of clauses. The nominalizations under discussion exhibit behav-

iors characteristic of finite clauses on the one hand and pure nominals on the other. I approach the analytical treatment of these nominalizations under the assumption that all aspects of structure/meaning relations are derived syntactically. This approach leads to a syntactic view of the formation of verbs and nouns on the basis of category neutral roots: categorial status is contextually determined via embedding of a root within either verbal or nominal functional structure. Such a view affords a structural explanation of why some syntactic processes cut across clauses and nominalizations while others are only available in clauses. In particular, clauses and nominalizations in Bulgarian share various morphosyntactic properties because they share a portion of syntactic structure that is the locus of these properties; any differences between clauses and nominalizations follow from the absence of certain portions of verbal functional structure within nominalizations. Delimiting the amount of verbal structure in nominalizations and precisely pinning down its morphosyntactic contributions are two of the main empirical concerns of this chapter.

3.1 Types of nominalization in Bulgarian

There are a number of suffixes in Bulgarian that create nominalizations out of roots that are also found in finite verbs. The empirical and analytical focus here is on the nominalizations formed by the nominalizing suffix whose morphophonological exponent is *-(e)n* and which I designate as -N. The nominalizations formed by means of the -N nominalizer (henceforth, *-N nominalizations*)

are complex event nominals in the sense of Grimshaw (1990) and have their own argument structure, a property of central importance to the discussion in this chapter. -N nominalizations are to be distinguished from all other types of nominalization in Bulgarian, which are formed by a range of other suffixes and behave like simple event nominals or result nominals. In this section, I introduce the two broad types of nominalizations— -N nominalizations and all others—and motivate the distinction between them on the basis of Grimshaw's (1990) diagnostics for complex event nominals.

The nominalizing suffix -N is realized as *-en* or just *-n*, as shown in (1), in an instance of phonologically conditioned contextual allomorphy discussed in §3.2.1. It is the only nominalizer in Bulgarian that is fully productive: for instance, its attachment to verbal stems is not subject to any lexical restrictions that depend on the nature of the root. This is not to say that just any root may be used to form an -N nominalization—there are number of restrictions on the kinds of elements that -N combines with. However, they are all systematic and can be expressed solely in terms of purely morphosyntactic features. Some examples of -N nominalizations include the following:

(1)

*ora-**n**-e* 'plowing'	*măč-**en**-e* 'torturing'
*kova-**n**-e* 'forging'	*văr**t**-**en**-e* 'turning'
*mete-**n**-e* 'sweeping'	*bra-**n**-e* 'gathering'
*dava-**n**-e* 'giving'	*pisa-**n**-e* 'writing'
*peče-**n**-e* 'baking'	*kăpa-**n**-e* 'bathing'
*văršе-**en**-e* 'threshing'	*pročita-**n**-e* 'reading'

In contrast to English *-ing* nominalizations, -N nominalizations in Bulgarian are unambiguously complex event nominals (Pashov 1999, Georgiev 1999, Markova 2010), as revealed by Grimshaw's (1990) diagnostics.[1] First, as the examples in (2) demonstrate, -N nominalizations allow modification by aspectual adjectives like *frequent* and *constant* as well as by agent-oriented adjectives, which are only compatible with the complex event interpretation of a nominalization (Grimshaw 1990, p. 50-51). In addition, (2c) demonstrates that -N nominalizations allow aspectual modifiers, which are not tolerated in result nominals. Adjectival and aspectual modification within -N nominalizations of the type illustrated here is further discussed in §3.2.3.

(2) a. *čestoto săbirane na učenicite*
the.frequent meeting of the.students
'the frequent meeting of the students'

b. *umišlenoto narušavane na reda*
the.deliberate disruption of the.order
'the deliberate disruption of order'

c. *subarjaneto na sgradata v prodălženie na dva časa*
the.tearing.down of the.building in continuation of two hours
'the tearing down of the building for five hours'

Grimshaw (1990) observes that complex event nominals but not result nominals allow control into a purpose clause. This diagnostic successfully distinguishes

[1]The relevant tests are performed on transitive -N nominalizations in this section but §3.3.3 reports the same results in the context of intransitive -N nominalizations. Only a few high-frequency -N nominalizations such as *jadene* 'meal', *vjarvane* 'belief' are ambiguous between complex event nominals and result nominals.

between the two classes of nominals in Bulgarian: -N nominalizations behave like complex event nominals with respect to this diagnostic and their "subject" is able to control the phonologically null PRO subject of a purpose clause:[2]

(3) *săbraneto na učenicite za da* [PRO *rešat problemite si*]
the.meeting of the.students for to they.solve problems REFL
'the meeting of the students in order to solve their (own) problems'

Furthermore, the inclusion in a nominalization of a *by*-phrase, another subject-related element, is also known to force a complex event interpretation of that nominalization (Hornstein 1977, p. 148, fn. 12; Grimshaw 1990, p. 52). Bulgarian -N nominalizations pattern with complex event nominals in that they may contain *ot*-phrases—the Bulgarian counterpart of English passive *by*-phrases, which are discussed in detail in §3.3.2.1:

(4) *usložnjavaneto na izpita ot učitelja*
the.complication of the.exam by the.teacher
'the complication of the exam by the teacher'

(Di)transitive -N nominalizations behave like complex event nominals and unlike result nominals in that they require the presence of their internal arguments—see (5a) below, and §3.3.1 for detailed discussion. In addition, -N nominalizations are not compatible with clausal complements (cf. Grimshaw 1990:73): examples (5b) and (5c) show that both subjunctive complements and finite CP complements are ungrammatical in Bulgarian.

[2]The notion of "subject" in the context of -N nominalizations is made more precise in §3.3.2 and is further developed in Chapter 4.

(5) a. *izrazjavaneto *(na čuvstva) e želatelno*
the.expression of feelings is desirable
'the expression of feelings is desirable'

b. * *želaneto na Ivan* [*da otide na počivka*]
the.wanting of Ivan to go on vacation
'Ivan's desire to go on vacation'

c. * *tvărdeneto na Ivan* [*če zemjata e ploska*]
the.claiming of Ivan that the.earth is flat
'Ivan's claim that the earth is flat'

Finally, -N nominalizations exhibit yet another property of complex event nominals: they do not occur predicatively, as the ungrammaticality of the following example shows.

(6) * *tova beše razrušavaneto (na grada)*
this was the.destruction of the.city
'this was the destruction (of the city)'

There are 11 other suffixes that form nominalizations in Bulgarian, shown in (7). None of them are fully productive, and they all exhibit high degree of lexical idiosyncrasy and selectivity with respect to the roots they combine with.

(7) *pojav-**a*** 'appearance'
*bor-**ba*** 'wrestling'
*moli-**tva*** 'prayer'
*počiv-**ka*** 'rest'
*gone-**nica*** 'chase'
*svir-**nja*** 'playing of music'
*grab-**ež*** 'robbery'
*nakaza-**nie*** 'punishment'
*kik-**ot*** 'laughter'
*simula-**cija*** 'simulation'
*mont-**až*** 'fitting'

As noted earlier, these nominalizations are all result nominals, object denoting nominals, or simple event nominals (see also Pashov 1999:213). The latter, which are often formed by the suffixation of *-nie* (e.g. *gonenie* 'persecution', *sǎbranie* 'meeting'), behave like result nominals such as the English *race* and *trip* in all relevant ways (Grimshaw 1990:59). The nominalizations formed with these suffixes pattern like result nominals more generally according to Grimshaw's (1990) diagnostics, and crucially, unlike -N nominalizations.

First, they disallow modification by adjectives like *frequent* and *constant* (8a), by aspectual modifiers (8b), and by agent-oriented adjectives (8c). Since these modifiers are normally compatible with complex event nominals only, the nominalizations under discussion must be classified as result nominals instead.

(8) a. * *čestoto sǎbranie*
the.frequent meeting
'the frequent meeting'

b. * *razrušenieto na sgradata v prodălženie na dva časa*
the.destruction of the.building in continuation of two hours
'the destruction of the building for five hours'

c. * *umišlenoto nakazanie*
the.deliberate punishment
'the deliberate punishment'

Furthermore, unlike -N nominalizations, these nominalization do not occur with *ot*-phrases (9a), do not require the presence of any arguments (9b), and disallow control into purpose clauses (9c):[3]

[3]Simple event nominals actually allow the appearance of an *ot*-phrase: e.g. *prodažbata na kilimi*

(9) a. * *usložnenieto na izpita ot učitelja*
the.complication of the.exam by the.teacher
'the complication of the exam by the teacher'

b. * *tova usložnenie (na izpita) beše naložitelno*
this complication of the.exam was necessary
'this complication of the exam was necessary'

c. * *săbranieto na učenicite za da* [PRO *rešat problemite si*]
the.meeting of the.students for to they.solve problems REFL
'the meeting of the students in order to solve their (own) problems'

Unlike -N nominalizations, they are compatible with clausal complements:

(10) a. *želanieto na Ivan* [*da otide na počivka*]
the.desire of Ivan to go on vacation
'Ivan's desire to go on vacation'

b. *tvărdenieto na Ivan* [*če zemjata e ploska*]
the.claiming of Ivan that the.earth is flat
'Ivan's claim that the earth is flat'

Finally, like result nominals more generally, these nomninalizations can occur predicatively:

(11) *tova beše razrušenieto* (*na grada*)
this was the.destruction of the.city
'this was the destruction (of the city)'

The results of Grimshaw's (1990) diagnostics reveal that these nominalizations behave like typical result nominals. What is most relevant for the present purposes is the stark contrast between them and -N nominalizations. The latter

ot tărgoveca 'the sale of rugs by the salesman' (see Markova 2010, p. 108, for further discussion).

were shown to pattern like complex event nominals with respect to the same set of diagnostics and, therefore, to take true arguments. This property is crucial for the investigation of the syntactic mechanisms for expressing such arguments within nominalizations. As will be demonstrated later, these mechanisms include cliticization and clitic doubling. Thus, the theory of cliticization and clitic doubling based on `m-merger`, which was developed in Chapter 2 on the basis of objects of clauses, is applied here within -N nominalization.

3.2 The morphosyntax of -N nominalizations

As a first step towards the understanding of -N nominalizations and the workings of cliticization and clitic doubling within them, I explore their morphological composition and how it correlates with an array of morphosyntactic properties. This investigation is conducted within a syntactic approach to the formation which assumes that nouns and verbs are formed from category neutral roots. If roots are acategorial, differences between nouns and verbs, and between their extended projections, must stem from the functional structure above roots. It is this functional structure that contributes the features that define words as nouns and verbs as well as the nominal or verbal properties of their projections. Thus, both nominalizations and clauses (projected from a verb) share at least a root, and potentially additional morphosyntactic structure above it. On this view, shared structure is responsible for any similarities between them. Here, I probe the structural make-up of -N nominalizations in

Bulgarian by comparing their morphosyntactic properties to those of typical verbal and nominal projections—clauses and object-denoting nominal phrases, respectively. I find that -N nominalizations pattern like typical nominal phrases with respect to all tests but two: they include some verbalizing morphology and require the expression of their internal arguments. These two patterns indicate that there is some minimal overlap between the morphosyntactic structure of -N nominalizations and verbal projections. The structural properties of -N nominalizations are otherwise identical to those of typical nominal phrases.

3.2.1 Verbalizing and nominalizing morphology

The pieces of morphophonology trapped between the root and the nominalizing -N morpheme in -N nominalizations happen to be found on verbs as well. In this section, I identify them as various kinds of verbalizers and explore the consequences of their presence for the structure of -N nominalizations. To begin with, I consider the behavior of these verbalizing morphemes in the formation of verbal stems.

Bulgarian verbs are traditionally viewed as belonging to one of two lexical aspects: PERFECTIVE ("completed") and IMPERFECTIVE (unmarked with respect to completion). Roots may undergo suffixation that produces either a perfective or a primary imprefective stem. The primary imperfectives are formed by the addition of one of the following suffixes (Scatton 1984):[4]

[4]The symbol "*" indicates that the morpheme is subject to the ČA→ČE alternation (Scatton

(12) -∅

a. krad-∅- ‘steal’

b. kov-∅- ‘forge’

(13) -**a**

a. kăp-**a**- ‘bathe’

b. pis-**a**- ‘write’

(14) -*__a__

a. bol-*__a__- ‘hurt’

b. šept-*__a__- ‘whisper’

(15) -**aj**

a. pit-**aj**- ‘ask’

b. čak-**aj**- ‘wait’

(16) -**v-aj**

a. vjar-**vaj**- ‘believe’

b. objad-**vaj**- ‘dine’

(17) -**u-v-aj**

a. glad-**uvaj**- ‘starve’

b. pazar-**uvaj**- ‘shop’

(18) -**stv-aj**

a. advokat-**stvaj**- ‘practice law’

b. filosof-**stvaj**- ‘philosophize’

(19) -**ir-aj**

a. asfalt-**iraj**- ‘cover with asphalt’

b. bojkot-**iraj**- ‘boycott’

(20) -*__aj__

a. bogat-*__aj__- ‘become rich’

b. bleden-*__aj__- ‘become pale’

(21) -**i** (mostly transitives)

a. nos-**i**- ‘carry’

b. vod-**i**- ‘lead’

(22) -**n**

a. gas-**n**- ‘go out (e.g. of fire)’

b. rit-**n**- ‘kick’

The perfectives are formed out of roots by suffixation, as shown in (23). Primary imperfectives can also form the basis of perfective stems when further

1984, p. 80ff, p. 186). See Appendix D for a list of regular morphophonemic rules that apply to the provided underlying forms to yield the surface forms.

composed with one of the prefixes in (24). Such prefixation yields perfective stems, which fall in the same class of lexical perfectives formed directly from roots.

(23) *Suffixation* (to roots)

a. maz-**n**- 'spread'

b. hvat-**n**- 'catch'

c. vărt-**n**- 'turn'

(24) *Prefixation* (to primary imperfectives)

a. **na**-pis-a- 'write'

b. **iz**-kăp-a- 'bathe'

c. **pro**-čet- 'read'

Any perfective stem, regardless of whether it is formed out of a root via suffixation or out of a primary imperfective via prefixation, can further undergo secondary imperfectivization by the addition of one of the following suffixes (Scatton 1984):

(25) **-aj**

a. pro-čet-**aj**- 'read'

b. iz-gas-i-**aj**- 'extinguish'

c. hvat-n-**aj**- 'catch'

(26) **-av-aj**

a. na-pis-a-**avaj**- 'write'

b. o-čak-aj-**avaj**- 'expect'

c. iz-brăs-n-**avaj**- 'shave'

Secondary imperfective suffixes select perfective stems (as in the examples above), and do not attach directly to roots or to primary imperfectives:

(27) a. * čet-**aj**- 'read'

b. * gas-i-**aj**- 'extinguish'

c. * hvat-**aj**- 'catch'

(28) a. * pis-a-**avaj**- 'write'

b. * čak-aj-**avaj**- 'expect'

c. * brăs-n-**avaj**- 'shave'

All resulting secondary imperfectives behave like their primary counterparts and are conjugated as primary imperfectives in **-aj** (see (15)). Secondary imperfectivization may involve a change in lexical meaning: for instance, the secondary imperfective *očakvam* 'expect' is formed by prefixation of *o-* and suffixation of *-avaj* to *čakam* 'wait'. The derivational possibilities described so far are summarized in Fig. 3.1.

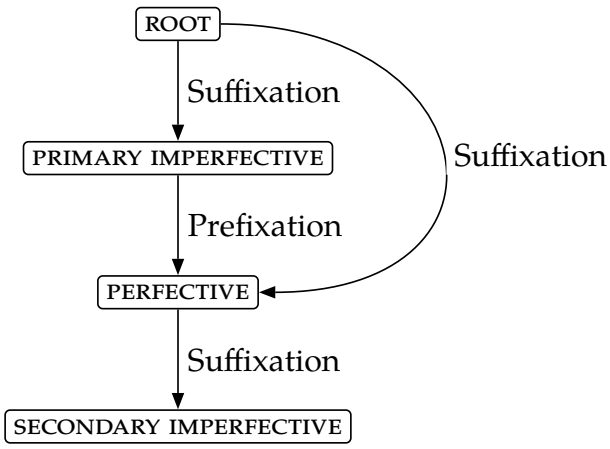


Figure 3.1: Derivation of the verbal stem in Bulgarian: boxes represent types of stems; arrows represent (modes of) affixation (cf. Scatton 1984, p. 286).

Verb stems formed in one of these ways may further combine with grammatical aspect and tense to form fully inflected verbs. Alternatively, they may combine with nominalizing morphology to form nominal phrases. In particular, -N nominalizations are formed from (primary or secondary) imperfective stems by the attachment of the nominalizing suffix -N, realized as *-en* after stems ending in **-i**, **-*a**, **-j**, and as *-n* elsewhere, as illustrated below. The ungrammaticality of the (b) examples shows that nominalizations of this kind cannot be

formed out of perfective stems.[5]

(29) 'writing'

a. *pis-**a**-**n**-e* → *pisane*
write-IMPF:1-NMNLZR-N.SG

b. * ***na**-pis-**a**-**n**-e*
PF-write-IMPF:1-NMNLZR-N.SG

c. ***na**-pis-**a**-**avaj**-**n**-e* → *napisvane*
PF-write-IMPF:1-IMPF:2-NMNLZR-N.SG (by Rules 1, 3, 5)

(30) 'bathing'

a. *kăp-**a**-**n**-e* → *kăpane*
bathe-IMPF:1-NMNLZR-N.SG

b. * ***iz**-kăp-**a**-**n**-e*
PF-bathe-IMPF:1-NMNLZR-N.SG

c. ***iz**-kăp-**a**-**avaj**-**n**-e* → *izkăpvane*
PF-bathe-IMPF:1-IMPF:2-NMNLZR-N.SG (by Rules 1, 3, 5)

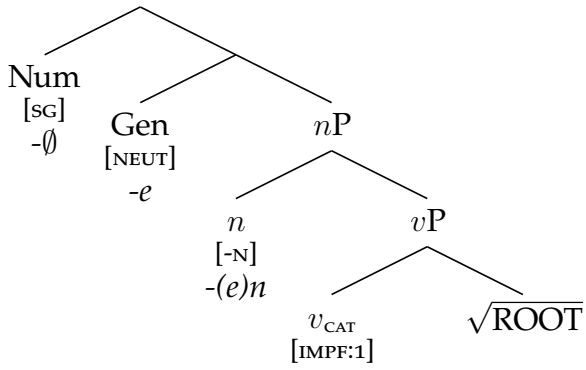
Given this much, the morphosyntactic structure of -N nominalizations up to the merger of the nominalizing suffix -N must be identical to that of finite verbs. In both cases, prior to the addition of this suffix, the root merges with at least one and at most three verbalizing suffixes: the primary imperfective, perfective, and secondary imperfective. These suffixes categorize the root and are represented as v_{CAT} to be distinguished from the little v head that introduces the external argument. Once the nominalizer -N is added to the structure, any in-

[5]See Appendix D for a list of rules that apply to the provided underlying forms to yield the surface forms.

flectional morphology that follows is nominal in nature. For instance, nominal concord and subject-predicate agreement reveal that -N nominalizations bear neuter gender features and singular number features. The gender feature is expressed by *-e* (see (29) and (30)); i.e. -N nominalizations belong to the class of *e*-final neuter nouns. Singular number on this class of nouns suffix is phonologically null, while plural is marked by the suffix *-ta*. Thus, we arrive at the following morphosyntactic structure for -N nominalizations:[6]

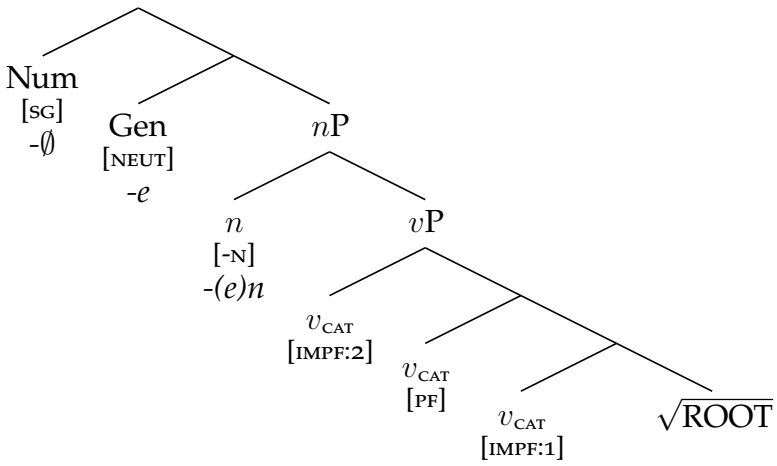
(31) *Morphosyntactic structure of -N nominalizations*

a. with a primary imperfective stem:



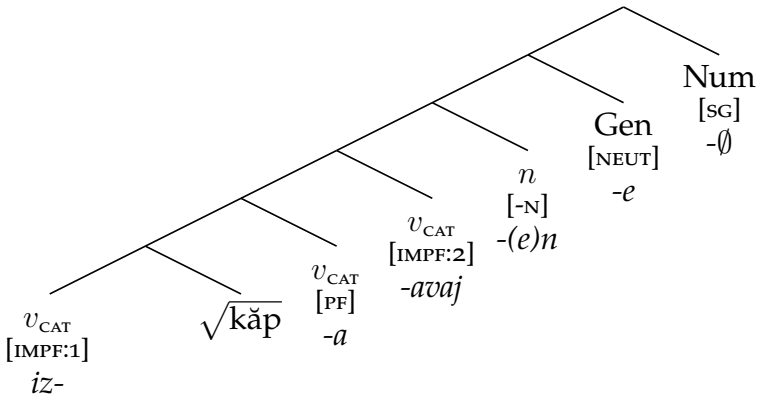
[6]For expository reasons, where not relevant in the rest of the chapter I conflate gender, number, and the nominalizer -N and represent them as occupying the same terminal node n. In these tree diagrams the [-N] feature on n is a shorthand for whatever features are bundled together as the nominalizer morpheme.

b. with a secondary imperfective stem:



The heads in (31) are merged in accordance with their selectional requirements, which ensure a unique order of merger that yields the given structures. The nominalizer -N, in particular, must be merged with a stem headed by one of the imperfective verbalizers (primary or secondary)—for additional selectional requirements associated with -N, see §3.3.2. The root undergoes roll-up head raising at least to Num, resulting in the formation of a complex head (32) containing the root and all the morphemes it picks up along the way (cf. (30c)). In addition to accounting for the expression of inflection on nouns, this head raising explains facts of word order within -N nominalization that are discussed in §3.3.2.2.

(32)



3.2.2 Internal arguments

In addition to a segment of functional structure, -N nominalizations share with verbal projections the need for their internal arguments to be expressed.[7] Specifically, -N nominalizations require the same set of internal arguments that the corresponding verb requires in other contexts. For example, the theme argument *na sgrada* 'of a building' of the nominalization *săbarjane* 'demolishing' in (33a) must be expressed, as it would be in a corresponding clause where it is the argument of the verb *săbarjam* 'demolish'. Likewise, the prepositional argument *v prerekanie* 'into an argument' of *vlizane* 'entering' in (33b) is obligatory, as it is in the context of the verb *vlizam* 'enter' when it bears the relevant sense.

(33) a. *Za da se polучi razrešenie za săbarjane *(na sgrada), trjabvaše da*
for to REFL receive a.permit for demolishing of building had to
se iztăkne kakvo šte se săbarja i zašto.
REFL indicate what will REFL demolish and why

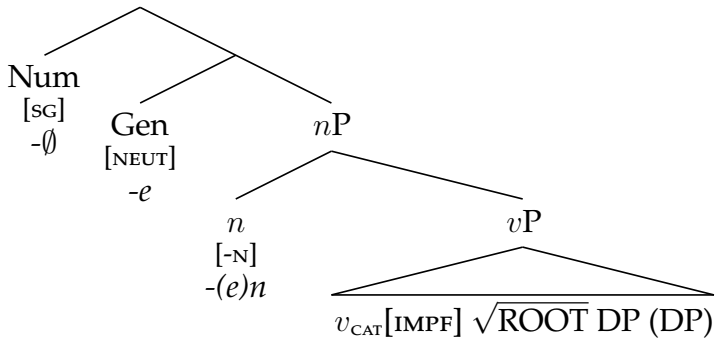
[7] For present purposes, an internal argument is any argument that is not external; therefore, some roots may have more than one internal argument.

'In order to get a permit for the demolition of a building, you had to indicate what will be demolished and why.'

b. *Globiha starši trenjoră na kluba za vlizane *(v prerekanie)*
they.fined the.senior coach of the.club for entering into argument
s dlăžnostnite lica.
with the.officials
'They fined the senior coach of the club for entering int o an argument with the officials.'

In requiring the expression of their internal arguments, -N nominalizations pattern with verbs and unlike other kinds of nominals, such as object-denoting, simple-event, or result nominals, which do not. Therefore, whatever is responsible for the obligatory expression of internal arguments in verbal projections must also be present in -N nominalizations as well. Here, I assume that internal arguments are structurally introduced within the vP projection, whose presence within -N nominalizations has already been established and which is shared by -N nominalizations and clauses (§3.2.1):[8]

(34)



[8]Recall that the head v_{CAT} of this vP is one of the verbalizing imperfective suffixes, and not—as I show in §3.2.4 and §3.2.5—a v head that assigns accusative case and/or introduces the external argument. In other words, the claim about internal arguments here amounts to base generating them within VP in frameworks that do not decompose verbs into roots and verbalizing morphology.

There are other implementations of this general approach to the realization of internal arguments that are consistent with (34). For instance, it is possible that internal arguments are introduced within $\sqrt{}$P (=RootP; e.g. Marantz 1997, Alexiadou 2001, Harley 2009a, a. o.) or, alternatively, by functional structure above $\sqrt{}$P (e.g. Borer 2005, Alexiadou, Anagnostopoulou & Schäfer 2009). I leave the issue open until the more detailed discussion in §3.3.1, only noting here that regardless of the implementation, it is the structural proximity of the internal arguments to the root that is, according to this approach, responsible for the selectional restrictions imposed on the internal arguments. These selectional restrictions are, in turn, responsible for their obligatory expression, which characterizes -N nominalizations.[9]

3.2.3 Modification

Assuming that (different kinds of) adverbials are structurally related to (different kinds of) projections (e.g. Jackendoff 1977, Alexiadou 1997, Cinque 1999, a.o.), the (un)availability of adverbial modification within -N nominalizations can be used as a probe into their structure. In particular, I take such modification to be licensed within the phrase headed by the little v head that introduces the external argument or any higher head in the extended verbal projection

[9]External arguments are not obligatory in -N nominalizations in the sense that they may be phonologically null (although they could still be syntactically represented). Consequently, they receive a different treatment. The apparent optionality of external arguments as a diagnostic for the absence of certain verbal functional projections in -N nominalizations is discussed in §3.2.5, while §3.3.2 is concerned with their morphosyntactic expression when they do appear overtly.

(to be distinguished from the verbalizing v_{CAT} heads). This is a particular instantiation of the informal traditional assumption that adverbials modify verbal constituents and not nominal ones. Modification by postnominal adverbs like *postepenno* 'gradually', *vnimatelno* 'carefully', or *vsekidnevno* 'everyday' is questionable in -N nominalizations:

(35) a. ?? *spirane na vnosa na šileta postepenno*
stopping of the.import of goat kids gradually
'gradually stopping the import of goat kids'

b. * *čestoto uništožavane na dokumentite vnimatelno*
the.frequent destruction of the.documents carefully
'the frequent carefully destroying of the documents'

c. * *uništožavaneto na dokumentite vsekidnevno*
the.destruction of the.documents every.day
'the everyday destroying of the documents'

This suggests that the verbal functional structure that licenses adverbial modification of this kind is absent in this type of nominalization. In other words, -N nominalizations do not contain a little v head that introduces the external argument or any heads higher than it (e.g. Mood, Asp, T).[10] The incompatibility between adverbial modification and verbalizing morphology, whose presence within -N nominalizations was established in §3.2.1, further suggests that the verbalizing suffixes do not play a role in the licensing of modifiers.

[10]Some languages, like Greek and Hebrew, have been claimed to allow certain kinds of adverbs inside nominalizations (Alexiadou 1997, Hazout 1995). In these languages, process nominals tolerate manner, aspectual, and certain temporal adverbs but not modal or speaker-oriented adverbs (e.g. *probably*, *fortunately*). Bulgarian differs from such languages in that it disallows adverbs in process nominals in general. See also Fu, Roeper & Borer 2001, which claims that adverbs are possible inside English nominalizations as well.

Modification by prenominal adverbs is impossible in Bulgarian more generally and cannot be employed as a diagnostic here. In this connection, it should be noted that items that look like the adverbs in (35) can, in fact, appear prenominally, as in (36). However, here these elements are prenominal adjectives which happen to be homophonous with adverbs when they bear neuter singular features.[11]

(36) a. *postepenno spirane na vnosa na šileta*
gradual/*gradually stopping of the.import of goat kids
'gradual/*gradually stopping the import of goat kids'

b. *častoto vnimatelno uništožavane na dokumentite*
the.frequent careful/*carefully destruction of the.documents
'the frequent careful/*carefullly destroying of the documents'

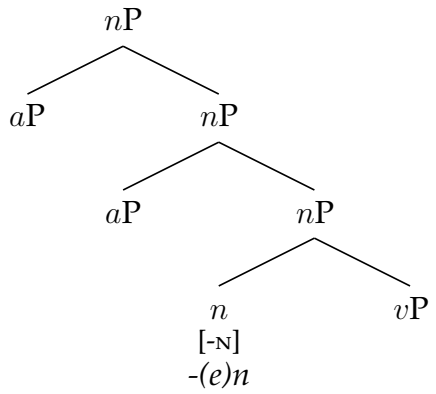
c. *oficialnoto otkrivane na bjust-pametnik na Vasil Levski.*
the.official/*officially unveiling of a.bust of Vasil Levski
'the official/*officially unveiling of a memorial bust of Vasil Levski.'

In contrast to the unavailability of adverbial modification in -N nominalizations, modification by adjectives is fully acceptable, as demonstrated in (36). This is expected, given that -N nominalizations involve nominal functional structure introduced by the merger of the nominalizer -N, and that adjectives are adjuncts in the extended nominal projection:[12]

[11] The placement of the suffixal definiteness marker can be used to show that these prenominal elements are really adjectives. Since adverbs are invisible to the rules that govern the placement of the definiteness marker (see Appendix B), if these elements are adverbs, the definiteness marker is expected to surface as a suffix on the noun. However, this is not possible: **postpenno spirane-to* 'the gradually stopping' (cf. (36b) and (36c)).

[12] Adjectives are not heads in the extended nominal projection, since an adjective in Bulgarian can take a complement that intervenes between it and the head noun. Appendix B contains relevant data (see also Dost & Gribanova 2006).

(37)



-N nominalizations can be modified by PPs and certain temporal adverbs (as has also been reported to be the case in Hebrew by Siloni (1997)):

(38) a. *prodălžitelnoto uništožavane na dokumentite včera*
the.prolonged destroying of the.documents yesterday
'the prolonged destroying of the documents yesterday'

b. *otkrivane na bjust-pametnik na Vasil Levski v grad Nikopol ot*
the.unveiling of a.bust of Vasil Levski in town Nikopol by
prezidenta na republikata na 15 juli.
the.president of the.republic on 15 July
'the unveiling of a memorial bust of Vasil Levski by the president of the republic in the town of Nikopol on July 15th'

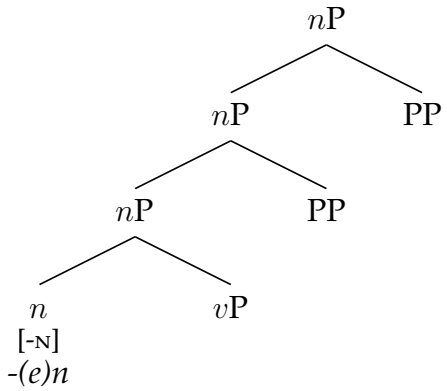
The acceptability of such modification is consistent with the absence of verbal functional structure, as established above, and the presence of nominal functional structure, instead. Note, in particular, that temporal PPs and adverbs can modify nominal phrases that are demonstrably not complex event nominals:

(39) a. the funeral at 2 in the afternoon

b. the well-attended race last weekend

Since such nominal phrases can be classified as simple event nominals (Grimshaw 1990), it appears that the licensing of PP modifiers and temporal adverbs depends, at least to some extent, on the event interpretation associated with the nominal phrase. Presumably, these modifiers are adjuncts in the extended nominal projection, like DP-internal modifiers in Bulgarian more generally (cf. (37)):

(40)



On the other hand, the class of adverbials discussed in connection with (35) require specific structural licensing environments—the presence of certain layers of verbal functional structure, in particular.

3.2.4 Accusative case

I assume that accusative case is licensed by a functional head in the extended verbal projection. I will call this head v, as is standard, but it is important to distinguish it from the verbalizing v_{CAT} heads in Bulgarian, which carry lexical aspect features ([PF] and [IMPF]) and are structurally closer to the root than the accusative case assigning v. The availability of accusative case on an internal

argument must then be indicative of the presence of this functional head. For instance, consider the contrast between English ACC-*ing* and OF-*ing* nominalizations in (41). The former assign accusative case to theme arguments like *drugs and alcohol*, while the latter require the introduction of internal arguments by *of*, as a last resort mechanism to remedy the unavailability of structural case. Intuitively, argument licensing via structural case assignment is in general a property of verbal constituents, not nominal ones. In this sense, ACC-*ing* nominalizations are more "verbal" than OF-*ing* nominalizations, which behave like typical nominal phrases in this respect.

(41) a. ACC-*ing* nominalizations:
Belushi foolishly mixing drugs and alcohol was the cause of his death

b. OF-*ing* nominalizations:
Belushi's foolish mixing *(of) drugs and alcohol was the cause of his death

In Bulgarian -N nominalizations, as in English OF-*ing* nominalizations, accusative case is unavailable and the internal argument is licensed by an alternative last resort mechanism. In the following examples, the theme arguments *săstojanieto …* 'the state …' and *vnosa …* 'the import …' require the presence of the element *na*. This element does not express accusative case, which is phonologically unmarked on non-pronominals in Bulgarian.[13]

[13]Bulgarian does not exhibit morphological case marking outside of the pronominal system, except for marking by the element *na*. As the following examples show, this element marks goal arguments in clauses and it can mark any relation in nominals (e.g. theme, possessor, etc.). Finally, *na* happens to serve as a locative preposition as well:

(i) a. *Marija izprati pismo na rabotnika.*
Maria sent letter to the.worker

(42) a. *v petăk be izslušan doklada na komisijata za opredeljane*
on Friday was heard the.report of the.commission for determining
*(*na*) *săstojanieto na otbranitelnata industrija*
of the.state of the.defense industry
'on Friday the report of the commission for determining the state of the defense industry was presented'

b. *EO and FAO ne sa davali ukazanija na Jordanija za spirane *(na) vnosa na šileta i šileško meso ot Bălgarija*
EO and FAO not are given instructions to Jordan for stopping of the.import of goat kids and goat-kid meat from Bulgaria
'EO and FAO have not given Jordan instructions for stopping the import of goat kids and goat kid meat from Bulgaria'

The unavailability of accusative case within -N nominalizations suggests that the functional head v, which is assumed to assign accusative case, is absent in these nominalizations. This is the expected state of affairs, given that the introduction of the nominalizer -N precludes the possibility of subsequent merger of verbal functional heads such as the accusative case assigning v head. In other words, the following piece of structure can only be composed with nominal functional heads:

'Maria sent a letter to the worker.'

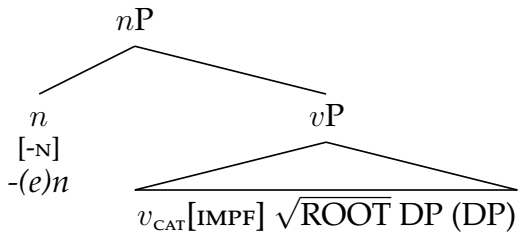
b. *umišlenoto narušavane na reda*
the.deliberate disruption of the.order
'the deliberate disruption of order'

c. *kolata na Ivan*
the.car of Ivan
'Ivan's car'

d. *vestnika e na masata*
the.paper is on the.table
'the paper is on the table'

See §3.3 on the nature of the element *na* that introduces the internal argument in (42).

(43)



This result is furthermore consistent with the finding that -N nominalizations do not support adverbial modification, taken in §3.2.3 as evidence for the absence of certain layers of verbal structure that contain the case assigning v. On the other hand, it is important to note that it is this higher verbal head v that licenses accusative case and not the verbalizing v_{CAT}[PF] and v_{CAT}[IMPF] morphology that categorize the root.

The unavailability of accusative case within -N nominalizations is subject to an intriguing kind of dialectal variation. Markova (2010), p. 95, judges as grammatical -N nominalizations without the element *na*, as in (44a). Although my consultants do not find such examples grammatical, it is likely that accusative marking inside -N nominalizations used to be a wide-spread phenomenon in the past, given that it is also mentioned in some descriptive grammars (e.g. Andrejčin et al. 1983, p. 63; Hauge 1999, p. 39). Interestingly, Markova (2010) reports that such examples are ungrammatical in the presence of the definiteness marker, as in (44b). This suggests that in contexts like (44a) accusative case is licensed (indirectly) by an indefinite D.[14]

[14]Many interesting questions arise with respect to the parametric difference between the two dialects of Bulgarian and the role of the definiteness marker in the assignment of accusative case in the dialect described by Markova (2010). It is conceivable that, in Markova's (2010)

(44) a. *očakvane velikata promjana*
awaiting the.great change
'awaiting the great change'

b. * *očakvane-to velikata promjana*
awaiting-the the.great change
'awaiting the great change'

For present purposes, I put aside the dialect described by Markova (2010), and focus on the one that lacks accusative case inside nominals altogether. The absence of accusative in this dialect constitutes converging evidence—in addition to the data from the previous sections—that the little v head which normally acts as the licensor of accusative case is absent in -N nominalizations.[15]

dialect, D[INDEF] licenses the presence of an accusative case assigning v or that it is able to assign accusative case directly itself. If so, it is this property of D that appears to be absent in the dialect I am concerned with in this chapter.

[15]It is worth pointing out that the same conclusion follows under a competition-based approach to syntactically assigned case. For instance, in Preminger 2011 case assignment is syntactic and governed by a disjunctive case hierarchy that includes lexical/oblique, dependent, and unmarked case (Marantz 1991). In this system, the assignment of dependent case (accusative or ergative) in particular is not triggered by a functional head but is competition-based, in the sense that it is assigned to a nominal phrase in a local relation with a competing nominal phrase (e.g. to an object in the presence of a subject). What does the absence of accusative case in Bulgarian -N nominalizations mean in this theoretical context? The reason why dependent case (accusative) is unavailable in -N nominalizations would be that within them case competition between two nominal phrases is impossible—even when there are two nominal phrases in need of case within an -N nominalization, they are unable to enter into the local relation required for the assignment of dependent case. The reason could be that at least one phase boundary intervenes between an external argument and any internal argument in an -N nominalization, which in turn is because internal arguments remain in-situ. Crucially, I establish on independent grounds in §3.3.1.1 that internal arguments remain in-situ in nominalizations, since the verbal functional structure that potentially triggers their movement in clauses is absent in nominalizations (see also Harley & Noyer 1998). In clauses, on the other hand, the relevant verbal structure is available and the internal argument undergoes movement into the relevant syntactic domain. It is then able to enter into a local relation with the external argument and receive dependent case as a consequence. Therefore, in a case-competition approach to the syntactic assignment of case, the absence of dependent case within -N nominalizations also suggests impoverished verbal functional structure inside nominalizations.

3.2.5 External arguments

Marantz (1984) and Kratzer (1994, 1996) argue that the external argument is not an argument of the verb but is introduced as the specifier of a functional head. Following them, I assume that the external argument in Bulgarian is obligatorily introduced by the functional head in the extended verbal projection that licenses accusative case (see §3.2.4). Therefore, the presence of an external argument must diagnose the presence of this functional head in the structure and, presumably, correlate with the availability of accusative case. This is certainly the case in English ACC-*ing* nominalizations, where the internal argument receives accusative case DP-internally and the external argument is required (though its case assigner may be DP-external). On the other hand, OF-*ing* nominalizations do not require an external argument, which takes the form of a genitive possessor when present (Lees 1963, Harley 2009b):

(45) a. ACC-*ing* nominalizations:
Belushi/PRO foolishly mixing drugs and alcohol was the cause of his death

b. OF-*ing* nominalizations:
(Belushi's) foolish mixing of drugs and alcohol was the cause of his death

Since the functional head responsible for the assignment of accusative case is absent in -N nominalizations, the prediction as far as external arguments are concerned is that they would not be obligatory within these nominalizations. This prediction is borne out: the external argument is realized optionally, as it is in English OF-*ing* nominalizations. This is illustrated by the following examples,

in which an external argument is altogether absent:

(46) a. *čestoto pluvane e zdravoslovno*
the.frequent swimming is healthy
'frequent swimming is good for the health'

b. *otkrivane na bjust-pametnik na Vasil Levski v grad Nikopol*
the.unveiling of a.bust of Vasil Levski in town Nikopol
'the unveiling of a memorial bust of Vasil Levski in the town of Nikopol'

The caveat here is that the surface absence of an overt external argument is consistent with the claim that a little v head is absent and does not directly support such a claim. In particular, it is possible for the external argument to be syntactically represented in all -N nominalizations, as long as Bulgarian allows it to remain unpronounced (e.g. as*pro* or PRO). However, a *pro* analysis can be excluded since it can be shown that the examples in (46) do not involve external arguments that are null pronouns. This can be established by the contrast between the behavior of clauses with null subjects and -N nominalizations in (47). The null pronoun subject in (47a), which is first person singular, as revealed by the subject agreement marking on the verb, is able to bind the reflexive possessor inside the direct object. In the corresponding -N nominalization, such binding should be possible as well under the assumption that -N nominalizations contain null subjects, just like clauses. However, as (47b) demonstrates, the reflexive cannot be bound by a first person singular external argument, suggesting that the external argument is not a null pronoun.

(47) a. *često izlagam svoite kartini v tazi galerija*
frequently I.exhibit REFL paintings at this gallery
'I frequently exhibit my (own) paintings at this gallery'

b. *čestoto izlagane na svoite kartini v tazi galerija*
the.frequent exhibiting of REFL paintings at this gallery
'the frequent exhibiting of *my/one's own paintings at this gallery'

These findings, however, do not exclude the possibility that the external argument in -N nominalizations is always projected syntactically but has the option to be realized as a phonologically null PRO_{arb}. In fact, there is additional evidence that, at least in some cases, the external argument can be a controlled PRO. In the following example, there is no overt external argument within the nominalization but the agent of *narušavane* 'infringing' nonetheless receives a first person plural interpretation under control by the matrix object *ni* 'us':

(48) *izobretatelja ni obvini v* [*narušavane na patentnoto mu pravo*]
the.inventor us_i accused of PRO_i infringing of patent his right
'the inventor accused us of (our) infringement of his patent rights'

In sum, in contrast to finite clauses, nothing within Bulgarian -N nominalizations forces the expression of external arguments as overt nominal phrases or as phonologically null pronouns. This finding is certainly consistent with the absence of the functional head that licenses accusative case, which is assumed to also introduce the external argument. However, for now I leave aside the question of whether the external argument should be treated as PRO when

covert (see Williams 1985 and Roeper 1987).[16] Related questions arise concerning the mechanism(s) responsible for the optional phonological expression of the external argument, which can be introduced overtly in four different ways. What these mechanisms are and how they account for the optional phonological expression of the external argument is discussed in §3.3.2, but for present purposes, I note that none of them involve the little v head that introduces external arguments in the clause.

3.2.6 Voice

I assume that voice morphology is introduced by a dedicated functional head in the extended verbal projection, Voice. This head may or may not be identical to the head responsible for the assignment of accusative case and the introduction of the external argument (cf. §3.2.4, §3.2.5). The presence of such a functional head in nomninalizations can, in fact, be morphophonologically detected in some languages. For instance, Alexiadou (2001) reports that process nominals in Modern Greek include—albeit non-systematically—the affix *-m*, which is related to non-active voice morphology (p. 50):

(49) a. *Passive perfect participle*
*diavas-**m**en-os*
read

[16] The solution of this puzzle in Bulgarian, but also more generally, will depend on the proper treatment of implicit arguments and, in particular, the kind of implicit argument found in nominalizations. For relevant discussion of various issues related to the syntactic presence of implicit arguments crosslinguistically, see Bhatt & Pancheva 2006.

b. *Process nominal*
*diavas-**m**-a*
reading

The inclusion of voice morphology in nominalizations is more robust and regular in Turkish, where action nominals include the same voice morphology found on finite verbs (Comrie 1976, p. 198):[17]

(50) a. *mektub yaz **-il** -di*
letter write PASS PAST
'the letter was written'

b. *mektub -un yaz **-il** -ma -si*
letter GEN write PASS VN its
'the writing of the letter' (lit. the being written of the letter)

Voice morphology in Bulgarian finite verbs attaches to the stem built from the root and any of the lexical aspect morphemes (§3.2.1). Consider, for example, the difference between passive and active forms of the transitive verbs in (51) and (52). Both the perfective and the (primary and secondary) imperfective stems of these verbs combine with the passive morpheme *-n* to produce a fully inflected verb form (traditionally called the past passive participle). On the other hand, the active forms contain tense marking and, if the tense is [PAST], an overt marker of grammatical aspect (imperfective in this case):[18,19]

[17] Following Comrie's (1976) terminology and glossing conventions, the abbreviation VN in the glosses stands for "verbal noun".

[18] I take the active voice morpheme to be null and do not include it in the glosses of the active forms.

[19] See Appendix D for a list of rules that apply to the provided underlying forms to yield the surface forms.

(51) *Active*

a. primary imperfective:

*pis-**a**-***a**-h* → *pišeh*
write-IMPF:1-G:IMPF-PAST.1.SG (by Rules 1, 2, 6)

b. perfective:

na**-pis-**a**-a**-h* → *napišeh*
PF-write-IMPF:1-G:IMPF-PAST.1.SG (by Rules 1, 2, 6)

c. secondary imperfective:

na**-pis-**a**-**avaj**-a**-h* → *napisvah*
PF-write-IMPF:1-IMPF:2-G:IMPF-PAST.1.SG (by Rules 1, 3, 4, 5, 6)

(52) *Passive*

a. primary imperfective:

*pis-**a**-**n*** → *pisan*
write-IMPF:1-PASS

b. perfective:

na**-pis-**a**-**n → *napisan*
PF-write-IMPF:1-PASS

c. secondary imperfective:

na**-pis-**a**-**avaj**-**n → *napisvan*
PF-write-IMPF:1-IMPF:2-PASS (by Rules 1, 3, 5)

Neither voice distinctions nor any voice morphology is found in Bulgarian -N nominalizations. Specifically, the overt passive marking seen in (52) is in complementary distribution with the nominalizer -N, as seen in (53). The absence

of distinct interpretations in terms of voice in these examples confirms that the observed surface complementarity is not the result of haplology.[20]

(53) *-N nominalizations*

a. primary imperfective:

*pis-**a**-**n**-e* → *pisane*
write-IMPF:1-NMNLZR-SGN

b. secondary imperfective:

***na**-pis-**a**-**avaj**-**n**-e* → *napisvane*
PF-write-IMPF:1-IMPF:2-NMNLZR-SGN (by Rules 1, 3, 5)

I further assume that the formation of reflexive *se*-passives is also contingent on the presence of a Voice head. The unavailability of this kind of passive in -N nominalizations, illustrated below with primary imperfectives, suggests that the relevant Voice head is absent as well. Note, in particular, that the passive-forming *se* found in clauses, (54), cannot surface within otherwise legitimate -N nominalizations, (55).

(54) a. *knigata se piše ot dvanaset sătrudnika*
the.book ***se*** write.3.SG by twelve collaborators

[20] Voice morphology has been claimed to be present in *-ie* nominalizations (see (7) in §3.1). Markova (2010) argues that these nominalizations contain the passive morpheme *-n*, to which the nominalizer *-ie* attaches: *nakaza-n-ie* 'punishment', *razruše-n-ie* 'destruction', *usložne-n-ie* 'complication'. This analysis, which goes against traditional treatments that posit a *-nie* nominalizer instead and no voice morphology, explains why *-ie* nominalizations, unlike their -N counterparts, can be formed from both perfective and imperfective verbal stems. This possibility is parasitic on the ability of the passive morpheme *-n* to attach to both types of verbal stems. In addition, while -N nominalizations may involve any verbal stem, *-ie* nominalizations cannot be formed out of unergatives—i.e. those that are independently incompatible with the *-n* passive participle morphology, which presumably involves promotion of an internal argument. Assuming that *-ie* nominalizations include voice morphology offers a natural explanation of this incompatibility, which would otherwise have to be stipulated.

'the book is being written by twelve collaborators'

b. *statiite šte se obsăždat sledvaštata sedmica*
the.articles will ***se*** discuss.PL next week
'the articles will be discussed next week'

(55) a. *pisaneto (*se) na knigata ot dvanaset sătrudnika*
the.writing ***se*** of the.book by twelve collaborators
'the writing of the book by twelve collaborators'

b. *obsăždaneto (*se) na statiite sledvaštata sedmica*
the.discussing ***se*** of the.articles next week
'the discussing of the articles next week'

The absence of interpretive voice distinctions in -N nominalizations or any morphosyntactic reflexes of Voice—i.e. the passive suffix or the passive *se* clitic—constitutes robust evidence that they contain an impoverished verbal projection, which lacks a Voice head. In addition, the complementarity between Voice and the -N nominalizer brings to the fore the partially identical distribution of Voice and n[-N]. Specifically, both morphemes combine with the same type of constituent—a root that has undergone verbalization by a perfective or a (primary/secondary) imperfective v_{CAT} head. And while Voice and n[-N] select the same types constituents, the difference between them lies in the class of elements that selects them: VoiceP merges with heads in the extended verbal projection (Asp, Mood, T) while nP merges with heads in the extended nominal projection (Gen, Num, D).

3.2.7 Aspect and tense

Finite verb forms in Bulgarian mark a grammatical aspect distinction in addition to the lexical aspect marking found in close proximity to the root (§3.2.1). For example, the difference between (56) and (57) is one of grammatical aspect: the imperfect is marked by the morpheme -***a***, while the perfect aspect morpheme is phonologically null. I assume that the morphosyntactic locus of this difference in surface form is an independent head in the extended verbal projection, Asp. This functional head attaches to the verbalized root (vP, headed by v_{CAT}), and the resulting complex then combines with tense (T).[21,22]

(56) *Imperfect*

a. primary imperfective:

*pis-**a**-***a**-h* → *pišeh*
write-IMPF:1-G:IMPF-PAST.1.SG (by Rules 1, 2, 6)

b. perfective:

na**-pis-**a**-a**-h* → *napišeh*
PF-write-IMPF:1-G:IMPF-PAST.1.SG (by Rules 1, 2, 6)

c. secondary imperfective:

na**-pis-**a**-**avaj**-a**-h* → *napisvah*
PF-write-IMPF:1-IMPF:2-G:IMPF-PAST.1.SG (by Rules 1, 3, 4, 5, 6)

[21]Surface differences in grammatical aspect are neutralized in non-past tenses.
[22]See Appendix D for a list of rules that apply to the provided underlying forms to yield the surface forms.

(57) *Perfect*

a. primary imperfective:

*pis-**a**-∅-h* → *pisah*
write-IMPF:1-G:PF-PAST.1.SG

b. perfective:

***na**-pis-**a**-∅-h* → *napisah*
PF-write-IMPF:1-G:PF-PAST.1.SG

c. secondary imperfective:

***na**-pis-**a**-**avaj**-∅-h* → *napisvah*
PF-write-IMPF:1-IMPF:2-G:PF-PAST.1.SG (by Rules 1, 3, 5)

In addition, as the glosses above reveal, tense is also marked and is the most peripheral suffix in these examples. Abstracting away from subject agreement marking, I assume this suffix to be the expression of a T head. A comparison between the present tense forms in (58) and the past tense forms above demonstrates that tense distinctions are morphologically encoded. The absence of tense morphology in -N nominalizations is consistent with the lack of nominative case, obligatory movement to Spec,TP, or T-oriented adverbs within -N nominalizations.

(58) *Present* (cf. *Past* in (57))

a. primary imperfective:

*pis-**a**-∅-a* → *piša*
write-IMPF:1-G:PF-PRES.1.SG (by Rules 1, 2)

b. perfective:

***na**-pis-**a**-∅-a* → *napiša*
PF-write-IMPF:1-G:PF-PRES.1.SG (by Rules 1, 2)

c. secondary imperfective:

***na**-pis-**a**-**avaj**-∅-m* → *napisvam*
PF-write-IMPF:1-IMPF:2-G:PF-PRES.1.SG (by Rules 1, 3, 5)

In sum, -N nominalizations do not tolerate grammatical aspect or tense: as the following examples demonstrate, the nominalizer -N is directly attached to the verbalized root, leaving no space for intervening Asp or T heads.

(59) -N nominalizations

a. primary imperfective:

*pis-**a**-**n**-e* → *pisane*
write-IMPF:1-NMNLZR-SGN

b. secondary imperfective:

***na**-pis-**a**-**avaj**-**n**-e* → *napisvane*
PF-write-IMPF:1-IMPF:2-NMNLZR-SGN (by Rules 1, 3, 5)

Therefore, no modifications are needed in the previously established morphosyntactic structure of -N nominalizations. The only structural overlap between finite verb forms and -N nominalization is the verbal stem that contains the root and one or more of the lexical aspect verbalizers.

3.2.8 Negation

I assume that the sentential negation marker in Bulgarian is a polarity Σ head which bears a [NEG] feature and heads its own projection ΣP, in the sense of

Laka (1990). This head Σ[NEG] takes a TP-sized complement.[23] Given this set of assumptions about negation, the absence of Voice, Asp, and T in -N nominalizations may lead to the expectation that -N nominalizations do not support negation either. However, the negation marker found in clausal contexts can, in fact, be present in -N nominalizations:[24]

(60) a. *častoto* ***ne****-pristigane na turisti*
the.frequent non-arrival of tourists
'the frequent non-arrival of tourists'

b. ***ne****-razpredeljaneto na hrana na nuždaeštite se po vreme na krizata*
non-the.dispensation of food to those.in.need during the.crisis
'the non-dispensation of food to those in need during the crisis'

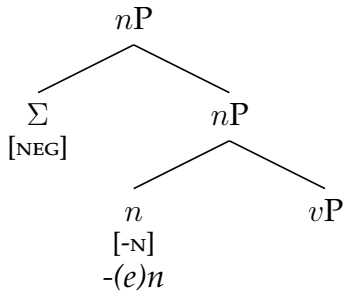
The availability of negation in -N nominalizations creates an apparent paradox: functional heads lower than Σ[NEG] are not found in -N nominalizations and yet, Σ[NEG] is. Since this head's selectional requirement cannot be satisfied if it does not take a TP complement, non-contiguities as in -N nominalizations, where negation attaches directly to a much smaller constituent than it usually does, are not expected. This apparent paradox dissolves if it is recognized that the *ne* element found in -N nominalizations is not the sentential negation marker found in clauses. Instead, it is the morphophonological expression of constituent negation. Following Embick & Noyer (2001), I assume that constituent negation in-

[23] It is immaterial for present purposes whether Σ[NEG] is a head in the clausal spine which takes TP as its complement or an adjunct to TP.

[24] Unergative nominalizations are incompatible with negation in some languages; this fact is used in an attempt to distinguish between unaccusative and unergative -N nominalizations in appendix C.3.

volves the adjunction to a phrase of the same [NEG] feature that projects ΣP in sentential negation contexts. In -N nominalizations this feature is adjoined to nP:

(61)



Assuming that sentential and constituent negation are the realization of the same [NEG] feature in different structural contexts accounts for their semantic similarities and for the fact that both license NPIs crosslinguistically (see Embick & Noyer 2001, fn. 44). In Bulgarian, such a parallel between sentential and constituent negation also exists: the following examples show that both participate in negative concord—in this case, with the surface external argument:

(62) a. ***nikakvi*** *vlakove* *(***ne***) *minavat prez tazi gara*
no trains not pass through this station
'no trains pass through this station'

b. *(***ne***)*-minavaneto na* ***nikakvi*** *vlakove prez tazi gara*
non-the.passing of no trains through this station
'the non-passing of any trains through this station'

In addition, encoding sentential and constituent negation as the same [NEG] feature underlyingly allows negation to appear inside nominalizations while none of the heads we would expect to see based on the presence of sentential negation

are actually found in -N nominalizations.[25]

3.2.9 Summary and implications

-N nominalizations in Bulgarian behave like nominal—not verbal—constituents in a number of ways. First, accusative case is not available inside -N nominalizations, a general property of nominals. Second, and related to this, -N nominalizations do not require the expression of an external argument, unlike the corresponding clauses formed on the basis of the same roots.[26] Third, they are not subject to adverbial modification, while adjectival modification is possible. Furthermore, in contrast to finite verbs, -N nominalizations do not contain voice, aspect, or tense morphology; instead, they inflect like nouns. I interpret these facts as evidence for the absence of verbal functional structure in -N nominalizations above the lexical aspect v_{CAT} heads that verbalize the acategorial root. On the other hand, -N nominalizations behave like verbal constituents in that they obligatorily contain internal arguments just like the clauses based on the same roots, and also include lexical aspect marking.

These findings, summarized in fig. 3.2, are explained—in a way consistent with the morphological structure of -N nominalizations examined in §3.2.1—by assuming the absence of any verbal functional structure on top of the root and

[25]Technically, how exactly the empirical differences between sentential and constituent negation are captured is inconsequential for the present purposes. Crucially, whatever implementation is chosen, the difference in whether [NEG] selects a TP complement or not provides the basis for distinguishing between the behavior of negation in clauses and -N nominalizations.

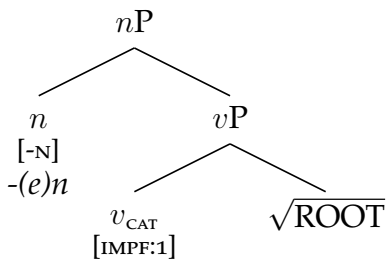
[26]See §3.2.5 and fn. 16 regarding the PRO treatment of silent external arguments within nominals as well as their complete syntactic suppression.

DIAGNOSTIC	-N NOMINALIZATIONS	OTHER NOMINALS	CLAUSES
verbalizing morphology	yes	no	yes
internal arguments	yes	no	yes
accusative case	no	no	yes
obligatory ext. arg	no	no	yes
adverbial modification	no	no	yes
voice, aspect, tense	no	no	yes
nominalizing morphology	yes	yes	no
adjectival modification	yes	yes	no
number, gender marking	yes	yes	no

Figure 3.2: Summary of results; for the purposes of this comparison, the class of "other nominals" contains object-denoting nouns and crucially excludes (deverbal) nominalizations.

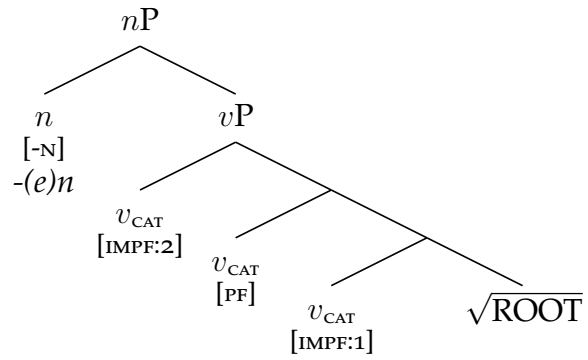
the lexical aspect affixes, which have direct morphophonological reflexes. That is, the -N nominalizer is merged directly with a vP headed by an imperfective v_{CAT}[IMPF] (either primary or secondary), but no other verbal functional heads are posited:[27]

(63) a.



[27] From this point on, in tree diagrams I will abstract away from the two possible structures for -N nominalizations, which differ in the number of lexical aspect verbalizers that they contain, and only represent the fact that the highest one of them must bear an [IMPF] feature.

b.



One consequence of this treatment, which follows from the absence of accusative case and obligatory external arguments in -N nominalizations, is the dissociation between the verbalizing v_{CAT} affixes and the functional head that assigns accusative case and introduces the external argument. Thus, categorizing functional heads like v_{CAT}[IMPF:1], v_{CAT}[PF], and v_{CAT}[IMPF:2], at least in Bulgarian, cannot be identified with the functional heads responsible for structural case assignment and the introduction of external arguments, which occupy higher structural positions (Pylkkänen 2002, Cuervo 2003, Collins 2005, Alexiadou, Anagnostopoulou & Schäfer 2006, Merchant 2008, Harley 2009b, 2013, a.o.). Earlier proposals (Chomsky 1995, Harley 1995, Marantz 1997), on the other hand, conflated the verbalizing head (v, Marantz 1997) with the external-argument-introducing projection (VoiceP, Kratzer 1996, Hale & Keyser 1993). The Bulgarian data provides a morphosyntactic argument against the earlier position and constitutes evidence for a more nuanced view of the extended verbal projection, whereby each functional head serves a single purpose (case assignment, external argument introduction, etc.). In particular, the verbalizing v_{CAT} heads are responsible for the realization of certain pieces of morphophonol-

ogy and associated effects (see below) while higher functional heads are responsible for case assignment, the licensing of adverbial modification, and the introduction of external arguments as well as additional functional heads (e.g. Asp, T).

As another consequence, the present approach reveals a connection in Bulgarian between the (obligatory) presence of internal arguments and the vP projection which contains the root and the lexical aspect suffixes (i.e. the "lexical" VP of earlier approaches). The presence of this projection is independently established on the basis of its morphosyntactic and interpretive properties (§3.2.1). Since this projection constitutes the only structural overlap between clauses and -N nominalizations, it must be responsible for the required expression of internal arguments in -N nominalizations. Additional convergent evidence for this view comes from the observation that the lexical aspect affixes can interfere with the argument structure of the verb. In particular, perfectivization is often valency changing: while the primary imperfectives below are intransitive, the prefixed perfectives require an internal argument (see also Filip 1999, p. 198, and Markova 2010, Section 5).

(64) a. *tazi sutrin četoh* (*vestnika*)
this morning read.IMPF:1.G:IMPF.PAST.1.SG the.newspaper
'this morning I read (the newspaper)' or 'this morning I was reading (the newspaper)'

b. *tazi sutrin pro-četoh* *(*vestnika*)
this morning PF-read.IMPF:1.G:IMPF.PAST.1.SG the.newspaper
'this morning I read (and completed reading) the newspaper'

(65) a. *dnes šte pluvam* (**rekata*)
today will swim.IMPF:1.G:IMPF.PRES.1.SG the.river
'today I will swim'

b. *dnes šte pre-pluvam* *(*rekata*)
today will PF-SWIM.IMPF:1.G:IMPF.PRES.1.SG the.river
'today I will swim (across) the river'

In addition, the lexical aspect verbalizers appear to be within the structural domain of idiosyncratic meaning: they often undergo semantic drift whereby the attachment of a verbalizing v_{CAT} head introduces a non-predictable change in meaning. Compare, for instance, the following primary imperfective with the corresponding prefixed perfective:[28]

(66) a. *piša*
write
'write'

b. *za-piša*
PF-write
'write down, register'

In these cases, the whole vP can be associated with a particular non-compositional meaning. Such idiomatization is then characteristic of the portion of verbal structure shared by clauses and -N nominalizations. The strongest claim about the structural source of internal arguments, given the data discussed so far, is that this source is to be found within the vP. However, as mentioned above, there is more than one possible implementation of this conclusion.

[28]Whether there is a change in meaning depends on the nature of the prefix. While the *za-* prefix does induce such a change in the context of the root *pis* 'write', a prefix like *na-* does not have this effect in the same context and has a purely perfectivizing function.

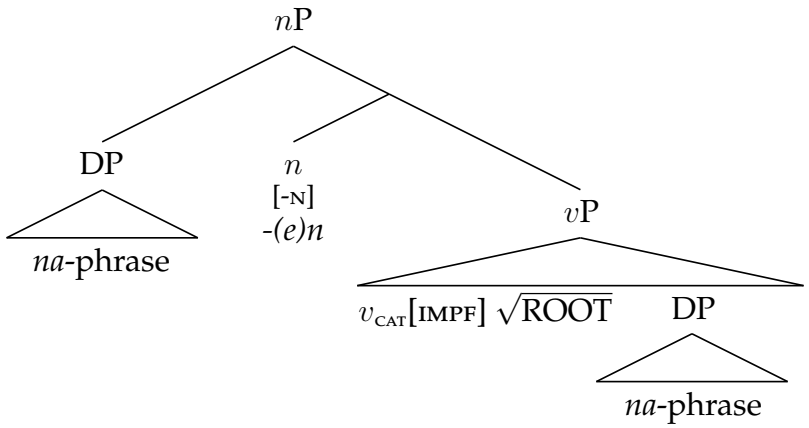
In the following section I turn to the morphosyntactic realization of DP-internal arguments and in §3.3.1 I explore the viability of a stronger claim regarding internal arguments: that they are introduced within an even smaller domain, $\sqrt{P}$.

3.3 Argument realization in -N nominalizations

It has been established that -N nominalizations are complex event nominals in the sense of Grimshaw (1990). As such, they require the syntactic expression of their internal arguments and are compatible with the overt syntactic expression of an external argument. Within -N nominalizations, Bulgarian supplies a number of modes of argument realization. For instance, both external and internal arguments can be expressed as *na*-phrases. I treat the element *na*, which introduces the argument DP in these phrases, as the morphophonlogical reflex of unmarked case within nominals. This approach is inspired to a certain extent by, but diverges in important ways from, the treatments of English *of* as inherent case (Chomsky 1986b) and a last-resort case maker (Harley & Noyer 1998, Harley 2009b).[29]

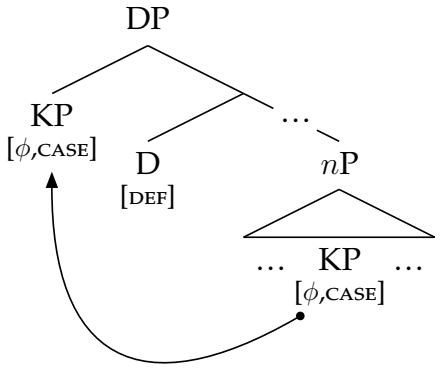
[29]In §3.3.1.2 I present evidence for distinguishing the elemtent *na* that expresses unmarked case on direct objects and external arguments within nominalizations from the element *na* on indirect objects, which expresses lexical/oblique case. This lexical/oblique case is the dative case assigned to indirect objects in clauses (Chapter 2).

(67)

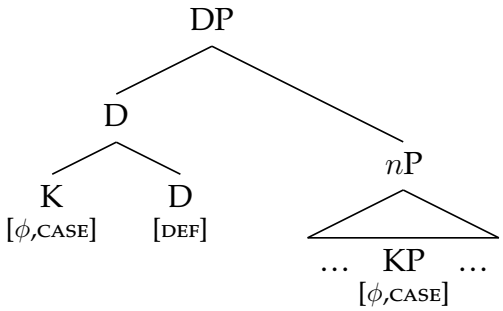


Arguments of -N nominalizations can also be realized as clitics. A clitic may appear in the presence of a corresponding *na*-phrase in an instance of DP-internal clitic doubling. Following the discussion in Chapter 2, I analyze such instances of clitic doubling within -N nominalizations as involving A-movement of a DP-internal nominal phrase to Spec,DP followed by `m-merger` of the moved phrase with D, as illustrated in (68). Various constraints on the distribution of DP-internal clitics and clitic doubling are brought ot bear on this analysis.

(68) a. *Syntactic movement*

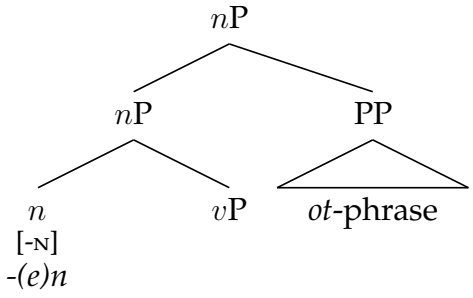


b. *Morphological merger*



Finally, there are two additional modes of expression reserved for external arguments only. *ot*-phrases and a certain class of denominal adjectives. *Ot*-phrases are the Bulgarian counterpart of passive *by*-phrases in English and behave similarly in -N nominalizations, where I treat them as adjoined to nP (69). Denominal adjectives are prenominal modifiers morphologically built around a nominal component that can be interpreted as the external argument—this class of adjectives is the focus of Chapter 4.

(69)



In this section, I elaborate the analyses just outlined above and support them by exploring in detail the ways in which various types of DP-internal arguments are realized.

3.3.1 Internal arguments

Internal arguments within -N nominalizations—namely, direct and indirect objects—are obligatory (as long as they are also obligatory in the corresponding verb phrases) and can be expressed by *na*-phrases. An intriguing difference between direct and indirect objects is that only the former can, in addition, be expressed by a clitic. A closer look at these properties of transitive and ditransitive nominalizations reveals much of interest regarding the morphosyntactic realization of argument structure, the locality of cliticization and clitic doubling, case marking within nominals, as well as the structure of nominals more generally.

3.3.1.1 Direct objects

The direct object of a transitive -N nominalization can be expressed by a *na*-phrase or a clitic. For instance, the theme argument *tărgovskoto sporazumenie* 'the trade union' in (70a) is introduced by the element *na*, and (70b) contains two such theme arguments. Example (70c), on the other hand, involves a *na*-phrase theme argument within the subject DP and the subsequent use of a clitic theme argument *mu* within a distinct DP.[30] The -N nominalizations in such examples tolerate the expression of an external argument, which is, however, not required,

[30] DP-internal clitics are glossed as DAT (dative) throughout this chapter because they are morphophonologically identical to the dative clitic in clauses. However, as in clauses, this classification is purely morphophonological and does not constitute a claim about the underlying featural content that the clitics express. For further discussion, see §3.3.1.2

as discussed above and in §3.3.2.

(70) a. *vătrešnite protivorečija v obštnostta sa pričinata za*
the.internal differences in the.community are the.reason for
nepodpisvaneto [*na tărgovskoto sporazumenie*]
not.signing of the.trade treaty

'the internal differences in the community are the reason for the non-signing of the trade treaty'

b. *predstoi obsăždaneto* [*na proekt za prokopavaneto* [*na nov*
is.forthcoming discussion of project for digging of new
tunel pod Stara planina]]
tunnel under Balkan ridge

'the discussion of a project for the digging of a new tunnel under the Balkan ridge is forthcoming'

c. *obsăždaneto* [*na zakona*] *v komisijata vărvi paralelno s*
the.discussion of the.law in the.commission runs in.parallel with
obsăždaneto [*mu*] *v plenarnata zala*
the.discussion 3.SG.M.DAT in the.plenary hall

'the discussion of the law in the commission runs in parallel with the its discussion in the plenary hall'

Ditransitive nominalizations also allow their direct objects to be expressed either by a *na*-phrase, as in (71a), or by a clitic, as in (71b). The appearance of such clitics is restricted to definite nominal phrases because DP-internal clitics are invariably adjacent to definite determiners (see Appendix B). The indirect object in each of the examples below and, in fact, in any ditransitive nominalization is expressed as a *na*-phrase; this empirical observation is the focus of the following section. As in the transitive nominalizations above, external arguments are possible here too even though the examples provided do not contain any.

(71) a. *razpredeljaneto* [*na hrana*] *na naj-nuždaeštite se liča v*
the.dispensation of food to the.most-in.need REFL persons in
občnostta beše otloženo otnovo
the.community was delayed again

'the dispensation of food to those most in need in the.community was delayed again'

b. *godina sled podarjavaneto* [*mu*] *na Petăr, Mirek otkriva če*
year after the.giving 3.SG.M.DAT to Peter Mirek discovers that
pametta na laptopa e po-malka otkolkoto trjabva
the.memory of the.laptop is smaller than.how.much it.should

'a year after its giving to Peter as a present, Mirek discovers that the memory of the laptop was less than it should be'

It has been established that the direct object is obligatory in both transitive and ditransitive -N nominalizations (§3.1 and §3.2.2). Consider, in addition, the following examples in which dropping the theme argument results in ungrammaticality, as it would in a clause projected from the same root. The ungrammatical (72b) differs from the grammatical (71a) above only in the presence of the theme *na*-phrase. It should be noted that the ungrammaticality here is not caused by the absence an external argument and is entirely predictable from the presence of the direct object.

(72) a. *tradicionnoto prepluvane *(na reka Dunav) prodălži cjal den*
the.traditional swimming of river Danube lasted all day

'the traditional crossing of the Danube by swimming lasted all day'

b. * *razpredeljaneto na naj-nuždaeštite se liča v občnostta*
the.dispensation to the.most-in.need REFL persons in the.community
beše otloženo otnovo
was delayed again

'the dispensation of food to those most in need in the community was delayed again'

In addition, direct objects of -N nominalizations are optional only if they are also optional in the corresponding verb phrases. Such behavior is characteristic of Slavic languages, more generally: in many Slavic languages complex event nominals can drop their internal arguments only when their corresponding verbs can do so (Bašić 2010, p. 60). For instance, a verb like *peja* 'sing' in (73), which alternates between an intransitive and a transitive in clauses, does so in -N nominalizations as well. Verbs like the lexically perfective *prepluvam* 'swim (across)' in (72a) are strictly transitive but also have constant behavior in both clauses and -N nominalizations. The parallel behavior of internal arguments across clauses and -N nominalizations is expected if what dictates their behavior is the structure shared between finite verbs and these nominalizations.

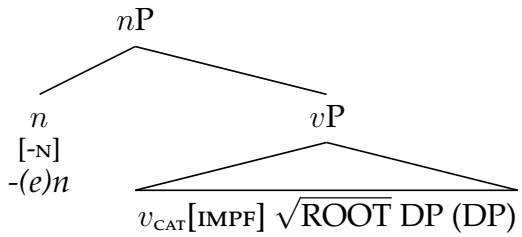
(73) a. *vsički peeha* (*narodni pesni*) *često*
everyone sang folk songs often
'everyone often sang (folk songs)'

b. *čestoto peene* (*na nardoni pesni*) *radvaše vsički*
the.frequent singing of folk songs made.happy everyone
'the frequent singing (of folk songs) made everyone happy'

The two central properties of direct objects within -N nominalizations established so far are their obligatory expression and the possibility of expressing them as either *na*-phrases or clitics. It was noted in §3.2.2 that, since -N nominalizations pattern with verbs in requiring their internal arguments, the structural elements responsible for the introduction of internal arguments in both domains must be shared. The strongest claim consistent with the data seems to be that internal arguments are introduced within the "lexical" vP projection

(headed by v_{CAT}), which represents the structural fragment shared by clauses -N nominalizations (§3.2.1):

(74)

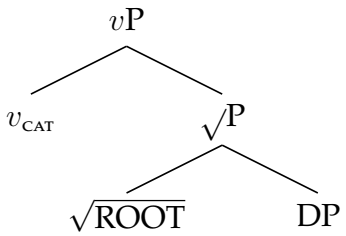


It is the inclusion of internal arguments within the "lexical" vP projection that ensures their relative proximity to the root and is intended to account for their obligatory expression. It was further noted, however, that this view of the internal structure of vP is underspecified with respect to the exact base positions of the internal arguments and direct objects in particular (indirect objects are discussed in §3.3.1.2). Here I clarify the analytical options.

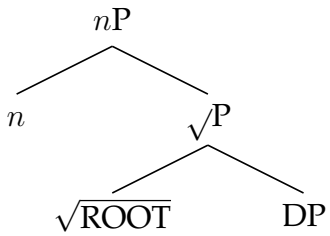
One approach assumes that, in both clauses and -N nominalizations, roots merge with their internal arguments directly. This merger is driven by the selectional requirements of the root and accounts for the obligatory presence of internal arguments, among other things. More generally, such a treatment provides the basis for an account of the differences between external and internal arguments noted by Marantz (1984) and Kratzer (1996), a. o. In particular, numerous dependencies are found between verbs and their internal arguments but not necessarily between verbs and their external arguments. For Marantz, for example, the subject is an argument of a verbal predicate (i.e. the maximal projection of the verb, VP or vP) and not of the verb itself because it does not

trigger idiosyncratic interpretations of the verb (while internal arguments often do). Such asymmetries between external and internal arguments are captured in this framework by assuming that external and internal arguments are introduced into the structure in distinct positions. Specifically, external arguments are "severed" from the verb and introduced as specifiers of functional heads, while internal arguments are introduced within the immediate projection of the root, $\sqrt{}$P (Marantz 1997, Alexiadou 2001, Harley 2009a). Such a $\sqrt{}$P constituent, the result of directly merging a root with its direct object, must then combine with a categorizing functional head v_{CAT} or n, as in (75). In addition to capturing the selectional restrictions assumed to hold between a verb (or its root, according to this approach) and its internal arguments, the direct merger of roots with its internal arguments has been supported by Harley (2009a) based on data concerning *one*-replacement in English and synthetic compounds. Alexiadou (2001), p. 66ff., develops such an approach in the context of Modern Greek, building on work by Levin (1999).

(75) a. little v



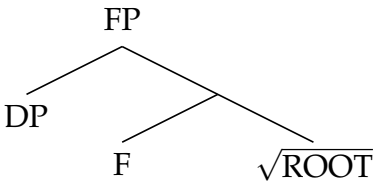
b. little n



An alternative position holds that roots are radically underspecified and that they must combine with categorizing heads in order to be syntactically ma-

nipulated further (see e.g. Acquaviva 2008, Embick 2010). A root must merge with a categorizing head before it merges with anything else. Thus, on this view roots do not directly merge with any arguments, which, in turn, must be "severed" from the verb and introduced as specifiers of functional heads, as in (76). Here, the head F introduces the internal argument DP, and it can be conceivably identified with one of the verbalizing lexical aspect heads in Bulgarian (v_{CAT}[PF], v_{CAT}[IMPF:1], v_{CAT}[IMPF:2]). A consequence of this approach is that this functional structure also mediates relations between nominal arguments and the verb.

(76)



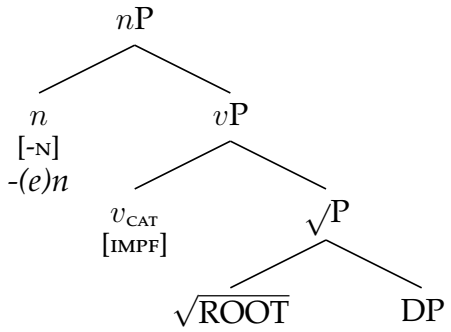
Proponents of this approach argue that the existence of argument structure associated with roots in the lexicon constitutes a redundancy in the grammar, since the same (predicate-argument) relations are also encoded by structural relations in the syntax (e.g. Borer 2005, Alexiadou et al. 2009). Furthermore, Acquaviva (2008) argues against the existence of $\sqrt{}$P altogether on the assumption that roots, lacking any syntactic information, are unable to project or have complements. According to this view, roots are syntactically inert (though not completely invisible) and internal arguments (as well as the overall meaning of roots) is licensed in the context of highly articulated functional structure. Any selectional or other restrictions that appear to hold between a root and any of its internal arguments must then be mediated by this functional structure. It can no

longer be maintained that roots select their internal arguments; instead, it must be specified how the functional structure that introduces internal arguments licenses certain classes of roots (namely those that form the basis of (di)transitive and unaccusative verbal stems). This is how this approach explains the standard subcategorization facts and the selectional restrictions imposed on internal arguments, as well as their obligatoriness. An apparent consequence is that, by introducing external and internal arguments by the same mechanisms, such a view appears to blur some distinctions between them that have been established empirically (see also Potts 2008).

The difference between the two approaches boils down to whether internal arguments are associated by the neo-Davidsonian method in the syntax or not. The choice has repercussions for the division of labor between the lexicon and the functional structure on top of roots and, in particular, for the treatment of roots. On the empirical side, the choice between these competing approaches depends on their compatibility with the known morphosyntactic behavior of both external and internal arguments. The issue appears to be unresolved at this point and these two approaches, as well as any other candidates, remain to be compared once they have been embedded in a general theory of morphosyntax and its connections with argument structure. In the context of Bulgarian conclusive evidence one way or another is not yet available and both approaches are consistent with the analysis of -N nominalization that I propose. For expository reasons, I illustrate relevant claims below under the assumption that roots merge directly with their internal arguments, as shown in (77). Where the

differences between the two approaches are non-trivial, I make this explicit.

(77)



The second central property of direct objects in -N nominalizations concerns the possibility of expressing them as either *na*-phrases or clitics. I treat *na* as the morphophonological realization of case. To situate *na* in a typology of case marking, it might be helpful to summarize the results of research on morphological case marking that dissociates it from the syntactic licensing of nominals (e.g. Marantz 1991 and much subsequent work). According to this strand of research, morphological case within a given syntactic domain is assigned disjunctively in accordance with the following hierarchy:

(78) *Disjunctive case hierarchy*

lexical/oblique case → dependent case → unmarked case

Lexical/oblique case is assigned to a nominal associated with a particular θ-role and is, therefore, idiosyncratically conditioned, e.g. the dative assigned to goals or to the object of certain verbs like *help*; the notion is equivalent to that of Chomsky's (1986b) *inherent case*. The assignment of *dependent case* to a nominal is context-sensitive in that it depends on the presence either of a functional head

that assigns it (e.g. Bittner & Hale 1996, Baker & Vinokurova 2010, and §3.2.4 above; but see Preminger 2011 on Sakha) or of another nominal within some syntactic domain that does not bear lexical/oblique case (cf. fn. 15 in §3.2.4). The dependent cases are accusative and ergative. Finally, case marking that is neither lexical/oblique nor dependent is called *unmarked case*. Its assignment may also be context-sensitive: for example, unmarked case can be realized as nominative or absolutive in clauses but genitive in nominal phrases.[31]

Given this much, I treat the element *na* that introduces direct objects in -N nominalizations as an instance of unmarked case within the nominal domain. I further make the representational assumption that DPs bear a (valued or unvalued) case feature. Lexical/oblique case features, for instance, are idiosyncratically assigned to DPs by their sisters upon first `Merge` into the syntactic structure. Case features that are valued as lexical/oblique are morphophonologically expressed by their corresponding exponents. Leaving aside questions about how dependent case is assigned, I also assume that unmarked case is the morphophonological expression of case features that remain unvalued. Its assignment is not triggered by a functional head (see e.g. Preminger 2011). Therefore, *na* can be treated as the expression of unvalued case features within nominal phrases. It is inserted into a terminal node by an operation of the morphophonological component—i.e. it is a dissociated morpheme whose appear-

[31] Unmarked case is not to be confused with *default case*, also part of the disjunctive hierarchy of Marantz (1991), which is assigned to a nominal when no other case has been assigned to this nominal. This distinction becomes less clear if the disjunctive case hierarchy is implemented syntactically, as in Preminger 2011.

ance is triggered by the language's requirement to express case features. In sum, the following case values are available in Bulgarian, all of which are expressed morphophonologically in distinct ways:[32]

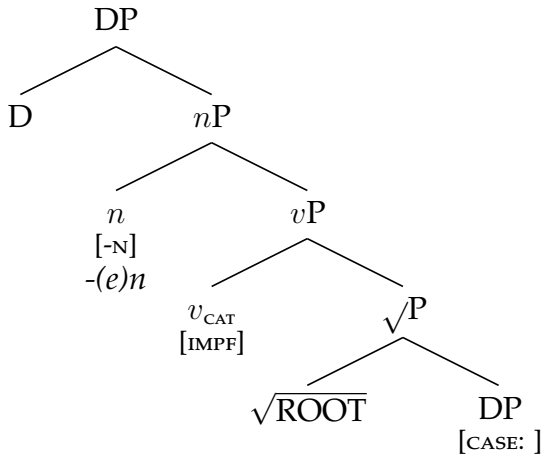
(79) a. DP[CASE:DAT] (lexical/oblique case)

b. DP[CASE:ACC] (dependent case)

c. DP[CASE:] (unmarked case)

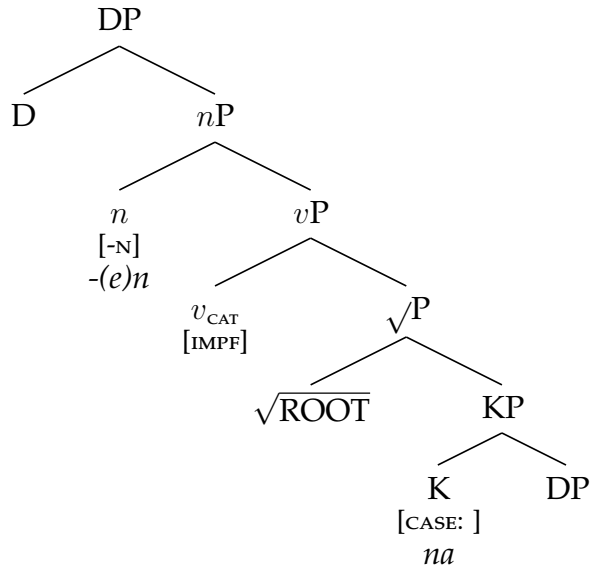
The case feature of a direct object in an -N nominalization remains unvalued in the syntax, as the direct object is not assigned lexical/oblique case or dependent case (80a). In the morphophonological component a K head is inserted as a sister to the direct object and inherits its case feature (80b) (for discussion of `K-insertion` and `Feature Copying`, see Chapter 2, §2.4.2). This K head is the locus of morphological case marking; it is spelled out as *na* when c-commanded by D (as opposed to T, in which case it is phonologically null).

(80) a.



[32]The accusative and dative case values discussed in Chapter 2 (§2.4.1), correspond to the dependent accusative and lexical/oblique dative here.

b.

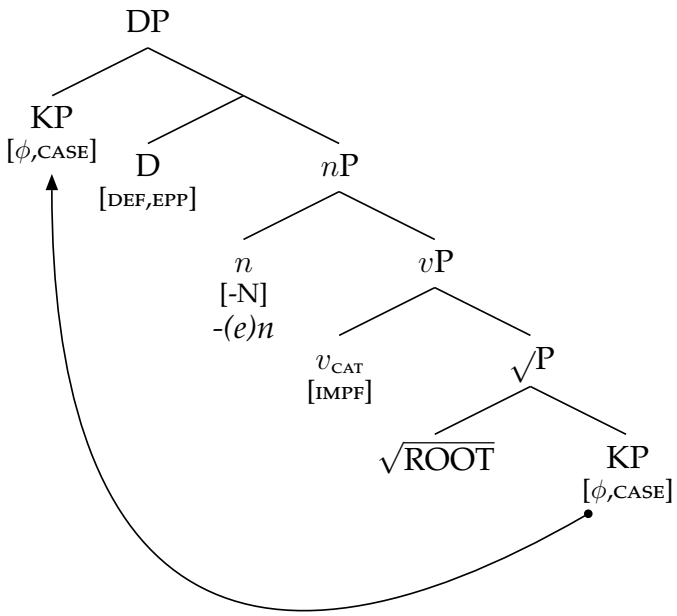


As an alternative to *na*-phrases, direct objects of -N nominalizations can be expressed by clitics (e.g. (70c) and (71b)). I assume that the expression of a direct object by a clitic is an instance of clitic doubling of a full nominal phrase. This full nominal phrase, the clitic's associate, may itself be expressed as a *na*-phrase or remain phonologically null. The analysis of clitic doubling developed in the context of objects of clauses in Chapter 2 can be applied within nominal phrases as well. The only difference is that the morphosyntactic locus of cliticization in nominal phrases is D and not v (the functional head that introduces the external argument in clauses). Thus, an [EPP] feature on D triggers movement of the direct object to Spec,DP, as in (81a).[33] In the morphophonological component

[33] As shown in 3.3.1.2 and Chapter 4, this movement is subject to standard locality constraints on A-movement. Therefore, for the direct object to be able to move to Spec,DP from its base position, there must be no intervening DP that is closer to D in terms of c-command than the direct object. In turn, this indicates that the external argument of -N nominalizations, which can normally occupy Spec,nP (§3.3.2.2), is absent when the direct object is clitic doubled. Such examples are taken as evidence in §3.3.2.1 for the existence of an n head which does not introduce

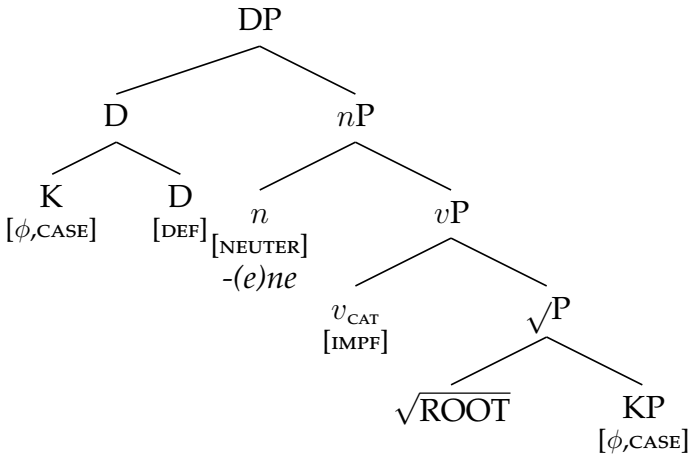
`K-insertion` adjoins as a sister to (every copy of) the DP a dissociated K morpheme, which inherits the Case- and ϕ-features of the DP via `Feature Copying` (this step has already taken place in (81a)). Then, the `m-merger` operation, triggered by a feature [M] on D, rebrackets D and the KP in its specifier, as in (81b). As a result, the raised direct object KP is reduced to its label (i.e. its Case and ϕ-features), which is adjoined to D.

(81) a. *Syntactic movement*



an external argument semantically or syntactically.

b. *Morphological merger*



As noted above, the expression of the direct object as a clitic is restricted to nominal phrases that are definite. To capture this distributional restriction, I assume that only the [DEF] feature on D can license the presence of an [M] feature on D. Since this [M] feature encodes the morphophonological requirement of a head to be within the same complex head as (the label of) its specifier, only D[DEF] can trigger the application of `m-merger`. The merger of D[DEF] and the label of its specifier (i.e. the clitic) accounts for the observed adjacency between the suffixal definiteness marker and the clitic (see Appendix B).

3.3.1.2 Indirect objects

The indirect object of a ditransitive -N nominalization can be expressed by a *na*-phrase. For instance, the goal arguments *bezdomnite* 'the homeless' in (82a), *Petăr* 'Peter' in (82b), etc. are introduced by the element *na*. In these examples the direct object is obligatorily expressed either by a *na*-phrase, as in (82a) and

(82c), or by a clitic, as discussed in the previous section and illustrated in (82b). External arguments are omitted, although they are possible (see §3.3.2).

(82) a. *Gărcija tărsi načini za okazvane na pomošt [na bezdomnite]*
Greece looks.for ways for rendering of assistance to the.homeless
'Greece looks for ways of rendering assistance to the homeless'

b. *godina sled podarjavaneto mu [na Petăr], Mirek otkriva če*
year after the.giving 3.SG.M.DAT to Peter Mirek discovers that
pametta na laptopa e po-malka otkolkoto trjabva.
the.memory of the.laptop is smaller than.how.much it.should
'a year after its giving to Peter as a present, Mirek discovers that the memory of the laptop was less than it should be'

c. *razpredeljaneto na hrana [na naj-nuždaeštite se liča v*
the.dispensation of food to the.most-in.need REFL persons in
obšnostta] beše otloženo otnovo
the.community was delayed again
'the dispensation of food to those most in need in the.community was delayed again'

In contrast to the direct object of a ditransitive nominalization, however, the indirect object cannot be expressed by a clitic, regardless of the definiteness of the DP that contains it. For instance, in the following examples neither the third person plural clitic *im* nor the third person feminine singular clitic *i* can be interpreted as the goal argument in the corresponding -N nominalization. Note, in addition, that the ungrammaticality of (83a) cannot be due to the absence of an overt antecedent for the clitic, which can be easily provided in the preceding discourse. Example (83b) contains such an antecedent—*sestra si* 'his sister'—but remains ungrammatical.

(83) a. * *OON može da spre okazvaneto [im] na pomošt*
UN might to discontinue the.rendering 3.PL.DAT of assistance
'the UN might discontinue rendering assistance to them'

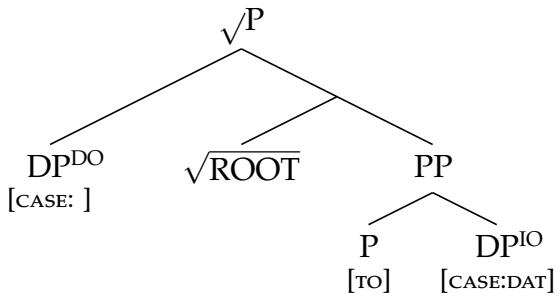
b. * *Mirek spodeli săs sestra si, če pametta na laptopa e*
Mirek shared with sister REFL that the.memory of the.laptop is
po-malka otkolkoto trjabva poveče ot edna godina sled
smaller than it.should more than one year after
podarjavaneto [i] na laptopa
the.giving 3.SG.F.DAT of the.laptop
'Mirek shared with his sister that the memory of the laptop is less than it should be more than a year after giving the laptop to her as a present'

An important aspect of the behavior of indirect objects within -N nominalizations is that they cannot be expressed as clitics. This is particularly striking, given that no such restriction holds in the corresponding clauses or with respect to direct objects within -N nominalizations. In addition, as Franks & King (2000) point out, indirect objects of clauses can be expressed by dative clitics, which are, at least superficially, identical to the clitics available for the expression of arguments within nominalizations. If this superficial identity between the phonological exponents of indirect object clitics and DP-internal clitics is taken as a reflex of some deeper similarity, it is even more mysterious why the kind of clitic that is reserved for the expression of indirect objects in clauses can express direct objects but not indirect objects in nominalizations. The analysis developed below explains the unavailability of indirect object clitics within DPs as the result of a locality condition on cliticization. The differences between clauses and nominal phrases with respect to indirect object clitics then follow

from the differences between the internal structure of vPs and DPs. The other significant property of indirect objects that the present analysis addresses is that indirect objects, like their direct-object counterparts, are obligatory in -N nominalizations if and only if they are obligatory in the corresponding verb phrases (or clauses).

Following the discussion in §3.3.1.1, I assume that the expression of indirect objects in -N nominalizations is forced by the selectional requirements of the root. In other words, both direct and indirect objects are merged within the maximal projection headed by the root, which is the domain of lexical idiosyncrasy where selectional requirements are imposed. This assumption is consistent with the internal structure of $\sqrt{}$P proposed in Chapter 2: Bulgarian ditransitives in general employ the *to*-dative type of structure in (84).[34]

(84) *Ditransitive $\sqrt{}$P (*to-*dative)*

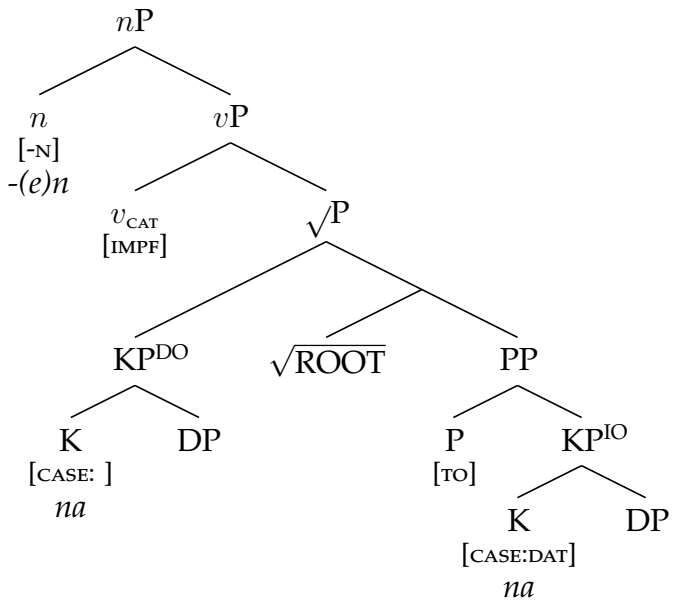


As indicated in this structure, the indirect object is introduced by a dedicated preposition, phonologically null in Bulgarian, which idiosyncratically θ-marks

[34]The only difference is a notational one: in Chapter 2 "$\sqrt{}$P" (along with the lexical aspect verbalizers) was called "VP". As in that chapter, the [TO] feature on P is a shorthand for whatever features are bundled together as the relevant preposition.

the indirect object DP and assigns lexical/oblique dative case to it. The direct object in this configuration receives unmarked case in the familiar way, as discussed in the previous section:

(85)



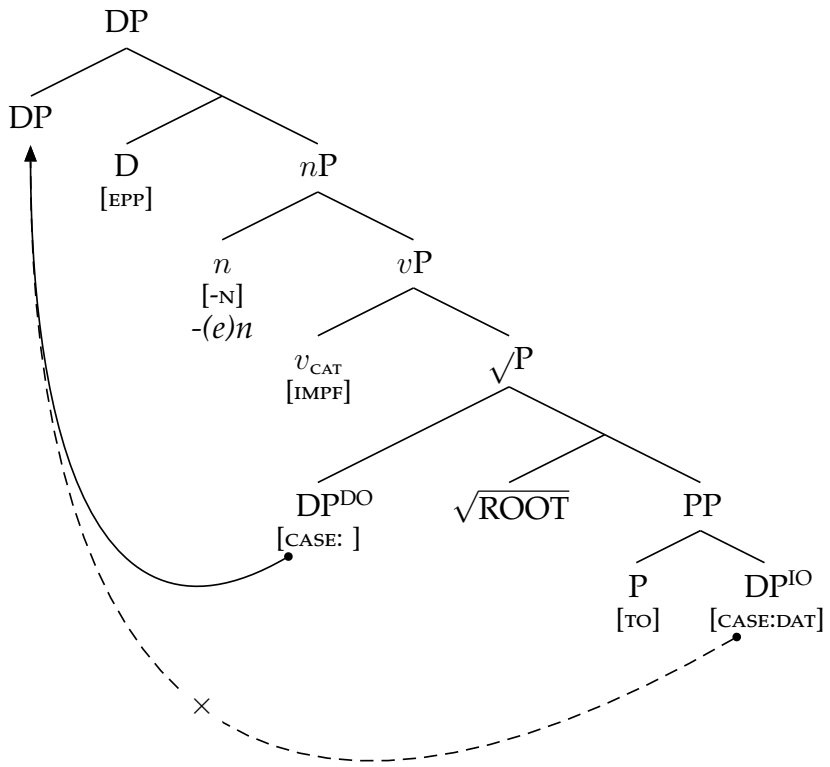
The morphophonological realization of the lexical/oblique dative case value assigned to the indirect object by P coincides with that of the unmarked case of the direct object: in both cases the case marker K is realized as the element *na*, shown in (85). This surface identity, however, is just a fact about the morphological case system of Bulgarian. In particular, the morphophonology of the language can be conceived of as being impoverished in a way that conflates the expression of unmarked case in nominals with the expression of lexical/oblique case.[35] This proposal captures the intuition of other approaches which also treat

[35]Unmarked case in clauses receives null expression (nominative) and dependent case is marked distinctly from both unmarked and lexical/oblique cases (as accusative).

the morphophonologically identical case marking on direct and indirect objects within Bulgarian nominalizations as instances of surface syncretism. For instance, Franks & King (2000), p. 334, conclude that the direct object receives structural case while the indirect object receives inherent case.

Having described the fact that indirect objects of -N nominalizations can be expressed as *na*-phrases, just like indirect objects of clauses, we now must face the question of why cliticization is not likewise available. As already pointed out, the issue is particularly pressing because *na*-phrases in general are exactly the kind of phrase that can be doubled by a clitic, and because indirect objects in clauses as well as direct objects within -N nominalizations can unproblematically undergo clitic doubling. Here I suggest that this effect can be reduced to a locality constraint on cliticization and clitic doubling. Specifically, in a definite ditransitive -N nominalization whose D is endowed with an [EPP] feature, as in (86), it is only the direct object DP^{DO} that can move to Spec,DP, since it is closer in terms of c-command to D than the indirect object DP^{IO}. Recall that syntactic movement is crucial in the derivation of cliticization and clitic doubling: only the object occupying Spec,DP undergoes `m-merger`, which reduces it to a clitic. Thus, if the indirect object cannot undergo A-movement to Spec,DP, it cannot undergo `m-merger` either. In other words, a general locality constraint on A-movement in combination with the obligatory presence of the direct object inside ditransitive nominalizations (forced by the subcategorization requirements of the root) leads to the correct prediction that indirect objects do not cliticize in -N nominalizations and cannot be clitic doubled either:

(86)



The restriction against cliticizing and clitic doubling indirect objects in -N nominalizations then follows from a general restriction on the syntactic movement that feeds cliticization and clitic doubling in the morphophonology: indirect objects fail to undergo such movement in the presence of a c-commanding direct object. There might, in fact, be evidence for an even stricter locality constraint at play. Franks & King (2000) discuss -N nominalizations of transitive verbs such as *pomagam* 'help' which assign lexical/oblique case to their complements, marked by *na*. Interestingly, even though these nominalizations do not contain another intervening DP, the lexical/oblique object can be neither clitic doubled nor expressed by a clitic:[36]

[36]The clitic as well as the clitic doubled *na*-phrase in (87b) can receive an agent interpretation.

(87) a. *pomaganeto na bezdomnite*
the.helping of the.homeless
'the helping of the homeless'

b. * *pomaganeto im* (*na bezdomnite*)
the.helping 3.PL.DAT of the.homeless
'the helping of them (, the homeless)'

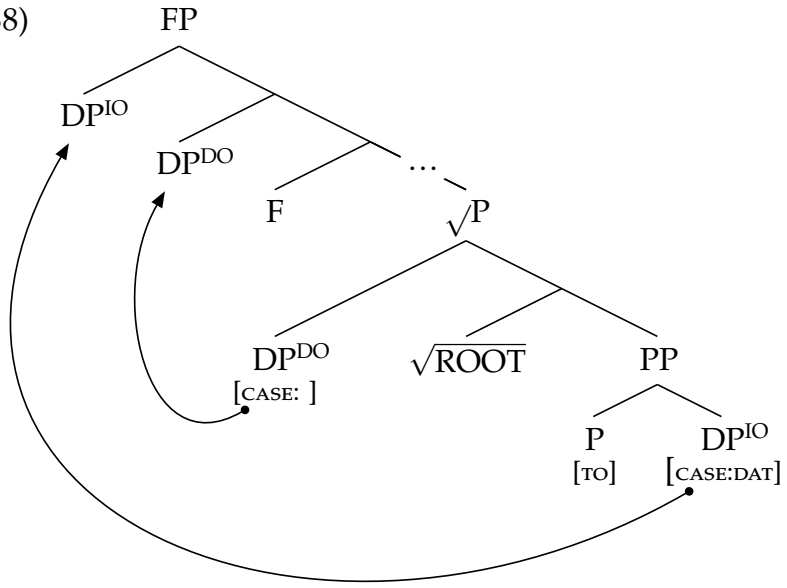
Thus, it appears that -N nominalizations do not tolerate the expression of lexical/oblique objects as clitics more generally. I attribute this effect to the phasehood of the PP which contains the indirect object and renders it invisible for any probing by higher functional heads. In order for the indirect object to become visible to D and interact with it, and be expressed as a clitic, it must escape the PP phase via (short) movement to an intermediate specifier. However, such an intermediate specifier is unavailable in -N nominalizations. As a result, the indirect object is trapped inside the PP phrase and remains incapable of interacting with any higher functional heads, including D. In clauses, on the other hand, such an intermediate specifier is, in fact, available and allows the lexical/oblique object to interact with higher functional heads and be clitic doubled.[37]

[37]The absence of an appropriate intermediate specifier to be targeted by movement of an internal argument in -N nominalizations could account for the unavailability of dependent case inside nominalizations under a case-competition approach—see fn. 15 in §3.2.4. Since internal arguments remain in-situ, trapped inside the vP phase (defined by the categorizing v head), they cannot enter into the required local relation with an external argument in the higher DP phase, which is required for the contextual assignment of dependent case. It should be noted, however, that this approach would require the relation relevant for dependent case assignment (which cannot be established between an external argument and any internal one) be more local than the movement relation, which is successfully established between D and the direct object.

To provide independent motivation for this analysis, I address the question of why indirect objects and lexical/oblique objects more generally can be expressed as clitics in clauses. If the functional head responsible for cliticization and clitic doubling in the clause (v) can interact with the lower indirect object, why can't D, the functional head responsible for clitic doubling in nominals, interact with the indirect object? As discussed in Chapter 2 (§2.4.1), I assume that what makes this interaction possible in clauses is the (short) movement of the indirect object to an intermediate specifier, as in (88). As far as the direct object is concerned, it must also become a specifier to the same functional head if the indirect object is to be able to move to it; this follows if the functional head F is endowed with an [EPP] feature that attracts either all DPs in its c-command domain or just the closest one (see Chapter 2 for detailed discussion). Movement of the indirect object to Spec,FP puts it in a position close enough to D to allow the interaction that results in cliticization and clitic doubling.[38]

[38]The direct and indirect objects are, in fact, equidistant after this movement, which explains why both objects can be clitic doubled simultaneously.

(88)



However, the functional head F that this movement targets in clauses is unavailable in -N nominalizations due to the impoverished verbal functional structure in this kind of nominal. Independent support for this absence comes from the absence in nominals of the inverted order in which an indirect object *na*-phrase precedes a direct object *na*-phrase. This alternative order is possible in clauses, as demonstrated empirically in Chapter 2 (§2.3.1). As shown in the diagram above, this alternative order results from the same short movement to an intermediate functional head that leads to the licensing of clitic doubling of the lower indirect object. In nominalizations, on the other hand, the direct object invariably precedes the indirect object:[39]

[39]Note that the ungrammaticality of (89b) cannot be due to a "heaviness" effect, whereby the relatively "heavier" indirect object must be DP-final, because there is no such difference in "heaviness" in (89a).

(89) a. * *Gărcija tărsi načini za okazvane na bezdomnite na pomošt*
Greece looks.for ways for rendering to the.homeless of assistance
'Greece looks for ways of rendering assistance to the homeless' (cf. (82a))

b. * *razpredeljaneto na naj-nuždaeštite se liča v obšnostta na*
the.dispensation to the.most-in.need REFL persons in the.community of
hrana beše otloženo otnovo
food was delayed again
'the dispensation of food to those most in need in the.community was delayed again' (cf. (82c))

Therefore, the indirect object's inability to precede the direct object in -N nominalizations correlates with the impossibility of expressing the indirect object as a clitic. Both of these effects can be reduced to the absence of the functional head F in -N nominalizations, since the IO–DO order and the cliticization of the indirect object require movement to the specifier of this intermediate functional head F. Its absence in -N nominalizations, in turn, follows from the impoverished verbal structure found in -N nominalizations and established on independent morphosyntactic grounds (see §3.2).

There is a connection between this analysis and Harley & Noyer's (1998) analysis of nominalizations of verb-particle constructions in English. The puzzle they aim to solve is why an object can intervene between the verb and the particle in clauses but not in nominalizations:

(90) a. Chris **wrote up** the paper

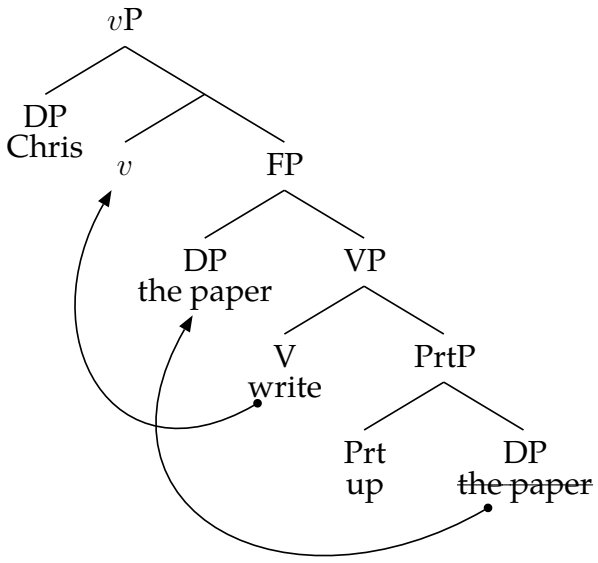
b. Chris's **writing up** of the paper

(91) a. Chris **wrote** the paper **up**

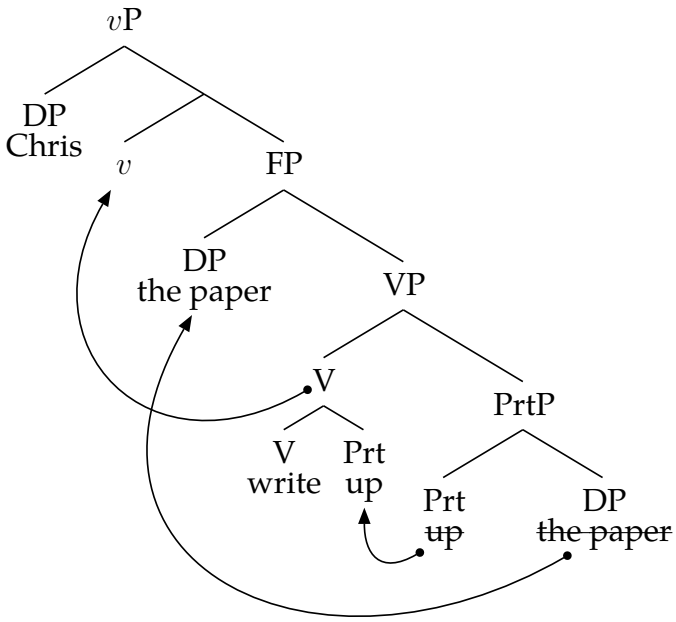
b. * Chris's **writing** of the paper **up**

Harley & Noyer (1998) take the base structure of examples (90a) and (91a) to be the same. In addition, they assume that both clauses involve short movement of the object (*the paper*) to an intermediate specifier (Spec,FP) and movement of the verb to the functional head that introduces the external argument (v). The difference between (90a) and (91a) arises from the optional head raising of the particle to the verb. If the particle raises, it must then accompany the verb on its movement to v; if it does not, it remains in-situ and sentence-final on the surface:

(92) a.



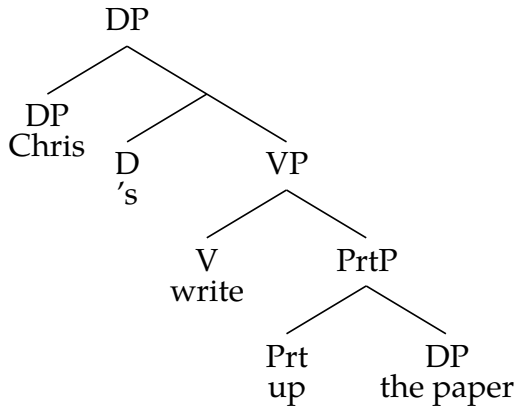
b.



Given this much, the absence of particle shift in nominalizations follows from the absence of a verbal functional projection FP for the object to move to, as shown in the diagram below.[40] This absence of the object–particle order in English nominalizations parallels the absence of the IO–DO order in Bulgarian -N nominalizations. Both result from the failure of the relevant object to move out of its base position. Since such movement is also required for the object to be clitic doubled, clitic doubling in Bulgarian -N nominalizations receives the same explanation.

[40] Harley & Noyer (1998) assume that *of* in examples like (90b) derived from this representation is a last-resort case marker.

(93)



3.3.2 External arguments

As demonstrated in §3.2.5, external arguments appear optionally in -N nominalizations. This optional expression of the external argument was taken as evidence for the absence of the v head that introduces the external argument. What remains to be explained is the mechanism(s) responsible for the expression of the external argument. External arguments in -N nominalizations can be overtly introduced in four different ways: as *ot*-phrases (the counterpart to English *by*-phrases), clitics, (clitic doubled) *na*-phrases, and a certain class of denominal adjectives. Denominal adjectives are the focus of Chapter 4. There they are viewed as a case study, in addition to clitic doubling, of the ability of parts of words to have independent syntactic presence. Here I focus on the other three modes of expression.

3.3.2.1 *Ot*-phrases

The external argument of a transitive or ditransitive -N nominalization can be optionally realized as part of an *ot*-phrase (see the next section on intransitive -N nominalizations). As illustrated in the following naturally occurring examples, the bracketed *ot*-phrase immediately follows the *na*-phrase that expresses the direct object:

(94) a. *vătrešnite protivorečija v obštnostta sa pričinata za*
the.internal differences in the.community are the.reason for
nepodpisvaneto na tărgovskoto sporazumenie [*ot zemedelcite*]
the.not.signing of the.trade treaty by the.farmers
'the internal differences in the community are the reason for the non-signing of the trade treaty by the farmers'

b. *dostatăčno e da napomnim za terora părvite meseci sled*
sufficient is to remind about the.terror the.first months after
zavzemaneto na vlastta [*ot nacistite*]
the.seizure of the.power by the.Nazis
'it is sufficient to recall the terror in the first months after the Nazi's seizure of power'

Example (95a) shows that in such -N nominalizations the expression of the external argument as an *ot*-phrase does not affect the ability of the direct object to be expressed as a clitic or a (clitic doubled) *na*-phrase. In a ditransitive nominalization, as in (95b), the indirect object can still be expressed as a *na*-phrase that is immediately followed by the *ot*-phrase.

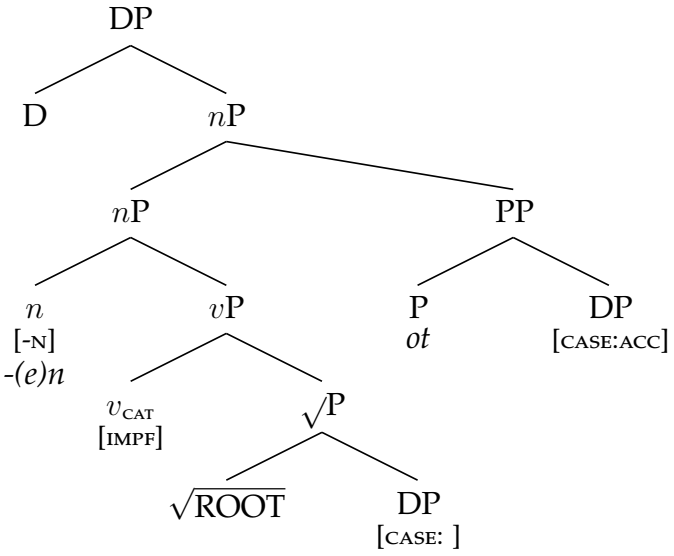
(95) a. *tăržestvata šte započnat s otkrivaneto mu v grad*
the.celebrations will begin with the.unveiling 3.SG.M.DAT in town
Nikopol [*ot prezidenta na republikata*]
Nikopol by the.president of the.republic

'the celebrations will begin with its unveiling by the president of the republic in the town of Nikopol'

b. *razpredeljaneto na hrana na nuždaeštite se* [*ot OON*] *beše*
the.dispensation of food to those.in.need REFL by UN was
otloženo otnovo
delayed again
'the dispensation of food by the UN to those in need was delayed again'

To capture this behavior, I assume that the *ot*-phrase is a syntactic PP adjunct to nP which introduces a nominal phrase that is semantically identified as the external argument of the nominalization. Its appearance is licensed whenever other syntactic means of introducing the external argument are suppressed. This assumption unifies the distribution of *ot*-phrases in verbal passives and nominalizations. The following diagram presents the assumed basic structure for transitive -N nominalizations (it can be trivially extended to ditransitives), while the details of the analysis are developed below:

(96)



In this configuration the direct object, as well as the indirect object in the corresponding ditransitive configuration, is marked in the familiar way, as previously described. In particular, the direct object receives unmarked case while the indirect object is assigned lexical/oblique case by the null preposition that introduces goal arguments. Unmarked case within nominals and lexical/oblique case are both morphophonologically marked by the element *na*. Thus, the expression of the external argument as an *ot*-phrase constitutes an addition to the familiar structures and does not affect any of the analysis that has been constructed so far.

As far as *ot*-phrases are concerned, two aspects of their behavior are significant for present purposes: (i) *ot*-phrases supply a nominal phrase that is identified as an external argument semantically, and (ii) *ot*-phrases are optional. The analysis I propose is inspired by Bruening's (2013) recent approach to *by*-phrases and constitutes a particular implementation of his treatment of *by*-phrases in English. This approach has the theoretical advantage that it treats *by*-phrases uniformly in clauses and nominalizations.

To begin with, consider active clauses, which are projected from the head v[ACT]. This functional head selects a VP (a verbalized verb with zero or more internal arguments) and obligatorily projects a specifier that hosts a nominal phrase. The projection of such a specifier can be implemented as the result of syntactic selection as well. For instance, suppose that the selectional requirements of a syntactic object are encoded via one or more features contained within the label of that syntactic object (cf. Adger 2003). Such features are satis-

fied by the merger of the syntactic object with the kind of object(s) required by the features. In this case v[ACT] is endowed with the ordered set of selectional features [S:VP,S:DP] (using notation from Bruening 2013), which means that it must first merge with VP. Once this merger takes place, the [S:VP] selectional feature of v is checked. When v projects, its label now contains only the [S:DP] selectional feature, which still needs to be satisfied. This feature is satisfied by the merger of a DP as the specifier of v. Thus, the presence of a nominal specifier of v[ACT] can be viewed as a lexical property of this head; i.e. v[ACT] is a transitive head. On the other hand, I assume, following Bruening 2013, that the meaning of v[ACT] is such that it takes the function denoted by its VP complement and adds an external argument to it via the Initiator relation.[41] The relevant syntactic and semantic lexical properties of v[ACT] can be given as follows:

(97) *Actives*

a. v[ACT] contains [S:VP,S:DP] (i.e. it requires a nominal specifier)

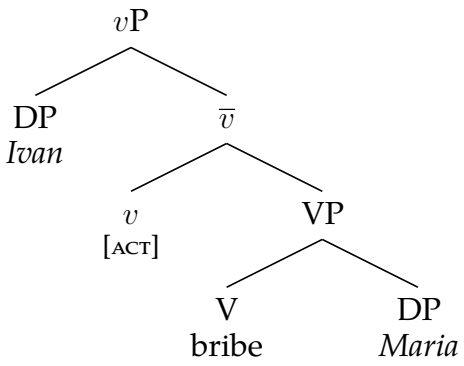
b. $[\![v\text{[ACT]}]\!] = \lambda f.\lambda x.\lambda e.f(e)\&\text{Initiator}(e,x)$

Given these lexical specifications of v[ACT], the derivation of the active clause in (98a) proceeds as follows. The syntactic selectional requirements of v are satisfied by merging it with a VP first and then with a DP. The DP introduced syntactically in its specifier is semantically interpreted as the external argument.[42]

[41] This is a slight departure from Kratzer (1996), who uses *Event Identification*. As far as I can tell, the two choices are interchangeable as far as the implementation here is concerned. I use *Initiator* as the cover term for all external argument roles (cf. Bruening 2013, Ramchand 2008).

[42] In these examples, I abstract away from the syntactic presence of the verbalizing affixes in Bulgarian and represent the verbal projection that contains the verbalized root and its internal

(98) a. *Ivan podkupi Marija*
Ivan bribed Maria
'Ivan bribed Maria'

b. 

c. i. $[\![\text{bribe}]\!] = \lambda x.\lambda e.\text{bribing}(e,x)$

ii. $[\![\text{VP}]\!] = \lambda e.\text{bribing}(e,\text{Maria})$

iii. $[\![\overline{v}]\!] = \lambda x.\lambda e.\text{bribing}(e,\text{Maria})\&\text{Initiator}(e,x)$

iv. $[\![v\text{P}]\!] = \lambda e.\text{bribing}(e,\text{Maria})\&\text{Initiator}(e,\text{Ivan})$

In contrast, passives contain the verbal functional head v[PASS], which was identified in §3.2.6 as the voice morpheme *-n*. I assume that, like its active counterpart, the meaning of v[PASS] is such that it is composed with the function denoted by its VP sister and semantically adds an external argument to it. Yet, v[PASS] is a strictly intransitive head in the syntax and does not project a nominal specifier, as encoded in (99a). This lexical specification of v[PASS] basically gives rise to an *implicit* (external) argument in the sense of a "(syntactically) unprojected theta role" (Landau 2010). Evidence that the implicit external arguments

arguments as VP.

of passives, as opposed to those of nominalizations, are not syntactically represented comes from their inability to be controlled or bound (Williams 1987, Partee 1989).[43] Such an approach also captures the intuition that passive morphology, in a sense, represents the external argument itself (e.g. Roeper 1987, Baker, Johnson & Roberts 1989).

(99) *Passives*

a. v[PASS] contains [S:VP] (i.e. it disallows nominal specifiers)

b. $[\![v\text{[PASS]}]\!] = \lambda f.\lambda x.\lambda e.f(e)$&Initiator($e$,$x$)

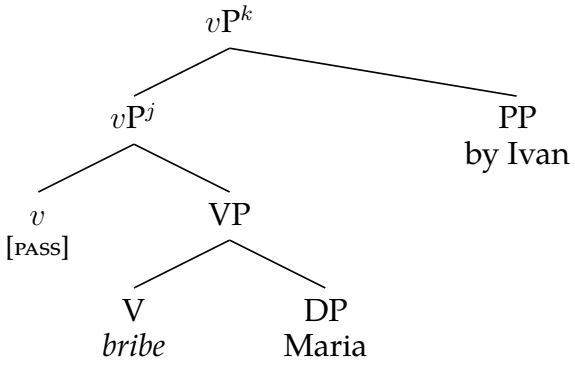
Since merging a nominal phrase as the specifier of v[PASS] is prohibited by the syntactic selectional requirements of v[PASS], the only way, provided by the lexical resources of the language, to satisfy the semantic need for an external argument is to introduce it as an *ot*-phrase. The *ot*-phrase syntactically adjoins to the passive vP. As shown below, the passive vP denotes a function with an open individual argument, which is semantically saturated as the result of composing it with the *ot*-phrase:[44]

(100) a. *Marija beše podkupena ot Ivan*
Maria was bribed by Ivan
'Maria was bribed by Ivan'

[43] However, implicit external arguments of passives do appear to be able to control into rationale clauses; see Bhatt & Pancheva 2006, Section 2.1, for discussion.

[44] The superscripts on different levels in the projection of v serve a purely expository purpose and are not part of the actual representation.

b.



c. i. $[\![\text{bribe}]\!] = \lambda x.\lambda e.\text{bribing}(e,x)$

ii. $[\![\text{VP}]\!] = \lambda e.\text{bribing}(e,\text{Maria})$

iii. $[\![v\text{P}^j]\!] = \lambda x.\lambda e.\text{bribing}(e,\text{Maria})\&\text{Initiator(e,}x)$

iv. $[\![v\text{P}^k]\!] = \lambda e.\text{bribing}(e,\text{Maria})\&\text{Initiator}(e,\text{Ivan})$

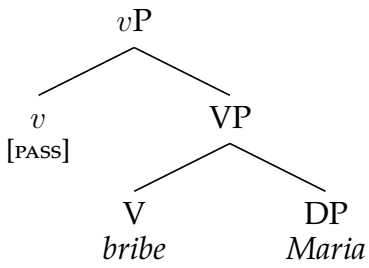
The optionality of *ot*-phrases, however, indicates that there is an additional way for the function denoted by vP[PASS] to be saturated. I assume that if the external argument of vP[PASS] is not saturated (by an *ot*-phrase), it is the passive morpheme itself that saturates it by existentially binding it (Bruening 2013). That the external argument of a short passive is existentially quantified over has been argued by Bach (1980), Keenan (1980, 1985), Williams (1987), among many others. Thus I assume the following additional denotation for v[PASS], which amounts to stating that the passive morpheme requires all the verbal arguments to be saturated even in the absence of a syntactically realized external argument:

(101) $[\![v[\text{PASS}]]\!] = \lambda f.\lambda x.\lambda e.\exists x : f(e)\&\text{Initiator}(e,x)$ (cf. (99b))

In the counterpart to (100a) that does not contain an *ot*-phrase, the denotation of v[PASS] still takes the function denoted by its sister VP and semantically adds an

external argument to it via the Initiator relation. In this case, however, v[PASS] also existentially quantifies over the open position of the Initiator relation—see (102). No nominal specifier is projected in accordance with the lexical specifications of v[PASS], and therefore, both its syntactic and semantic requirements are met:[45]

(102) a.



b. i. $[\![\text{bribe}]\!] = \lambda x.\lambda e.\text{bribing}(e,x)$

ii. $[\![\text{VP}]\!] = \lambda e.\text{bribing}(e,\text{Maria})$

iii. $[\![v\text{P}]\!] = \lambda e.\exists x$:bribing$(e,$Maria$)$&Initiator(e,x)

Finally, the -N nominalizer is like v in that it can add an external argument semantically. However, its syntactic selectional requirements differ from those of the verbal functional heads discussed so far. As encoded in its lexical specification below, n projects a nominal specifier optionally.[46] This approach attributes the same meaning to this particular kind of n as it does to v[ACT] and v[PASS] in (97b) and (99b). Furthermore, since n allows a nominal specifier but

[45]The adjunction of an *ot*-phrase is semantically incompatible with v[PASS] that has the denotation in (101), since it would not be able to receive an interpretation because the function denoted by vP has already been saturated. Likewise, the absence of an *ot*-phrase is incompatible with the denotation of v[PASS] in (99b).

[46]When the projection of a specifier is seen as a matter of syntactic selection, the parallel with optional selection of internal arguments becomes even clearer.

does not require one, it behaves syntactically like v[ACT] when it does project a nominal specifier, while it behaves syntactically like v[PASS] when it does not. A notable syntactic difference between the two kinds of morpheme is that while n is embedded in nominal contexts, v is embedded in verbal contexts.

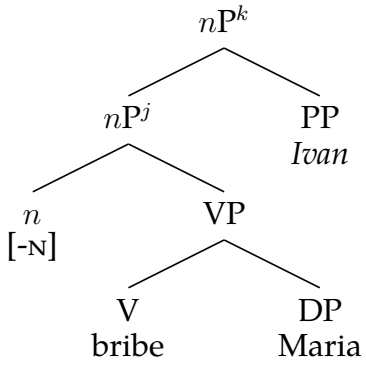
(103) *Nominalizations*

a. n[-N] contains [S:VP(,S:DP)] (i.e. it takes a specifier optionally)

b. $[\![n\text{[-N]}]\!] = \lambda f.\lambda x.\lambda e.f(e)\&\text{Initiator}(e,x)$

If n does not project a nominal specifier, the adjunction of an *ot*-phrase satisfies the semantic requirement imposed by n with respect to the presence of an external argument. This is accomplished the same way as in verbal passives (see above):

(104) a.



b. i. $[\![\text{bribe}]\!] = \lambda x.\lambda e.\text{bribing}(e,x)$

ii. $[\![\text{VP}]\!] = \lambda e.\text{bribing}(e,\text{Maria})$

iii. $[\![n\text{P}^j]\!] = \lambda x.\lambda e.\text{bribing}(e,\text{Maria})\&\text{Initiator}(e,x)$

iv. $[\![n\text{P}^k]\!] = \lambda e.\text{bribing}(e,\text{Maria})\&\text{Initiator}(e,\text{Ivan})$

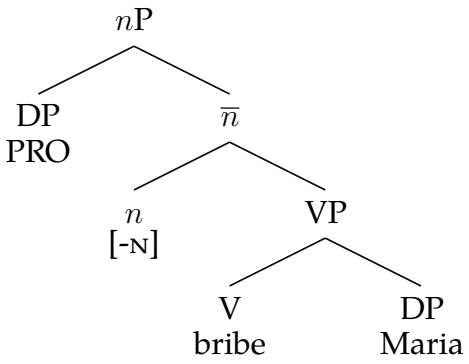
Unlike v[PASS], the nominalizer n which does not project a nominal specifier does not existentially quantify over the external argument. Instead, however, n has another meaning, in addition to (103b), such that it does not semantically introduce the Initiator relation at all—see (105). This alternative semantically vacuous flavor of n accounts for the existence of -N nominalizations which lack an external argument altogether—i.e. those that contain neither *ot*-phrases nor PRO. We encountered such -N nominalizations in §3.3.1.1 (see fn. 33), where it was demonstrated that direct objects can be clitic doubled. The availability of clitic doubling in these -N nominalizations indicates that nothing impedes the syntactic movement of the direct object to Spec,DP, which is a required step in the derivation of clitic doubling. In other words, these -N nominalizations do not contain an external argument in Spec,nP, since if they did, this external argument would block the movement of the direct object. The potential absence of *ot*-phrases in such -N nominalizations further indicates that the external argument is not required semantically either.

(105) $[\![n\text{[-N]}]\!] = \lambda f.\lambda e.f(e)$ (cf. (103b))

Consider the other possibility now, that n does project a nominal specifier. Data from binding and control suggest that the external argument in the specifier of n, when projected (i.e. in the absence of an *ot*-phrase), is represented syntactically (see §3.2.5). As in finite clauses, the external argument can be expressed as an overt DP, modulo differences in morphological case marking—this option is discussed in detail next, in §3.3.2.2. In contrast to finite clauses,

however, the external argument in Spec,nP can be represented as a phonologically null PRO$_{arb}$, as shown below (see §3.2.5 for evidence against treating it as a null *pro*).

(106) a. *podkupvaneto na senatora*
the.bribing of the.senator
'the bribing of the senator'

b. 

c. i. $[\![\text{bribe}]\!] = \lambda x.\lambda e.\text{bribing}(e,x)$

ii. $[\![\text{VP}]\!] = \lambda e.\text{bribing}(e,\text{Maria})$

iii. $[\![\overline{n}]\!] = \lambda x.\lambda e.\text{bribing}(e,\text{Maria})\&\text{Initiator}(e,x)$

iv. $[\![n\text{P}]\!] = \lambda e.\text{bribing}(e,\text{Maria})\&\text{Initiator}(e,\text{PRO})$

Returning to the initial concern, the distribution of *ot*-phrases within -N nominalizations, I have analyzed them as one of the modes of expression of external arguments. The analysis led to the postulation of the following functional heads:

(107) v (active)

a. [S:VP,S:DP]

b. $\lambda f.\lambda x.\lambda e.f(e)$&Initiator$(e,x)$

(108) v (passive; requires an *-ot*-phrase)

a. [S:VP]

b. $\lambda f.\lambda x.\lambda e.f(e)$&Initiator$(e,x)$

(109) v (passive; disallows an *-ot*-phrase)

a. [S:VP]

b. $\lambda f.\lambda x.\lambda e.\exists x : f(e)$&Initiator$(e,x)$

(110) n

a. [S:VP(,S:DP)]

b. $\lambda f.\lambda x.\lambda e.f(e)$&Initiator$(e,x)$

(111) n

a. [S:VP]

b. $\lambda f.\lambda x.\lambda e.f(e)$&Initiator$(e,x)$

(112) n

a. [S:VP]

b. $\lambda f.\lambda e.f(e)$

What verbal passives and nominalizations have in common on this view is the syntactic suppression of a dedicated specifier position, which would otherwise host the external argument. According to the present approach, the absence of such a specifier position is equivalent to the non-projection of a specifier due

to the syntactic selectional requirements of v in passives and n in nominalizations. Finally, the optionality of *ot*-phrases follows either from the ability of n to project a phonologically null specifier (PRO) or from its failure to semantically introduce the Initiator relation. Neither of these options are available in clauses.[47]

3.3.2.2 *Na*-phrases and clitics

It has been established that the nominalizing n morpheme may either project a nominal specifier or not. If it does not, the semantic requirement that there be an external argument is satisfied by syntactically supplying the external argument in an *ot*-phrase adjunct (§3.3.2.1). If, on the other hand, n does project a nominal specifier, one possibility discussed in the previous section is for this specifier to be occupied by a phonologically null PRO$_{arb}$. The other possibility, which is the focus of this section, is for the specifier to be an overt DP. Morphophonologically, this possibility is instantiated as the expression of the external argument by a *na*-phrase or a clitic, like a direct object. For instance, the external arguments in the following examples *Ivan* 'Ivan', *OON* 'the UN', and *zemedelcite* 'the farmers' are each introduced as part of a *na*-phrase that immediately follows the head noun and precedes the direct object *na*-phrase.[48]

[47] Note that the optionality of *ot*-phrases in verbal passives follows from the ability of the passive morpheme to existentially quantify over the external argument. Crucially, this is an empirically motivated difference between the passive morpheme and the nominalizing morpheme under discussion.

[48] In these examples, the direct object cannot be expressed by a clitic. Since the cliticized (or clitic doubled) argument is invariably the highest one in terms of c-command, only the external

(113) a. *čupeneto* [*na Ivan*] *na čaši*
the.breaking of Ivan of glasses
'Ivan's breaking of glasses' (Markova 2010, p. 109)

b. *vătrešnite protivorečija v obštnostta sa pričinata za*
the.internal differences in the.community are the.reason for
nepodpisvaneto [*na zemedelcite*] *na tărgovskoto sporazumenie*
not.signing of the.farmers of the.trade treaty
'the internal differences in the community are the reason that the trade treaty has not been signed by the farmers'

c. *razpredeljaneto* [*na OON*] *na hrana na nuždaeštite se beše*
the.dispensation of UN of food to those.in.need REFL was
otloženo otnovo
delayed again
'the EU's dispensation of food to those in need was delayed again'

Alternatively, the external argument in such (di)transitive -N nominalizations can be realized via a clitic. In all of the following examples the clitic can be associated with a full nominal phrase, introduced by a *na*-phrase—i.e. the external argument can be clitic doubled:[49]

(114) a. *mălčalivoto* [*mu*] *uništožavane na CSKA*
the.quiet 3.SG.M.DAT destruction of CSKA

argument is able to undergo cliticization in -N nominalizations that contain internal arguments. See below for detailed discussion of this restriction.

[49]There is some disagreement in the literature with respect to the judgments associated with such examples. Dimitrova-Vulchanova & Giusti (1999), p. 173, report that a clitic cannot express the agent in the following example even though there are attested corpus examples of this kind (see the main text) and my consultants judge this particular example as grammatical. It should be noted, however, that they do judge examples that contain a (subject-oriented) adjective, as (114a) for instance, as comparatively better.

(i) * *razrušavaneto* [*mu*] *na grada*
the.destruction 3.SG.M.DAT of the.city
'his destruction of the city' (Dimitrova-Vulchanova & Giusti 1999, p. 173)

'his quiet destruction of CSKA' (online)

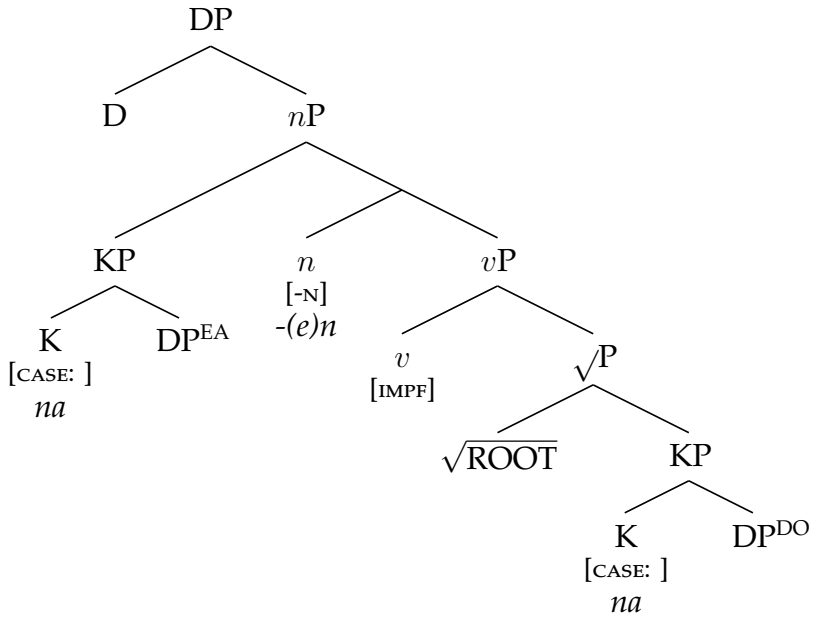
b. *prepluvaneto* [*mu*] *na kanala*
the.swimming 3.SG.M.DAT of the.canal
'the swimming of the canal' (Franks & King 2000)

c. *vătrešnite protivorečija sred zemedelcite sa pričinata za*
the.internal differences among the.farmers are the.reason for
nepodpisvaneto [*im*] *na tărgovskoto sporazumenie*
not.signing 3.PL.DAT of the.trade treaty
'the internal differences in the community are the reason that the trade treaty has not been signed by the farmers.'

To account for the expression of the external argument as a *na*-phrase or a clitic, I assume, following the discussion in the previous section, that it is introduced in the structure as a specifier of the nominalizing n morpheme, as in (115).[50] Further, since the external argument is not assigned lexical/oblique case upon first `Merge`, in the absence of any dependent case within -N nominalizations (i.e. accusative), it receives unmarked case. As a result, the external argument and the direct object are both introduced by the element *na*, which is the morphophonological expression of unmarked case within nominals (§3.3.1.1):

[50] In the following tree diagrams I abstract away from the potential presence of an indirect object but the structures can be trivially extended to represent distransitives.

(115)



It is notable that in Bulgarian the external argument and the direct object at least have the option of receiving identical morphological case marking. In other Slavic and Balkan languages and, at least some Romance languages, they often must be marked distinctly. For example, in Russian process nominalizations, the direct object bears genitive case while the external argument bears instrumental case (Schoorlemmer 1995). This has been reported to be true in at least one other Slavic language, Polish (Rozwadowska 1995). A Balkan language that exhibits this property is Modern Greek (Alexiadou 2001, p. 39). On Romance see Cinque 1980, Zubizarreta 1987, Bottari 1992, and Alexiadou 2001 (p. 83). The observation that genitive case marking is reserved for only one of the arguments of a process nominalization in these languages has been taken as evidence that genitive is a structural case in nominals. In these languages, the argument goes, genitive is assigned to the direct object of a nominalization in some structural

configuration and the only remaining option for case marking the external argument is via some inherent case (e.g. instrumental). In Bulgarian, however, if the element *na* did not signal unmarked case, we would have to posit that at least one of these two instances of *na* is actually dependent case or lexical/oblique case (in addition to the *na* that expresses the lexical/oblique dative case of indirect objects). Such a deviation from the simplest explanation of the observed identical morphological marking would, however, requires independent empirical motivation.

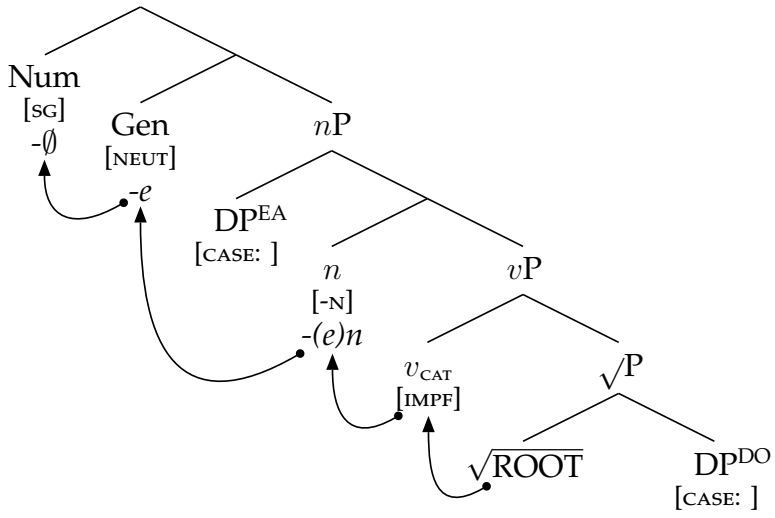
The underlying syntax illustrated in (115) feeds the morphophonological expression of case according to the principles just outlined. It also must give rise to the observed relative order between the external argument and the direct object. The external argument precedes the direct object (and indirect object in ditransitive nominalizations), indicating that the underlying c-command relation between the arguments transparently translates into precedence on the surface. Compare (113) above with the following ungrammatical orders, in which the external argument (*trenjora* 'the coach' or *pluveca* 'the swimmer') follows the direct object:

(116) a. * *mălčalivoto uništožavane na CSKA* [*na trenjora*]
the.quiet destruction of CSKA of the.coach
'the coach's quiet destruction of CSKA'

b. * *prepluvaneto na kanala* [*na pluveca*]
the.swimming of the.swimmer of the.canal
'the swimmer's swimming of the canal'

This surface order is achieved by roll-up head movement of the root up to the heads in the extended nominal projection that encode number and gender information, as shown in (117). The syntactic positions of Num and Gen correlate with the positions of their morphophonological exponents, as discussed in §3.2.1 (see, in particular, (31) and the surrounding text). The observed surface order cannot be simply a matter of linearizing the nominal specifier of n to the right, since that would place it after the direct object, contrary to fact.

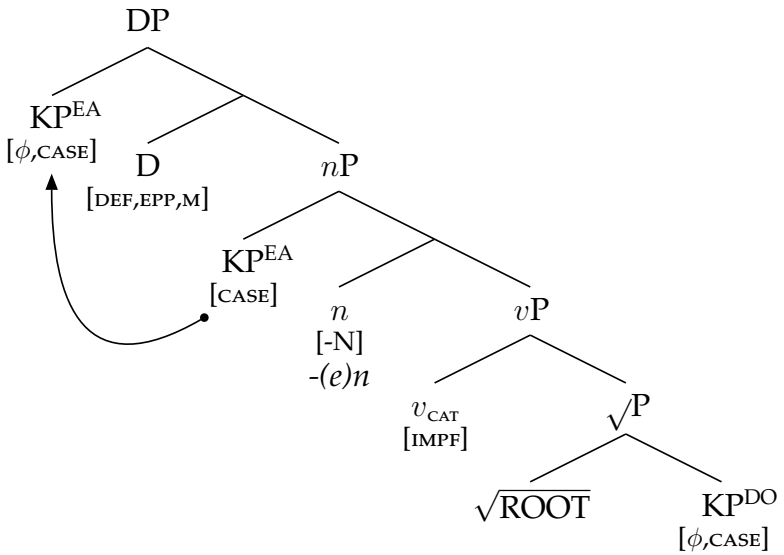
(117)



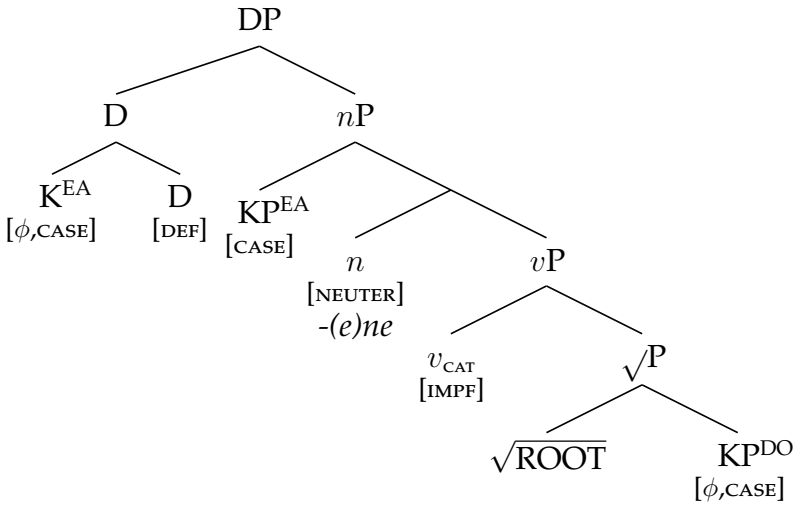
Finally, as demonstrated by (114), the external argument in a definite -N nominalization can be expressed by a clitic, which may or may not double an overt *na*-phrase. Even when the clitic appears without a corresponding *na*-phrase, I assume that it doubles a null pronoun in argument position. Here, as with clitic doubling of direct objects, I apply the analysis of clitic doubling developed in the context of objects of clauses in Chapter 2 (§2.4). As established on the basis of clitic doubling of direct objects, the functional head in

the extended nominal projection that is responsible for doubling is D. When an external argument occupies Spec,nP, the [EPP] feature on D[DEF] attracts it to Spec,DP. This syntactic movement is followed by the application of the `m-merger` operation (triggered by [M] on D), which reduces the external argument to its label (unmarked Case and ϕ-features) and adjoins it to D[DEF], as shown in (118). The analysis of case, outlined above, predicts correctly that the labels of external arguments and direct objects would not differ in their Case feature: both types of argument bear unmarked case and are realized by the same series of clitics. As in the case of direct objects, the application of `m-merger` also accounts for the observed adjacency between the suffixal definiteness marker and the external argument clitic.

(118) a. *Syntactic movement*



b. *Morphological merger*



According to the A-movement analysis of cliticization and clitic doubling, standard locality constraints on A-movement are expected to also constrain cliticization and clitic doubling. In the case at hand, one consequence of this analysis is that when the external argument is syntactically present, no other argument can be expressed as a clitic or clitic doubled. As alluded to above (fn. 48), this is, in fact, the case. In the following examples, the clitics *im* and *i* cannot be interpreted as the direct objects in the corresponding -N nominalizations, regardless of whether the full direct object *na*-phrase is present or not:

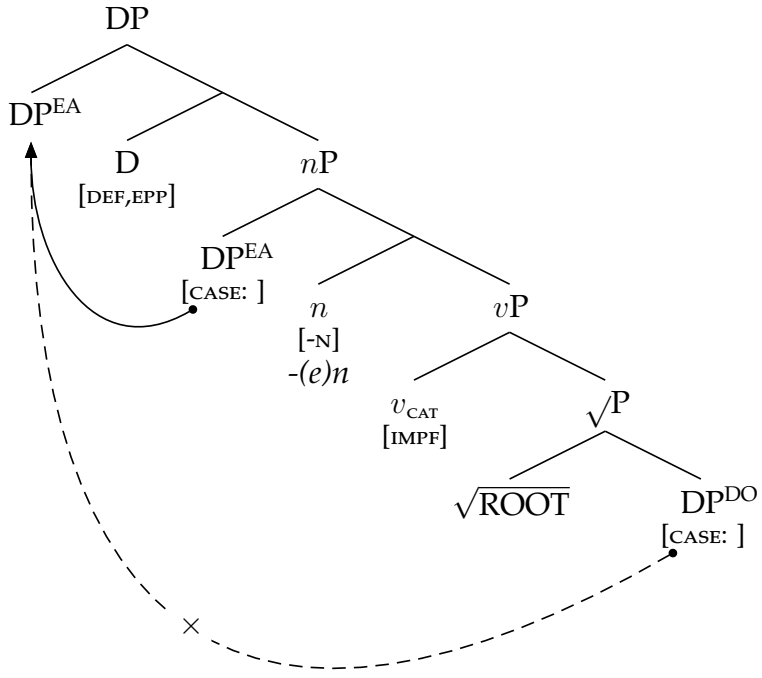
(119) a. * *čupeneto* ***im*** *na Ivan* (***na čašite***)
the.breaking 3.PL.DAT of Ivan of the.glasses
'Ivan's breaking of them (, the glasses)'

b. * *razpredeljaneto* ***i*** *na OON* (***na hranata***) *na nuždaeštite*
the.dispensation 3.SG.F.DAT of UN of the.food to those.in.need
se beše otloženo otnovo
REFL was delayed again

'the dispensation of it (the food) by the EU to those in need was delayed again'

The configuration associated with such examples is reminiscent of the one I adopted for ditransitive nominalizations, in which only the direct object can be expressed as a clitic or clitic doubled because it c-commands the indirect object. Here, it is the external argument that c-commands the direct object and, as a result, can enter into a relation with D, which is a prerequisite for cliticization:[51]

(120)



3.3.3 Intransitives

Like the external argument or direct object of a (di)transitive -N nominalization, the sole argument of an intransitive nominalization can be expressed by a *na*-

[51] An external argument that is expressed as an *ot*-phrase or is existentially quantified over (and unexpressed syntactically) would not block cliticization of the direct object.

phrase, as in (121), or a clitic, as in (122).[52]

(121) a. *čestoto pojavjavane* [*na Ivan*] *po vreme na predstavlenieto*
the.frequent appearance of Ivan during the.performance
'Ivan's frequent appearance during the performance'

b. *pričinata za incidentite e čestoto zaspivane* [*na vodačite*] *zad volana*
the.reason for the.accidents is the.frequent falling.asleep of the.drivers behind the.wheel
'the reason for the accidents is the drivers' frequent falling asleep behind the wheel'

(122) a. *potăvaneto* [*mu* [*v prodălženie na njakolko časa*
the.sinking 3.SG.M.DAT in duration of several hours
'its sinking for several hours' (e.g. of the ship)

b. *tova uveličava verojatnostta ot po-čestoto* [*im*] *padane.*
this increases the.probability of more-frequent 3.PL.DAT falling
'this increases the probability of their more frequent falling' (e.g. of the fogs)

While the nominalizations above are based on predicates that might be categorized as unaccusatives in other languages, the two modes of expression—*na*-phrases and clitics—are available within Bulgarian intransitive nominalizations more generally. In particular, the sole argument of what would usually be considered an unergative nominalization in languages that encode the distinction grammatically can also be expressed by both a *na*-phrase, as in (123), and a clitic, as in (124).

[52] Any other phrases within these nominalizations are not arguments but various kinds of adjuncts.

(123) a. *postojannoto smeene* [*na Ivan*] *na scenata*
the.constant laughing of Ivan on the.stage
'Ivan's constant laughing on the stage'

b. *često se čuvstvam samotna, s postojannoto rabotene* [*na măža mi*]
often REFL I.feel lonely with the.constant working of husband my
'I often feel lonely, with my husband's constant working'

(124) a. *postojannoto* [*im*] *govorene po vreme na filma*
the.constant 3.PL.DAT talking during the.movie
'their constant talking during the movie'

b. *zaradi čestoto* [*mu*] *izlizane ot zasedatelnata zala, rešenie ne beše vzeto*
due.to the.frequent 3.SG.M.DAT exiting from the.meeting hall decision not was made
'due to his frequent exiting from the meeting hall, no decision was made'

My analysis of intransitive -N nominalizations in Bulgarian is based on the idea that they form a unified morphosyntactic class in this language; i.e. the unergative-unaccusative distinction, as least within Bulgarian nominalizations, is not encoded grammatically. In addition to the uniform behavior demonstrated so far, which already suggests such a conclusion, there is abundant further evidence (see Appendix C for details): none of the diagnostics available in Bulgarian are able to distinguish between unergative and unaccusative nominalizations, and the evidence for such a distinction in the clause is rather

weak.[53]

But if unergative and unaccusative nominalizations are structurally identical, how is their sole argument introduced syntactically: is it merged directly with the root, as an internal argument of a transitive, or is it merged as a specifier of a functional head, as the external argument of a transitive? There are a number of reasons to think that only the option of merger in specifier position is instantiated in Bulgarian and that all intransitive nominalizations in the language actually have an external argument.

First, as mentioned in §3.3.2, the external argument of an -N nominalization can be expressed by a denominal adjective. This type of adjective includes what are traditionally called pronominal possessors: nominal modifiers with adjectival inflection and distribution, which express the ϕ-features of a possessor. Chapter 4 (in particular, §4.1) establishes an important property of pronominal possessors: in -N nominalizations they can express external θ-roles but not internal ones.[54] What is significant for present purposes is that the sole argument of an intransitive nominalization can be expressed by a pronominal possessor, as the following pair of examples shows (consult Appendix C.1 for additional data). Therefore, it must be structurally represented as an external argument.

[53]In fact, in clausal contexts the judgments are highly variable and uncertain, making it even harder to empirically ground any potential structural distinction between unergatives and unaccusatives. Fehrmann, Junghanns & Lenertová (2010) reach the same conclusion with respect to the empirical landscape in Bulgarian and are led to a uniform analytical treatment of intransitives (in clauses) in Bulgarian and languages that behave like it in this respect.

[54]This property of pronominal possessors is used in appendix C.1 in an attempt to distinguish between unergative and unaccusative nominalizations. It yields a null result on the basis of which the null hypothesis that there is no difference between the two classes of nomninalizations cannot be rejected.

(125) a. *negovoto postojanno pojavjavane po vreme na predstavlenieto*
the.his constant appearance during the.performance
'his constant appearance during the performance'

b. *negovoto postojanno skačane po scenata*
the.his the.constant jumping on the.stage
'his constant jumping on the stage'

Second, (126) demonstrates that the argument of an intransitive nominalization can be phonologically null. Leaving aside the orthogonal question of how the phonologically null argument is represented underlyingly (see §3.2.5 and §3.3.2 for relevant discussion), its compatibility with intransitive nominalizations is sufficient to distinguish it from internal arguments, which must be phonologically overt, as established in §3.3.1.1.[55]

(126) a. *kak se spravjate s neprekăsnatoto boleduvane*
how REFL you.cope with the.constant being.sick
'how do you cope with constantly being sick'

b. *čestoto tičane e zdravoslovno*
the.frequent running is healthy
'frequent running is good for the health'

Third, the argument of an intransitive -N nominalization can control into a purpose clause, as the examples below show. It was demonstrated in §3.1 that this is a property characteristic only of external arguments of (di)transitive nominalizations, not any of their internal arguments. Therefore the intransitive

[55]The optional overt expression of the sole argument in an intransitive -N nominalizations is used as a diagnostic to distinguish between unergatives and unaccusatives in appendix C.2. Like all the other tests conducted to address this question, it does not provide sufficient empirical ground for recognizing such a distinction in Bulgarian -N nominalizations.

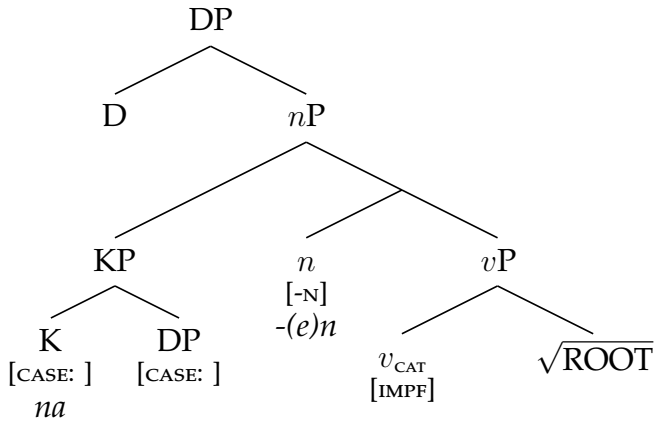
argument must be represented structurally as an external argument.

(127) a. *postojannoto pojavjavane na Ivan po vreme na predstavlenieto za da*
the.constant appearance of Ivan during the.performance for to
privleče vnimanie
attract attention
'Ivan's constant appearance during the performance in order to attract attention'

b. *postojannoto skačane na Ivan po scenata za da privleče vnimanie*
the.constant jumping of Ivan on the.stage for to attract attention
'Ivan's constant jumping on the stage in order to attract attention'

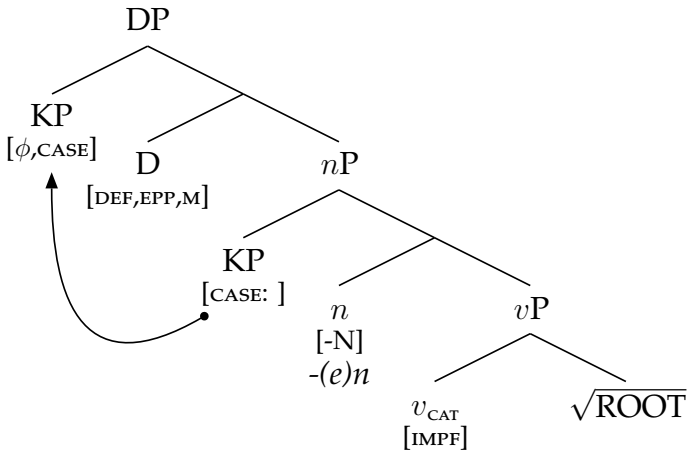
Based on this reasoning, I maintain that the sole argument of an intranstive -N nominalization is introduced as a nominal specifier of the nominalizing n morpheme (128), like the external argument of a transitive nominalization (§3.3.2). The argument DP is not assigned lexical/oblique case upon first Merge or dependent case (i.e. accusative), since none is available within -N nominalizations. As a result, it receives unmarked case, which is expressed morphophonologically by the element *na*. In this respect the intransitive argument is no different from the external argument of a transitive (cf. §3.2.5 and (115), in particular). As in transitive nominalizations, the surface order, in which the noun precedes the *na*-phrase argument, is arrived at via roll-up head raising of the noun to the relevant inflectional heads in the extended nominal projection:

(128)

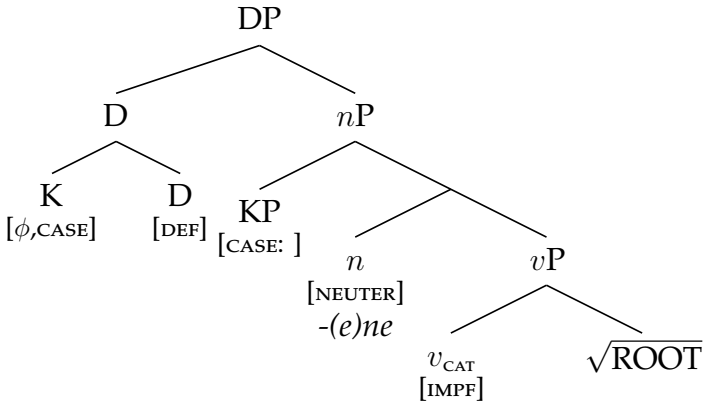


Given the theory of cliticization and clitic doubling developed so far, we expect the sole argument of an intransitive -N nominalization to be expressible as a clitic and to be able to be clitic doubled. A definite D[DEF] endowed with an [EPP] feature attracts the nominal phrase closest in terms of c-command. In an intransitive -N nominalization this happens to be its single argument, which undergoes A-movement to Spec,DP as a result. The application of `m-merger` in this derived position reduces the external argument to its label (unmarked Case- and ϕ-features) and adjoins it to D[DEF]. The facts in (122) and (124) support this analysis, which is schematized in (129).

(129) a. *Syntactic movement*



b. *Morphological merger*



There is an additional mode of expression that the discussion has so far neglected: *ot*-phrases. Like the sole argument of an intransitive clause, the argument of an intransitive -N nominalization cannot be expressed by an *ot*-phrase:

(130) a. * *pričinata za incidentite e častoto zaspivane* [*ot*
the.reason for the.accidents is the.frequent falling.asleep by
vodačite] *zad volana*
the.drivers behind the.wheel
'the reason for the accidents is the drivers' frequent falling asleep

behind the wheel.'

b. * *često se čuvstvam samotna, s postojannoto rabotene* [*ot măža*
often REFL I.feel lonely with the.constant working by husband
mi]
my
'I often feel lonely, with my husband's constant working'

Therefore, the mechanisms available for the expression of the sole argument of an intransitive nominalization include *na*-phrases, clitics, and denominal adjectives (discussed in Appendix C.1 and Chapter 4 and only briefly above) but not *ot*-phrases, which are reserved for the external argument of transitive nominalizations. One possible explanation for why intransitive nominalizations might be incompatible with *ot*-phrases is that they are, in fact, result nominals and not complex event nominals. However, this cannot be maintained, given the evidence based on Grimshaw's (1990) diagnostics discussed in §3.1. First, all of the nominalizations above are modified either by adjectives like *čest* 'frequent' and *postojanen* 'constant' or an aspectual modifier, which is evidence that they are complex event nominals. In addition, they allow control into a purpose clause (127) and agent-oriented adjectives (131), which are incompatible with result interpretations:

(131) a. *čestoto umišleno pojavjavane na Ivan po vreme na*
the.frequent deliberate appearance of Ivan during
predstavlenieto
the.performance
'Ivan's frequent deliberate appearance during the performance'

b. *postojannoto săznatelno rabotene na măža mi*
the.constant conscientious working of husband my

'my husband's constant conscientious working'

But if intransitive -N nominalizations are complex event nominals and not result or simple event nominals, we must look for a different explanation of their incompatibility with *ot*-phrases. We would have a simple explanation of this restriction if the sole argument of an intransitive -N nominalization were always an internal argument—naturally, as an internal argument it would not be expressible by an *ot*-phrase, since PP adjuncts are reserved for the expression of external arguments while internal ones are directly selected within $\sqrt{}$P. However, such an explanation is not available because of the robust evidence presented above that the argument of an intransitive -N nominalization cannot be an internal argument. Yet, another simple explanation is viable: the mechanism responsible for the complementarity between *ot*-phrases and intransitives in clauses is at play within nominalizations as well. Thus, nothing additional needs to be postulated in order to rule out the presence of *ot*-phrases within nominalizations.

Consider how this mechanism can be elaborated to account for the observed patterns. Given the account of *ot*-phrases in the context of verbal passives and -N nominalizations developed in §3.3.2, this unavailability indicates that the only syntactic mechanism for the expression of the semantically introduced external argument is the projection of a nominal specifier of v or n, occupied by an overt DP or by PRO. Recall that in transitive nominalizations n may either project such a specifier or not; in the latter case an adjunct *ot*-phrase must in-

troduce the argument. Therefore, intransitive nominalizations must require n to project a nominal specifier—this would prevent an *ot*-phrase from ever introducing another nominal.

How is it to be ensured that intransitive nominalizations combine exclusively with a specifier-projecting nominalizing n morpheme? The correlation between the class of roots that form the basis of intransitive nominalizations and the nominalizing n morpheme which projects a nominal specifier, I propose, is captured in terms of selection. In principle, there are at least two ways to implement such dependencies: via selection by a head of its sister and via licensing of a constituent in the context of its sister. While there might be empirical differences between these two approaches, since the issue is orthogonal to my present concern here, I leave it open.This kind of selection is also required to account for the correlation between classes of verbs (transitive, unaccusative, unergative) and the v morphemes they are compatible with: e.g. an unaccusative v cannot combine with an unergative $\sqrt{}$P.

In allowing unergative nominalizations, Bulgarian patterns with other Slavic languages. For instance, Alexiadou (2001), p. 86-7, and Schoorlemmer (1995, 1998) claim that Russian has unergative event nominals:

(132) *Ee polzanie po polu v tečenie celogo včera zabespokoilo menja*
her crawling over floor in the.course of.whole evening worried me
'Her crawling over the floor in the course of the whole evening worried me.'

This finding has a number of consequences for theories of nominalization more generally. As far as intransitive nominalizations are possible crosslinguistically, it has been claimed on the basis of various languages that they can be formed only out of unaccusative predicates (Picallo 1991, §6.1; Bottari 1992; Alexiadou & Stavrou 1998; Alexiadou 2001, p. 78, 82-3). Such findings have led to the treatment of nominalizations as characterized by unaccusative syntax—i.e. lacking an external argument. This captures, on the one hand, the similarity between transitive nominalizations and verbal passives in terms of the suppression of external arguments and the availability of *by*-phrases, etc. as well as the inability to nominalize unergatives. This type of analysis is well suited to explain the "ergative case marking" pattern observed in nominalizations across many languages: the direct object and the sole argument of an intransitive are marked identically (e.g. *of* in English) and distinctly from the transitive subject (e.g. *by* in English).

The Bulgarian findings then broaden the typology of nominalizations. First, as we saw in §3.3.2.2, they tolerate the identical expression of the external argument and the direct object as *na*-phrases (i.e. unmarked case). Thus, the ergative case marking pattern characteristic of English and many other languages is not the only possibility in Bulgarian (though it is possible). The availability of unmarked case for the external argument in transitive -N nominalizations was attributed in the previous section to the potential projection of a nominal specifier by the nominalizing n morpheme. Therefore, the difference between Bulgarian and languages that can only express the external arguments as an adjunct PP

can be captured by parametrizing the ability of n to project a nominal specifier.[56] Second, Bulgarian nominalizations can be formed out of unergatives, as demonstrated in this section. This was also attributed to the ability of the Bulgarian nominalizing n morpheme to project a nominal specifier, resulting in the unification of the two differences between Bulgarian (and, perhaps, Slavic more generally) and Romance and Modern Greek.[57]

3.4 Conclusion

The investigation of Buglarian -N nominalizations, which are complex event nominals in the sense of Grimshaw (1990), revealed a number of their intriguing morphosyntacic properties. First, the overlap between -N nominalizations and verbal projections (clauses) in Bulgarian was found to include only the root and the verbalizing v_{CAT} heads that mark lexical aspect. These verbalizing heads are demonstrably distinct from the higher functional heads responsible for (accusative) case assignment, the licensing of adverbial modification, and the introduction of the external arguments. The verbalizing v_{CAT} heads combine with the root to form the "lexical" vP projection which introduces the internal arguments of -N nominalizations. In particular, the direct object is merged di-

[56] Notice that Bulgarian, in fact, instantiates both options.

[57] Recall that there are robust arguments, presented earlier in this section, that the sole argument of an intransitive -N nominalization in Bulgarian is introduced by a functional head—i.e. it is an external argument. Therefore, these arguments are expected not to go through for unaccusative nominalizations in those languages in which nominalization are uniformly characterized by unaccusative/passive syntax (e.g. Romance, Greek).

rectly with the root while the indirect object in ditransitive -N nominalizations is introduced in a dative PP and is c-commanded by the direct object. The "lexical" vP projection, which introduces the internal argument is the only structural fragment shared by -N nominalizations and clauses. The external argument of nominalizations, on the other hand, is introduced outside of this projection, in the specifier of the nominalizing n head. Finally, intransitive -N nominalizations form a unified morphosyntactic class in Bulgarian; i.e. at least within -N nominalizations the unergative-unaccusative distinction is not encoded grammatically. All intransitives in the language can form -N nominalizations and their sole argument patterns with the external argument of transitive -N nominalizations. Since unergatives usually resist nominalization crosslinguistically, Bulgarian presents an analytical challenge to theories based on this typological observation, which view nominalizations as unaccusative (or passive) in nature.

The arguments of -N nominalizations can be morphophonologically expressed in a number of ways. The element *na* that introduces indirect objects is the morphophonological exponent of lexical/oblique dative case, assigned to the object by the phonologically null preposition that also idiosyncratically θ-marks it. On the other hand, the element *na* that can introduce all other arguments in an -N nominalization (external, direct object) is the morphophonological exponent of unmarked case within the nominal domain. Bulgarian differs from other Balkan and Slavic languages with richer case systems and from, at least, some Romance languages in that the external argument and the direct object in an -N nominalization can receive identical morphological case marking.

The external argument can also be expressed as an *of*-phrase (*by*-phrase)—an adjunct in the extended nominal projection—when the nominalizer n does not project the external argument as a specifier. Thus, it was established that verbal passives and nominalizations have in common the syntactic suppression of a specifier position that otherwise hosts the external argument. External arguments can, in addition, be expressed as denominal adjectives, which are the focus of Chapter 4.

Finally, DP-internal arguments more generally can be realized as clitics or clitic doubled. The theory of cliticization and clitic doubling developed in the context of clausal objects in Chapter 2 generalizes straightforwardly to the distribution of clitics within -N nominalizations. The locus of cliticization and clitic doubling in nominalizations is D[DEF]. If endowed with an [EPP] feature, it attracts the structurally closest argument to its specifier, which can then form a complex head with D as the result of `m-merger`. This analysis explains why a DP-internal clitic may only appear in a definite DP and why the definiteness marker (the morphophonological expression of D[DEF]) must be adjacent to the clitic on the surface. Since clitic doubling involves syntactic movement of a phrase to a specifier position, it was shown to be subject to the same locality constraints as syntactic movement of phrases more generally: e.g. only the structurally highest argument of a nominalization can be clitic doubled. The portability of the theory of clitic doubling based on `m-merger` across syntactic domains constitutes strong support for it. To demonstrate that `m-merger` is a morphophonological operation with more general consequences, I turn next to the investigation of

another phenomenon that can be understood in terms of `m-merger` and its interactions with syntax.

Chapter 4

Denominal adjectives

The theory of `m-merger` was developed in Chapter 2 on the basis of Bulgarian object clitics. As it becomes apparent in clitic doubling configurations, clitics behave syntactically like independent nominal phrases even though they are parts of morphophonological words. To reconcile this apparent paradox I treat clitics as nominal phrases in the syntax, which undergo A-movement to the specifier of a head in the extended verbal projection (v) and then are reduced to parts of words by `m-merger`. This treatment not only explains the dual behavior of clitics but also provides an insightful analysis of clitic doubling as the morphophonological reflex of syntactic movement. Then in Chapter 3 I demonstrate that this theory automatically accounts for the behavior of clitics within -N nominalizations, whose arguments can be expressed via cliticization and clitic doubling. I further trace the differences between cliticization in clauses and nominals to the nature of the functional head that is the locus of syntactic movement and

`m-merger` (v vs. D). The portability of the theory across syntactic domains constitutes further support for it.

The goal of this chapter is to show that the scope of the theory extends beyond cliticization and clitic doubling. The focus here is on another kind of sub-word element that is characterized by a significant degree of syntactic independence: the nominal component of a particular class of denominal adjective is syntactically active in ways expected of typical nominal phrases. However, these denominal adjectives exhibit a number of adjectival characteristics as well. The analysis developed in this chapter treats denominal adjectives as underlying nominal phrases that are converted into adjectives by `m-merger` in the course of the derivation, as part of the word formation process which combines a nominal phrase with adjectivizing derivational morphology. This approach explains the dual behavior of denominal adjectives with respect to syntax and morphophonology, and provides a unified treatment of the nominal component of denominal adjectives and verbal clitics. To the extent that the approach is successful it also constitutes evidence independent of cliticization and clitic doubling for `m-merger` as an operation of the mapping from syntax to morphophonology.

In addition, the discussion of denominal adjectives in this chapter concludes the survey of the morphosyntactic mechanisms available in Bulgarian for the expression of the external argument in -N nominalizations that was initiated in Chapter 3. In particular, the nominal component of a denominal adjective can be interpreted as the external argument of such a nominalization. The external

argument in -N nominalizations can then be expressed in a total of four ways: as a nominal phrase (*na*-phrase), a passive *ot*-phrase (*by*-phrase), a clitic, and (the nominal component of) a denominal adjective. In this chapter the treatment of denominal adjectives as underlying nominal phrases is used to explain their ability to be thematically related to an -N nominalization. Thus, this property of denominal adjectives is one of the major arguments for attributing to them the syntactic independence of nominal phrases. Among the others discussed in this chapter, are their anaphoric properties and interaction with A-movement.

4.1 Types of thematically related adjectives

Various types of nominalizations exist in Bulgarian; one of them, -N nominalizations, are complex event nominals, in the sense of Grimshaw (1990), and support their own argument structure. Internal arguments in -N nominalizations (both direct and indirect objects) are obligatorily expressed, as in clauses. External arguments may remain unpronounced but are generally allowed to appear in -N nominalizations as well. In fact, there are more morphosyntactic ways to express an external argument than there are to express any other kind of argument in a nominalization. Chapter 3 discusses three mechanisms for the introduction of external arguments into the syntactic structure of -N nominalizations: *ot*-phrases (the counterpart to English *by*-phrases), clitics, and (clitic

doubled) *na*-phrases.[1] Cliticization and *na*-phrases can be also utilized for the expression of other kinds of arguments, while *ot*-phrases are reserved for the expression of external arguments, as in verbal passives in clausal contexts. As already pointed out in Chapter 3, another way to express an external argument of an -N nominalization, which is unique to this kind of argument, is via a certain class of denominal adjective.

The denominal adjectives of interest can be divided into two classes. One of them is the class of *nationality adjectives*, which are morphologically based on place names:[2]

(1) a. *frenski* 'French'

b. *italianski* 'Italian'

c. *bălgarski* 'Bulgarian'

The second type of denominal adjective of interest is the class of prenominal possessors, which can be further subdivided into *pronominal possessors* in (2) and *non-pronominal possessors* in (3). The former can be uniquely identified by their ϕ-featural content, while the latter are formed on the basis of names and express more than just ϕ-features.[3]

[1] Another possibility is PRO_{arb}, which serves as the external argument when n projects a nominal specifier that contains no overt nominal phrase. For discussion of this option, see Chapter 3 (§3.2.5 and §3.3.2).

[2] This class of adjectives is known by various names in the literature: group (Grimshaw 1990, referential (Giorgi & Longobardi 1991), thematic (Cinque 1994), ethnic (Alexiadou & Wilder 1998), nationality (Cinque 2010).

[3] Both proper names and kinship terms are taken to be "names" in the relevant sense. In §4.2.1, I further unify the treatment of proper names, kinship terms and pronouns, at least as far as Bulgarian is concerned.

(2) a. *moj* 'my'

b. *tvoj* 'your'

c. *tehen* 'their'

(3) a. *Ivanov* 'Ivan's'

b. *Penkin* 'Penka's'

c. *baštin* 'father's'

As their name suggests, prenominal possessors are not limited to the expression of external arguments in -N nominalizations; in addition, they can express a variety of DP-internal relations within simple event, result, and object-denoting nominals—including the possessor relation. They share this property with nationality adjetives, which also have a non-thematic classificatory use (briefly discussed below). However, unlike the canonically postnominal *na*-phrases, the other means of expressing such relations, these possessors are consistently prenominal. In this section, I introduce the two broad types of denominal adjectives—nationality adjectives and prenominal possessors—illustrating their thematic use. This shared use makes denominal adjectives relevant for the present purposes and of central importance to the syntactic decomposition analysis developed in this chapter.

4.1.1 Nationality adjectives

That nationality adjectives are able to express external θ-roles can be demonstrated as follows. In the transitive -N nominalization in (4a), the direct object

trakijskite zemi 'the Thracian lands' is realized as part of a *na*-phrase, while the external argument *Rim* 'Rome', interpreted as an agent here, is part of a nationality adjective. The external argument of the intransitive -N nominalization in (4b) is likewise expressed as part of the nationality adjective.

(4) a. *rimskoto zavladjavane na trakijskite zemi*
the.Roman conquering of the.Thracian lands
'the Roman conquering of the Thracian lands'

b. *mnogogodišnoto rismko prosperirane*
the.many.year Roman prospering
'the Roman prospering that lasted many years'

It has been observed that crosslinguistically nationality adjectives are able to express only external arguments and not any internal ones (cf. Kayne 1981). This holds in Bulgarian as well. As the ungrammaticality of the following examples shows, in the presence of an *ot*-phrase, which encodes the external argument and forces the complex event interpretation of -N nominalizations, the nationality adjective is unable to express the internal argument. The latter can be realized via any of the other familiar means (discussed in Chapter 3).

(5) * *trakijskoto zavladjavane ot Cezar*
the.Thracian conquering by Caesar
'the Thracian conquering by Caesar'
(i.e. the conquering of Thrace by Caesar)

That the inclusion of a nationality adjective does not affect the complex event nature of -N nominalizations, which obligatorily receive complex event interpretations (see Chapter 3), can be demonstrated using the familiar tests.

First, these -N nominalizations are compatible with aspectual modification in the form of certain adjectives like *čest* 'frequent', as in (6a), and postnominal PP modifiers, as in (6b). As demonstrated in Chapter 3, aspectual modification in Bulgarian is compatible only with complex event nominals (see also Grimshaw 1990, p. 50).

(6) a. *čestoto rimsko zavladjavane na trakijskite zemi*
the.frequent Roman conquering of the.Thracian lands
'the frequent Roman conquering of the Thracian lands'

b. *rimskoto pokorjavane na Galija za njakolko godini*
the.Roman subjugation of Gaul over several years
'the Roman subjugation of Gaul over several years'

In addition, any -N nominalization with its external argument expressed by a nationality adjective still tolerates agent-oriented adjectives like *umišlen* 'intentional' and *prednameren* 'deliberate'. Since such adjectives are otherwise incompatible with result nominals, their cooccurrence with nationality adjectives within these nominalizations suggests that they are indeed complex event nominals:

(7) a. *umišlenoto rimsko zavladjavane na trakijskite zemi*
the.intentional Roman conquering of the.Thracian lands
'the intentional Roman conquering of the Thracian lands'

b. *rimskoto prednamereno pokorjavane na Galija*
the.Roman deliberate subjugation of Gaul
'the deliberate Roman subjugation of Gaul'

Finally, like any complex event nominal, a transitive -N nominalization containing a nationality adjective that expresses the external argument requires the

expression of its internal argument. This is further indication that these nominalizations behave like typical complex event nominals:

(8) a. * *rimskoto zavladjavane*
the.Roman conquering
'the Roman conquering' (i.e. the conquering by Rome)

b. * *rimskoto pokorjavane*
the.Roman subjugation
'the Roman subjugating' (i.e. the subjugating by Rome)

The data above indicates that nationality adjectives can only express external arguments. It can be further shown that they actually realize the θ-role assigned to the external argument, which would otherwise be assigned to a *na*-phrase, a nominal phrase contained within an *ot*-phrase (*by*-phrase), or a null pronominal PRO_{arb}. Specifically, if a denominal adjective does not actually express the external θ-role, it should be possible for that θ-role to be assigned to a constituent that is realized in one of these other possible ways. However, a denominal adjective expressing the external argument is in complementary distribution with a *na*-phrase or an *ot*-phrase that is also linked with the external argument, as (9a) and (9b) show, respectively.[4] This state of affairs is expected given that the external θ-role is actually assigned directly to the denominal adjective. This leaves the *na*-phrase and *ot*-phrase in the examples below without a θ-role, and thus, renders them ungrammatical in what can be considered a

[4]One can ask whether a denominal adjective that expresses the external argument can cooccur with a clitic that also expresses that external argument. The compatibility of a denominal adjective with a clitic is, however, contingent on whether denominal adjectives can be clitic doubled like *na*-phrases and null pronouns. I discuss this issue in §4.3.2.2.

violation of the θ-Criterion or its minimalist descendants.

(9) a. * *rimskoto zavladjavaneto na trakijskite zemi na Cezar*
the.Roman the.conquering of the.Thracian lands of Caesar
'the Roman conquering of the Thracian lands by Caesar'

b. * *rimskoto zavladjavane na trakijskite zemi ot Cezar*
the.Roman conquering of the.Thracian lands by Caesar
'the Roman conquering of the Thracian lands by Caesar'

As alluded to above, nationality adjectives are a class of relational adjectives (Levi 1978), whose behavior is not limited to their thematic use described so far. In their classificatory use, illustrated in (10), these adjectives modify nouns so that the whole nominal phrase that contains them normally describes a subtype of whatever the noun denotes.

(10) a. *italianska pasta*
Italy.NAT pasta
'Italian pasta'

b. *otležalo frensko vino*
aged France.NAT wine
'aged French wine'

c. *nov bălgarski časovnik*
new Bulgaria.NAT watch
'new Bulgarian watch'

Since the thematically related denominal adjectives are the focus of this chapter, I do not discuss their classificatory counterparts in any detail in the main text.

4.1.2 Prenominal possessors

As pointed out earlier, the class of prenominal possessors can be subdivided into pronominal and non-pronominal possessors. The former are the realization of ϕ-features of the external argument of an -N nominalization; in object-denoting nominal phrases they realize instead the ϕ-features of a possessor. The latter subclass—non-pronominal possessors—are morphologically constructed on the basis of animate proper names and kinship terms. The proper name or kinship term that forms each non-pronominal possessor is interpreted as the external argument of an -N nominalization or as the possessor in an object-denoting nominal. The following examples illustrate that prenominal possessors can express external θ-roles in -N nominalizations. In particular, the pronominal possessor *tehen* 'their' in (11a) is interpreted as the external argument agent in the given nominalization. The external argument of the nominalization in (11b), on the other hand, is expressed by the non-pronominal possessor *Cezarov* 'Caesar's' built out of the name *Cezar* 'Caesar'.

(11) a. *tjahnoto zavladjavane na trakijskite zemi*
the.their conquering of the.Thracian lands
'their conquering of the Thracian lands'

b. *Cezarovoto pokorjavane na Galija*
the.Caesar.POSS subjugation of Gaul
'Caesar's subjugation of Gaul'

Like nationality adjectives, prenominal possessors are limited to the expression of external arguments and cannot express internal arguments. Consequently,

if the external argument is expressed, instead, as an *ot*-phrase or a *na*-phrase, there is no possible interpretation for a prenominal possessor like *tehen* 'their' or *Kleopatrin* 'Cleopatra's' in the following examples. In particular, neither of these pronominal possessors can receive a theme interpretation:

(12) a. * *tjahnoto zavladjavane ot/na Cezar*
the.their conquering by/of Caesar
'their conquering by Caesar'
(i.e. the conquering of them by Caesar)

b. * *Kleopatrinoto zavladjavane ot/na Cezar*
the.Cleopatra.POSS conquering by/of Caesar
'Cleopatra's conquering by Caesar'
(i.e. the conquering of Cleopatra by Caesar)

An -N nominalization containing a prenominal possessor as its external argument is certainly a complex event nominal like the corresponding nominalization with a phonologically unexpressed external argument. Such nominalizations give rise to complex event interpretations and, accordingly, are compatible with the presence of aspectual and agent-oriented modification (Grimshaw 1990, p. 50). Consider for instance, the cooccurrence of both pronominal and non-pronominal possessors with adjectives like *čest* 'frequent' and *umišlen* 'intentional':

(13) a. *tjahnoto često / umišleno zavladjavane na trakijskite zemi*
the.their frequent intentional conquering of the.Thracian lands
'their frequent/intentional conquering of the Thracian lands'

b. *Cezarovoto prednamereno pokorjavane na Galija za njakolko*
the.Caesar.POSS deliberate subjugation of Gaul over several
godini
years
'Caesar's deliberate subjugation of Gaul over several years'

Moreover, as is characteristic of complex event nominals more generally, the expression of the external argument of an -N nominalization by a prenominal possessor forces the expression of its nternal arguments (Grimshaw 1990). In this respect, the -N nominalizations in (12), which do contain an overt internal argument, should be compared with the following ungrammatical examples, each of which is missing its internal argument:

(14) a. * *tjahnoto zavladjavane*
the.their conquering
'their conquering' (i.e. the conquering by them)

b. * *Cezarovoto pokorjavane*
the.Caesar.POSS subjugation
'Caesar's subjugation' (i.e. the subjugation by Caesar)

The nominalizations in (14) are grammatical if the prenominal possessors are associated with what approximates an internal θ-role, such as *theme* or *patient*. In this case, however, the prenominal possessors are modifiers of result nominals and not complex event nominals, as the comparison with the interpretations associated with the following examples shows. Here, the prenominal possessors *tehen* 'their' and *Cezarov* 'Caeser's' must be interpreted as (something like) the theme of the corresponding nominalization:

(15) a. *tjahnoto zavladjavane*
the.their conquering
'their conquering' (i.e. the conquering of them)

b. *Cezarovoto ubivane*
the.Caesar.POSS assassination
'Caesar's assassination' (i.e. the assassination of Caesar)

Treating these nominalizations as result nominals is independently justified. For instance, as expected of result nominals, they cannot contain passive *ot*-phrases (*by*-phrases):

(16) a. * *tjahnoto zavladjavane ot Francija*
the.their conquering by France
'their conquering by France'

b. * *Cezarovoto ubivane ot senatorite*
the.Caesar.POSS assassination by the.senators
'Caesar's assassination by the senators'

Furthermore, if the complex event interpretation is forced by the presence of an aspectual modifier or an agent-oriented adjective as in (13), the prenominal possessors lose their (roughly) theme interpretations from (15) and instead express the external argument. Thus, the presence of one of these modifiers renders the nominalizations in (15) ungrammatical altogether, since the modifier requires the complex event interpretation, which in turn requires the expression of all internal arguments—see the pair of examples below. These examples do not contain any nominal phrases that can be construed as the internal argument of the nominalization and are, accordingly, ungrammatical:

(17) a. * *tjahnoto često zavladjavane*
the.their frequent conquering
'their frequent conquering' (i.e. the conquering of them)

b. * *tjahnoto umišleno zavladjavane*
the.their intentional conquering
'their intentional conquering' (i.e. the conquering of them)

On the basis of this evidence, I conclude that prenominal possessors in complex event nominals can express external θ-roles but not internal ones.[5]

Finally, evidence that the prenominal possessor actually receives the external θ-role comes from its complementarity with the other mechanisms for the expression of the external θ-role, such as *ot*-phrases and *na*-phrases:

(18) a. * *tjahnoto zavladjavane na trakijskite zemi ot/na Cezar*
the.their conquering of the.Thracian lands by/of Caesar
'their conquering of the Thracian lands by Caesar'

b. * *Cezarovoto zavladjavane na trakijskite zemi ot/na negovite voiski*
the.Caesar.POSS conquering of the.Thracian lands by/of his armies
'Caesar's conquering of the Thracian lands by his armies'

As indicated earlier, in addition to their thematic use, prenominal possessors can encode possessor relations as well. For instance, (19) features pronominal possessors of object-denoting nominals, while (20) illustrates the possessive use of non-pronominal possessors built out of the name *Ivan* 'Ivan' and the kin-

[5]For additional discussion of this observation, see the section on intransitive -N nominalizations in Chapter 3 (§3.3.3) and the appendix on unaccusativity diagnostics in Bulgarian (Appendix C), where the restriction of prenominal possessors to external argument θ-roles is used as an unaccusativity diagnostic.

ship term *kaka* '(older) sister'.

(19) a. *negovata ljubima šapka*
the.his favorite hat
'his favorite hat'

b. *moeto novo tefterče*
the.my new notebook
'my new notebook'

(20) a. *starata Ivanova kăšta*
the.old Ivan.POSS house
'Ivan's old house'

b. *novija kakin dom*
the.new sister.POSS home
'(my) sister's new home'

The set of relations that prenominal possessors in Bulgarian can express is, in fact, not limited to the possessor relation: for example, they can express relations like *author* and *theme* in object-denoting nominals that support such relations.[6] So, nominals like *kniga* 'book', *portret* 'portrait', and *razkaz* 'story' license *author* and *theme* interpretations, in addition to the *possessor* interpretations illustrated above. In the following examples, the prenominal possessors *Aristotelov* 'Aristotle's' and *Elin Pelinov* 'Elin Pelin's' express an author and a theme, respectively.

(21) a. *naj starija Elin Pelinov razkaz*
most the.old Elin Pelin.POSS story
'Elin Pelin's oldest story'

b. *Aristotelov portret*
Aristotle.POSS portrait
'a portrait of Aristotle'

Non-thematic prenominal possessors—i.e. those that do not express external arguments—have numerous intriguing properties, which, however, lie beyond

[6]Perhaps, possessors in Bulgarian can be said to be able to express a bare R-relation in Higginbotham's (1983) sense (p. 416): "The NP subject bears some relation to the variable-place."

the scope of this chapter. The remainder of this chapter focuses on their thematic homophones, since the thematic relatedness of denominal adjectives more generally is one of the crucial arguments for the syntactic decomposition approach to their derivation pursued here.

4.2 The morphosyntax of denominal adjectives

As demonstrated in the previous section, both nationality adjectives and prenominal possessors can bear a thematic relation within -N nominalizations. This shared property is one of the main motivations for treating them in a uniform way morphosyntactically. Additional motivation comes from their morphological make-up and syntactic distribution, which are the focus of this section. In particular, denominal adjectives exhibit inflectional properties and placement patterns that are characteristic of prenominal modifiers more generally. This is also the reason for grouping nationality adjectives and prenominal possessors together as "denominal adjectives". However, it should be clear that the type of inflection and distribution these elements exhibit characterizes the larger class of prenominal modifiers, which includes numerals and certain quantifiers in addition to regular adjectives. That is, regular adjectives constitute only a subset of the class of prenominal modifiers. The label "denominal adjective" is thus an expository device, not an analytical one, and this becomes clear in the discussion of some subtle differences between nationality adjectives and pronominal possessors.

Given this background, here I discuss those properties of denominal adjectives which justify classifying them as prenominal modifiers more generally: their morphological composition (including their inflection) and their distribution. Denominal adjectives behave like prenominal modifiers in that they exhibit number and gender concord and have the basic distribution of regular adjectives. These properties of denominal adjectives are attributed to the presence of a particular head in their morphosyntactic structural make-up. Specifically, they contain a piece of adjectivizing derivational morphology. This account of the modifier characteristics of denominal adjectives has to be reconciled with their thematic relatedness. Thus, the morphological analysis of denominal adjectives as words, developed in §4.2.1, serves as the basis for the account of their syntactically independent behavior, developed in §4.2.2. According to this approach, their nominal characteristics are contributed by their nominal component, which is what the aforementioned piece of adjectivizing morphology attaches to. The result is an analysis that decomposes denominal adjectives into distinct syntactic units.

4.2.1 Word-level properties and analysis

As a starting point for the analysis of denominal adjectives, I motivate a particular view of their morphosyntactic structure. It is based on the central shared properties of nationality adjectives and pronominal and non-pronominal possessors: (i) they bear a type of inflection that is characteristic of prenominal

modifiers, (ii) they are legitimate hosts of the suffixal definiteness marker, and (iii) they behave like (complex) heads and do not branch (i.e. do not contain phrasal material). The analysis presented here concerns the post-syntactic representation of denominal adjectives, available at a stage of the derivation when their nominal component has already been combined with an adjectivizing piece of derivational morphology. It is this piece of derivational morphology that triggers the insertion of inflectional morphemes and conditions the placement of the suffixal definiteness marker. In the following section, §4.2.2, I develop an analysis of the syntactic behavior of denominal adjectives. In other words, I explain how the complex morphological heads discussed here are derived in the syntax.

4.2.1.1 Nationality adjectives

Nationality adjectives are formed from country and place names in combination with the adjectivizing suffix *-sk-* (e.g. Andrejčin et al. 1983, p. 154 and Scatton 1984, p. 278 among others):

(22) a. *fren-sk-o*
France-NAT-N
'French'

b. *italian-sk-a*
Italy-NAT-F
'Italian'

A number of processes may render the morpheme combinatorics involved in the formation of nationality adjectives less than fully transparent on the surface. For

instance, the suffix-initial /*s*/ is regularly deleted after alveopalatal fricatives and affricates (/*š*/, /*ž*/, /*č*/, /*s*/, /*z*/) in place names like *Pariž* 'Paris' and *Burgas* 'Burgas':

(23) a. *Pariž* 'Paris'

b. *Pariž-sk-i* → *Pariž-k-i*
Paris-NAT-M
'Paris (adjective)'

(24) a. *Burgas* 'Burgas'

b. *Burgas-sk-i* → *Burgas-k-i*
Burgas-NAT-M
'Burgas (adjective)'

In addition, the surface form of the name is sometimes affected by truncation, as illustrated below: within denominal adjectives *Bălgarija* 'Bulgaria' and *Čehija* 'Czech Republic' are reduced to *bălgar* and *čeh*, respectively. Regular morphophonemic alternations may further apply, such as the very common velar ∼ alveopalatal alternation in (26), which converts the underlying /*h*/ into /*š*/. This particular alternation is accompanied by deletion of the suffix-initial /*s*/ as well, once the *-sk-* suffix is attached.

(25) a. *Bălgarija* 'Bulgaria'

b. *bălgarija-sk-i* → *bălgar-sk-i*
Bulgaria-NAT-M
'Bulgarian'

(26) a. *Čehija* 'Czech Republic'

b. *čehija-sk-i* → *češ-sk-i* → *češ-sk-i*
Czech-NAT-M
'Czech'

Nationality adjectives bear inflectional morphology, which expresses the gender and number features of the nominal phrase they belong to. Participation in nominal concord of this kind is characteristic of adjectives more generally as well as of all other prenominal modifiers in the language, including demonstratives, quantifiers and numerals. In nationality adjectives, the correspondence between the possible combinations of gender and number feature values and their exponents is rather regular, as shown in (27): *-i(j)* encodes masculine singular (where *j* is deleted word-finally), *-a* feminine singular, *-o* neuter singular, and *-i* plural (where gender distinctions are neutralized). The difference between the exponents of masculine singular and plural becomes apparent only in the presence of the suffixal definiteness marker, as shown in (27a) and (27d).

(27) a. *bălgar-sk-i,* *bălgar-sk-ij-ă*
Bulgaria-NAT-M Bulgaria-NAT-M-the

b. *bălgar-sk-a*
Bulgaria-NAT-F

c. *bălgar-sk-o*
Bulgaria-NAT-N

d. *bălgar-sk-i,* *bălgar-sk-i-te*
Bulgaria-NAT-PL Bulgaria-NAT-PL-the

Another property that nationality adjectives share with all other prenominal modifiers is that they are legitimate hosts of the suffixal definiteness marker (see

Appendix B). Recall that D[DEF] only attaches to heads in the nominal phrase that exhibit nominal concord for number and gender; i.e. the class of prenominal modifiers discussed above. Thus, the definiteness marker appears as a suffix on a nationality adjective (as long as it is the left-most adjective in the nominal phrase, in accordance with its distributional specification) as shown in the examples above and in the following additional ones:

(28) a. *fren-sk-o-to*
france-NAT-N-the
'the French '

b. *italian-sk-i-te*
Italy-NAT-PL-the
'the Italian'

Nationality adjectives, like relational adjectives more generally (Levi 1978), are not gradable and cannot participate in the formation of comparatives or be modified by degree words like *tvărde* 'too' in (30). Compare their behavior with that of adjectives like *nov* 'new' and *navăseno* 'murky', which are gradable and can be compared:[7]

(29) a. *nov, po nov, naj nov*
new, more new, most new
'new, newer, newest'

b. *bălgarski, * po bălgarski, * naj bălgarski*
new, more Bulgarian, most Bulgarian
'Bulgarian, more Bulgarian, most Bulgarian'

[7]To the extent that examples like (29b) and (30b) are actually possible, they do not involve nationality adjectives in their relational use.

(30) a. *tvărde navăseno*
too murky
'excessively murky'

b. * *tvărde frensko*
too French
'excessively French'

Moreover, while there is abundant evidence that adjectives in Bulgarian can head branching phrases that appear prenominally (see Appendix B/A of Chapter 3/3), nationality adjectives never head branching phrases. They cannot be modified, as demonstrated above, nor do they take complements (for reasons that might not be entirely syntactic). Even if the name they are formed from is branching, such as *Iztočna Germanija* 'East Germany' or *Mala Azija* 'Asia Minor' below, the resulting nationality adjective is not itself branching. Instead, as revealed by the presence of the compounding "linking" element *-o-*, the resulting adjective involves a corresponding compound formed out of the separate parts of the place name.[8]

(31) a. *iztočn-o-germanski*
Eastern-LINKER-Germany.NAT
'East German '

b. *mal-o-azijski*
minor-LINKER-Asia.NAT
'Asia Minor (adjective)' (i.e. Anatolian)

[8]These examples only show names that are modified, since names do not take complements.

In their distribution, nationality adjectives in Bulgarian behave like typical prenominal modifiers, which precede head nouns (N) and follow quantifiers (Q) and demonstratives (Dem).[9] As long as a prenominal modifier remains within this region of the extended nominal projection, it is otherwise characterized by relative word order freedom. Even though there appears to be a canonical word order for all types of prenominal adjectives in Bulgarian, illustrated in (32) (cf. Sproat & Shih 1988, Cinque 1994), adjectives can appear in any order with concomitant changes in scope. Thus, although a nationality adjective canonically appears closer to the head noun than other kinds of prenominal modifiers, such as speaker/subject oriented adjectives or manner adjectives, any of the 24 potential orders among the four prenominal modifiers given in (32) (i.e. excluding Q and Dem) are possible in the language. An approach to the distribution of nationality adjectives, in comparison to that of prenominal possessors, is discussed in §4.2.2.

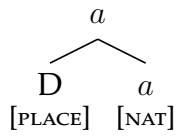
(32) a. Q > Dem > speaker oriented > subject oriented > manner > nationality > N

b. *verojatnoto postojanno netaktično grăcko prenebregvane na sporazumenieto*
the.probable constant tactless Greek ignoring of the.agreement

[9]Numerals are incompatible with -N nominalizations in Bulgarian and, while they behave like typical prenominal modifiers in terms of their inflection and distribution, are not considered in the context of the present discussion.

Setting aside the placement of nationality adjectives, their central morphosyntactic properties have been identified so far: they behave like complex heads in the extended nominal projection that can be decomposed into a country/place name and an adjectivizing derivational morpheme; furthermore, they can support inflection and host the suffixal definiteness marker. Given this much, I assume that the *-sk* suffix is a piece of adjectivizing derivational morphology represented morphosyntactically as a little a head. Given the data presented so far, it is apparent that a nationality adjective is formed by combining this adjectivizing a head with a country/place name, which I treat as a non-branching nominal phrase, i.e. a D(P):[10]

(33)



This treatment of country and place names as intransitive Ds, along with other proper names, kinship terms, and pronouns, is supported by their complementary distribution with the definiteness marker, which is the morphophonological exponent of a D head, as demonstrated by the contrast in (34).[11]

[10]Conceivably, the country/place name that participates in the formation of a denominal adjective can be treated instead as a constituent smaller than a DP, e.g. an nP or just a root. The reasons for treating it as a DP become clear later. One of them is that in all testable ways, the country/place name behaves like a full nominal phrase, that is, a DP (see §4.3). Another reason is that, if a unified account of nationality adjectives and prenominal possessors is to be achieved, it must be a DP because the nominal component of prenominal possessors is quite transparently a D(P).

[11]Of course, it is possible that the categorial D status of country and place names is derived via head-to-head movement of N to D.

(34) a. *Bălgarija* 'Buglaria'

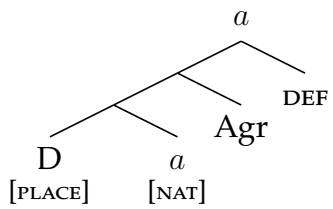
b. * *Bălgarija-ta*
Buglaria-the

Given the structure in (33), the adjectivizing a head is realized via the following spell out rule:

(35) a[NAT] $\leftrightarrow$ *-sk-*

The a head is the kind of head that conditions the appearance of adjectival inflection and the placement of the suffixal definiteness marker. In other words, it must be visible to the mechanisms of nominal concord and the placement rules that affect the definiteness marker. Following the presentation Chapter 2 (cf. discussion of `K-insertion` in §4.2.2.2), I assume that both processes are post-syntactic and involve the adjunction of an Agr and a D[DEF] node, respectively, to elements of the appropriate class (see also Appendix B). Since the relevant class of elements contains all prenominal modifiers, the `Agr-insertion` and `D-placement` rules must be sensitive to a unique property of prenominal modifiers. For present purposes it is sufficient to identify this property with their category/label, i.e. the presence of (some flavor of) an a head. Leaving aside further implementational details, orthogonal to the present concerns, concord targets all a heads contained in a given nominal projection, while the definiteness marker placement rule targets the leftmost such head. The application of these processes produces the following morphosyntactic structure for nationality adjectives:

(36)



It is important to note that this is an analysis of nationality adjectives at the level of the morphological word. In §4.2.2 it is complemented by a detailed analysis of their syntactic behavior, whose starting point is the assumption that the word structure in (36) is formed post-syntactically out of several syntactically independent components.

4.2.1.2 Pronominal possessors

As the table below shows, pronominal possessors express person (1-3), number (sg, pl), and gender in the third person singular (fem, other). In addition, they can express other kinds of features that are characteristic of pronouns in Bulgarian more generally. For instance, there are series of pronominal possessors that can be classified as reflexive, *wh*/relative, indefinite, and negative. Discussion of these other types of pronominal possessors is beyond the scope of this chapter although reflexive pronominal possessors inform the investigation of the properties of this type of denominal adjective with respect to binding in §4.3.1.

(37) *Pronominal possessors*[12]

FEATURES	MASC	FEM	NEUT	PLURAL	
1.S	*moj*	*moja*	*moe*	*moi*	my/mine
2.S	*tvoj*	*tvoja*	*tvoe*	*tvoi*	your(s)
3.S.M	*negov*	*negova*	*negovo*	*negovi*	his
3.S.F	*nejn*	*nejna*	*nejno*	*nejni*	her(s)
1.P	*naš*	*naša*	*naše*	*naši*	our(s)
2.P	*vaš*	*vaša*	*vaše*	*vaši*	your(s)
3.P	*tehen*	*tjahna*	*tjahno*	*tehni*	their(s)
REFLEXIVE	*svoj*	*svoja*	*svoe*	*svoi*	one's own
WH	*čij*	*čija*	*čie*	*čii*	whose
INDEFINITE	*nečij*	*nečija*	*nečie*	*nečii*	someone's
NEGATIVE	*ničij*	*ničija*	*ničie*	*ničii*	no one's

As the columns of (37) indicate, all pronominal possessors participate in nominal concord and vary with the number and gender of the nominal phrase that they are part of—a characteristic shared with nationality adjectives and all other prenominal modifiers. Furthermore, the exponents of the gender and number features that these possessors acquire via nominal concord are identical to those on nationality adjectives (cf. (27) in §4.1.1) and prenominal modifiers more generally. This is illustrated in (38) with the third person singular masculine pronominal possessor. This parallel, among many others, constitutes the basis for analyzing pronominal possessors as prenominal modifiers (see Dimitrova-Vulchanova & Giusti 1999 and references therein).

[12]There are some subregularities in this paradigm but, for present purposes, the surface forms of the pronominal possessors will not be segmented any further.

(38) a. *negov-∅*
his-M

b. *negov-a*
his-F

c. *negov-o*
his-N

d. *negov-i*
his-PL

Like nationality adjectives and other prenominal modifiers, pronominal possessors are legitimate hosts of the suffixal definiteness marker, which appears as a suffix on a pronominal possessor as long as the possessor is the left-most potential host, in accordance with the distributional properties of the definiteness marker (cf. (28)).

(39) a. *nein-a-ta*
her-F-the
'her'

b. *vaš-i-te*
your-PL-the
'your'

Pronominal possessors cannot be used in comparatives or modified by degree words, as shown below. Likewise, they are never heads of branching phrases, as they do not take complements and the ϕ-feature bundle that forms the basis of a pronominal possessor cannot itself be part of a branching phrase.[13]

[13]Examples like *nie, lingvistite* 'we, the linguists' are possible but they obligatorily contain a definiteness marker on the noun, which indicates that these are probably two nominal phrases in apposition.

(40) a. *tvoj*, * *po tvoj*, * *naj tvoj*
your(s) more your(s) most yours
'your(s), more your(s), most your(s)'

b. * *mnogo moja kniga*
very my book
'very my book'

These possessors share the distribution of prenominal modifiers and appear before head nouns but after quantifiers and demonstratives. A direct comparison with nationality adjectives reveals that canonically, nationality adjectives are closest to the head noun, while pronominal possessors are farthest away. As the hierarchy in (41) shows, pronominal possessors are structurally the highest prenominal modifier and precede speaker/subject oriented adjectives as well as manner adjectives. Even though a pronominal possessor is canonically the leftmost prenominal modifier in a sequence of such modifiers, with concomitant scope changes, it can appear in any position that is to the right of quantifiers and demonstratives and to the left of the head noun.

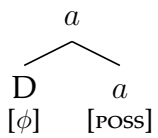
(41) a. pronominal possessor > speaker oriented > subject oriented > manner > nationality

b. *negovoto verojatnoto postojanno netaktično kritikuvane na statijata*
the.his probable constant tactless criticizing of the.article

Based on the morphosyntactic properties of pronominal possessors, it can be maintained that they are formed in much the same way as nationality adjectives. In particular, they can be treated as bundles of ϕ-features D, which combine with an adjectivizing little a head, as in (42). I am not concerned with

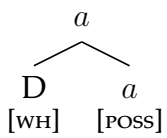
further decomposition of the pronominal possessor forms in (37). Suffice it to say that, to the extent at least some of them are portmanteau forms, the adjectivizing a head must undergo fusion with D, resulting in the formation of a single terminal bundle of features, which can then be targeted by Vocabulary Insertion.

(42)



The D head must also be able to bear the relevant ϕ-featural specification that yields the additional types of possessor, such as reflexive, *wh*/relative, indefinite, and negative (see (37)). Therefore, D can be [WH], which is realized as the *wh*-word *who* when in isolation, but in the context of a possessive a it is realized as *whose* (see the full paradigm in (37)):

(43)

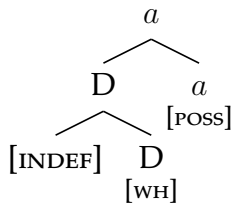


(44) a. D[WH] ↔ *ko(j)*

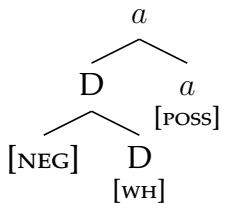
b. D[WH] ↔ *či(j)* / __ a[POSS]

The indefinite possessor *neči(j)* 'someone's' and the negative possessor *niči(j)* 'no one's' are complex D heads constructed out of D[WH] plus either [INDEF] or [NEG], respectively:

(45) a.



b.



Both the indefinite and the negative prefix are realized independently of D[WH], which exhibits contextual sensitivity to the adjacent a[POSS], as shown above. The morpheme a[POSS] itself receives a phonologically null exponent:[14]

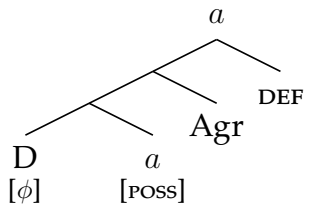
(46) a. [INDEF] ↔ *ne-*

b. [NEG] ↔ *ni-*

c. a[POSS] ↔ ∅ / __ D[WH]

As with nationality adjectives, it is the adjectivizing a head that conditions the appearance of adjectival inflection on pronominal possessors—i.e. their participation in nominal concord—as well as the placement of the suffixal definiteness marker (cf. §4.2.1.1). The resulting structure can be given as follows:

(47)



[14]It is possible to analyze the interaction between D[WH] and a[POSS] by positing fusion, which creates a single D+a terminal targeted by the *či(j)* exponent.

4.2.1.3 Non-pronominal possessors

A restricted class of animate proper names and kinship terms can combine with an adjectivizing suffix, realized as either *-ov* or *-in* (Andrejčin et al. 1983, p. 152ff; Scatton 1984, p. 277; Pancheva 2004, among others)—see the examples below. The resulting adjectives are interpreted as possessors the way that pronominal possessors are (§4.2.1.2): the proper name or kinship term that forms the non-pronominal possessor is interpreted as the external argument of an -N nominalization that contains the possessor.

(48) *The* -ov *suffix*

a. *čič-ov-a*
uncle-POSS-F
'uncle's'

b. *Elin Pelin-ov-∅*
Elin Pelin-POSS-M
'Elin Pelin's'

(49) *The* -in *suffix*

a. *kak-in-∅*
sister-POSS-M
'sister's'

b. *Penk-in-i*
Penka-POSS-PL
'Penka's'

The suffixes *-ov* and *-in* are in complementary distribution and make the same semantic contribution and, therefore, I treat them as allomorphs of the same abstract morpheme (glossed as POSS). It is realized as *-in* after stems that end in /*a*/; with all other stems, the *-ov* allomorph surfaces instead. This can be seen in the examples above, where *Penka* 'Penka' (proper name) and *kaka* '(older) sister' are stems that end in /*a*/ and, accordingly, condition the *-in* allomorph. On the other hand, the kinship term *čičo* 'uncle' and the name *Elin Pelin* 'Elin

Pelin' do not end in /*a*/ and condition the *-ov* allomorph.[15] The final vowel of the stem, if any, is regularly deleted upon the addition of either vowel-initial allomorph of the adjectivizing morpheme, as in (48a) and (49b).

Like their pronominal counterparts, these possessors pattern with prenominal modifiers—including nationality adjectives—in a number of ways. For instance, they exhibit nominal concord in gender and number features and can host the suffixal definiteness marker (here illustrated with the kinship term *vujčo* 'uncle' as the basis for the possessor):

(50) a. *vujč-ov-ij-a*
uncle-POSS-M-the

b. *vujč-ov-a-ta*
uncle-POSS-F-the

c. *vujč-ov-o-to*
uncle-POSS-N-the

d. *vujč-ov-i-te*
uncle-POSS-PL-the

Non-pronominal possessors also pattern with nationality adjectives in that they are always both minimal and maximal projections. In other words, they are comprised entirely of the (complex) adjectival head and do not contain any phrases. As a result, they cannot be compared and are not modifiable (which might be due to extra-syntactic factors as well):

[15]The choice between the two allomorphs of POSS is not conditioned by gender, since masculine kinship terms that end in /*-a*/ still condition the appearance of the *-in* allomorph: *bašta* 'father' (masc) — *baštin* 'father's'.

(51) a. *Ivanova, * po Ivanova, * naj Ivanova*
Ivan.POSS.F more Ivan.POSS.F most Ivan.POSS.F
'Ivan's, more Ivan's, most Ivan's'

b. *vujčova, * po vujčova, * naj vujčova*
uncle.POSS.F more uncle.POSS.F most uncle.POSS.F
'uncle's, more uncle's, most uncle's'

c. * *tvărde Ivanovite*
too the.Ivan.POSS.PL
'excessively Ivan's'

d. * *mladija vujčova*
young uncle.POSS.F
'young uncle's'

There do exist various non-pronominal possessors that appear to contain multiple heads. For instance, they can be formed out of combinations of first and last names (*Elin Pelin* 'Elin Pelin') or a title or kinship term plus a name (*čičo Tom* 'uncle Tom'), as in the examples below. In such cases, the combinations of terms that form the basis of non-pronominal possessors behave as compounds (i.e. complex heads), as in nationality adjectives (cf. (31)). For instance, they behave like a single head for the purposes of the placement of the definiteness marker, which is a suffix on the *head* of the left-most prenominal modifier in the nominal phrase. As (52b) indicates, the definiteness marker is suffixed to the whole complex head that includes both the kinship term *čičo* 'uncle' and the name *Tom*.

(52) a. *Elin Pelinov*
Elin Pelin.POSS
'Elin Pelin's'

b. *čičo Tomovata*
uncle Tom.POSS.the
'uncle Tom's'

Like all prenominal modifiers, non-pronominal possessors precede head nouns and follow quantifiers and demonstratives. Their canonical position relative to other such modifiers, like speaker/subject oriented adjectives and manner adjectives, differs from that of their pronominal counterparts and nationality adjectives: non-pronominal possessors tend to appear linearly between these other types of pronominal modifier, as the hierarchy below indicates. The canonical position of non-pronominal possessors is to the left of nationality adjectives but this order is flexible and deviations from it give rise to non-neutral interpretations:

(53) a. pronominal possessor > speaker oriented > non-pronominal possessor > subject oriented > manner > nationality

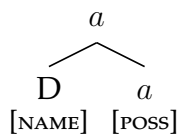
b. *negovoto verojatnoto postojanno netaktično kritikuvane na statijata*
his the.probable constant tactless criticizing of the.article

I assume that non-pronominal possessors are also built out of a D head, via the merger of an adjectivizing a head. This a can, in principle, be treated as identical to the one that is involved in the formation of pronominal possessors.[16] The difference between the two classes of prenominal possessor then is in the

[16]If the distribution of prenominal possessors is taken to follow from the distributional properties of the a that forms them, as in §4.2.2, it is impossible to maintain that both pronominal and non-promominal possessors are formed from the same a head because they are characterized by distinct canonical placement patterns.

nature of D, which is a bundle of ϕ-features in pronominal possessors but a name in non-pronominal possessors:

(54)



I assume that names (proper names and kinship terms) are intransitive Ds that are simultaneously minimal and maximal projections. Evidence for their D status comes from their complementary distribution with the definiteness marker, which is the morphophonological exponent of a D head:

(55) a. *Marija* 'Maria'

b. * *Marija-ta*
Maria-the

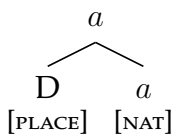
(56) a. *čičo (mi)* '(my) uncle'

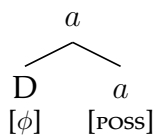
b. * *čičo-to (mi)*
uncle-the (my)

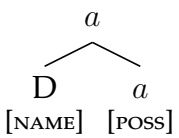
It is possible that the categorial D status of names is derived via head-to-head movement of N to D. In this respect, it is quite intriguing that the relevant class of elements in Bulgarian—those that can be classified as names—is, up to lexical specification, the same as the class of elements that have been claimed to undergo N-to-D raising in Italian (Longobardi 1994). Since what is relevant here is that these elements are Ds in Bulgarian by the time they merge with a, and how they ended up as Ds is orthogonal to the present concerns, I leave various interesting issues open for now.

4.2.2 The syntax-morphophonology interaction

Denominal adjectives can express θ-roles in -N nominalizations in a way characteristic of nominal phrases (§4.1); yet, in certain respects they behave like typical prenominal modifiers (§4.2). The dual properties of denominal adjectives are captured here by assuming that part of the derivation involves their syntactically active nominal components while another part of the derivation involves the adjectives constructed out of these nominal components in the morphophonology. In other words, denominal adjectives are underlying nominal phrases that are converted into adjectives in the course of the derivation. The structural properties of the three kinds of denominal adjectives in Bulgarian were identified and analyzed in §4.2.1, where I attributed to them the following morphosyntactic structures. Thus, the difference between the three kinds of denominal adjectives lies in the flavor of the D and a heads they are formed out of:

(57)


(58)


(59)


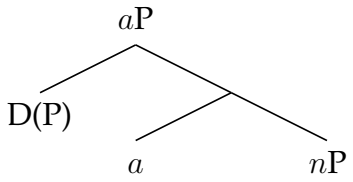
The point in the derivation at which these adjectival structures are created coincides with the `m-merger` of a, a piece of adjectivizing ("derivational") morphology, with a D, as part of a word formation process external to narrow syntax. Thus, prior to the completion of this process—i.e. in narrow syntax—the nominal phrase component of denominal adjectives is visible to purely syntactic operations like `Agree` and `Merge`. Post-syntactically, these nominal phrases are

converted into adjectives, with a number of consequences that help explain the adjectival, head-like characteristics of denominal adjectives described above.

4.2.2.1 Syntax

Of the morphological pieces into which denominal adjectives can be decomposed on the surface, only their nominal component D and the head a must be present in the syntax. The other morphemes (inflection, definiteness marker) are dissociated and come to occupy their final positions post-syntactically. As far as D and a are concerned, I assume that they are in a specifier-head relation in the syntax. That is, I treat what is analyzed on the surface as a denominal adjective as a syntactic complex that is the result of combining a little a head in the extended nominal projection with the syntactically independent D(P) in its specifier:[17]

(60)



This structure allows for an account of the thematic relatedness of denominal adjectives that is maximally close to the account of the thematic relatedness of other arguments in clauses and nominalizations. In particular, I assume, fol-

[17]This is the partial DP structure relevant for the present purposes. Nominal modifiers—such as other kinds of adjectives—are treated as syntactic adjuncts in the extended nominal projection (see Chapter 3 (§3.2.3) and footnote 12). They are omitted here because they do not affect the thematic relation established between the D(P) in Spec,aP and nP.

lowing the presentation in Chapter 1, that thematic relations are established between predicates and their arguments upon external Merge of a nominal phrase (the argument) with a constituent that represents the (unsaturated) predicate (Hale & Keyser 1993, Chomsky 1995, Heim & Kratzer 1998, Harley 2011). As discussed in Chapter 3 (§3.3.2), the meaning of n in (60) is such that it takes the function denoted by its complement and adds an external argument to it via the Initiator relation—see (61b). Syntactically, however, n projects a nominal specifier only optionally (see (61a) and Chapter 3 (§3.3.2) for motivation). Thus, if n comes in the flavor that does not project a nominal specifier, the external argument role would remain unsaturated as the construction of the nP in (60) is completed.

(61) a. n[-N] contains [S:VP(,S:DP)] (i.e. it takes a specifier optionally)

b. $[\![n\text{[-N]}]\!] = \lambda f.\lambda x.\lambda e.f(e)\&\text{Initiator}(e,x)$

As shown in Chapter 3 (§3.3.2), one way to saturate the external argument role is to merge as an adjunct to nP an *ot*-phrase (*by*-phrase), which supplies a nominal phrase that semantically fills the open position of the function that nP denotes. Alternatively, however, Bulgarian allows nP to be merged with a functional head whose syntactico-semantic properties ensure the semantic saturation of the relevant open position. This is exactly the role that the a head appears to play—it obligatorily projects a nominal specifier in the syntax but makes no semantic contribution:

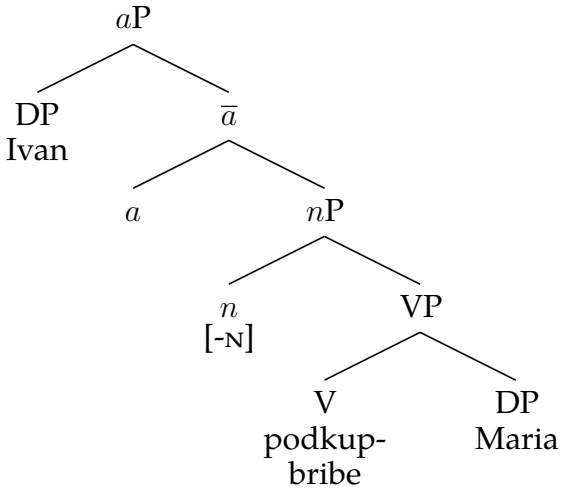
(62) a. a contains [S:nP,S:DP] (i.e. it requires a nominal specifier)

b. $[\![a]\!] = \lambda f.\lambda e.f(e)$

Thus, the nominal phrase in Spec,aP is interpreted as the external argument introduced semantically within nP; a provides the means for its morphosyntactic expression by the projection of a nominal specifier, much like *ot* 'by' does.[18] The semantic composition for a transitive -N nominalization proceeds as follows:

(63) a. *Ivanovoto podkupvaneto na Marija*
the.Ivan.POSS the.bribing of Maria
'Ivan's bribing of Maria'

b.



c. i. $[\![\text{bribe}]\!] = \lambda x.\lambda e.\text{bribing}(e,x)$

ii. $[\![\text{VP}]\!] = \lambda e.\text{bribing}(e,\text{Maria})$

iii. $[\![n\text{P}]\!] = \lambda x.\lambda e.\text{bribing}(e,\text{Maria})\&\text{Initiator}(e,x)$

iv. $[\![\bar{a}]\!] = \lambda x.\lambda e.\text{bribing}(e,\text{Maria})\&\text{Initiator}(e,x)$

[18] This head a head and the preposition *ot* 'by' differ, of course, in how they are introduced in the structure: the former is a head in the extended nominal projection taking nP as its complement, while the latter heads an adjunct *ot*-phrase (*by*-phrase) to nP.

v. $[\![aP]\!] = \lambda e.\text{bribing}(e,\text{Maria})\&\text{Initiator}(e,\text{Ivan})$

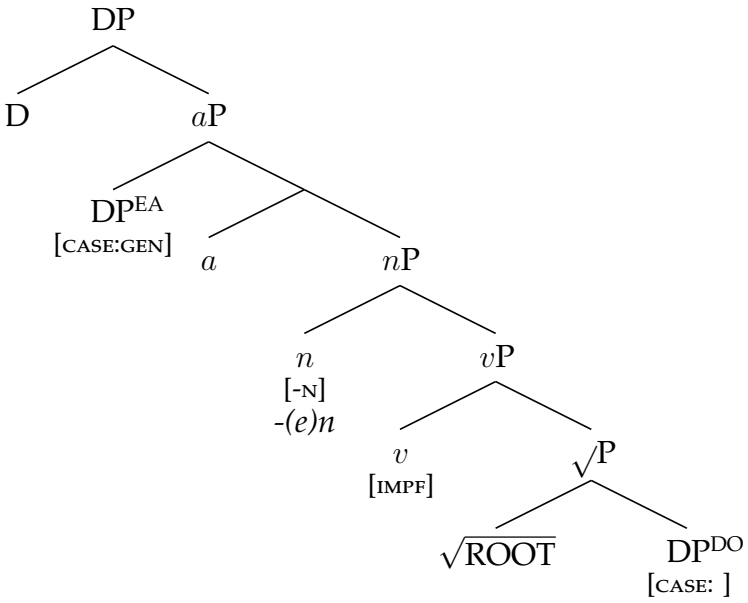
The thematic relation between the D(P) in Spec,aP and its sister constituent is established when the D(P) undergoes external Merge. In this respect, the thematic relatedness of denominal adjectives is derived in the same way as for arguments in clauses or other arguments of -N nominalizations that are expressed via different morphosyntactic mechanisms. Now, recall that n exhibits variable syntactic behavior: it may either project a nominal specifier or not (see (61a)). It is clear that a is compatible only with the n that does not project a nominal specifier. The proposed analysis of denominal adjectives explains why this should be the case: if a took as its complement an nP with a nominal specifier as its external argument, there would be no way for the obligatorily projected Spec,aP to receive an interpretation. In other words, such a configuration violates the θ-Criterion or its minimalist descendants.[19]

As the external argument is syntactically introduced in the specifier of a, the latter assigns to it lexical/oblique case, which I call genitive—see (64). The other arguments of the -N nominalization receive case in the usual way (see Chapter 3, §3.3.1). For example, the internal argument receives unmarked case, since it is not assigned lexical/oblique case upon first Merge and dependent case (i.e. accusative) is just not available within -N nominalizations, as previously established (Chapter 3, §3.2.4). Unmarked case on the internal argument,

[19]This analysis attributes semantic vacuity to a, which is also necessary because aP must be able to be further composed semantically with higher elements in the extended nominal projection, such as determiners and demonstratives. Note that a is an "adjectivizng" head only in the sense that it is the post-syntactic locus of adjectival inflection.

and in general, is interpreted by the morphophonology via the insertion of a K head, which is spelled out as *na*; how genitive case on the external argument is interpreted by the morphophonology is the subject of the following section (§4.2.2.2). This approach to the syntax of denominal adjectives explains their thematic properties and makes further predictions about their interaction with narrow syntactic operations like `Agree` and `Merge`, which are the focus of §4.3.

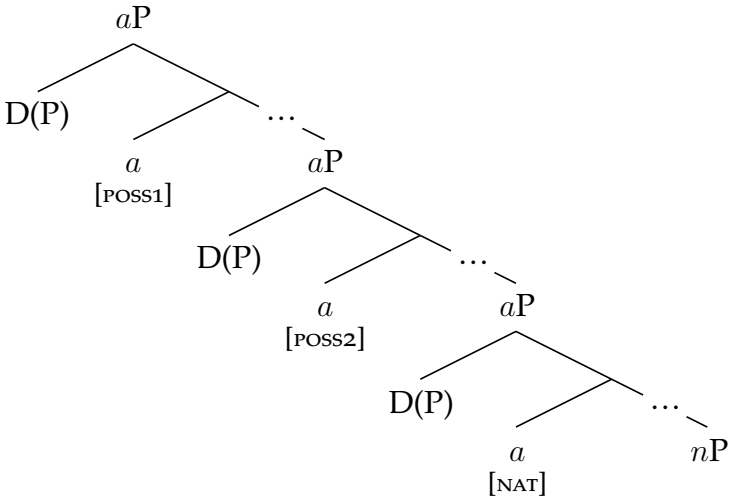
(64)



Finally, we are equipped to understand the distributional facts discussed throughout §4.2.1 that have so far been ignored. It was established there that the three types of D(P) that give rise to denominal adjectives (country/place names, ϕ-feature bundles, names/kinship terms) have distinct canonical distributions. According to the present approach, the external argument D(P) is generated in the specifier of a and, therefore, the distribution of D(P) is connected to that of a. This allows an explanation of the distinct canonical placement of

the three types of D(P) in terms of the canonical placement of the a heads whose specifiers they occupy. In particular, the distinct distributions of the three types of denominal adjectives are a direct consequence of the distinct distributions of the a heads that participate in their respective formation. Thus, if the hierarchy in (65a) reflects the canonical placement of these prenominal modifiers as argued in §4.2.1, it must be the result of the syntactic structure in (65b):[20]

(65) a. pronominal possessor > speaker oriented > non-pronominal possessor > subject oriented > manner > nationality

b. 

It should be noted that if (65b) is the basis for the explanation of the distinct canonical positions of the three types of denominal adjectives, it can no longer be maintained that fewer than three distinct a heads are involved in their formation (see fn. 16). It was already established that the a that produces nation-

[20]Note that, while (65b) encodes the relative positions of the three types of denominal adjective, they are in complementary distribution and cannot appear in a single -N nominalization. Thus, (65b) is not intended to be a structure that is actually instantiated.

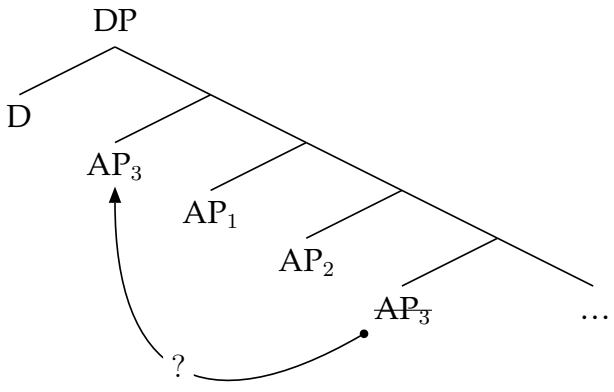
ality adjectives must be different from the one responsible for the formation of prenominal possessors (§4.2.1). However, the latter must also be treated as two separate flavors of a: the a that selects a pronominal specifier is distinct from the one that introduces a non-pronominal specifier. This difference is encoded in (65b) by endowing the two a heads with the features [POSS1] and [POSS2], respectively.

As far as the distribution of denominal adjectives and prenominal modifiers more generally is concerned, I remain neutral on how the canonical order in (65a) is actually derived. In particular, I am currently unaware of any data that bears on whether this order results from a fixed universal hierarchy of functional projections each of which introduces a modifier in its specifier (Cinque 1994). What is relevant for present purposes is that the structure in (65b) is a possible output of the syntax. The observation that it is associated with an interpretation which is, in a certain sense, "canonical" can then receive an explanation in terms of semantic composition, potentially coupled with other factors (cf. Bošković 2009). In fact, we already saw evidence that all potential orders of prenominal modifiers inside an -N nominalization are actually possible (§4.2.1), and therefore all of the corresponding syntactic structures must be available outputs of the syntax. Thus, it is possible to maintain that there are no syntactic restrictions on the merger of prenominal modifiers into the extended nominal projection and that different surface orders among modifiers simply result from the order in which these modifiers have been merged in the syntax.

A version of this analysis of multiple possible adjective orders, which does not require AP movement but relies instead on multiple base generated orders, is put forward by Cinque (2010). He proposes two distinct sources of adjectives within nominal phrases, which are mapped to different base generation sites in the extended nominal projection and which correlate with differences in meaning (roughly corresponding to direct (low) and indirect (high) modification). Then, an adjective in some language can be related to either one of these two underlying sources, which, on the surface, gives the appearance of alternative ordering possibilities of that adjective.[21]

It is worth asking at this point whether these alternative orders can be derived from the canonical order in (65a) via syntactic movement of the adjectives (e.g. AP movement). For (focus) movement accounts of alternative adjectival orders and counter-arguments, the reader is directed to Scott 2002:92, Truswell 2004, 2005:40ff, Alexiadou, Haegeman & Stavrou 2007:320, Svenonius 2008:35, Cinque 2010:59 (section 5.1). Such movement may proceed as follows:

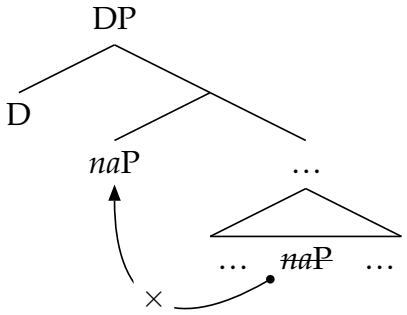
(66)



[21]For an alternative account of adjective ordering more generally, which does not rely on a unique order of functional heads in the extended nominal projection, see Abels & Neeleman 2012, section 5.3, p. 64.

However, there are several reasons why such movement seems unlikely in Bulgarian. First, there is no positive evidence for any kind of AP-movement in the language.[22] Second, if (phrasal) movement were responsible for the positioning of adjectives, it would remain unclear why other phrases (e.g. *na*-phrases) are not able to move to the positions targeted by this putative AP movement:

(67)



For instance, it is impossible for a canonically postnominal *na*-phrase possessor to appear prenominally to the right of demonstratives and quantifiers, which is the typical position of prenominal adjectives:[23]

(68) a. *vsički knigi na Vazov*
all books of Vazov
'all books by Vazov'

b. * *vsički na Vazov knigi*
all of Vazov books
'all books by Vazov'

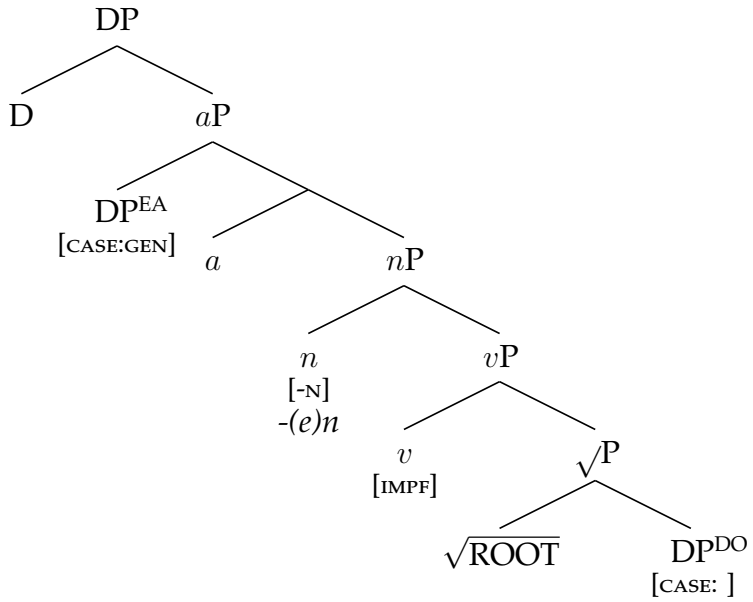
[22] In fact, in light of the immobility of denominal adjectives with respect to all known types of movement within nominal phrases, demonstrated in §4.3.2.2, it would be quite unexpected for the alternative orders to arise as the result of movement.

[23] Such *na*-phrases can appear DP-intitially—preceding demonstratives and quantifiers—but this is the result of DP-internal fronting to the left edge of the DP (focus movement or topicalization). As shown in §4.3.2.2, adjectives do not undergo this kind of movement.

4.2.2.2 Morphological merger

So far I have established that the class of functional heads a that participate in the formation of denominal adjectives take nP as their complement and obligatorily project a nominal specifier. The nominal phrase in Spec,aP is interpreted as the external argument of nP and receives lexical/oblique genitive case which is idiosyncratically conditioned in that position. The internal argument, on the other hand, is assigned unmarked case, as it receives neither lexical/oblique nor dependent case:[24]

(69)

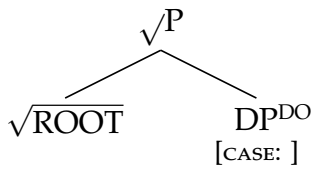


As discussed in Chapter 3 (§3.3.1.1) the morphophonological expression of unmarked case on a DP involves the insertion of a K head as the sister to DP. The K head inherits the case feature of the DP and is then spelled out as *na*:

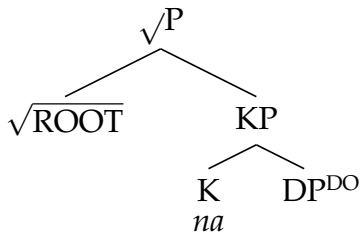
[24]Recall that unmarked case was treated as the morphophonological expression of case features that remain unvalued.

(70) *K-insertion*

a. *Input*



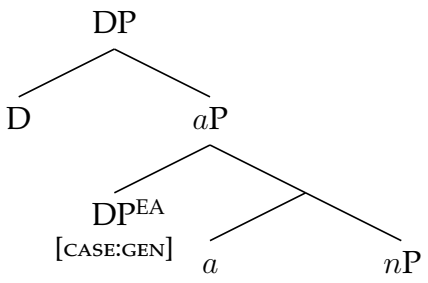
b. *Output*



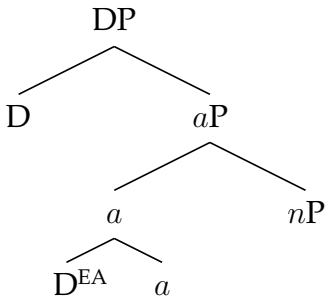
On the other hand, instead of `K-insertion`, the morphophonological expression of genitive case involves the application of `m-merger`, an operation which rebrackets a head and its specifier (Chapter 2, as well as Matushansky 2006, Nevins 2011, Harizanov (to appear a), and Kramer (to appear)). The output of `m-merger` is a head adjunction structure containing the labels of the head and its specifier that constitute the input to the operation:

(71) *M-merger*

a. *Input*



b. *Output*



It is in this way then that the complex morphological heads discussed in §4.2.1 are formed out of a syntactic configuration in which the external argument and a are in a specifier-head relation. This treatment allows the nominal component

of a denominal adjective to receive its θ-role in the syntax, while at the same time the post-syntactically derived complex head structure explains the morphological properties identified in §4.2.1. In particular, the complex a head in (71b) supports the inflectional morphology characteristic of prenominal modifiers in general and qualifies as a legitimate host for the suffixal definiteness marker. In addition, it behaves like a typical morphophonological head since the output of `m-merger` is obligatorily a (complex) head. Overall, the application of `m-merger` accounts for the behavior of denominal adjectives as morphophonological words discussed in the previous sections.

The present approach allows an understanding of the obvious parallels in the behavior of the nominal component of denominal adjectives and verbal clitics (Chapter 2). Specifically, both are treated as independent nominal projections in the syntax, which accounts for their thematic properties and interaction with narrow syntactic operations like `Agree` and `Merge`. Moreover, since `m-merger` is involved in the derivation of both the verb+clitics cluster and denominal adjectives, their head-like properties are likewise amenable to a unified explanation. Ultimately, both the verb+clitics cluster and the denominal adjective are good examples of elements with the dual behavior of syntactic phrases and morphophonlogical words. The difference between the two has to do with the abstract Case on the participating nominal phrase—dative/accusative with clitics vs. genitive in denominal adjectives. This difference, in turn correlates with a difference in the trigger of `m-merger`. Clitics result from the application of `m-merger` triggered by the functional head that they are specifiers of, namely

v. On the other hand, the genitive Case relation between a and the nominal phrase in its specifier acts as the trigger of `m-merger` in denominal adjectives. In this case then the role of the functional head a in this morphophonological process is indirect, as it only enters into a Case assignment relation with its specifier, which is the actual trigger of `m-merger`.

This approach leads to the conclusion that the interpretation of abstract Case (qua argument licensing) by the morphophonology is not limited to morphological case marking (i.e. inflectional morphology). Here we have, instead, a different kind of word formation process expressing an underlying abstract Case relation, which involves the addition of what looks like derivational (categorizing, adjectivizing) morphology (cf. Fábregas 2007, Alexiadou & Stavrou 2011). Therefore, `K-insertion` and `m-merger` can be viewed as two modes of morphophonological expression of abstract Case. Both operations are morphological structure building/modifying operations which take place prior to Distributed Morphology operations like Local Dislocation, Lowering, Fusion, Fission, and of course Vocabulary Insertion. It should be noted, however, that both `K-insertion` and `m-merger` are operations of the morphophonological component that are in principle independent of the expression of Case. For instance, in addition to the expression of Case, `K-insertion` is presumably implicated in concord and agreement (Embick & Noyer 2001, Kramer 2009) while `m-merger` plays a role in cliticization (Matushansky 2006, Chapter 2).

At this point, it is possible to draw a connection between the treatment of `m-merger` as a morphophonological mechanism for the expression of an under-

lying syntactic relation and Baker's (1988) principle of PF Identification:

(72) *The Principle of PF Identification* (Baker 1988, p. 116)

Every Case indexing relationship at S-structure must be interpreted by the rules of PF.

According to this principle, every abstract Case relation encoded in the syntax is expressed via some morphophonological mechanism. The inventory of morphophonological mechanisms available to any given language varies. Thus, Baker (1988) discusses as possible PF expressions of abstract Case agreement and case morphology as well as word order, among others; any one or more of these mechanisms may be utilized by a language in the expression of syntactic relations. More generally then PF identification amounts to at least the "assignment of morphology conditioned by one member of the relationship to the other member, and the enforcement of directed adjacency between the two" (Baker 1988, p. 116).

Furthermore, Baker's (1988) approach replicates the results of Marantz's (1984) generalization of the Projection Principle to PF so that it governs the construction of morphophonological expressions.[25]

[25] *Projection Principle* (original formulation; Chomsky 1981, 1986b): (i) representations at each level of representation are projections of the features of lexical items (notably their subcategorization features), and (ii) if F is a lexical feature, it is projected at each syntactic level of representation (D-structure, S-structure, Logical Form).

(73) *Projection Principle* (Marantz 1989, p. 101)

> For all pairs of constituents (X, Y), a relation R(X, Y) at one level of representation of a sentence in the syntax must map onto a relation R'(X',Y') at any other level of representation of the sentence. (where X' and Y' are the constituents "corresponding" to X and Y at the other level of representation)

According to the generalized Projection Principle, every syntactically encoded relation must map to some PF relation. In the case of denominal adjectives, the relevant syntactic relation that is being encoded is that of abstract (genitive) Case, assigned idiosyncratically by a to its specifier. The PF expression of this relation amounts to word formation: via the application of `m-merger` the PF counterparts of a and its specifier (i.e. their labels) become part of the same morphophonological word. That is, we must add to the inventory of possible mechanisms for the PF expression of some syntactic relation that of *containment of the two members of the relation within the same morphophonological word*.[26]

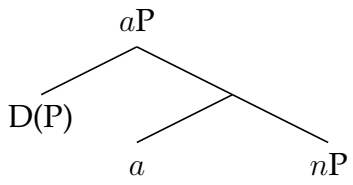
4.3 Analytical consequences

It was demonstrated in §4.1 that the nominal component of a denominal adjective bears a thematic relation within the -N nominalization it is part of (Kayne 1981, Zubizarreta 1985). This prompted the syntactic decomposition of denom-

[26] This is a subcase of Marantz's (1984) assumption (p. 266) that "the merger of lexical items at s structure expresses l-s relations between phrases headed by the lexical items".

inal adjectives into an a head that takes nP as its complement and a nominal phrase D(P) in Spec,aP that is interpreted as the external argument of nP (see §4.2):

(74)

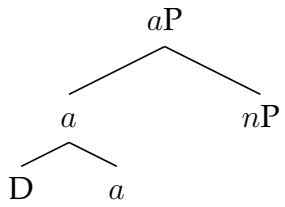


If the nominal component D(P) of a denominal adjective really occupies Spec,aP, it should behave like a syntactically independent nominal projection. In this section, I discuss a number of ways in which it instantiates such kind of behavior. First, denominal adjectives exhibit context-sensitivity to c-commanding binding antecedents (§4.3.1). Participation in binding relations characterizes only certain classes of nominal elements and denominal adjectives are shown to pattern with such elements. Second, denominal adjectives interact with the syntactic movement of arguments within -N nominalizations. Specifically, they are capable of blocking DP-internal movement of phrases across them in the very same way that a nominal phrase in argument position might do (§4.3.2). These findings constitute further support for an account of denominal adjectives that attributes their nominal behavior to the syntactic representation of their nominal component as a specifier.

It was further demonstrated, in §4.2.1, that despite their syntactic complexity denominal adjectives behave like morphophonological words with respect to various criteria. This aspect of their morphological behavior was taken as ev-

idence that they are derived via `m-merger`, which converts (74) into a complex head by adjoining the labels of a and D(P):

(75)



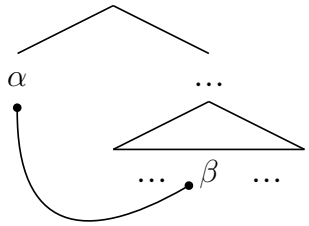
In particular, since only the label of a nominal phrase in specifier position survives the application of `m-merger`, a denominal adjective is not expected to contain any branching material. Ultimately, the additional case studies discussed in this section lend further support to the present approach to the dual behavior of denominal adjectives.

4.3.1 Anaphoricity

One aspect of the behavior of denominal adjectives that supports their syntactic decomposition concerns their sensitivity to c-commanding binding antecedents (§4.3.1.1-§4.3.1.3). In particular, the distribution of pronominal possessors is affected by Principles A and B of the Binding Theory, while that of non-pronominal possessors—i.e. those formed out of names—is partially governed by Principle C. Specifically, these possessors are forced to be bound or free by the principles of the Binding Theory. The present approach to the syntactic derivation of denominal adjectives explains this behavior by treating their nominal component no differently from pronouns and names in general. The

interaction between a potential binding antecedent α and a pronoun/name β that stand in the configuration below is governed by the principles of the Binding Theory.

(76)



Since the nominal component of denominal adjectives (prenominal possessors, in particular) has the same status as β in this diagram, it is only expected that they will also obey these principles.

4.3.1.1 Principle A

The following subset of the pronominal possessors have traditionally been designated as *reflexive* (see §4.2.1.2):

(77) *Reflexive pronominal possessors*

	MASC	FEM	NEUT	PLURAL	
REFLEXIVE	*svoj*	*svoja*	*svoe*	*svoi*	one's own

One way in which they are reflexive is that they can be bound like other reflexive pronouns. For instance, the pronominal possessor *svoe* 'one's own (neut)' below is bound by the matrix subject *Kitaj* 'China' and *vsjaka dăržava* 'every country'. The pronominal possessors in these examples are, of course, interpreted as the external arguments of the -N nominalizations *pospisvane* 'signing' and *izlizane*

'leaving'.

(78) a. *Kitaj e licemeren v svoeto podpisvane na tezi dva*
China is hypocritical in the.REFL.POSS signing of these two
važni dokumenta
important documents

'China$_i$ is hypocritical in its$_i$ (own) signing of these two important documents'

b. *vsjaka dăržava može da uvedomi za svoeto izlizane ot*
every country can to announce about the.REFL.POSS leaving from
dogovora edna godina sled podpisvaneto mu
the.treaty one year after signing.the its

'Every country$_i$ can announce its$_i$ (own) leaving of the treaty within a year from its signing'

Pronominal possessors behave like anaphors with respect to Principle A of the Binding Theory in that they must be bound by a c-commanding antecedent within a binding domain of the relevant size. I state the binding principles informally here, since their actual interaction with the indexing procedure is not relevant for present purposes. Instead, I formulate them, following Reinhart (1983b) and Chomsky & Lasnik (1993), in terms of their appropriate output:

(79) *Principle A*

An anaphor (a reflexive or reciprocal pronoun) is interpreted as bound by (and only by) a c-commanding nominal phrase within a specified syntactic domain.

The following examples show that c-command is relevant for the binding of reflexive possessors. In particular, only the matrix subject *săjuznicite na Kitaj* 'China's allies' can bind the reflexive pronoun *svoe* 'one's own (neut)'. On the

other hand, binding by any DP that is properly contained within the subject, such as *Kitaj* 'China', fails:

(80) [*sǎjuznicite na Kitaj*] *odobriha svoeto podpisvane na tezi dva*
the.allies of China approved the.REFL.POSS signing of these two
važni dokumenta
important documents
'China's$_k$ allies$_j$ approved their$_j$/*its$_k$ (own) signing of these two important documents'

In addition, the minimal clause that contains these reflexive possessors qualifies as the relevant binding domain. The reflexive possessor *svoe* 'one's own (neut)', which is interpreted as the external argument in the following example, can only be bound by the c-commanding antecedent *Kitaj* 'China', which is the subject of the clause that immediately contains the -N nominalization. On the other hand, binding of the reflexive possessor by the subject *Rusija* 'Russia' of the higher clause fails:

(81) *Rusija znae, če Kitaj odobri svoeto podpisvane na tezi dva*
Russia knows that China approved the.REFL.POSS signing of these two
važni dokumenta
important documents
'Russia$_k$ knows that China$_j$ approved its$_{j/*k}$ (own) signing of these two important documents'

-N nominalizations also define domains for the binding of reflexives. A reflexive possessor internal to an -N nominalization DP, such as *svoe* 'one's own (neut)' below, cannot be bound by an antecedent external to this DP, *organizimă* 'the organism'. Instead, in this position a non-reflexive possessor, such as the third person singular masculine pronominal possessor *negovo* 'its', must appear:

(82) *organizimă izbjagva često narušavane na negovoto/*svoeto*
the.organism avoids frequent disruption of the.its/the.POSS.REFL
usvojavane na vitamin C
absorption of vitamin C

'the organism$_i$ avoids frequent disruption of its$_i$ (own) absorption of vitamin C'

A further restriction on these reflexive possessors, besides Principle A, is that they are obligatorily bound by a "subject". The sense of "subject" here can be narrowed down structurally to the thematic positions associated with external arguments of clauses and nominalizations, namely Spec,vP and Spec,nP. To illustrate this, I rely on reflexive possessors in their non-thematic uses. However, the conclusions carry over to the other kinds of reflexives in the language as well as to reflexive possessors that are interpreted as external arguments of -N nominalizations (see §4.4 and Schürcks 2003).[27]

To begin with, I present relevant evidence from clauses. First, the examples below show that internal arguments, such as a direct object, is not a legitimate antecedent for a reflexive possessor contained within an indirect object. In such configurations, the subject is still the only possible binder for the reflexive:

(83) *az predstavih Ivan na svojata sestra*
I introduced Ivan to the.REFL.POSS sister

'I introduced Ivan$_i$ to his$_i$/*my (own) sister'

[27] The reason I avoid examples with reflexive possessors in their thematic use is that they impose very strict constraints on the possible argument structures of their container -N nominalization (e.g. they must involve an -N nominalization embedded as an internal argument of another -N nominalization) which results in excessive semantic/pragmatic implausibility.

Second, it is the base position of the potential antecedent—not its surface position—that is relevant for the purposes of reflexive binding. Consider for instance, the inability of derived subjects of passives to bind this kind of reflexive possessor. In the following passive example the surface subject *tija nešta* 'these things' has been promoted to Spec,TP via A-movement from its base position as the direct object of *vrăštam* 'return' (Hauge 1999). From this position, however, it is unable to bind the reflexive possessor *svoe* 'one's own (neut)', which is contained within the locative argument of the verb.

(84) * *tija nešta edva li šte bădat vărnati njakoga na svoeto predišno*
these things hardly will be returned ever to the.POSS.REFL former
mjasto
place
'these things$_i$ will hardly ever be returned to their$_i$ former place'

Therefore, external arguments of clauses, which are base generated in Spec,vP can antecede reflexive pronouns but internal arguments cannot, even if they are promoted to Spec,TP via A-movement. Reflexive pronouns in Bulgarian then cannot be bound by internal arguments (i.e. those that are base generated within the complement of v) regardless of the surface position of these arguments.[28]

In addition, it can be shown that internal arguments within -N nominalizations are likewise unable to bind reflexives. For instance, the direct object *Ivan* 'Ivan' of the following -N nominalization cannot antecede the reflexive possessor *svoi* 'one's own (pl)' within the indirect object of that -N nominalization:

[28]These conclusions hold true of reflexive pronouns more generally, as demonstrated in §4.4.

(85) *moeto postojanno predstavjane na Ivan na svoite roditeli*
the.my constant introducing of Ivan to the.REFL.POSS parents
'my constant introducing of Ivan$_i$ to his$_i$/*my (own) parents'

While Spec,TP does not host binding antecedents in clauses, it is an open question whether Spec,DP does so in -N nominalizations. Within the present framework of assumptions, Spec,DP in an -N nominalization is non-empty only when a DP-internal nominal phrase has been clitic doubled or fronted to the left periphery of the DP. In particular, both clitic doubling and fronting of this kind are assumed to involve A-movement to Spec,DP of the structurally highest active nominal phrase within the c-command domain of D. Therefore, both processes can be used to test whether an internal argument promoted to Spec,DP can serve as a binding antecedent for reflexives. The relevant configuration involves a ditransitive -N nominalization with an indirect object that contains a reflexive pronoun and a direct object that moves to Spec,DP in the absence of an external argument. Such movement can feed either clitic doubling (i.e. further `m-merger`) or fronting to the left periphery of DP (i.e. further $\overline{\text{A}}$-movement) yielding the following two examples. The failure of the reflexive *svoi* 'one's own (pl)' to be bound by either the clitic doubled or the fronted direct object *Ivan* 'Ivan' demonstrates that Spec,DP is irrelevant for reflexive binding within -N nominalizations.

(86) a. * *postojannoto mu predstavjane (na Ivan) na svoite roditeli*
the.constant 3.SG.M introducing of Ivan to the.REFL.POSS parents
'the constant introducing of him$_i$/Ivan$_i$ to his$_i$ (own) parents'

b. * *na Ivan postojannoto predstavjane na svoite roditeli*
of Ivan the.constant introducing to the.REFL.POSS parents
'the constant introducing of Ivan$_i$ to his$_i$ (own) parents'

On the other hand, an external argument expressed as a *na*-phrase within an -N nominalization is, in fact, able to bind reflexive pronouns. For instance, the quantified external argument *vsjako dete* 'every child' in the following example binds the more deeply embedded *svoja* 'one's own (fem)':

(87) *čestoto izlizane na vsjako dete ot svojata staja*
the.frequent exiting of every child from the.REFL.POSS room
'every child's$_i$ frequent exiting from its$_i$ (own) room'

Since the morphophonlogical expression of external arguments as *na*-phrases is limited to Spec,nP, the quantified antecedent in this -N nominalization must occupy Spec,nP. In turn, this reveals that Spec,nP—the thematic position associated with the external argument of -N nominalizations—must be able to host antecedents for reflexive binding. In this respect it differs both from Spec,DP and from positions internal to the complement of n. In fact, Spec,vP and Spec,nP are the only such positions for which we have positive evidence in Bulgarian. This lexical requirement of Bulgarian reflexives can be encoded in a number of ways (e.g. as a feature on the relevant class of reflexive pronouns or a binding principle that refers to this class) but, since the exact implementation bears little on the present concerns, I state the constraint as a description of its appropriate output:[29]

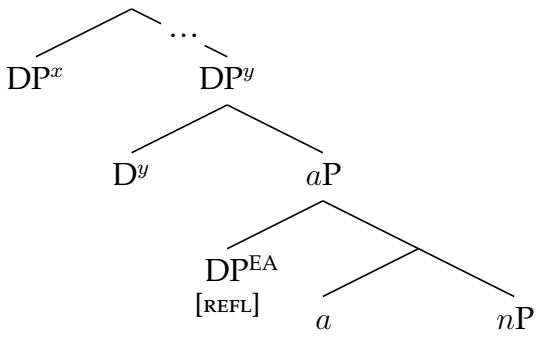
[29]This "subject-orientation" property of reflexives in Bulgarian is of more general nature and characterizes other kinds of reflexives in the language; it is further discussed in §4.4.

(88) *Constraint on reflexive binding in Bulgarian*

A reflexive pronoun must be bound by a nominal phrase that is externally merged as Spec,vP or Spec,nP.

For the purposes of this section, the sensitivity of the reflexive pronominal possessors to c-commanding antecedents is taken as evidence for syntactically decomposing denominal adjectives into an independent nominal component and additional morphosyntactic pieces (such as the adjectivizing head, for example). It is this nominal component that constitutes the locus of their behavior as bindees. At the output of narrow syntax the morphosysntactic pieces of denominal adjectives occupy the positions in (89). This is the structure that serves as the input to the component(s) of grammar responsible for the computation of binding.

(89)



In such a structure the potential antecedent DP^x is predicted to bind the anaphoric DP^{EA} unproblematically. Coindexation is additionally constrained by Principle A, which ensures that DP^x c-commands DP^{EA} and that both are sufficiently close to each other. Furthermore, coindexation is subject to the lex-

ical requirement of Bulgarian reflexives that the binder be externally merged as Spec,vP or Spec,nP. Since binding is computed independently of the mapping from syntax to morphophonology, operations like `m-merger`—which produces a denominal adjective out of a and its specifier in (89)—have no effect on binding.[30]

4.3.1.2 Principle B

A subset of the non-reflexive pronominal possessors—the third person ones (shown below)—exhibit the syntactic behavior of regular pronouns.

(90) *Pronominal possessors (third person)*

FEATURES	MASC	FEM	NEUT	PLURAL	
3.S.M	*negov*	*negova*	*negovo*	*negovi*	his
3.S.F	*nejn*	*nejna*	*nejno*	*nejni*	her(s)
3.P	*tehen*	*tjahna*	*tjahno*	*tehni*	their(s)

In particular, they obey Principle B of the Binding Theory and cannot be bound in the relevant locality domain (Reinhart 1983b, Chomsky & Lasnik 1993):

(91) *Principle B*

A pronoun must be interpreted as not bound by any c-commanding nominal phrase within a specified syntactic domain.

[30] This account is independent of what component or components of the grammar are responsible for establishing binding relations, as long as the syntactic structure in (89) is accessible to the relevant component(s).

As with reflexive binding, the relevant domain can be either the minimal clause or an -N nominalization. So, in the presence of a c-commanding antecedent within the same clause or nominalization it is the reflexive counterparts of these pronominal possessors that are compatible with binding of this kind and would appear instead. For instance, the pronominal possessor *negovo* 'its' is necessarily interpreted as disjoint from the matrix subject *Kitaj* 'China':

(92) * *Kitaj e licemeren v negovoto podpisvane na tezi dva važni*
China is hypocritical in the.its signing of these two important
dokumenta
documents
'China$_i$ is hypocritical in its$_i$ signing of these two important documents'

In addition, a third person pronominal possessor, such as *tjahno* 'their' in (93), can legitimately appear as the external argument of an -N nominalization, as long as it is not bound by the subject *Kitaj* 'China' of the minimal clause that contains that nominalization.

(93) *Rusija znae, če Kitaj odobri tjahnoto podpisvane na tezi dva*
Russia knows that China approved the.their signing of these two
važni dokumenta
important documents
'Russia$_j$ knows that China$_k$ approved its$_{j/*k}$ signing of these two important documents'

Interestingly, the complementarity between reflexive and non-reflexive pronominal possessors is found only with [−PARTICIPANT] pronominal possessors. First and second person possessors like *naše* 'our' in (94), on the other hand, can occur with coindexed subjects (*nie* 'we') unproblematically:

(94) *nie odobrihme našeto podpisvane na tezi dva važni dokumenta*
we approved the.our signing of these two important documents
'we$_i$ approved our$_i$ signing of these two important documents'

Thus, there is an optionality between reflexive and non-reflexive pronominal possessors in the first and second persons, which disrupts the complementarity observed in the third person and in non-possessive reflexives in the language more generally. Incidentally, such optionality is observed in English too:

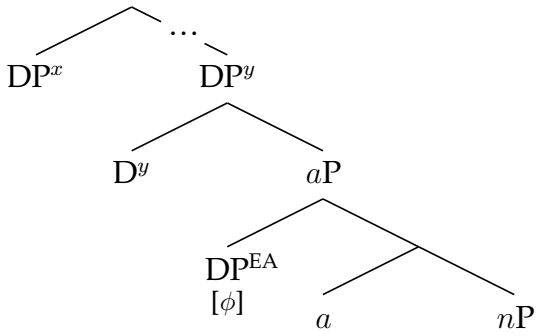
(95) a. we wrote about us

b. * they$_i$ wrote about them$_i$

This split in the Bulgarian paradigm suggests that [+PARTICIPANT] reflexive possessors can refer directly to the discourse participants without requiring a relation between two pieces of linguistic material. Presumably, third person reflexive possessors need a linguistic antecedent because, unlike first and second person referents, third person referents are not uniquely determined by the discourse.

The sensitivity of pronominal possessors to c-commanding nominal phrases is expected under the decomposition analysis of denominal adjectives, since it attributes the status of an independent pronoun to their nominal component. As a result, the interpretive component is handed the syntactic structure below. In such a configuration the pronoun DP$^{\text{EA}}$ is predicted to be not bound by any c-commanding DP^{x} within the relevant binding domain:

(96)



4.3.1.3 Principle C

So far we have seen that in their behavior as bindees both reflexive and non-reflexive pronominal possessors obey Principles A and B of the Binding Theory. In addition, non-pronominal possessors—those formed from names—cannot be bound by a c-commanding antecedent. The external argument *Cezarovo* 'Caesar's' of the -N nominalizations in each of the following examples fails to be bound by the pronominal matrix subject *toj* 'he' regardless of the hierarchical distance between the two elements.

(97) a. * *toj odobri Cezarovoto podpisvane na tezi dva važni*
he approved the.Caesar.POSS signing of these two important
dokumenta
documents

'he$_i$ approved Caesar's$_i$ signing of these two important documents'

b. * *toj pomoli Egipet da odobri Cezarovoto podpisvane na tezi dva*
he asked Egypt to approve the.Caesar.POSS signing of these two
važni dokumenta
important documents

'he$_i$ asked Egypt to approve Caesar's$_i$ signing of these two important documents'

In other words, denominal adjectives formed from names appear to obey Principle C of the Binding Theory (Reinhart 1983b, Chomsky & Lasnik 1993):

(98) *Principle C*

An R-expression (i.e. a non-pronominal referring expression) is interpreted as not bound by any c-commanding nominal phrase.

Of course, this parallels the general behavior of names in Bulgarian. For instance, if the external argument of a nominalization is a name introduced by a *na*-phrase, it still cannot be c-commanded by a coindexed pronoun, regardless of how many clause boundaries away the pronoun is:

(99) a. * *toj odobri podpisvaneto na Cezar na tezi dva važni dokumenta*
he approved the.signing of Caesar of these two important documents
'he$_i$ approved Caesar's$_i$ signing of these two important documents'

b. * *toj pomoli Egipet da odobri podpisvaneto na Cezar na tezi dva važni dokumenta*
he asked Egypt to approve the.signing of Caesar of these two important documents
'he$_i$ asked Egypt to approve Caesar's$_i$ signing of these two important documents'

Lieber (1984) explains the following contrast in English in a similar way: (100b) is ungrammatical because *he* c-commands the R-expression *McCarthy*, which results in a Principle C violation.

(100) a. McCarthy$_i$ites are now puzzled by him$_i$.

b. * He$_i$ distrusts McCarthy$_i$ites.

However, Ward, Sproat & McKoon (1991) argue that the deviance of (100b) is due to the absence of an antecedent for the pronoun in the context provided. In support of their claim they consider the grammaticality of the following slightly modified examples:

(101) a. After McCarthy had undergone a change of heart and issued a public apology, he began to distrust the very McCarthyites who previously had been so fiercely loyal.

b. He has called editors to tell them Rushdie jokes …
(*New York Times Magazine*, "Rushdie in hiding", November 3, 1990, p. 68)

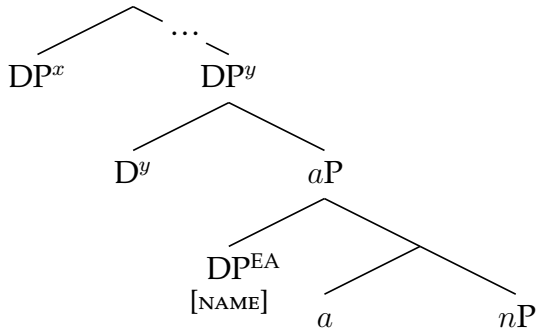
In Bulgarian, however, possessors formed out of names must be free (i.e. not bound) even in such contexts. For instance, it is still ungrammatical for the pronoun *toj* 'he' to bind the non-pronominal possessor *Cezarovo* 'Caesar's', which is interpreted as the external argument of an -N nominalization in the following example:

(102) * *sled kato Cezar obsădi riskovete, toj odobri Cezarovoto*
after that Caesar discussed the.risks he approved the.Caesar.POSS
razgrabvane na gradovete
looting of the.cities
'after Caesar$_i$ discussed the risks, he$_i$ approved Caesar's$_i$ looting of the cities'

Therefore, Ward et al.'s (1991) objection does not hold for prenominal possessors in Bulgarian and the data in (97) does constitute evidence that prenominal possessors are sensitive to Principle C of the Binding Theory. The prediction of the decomposition analysis of denominal adjectives is then borne out: if the

nominal component DP^{EA} of such an adjective is a name, it would interact with any c-commanding DP^{x} according to Principle C—see (103). In particular, DP^{EA} cannot be bound by DP^{x}. It should be noted that, while I do not make a specific claim about the division of labor among various grammatical components with respect to Principle C, these conclusions hold as long as the syntactic structure (103) is utilized by the relevant grammatical component(s).[31]

(103)

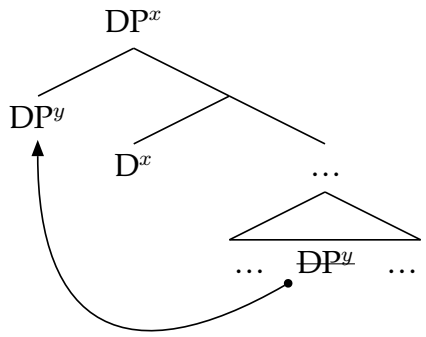


4.3.2 Intervention

Another property of denominal adjectives that attests to their underlyingly nominal character concerns their interaction with syntactic movement. In particular, unlike any other kind of adjective, they are able to block DP-internal A-movement—the kind of movement that gives rise to cliticization and clitic doubling in DPs (§4.3.2.1). This kind of movement affects only DP-internal *na*-phrases (DP^{y} in (104)) and targets Spec,DP:

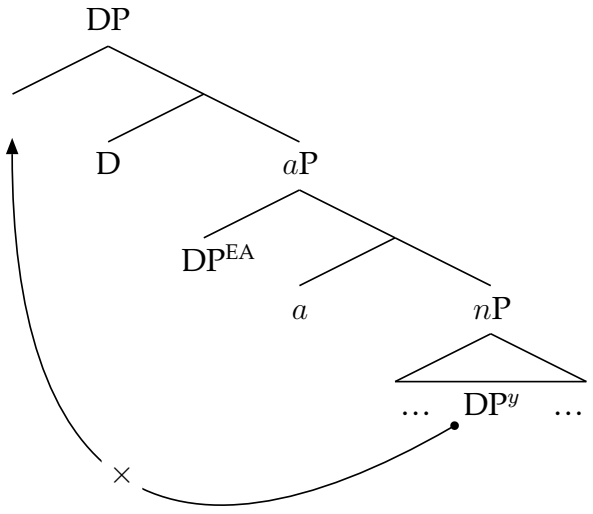
[31]It is, however, assumed sometimes that Principle C is not a syntactic condition (Chomsky 1982, Reinhart 1983a, Grodzinsky & Reinhart 1993, Reinhart & Reuland 1993). In that case, the sensitivity of denominal adjectives to Principle C might have to be re-examined analytically and may no longer bear on the plausibility of the syntactic decomposition analysis proposed here.

(104)



The present approach to the syntactic composition of denominal adjectives allows an explanation of this blocking effect in terms of standard assumptions about constraints on the locality of A-movement (e.g. Rizzi 1990). Specifically, as schematized in (105), the nominal component DP^{EA} of a denominal adjective is expected to block the initial movement to Spec,DP of a postnominal DP^y, as DP^{EA} occupies a specifier that is structurally closer to the probing head D^x than DP^y. As a result, DP-internal cliticization is expected to be impossible in the presence of a denominal adjective that expresses the external argument of a complex event nominal.

(105)



Finally, §4.3.2.2 demonstrates that DP^{EA} is a defective intervener because, while it blocks movement, it itself is immobile. I attribute this to the assignment of lexical/oblique case of a to its specifier, which renders DP^{EA} inactive for further syntactic manipulation and prevents it from undergoing any movement (Chomsky 2000, p. 123). Overall, the relevance of denominal adjectives for the computation of movement locality is taken as another piece of evidence for decomposing them syntactically.

4.3.2.1 DP-internal cliticization and clitic doubling

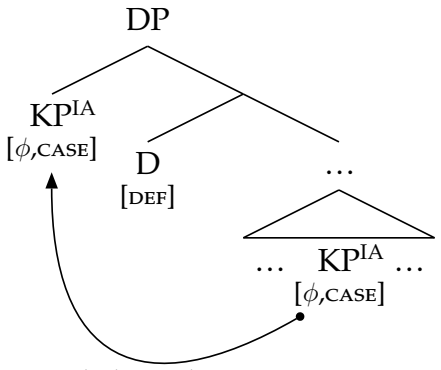
As discussed at length in Chapter 3 (§3.3.1), *na*-phrases that express internal arguments in -N nominalizations can be clitic doubled. In each of the following examples the clitic doubles the internal theme argument, which remains in its canonical postnominal position:

(106) a. *postojannoto <u>im</u> brutalno razgrabvane <u>na gradovete</u>*
the.constant 3.PL brutal looting of the.cities
'the constant brutal looting of the cities'

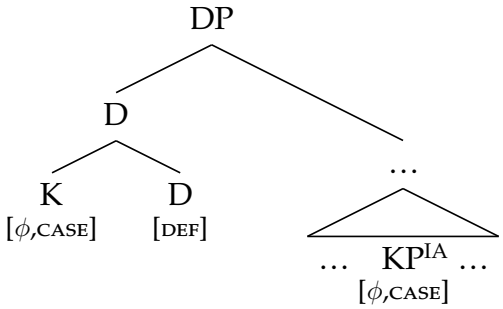
b. *obsăždaneto <u>mu</u> <u>na zakona</u> v plenarnata zala*
discussion-the 3.SG.M of the.law in the.plenary hall
'the discussion of the law in the plenary hall'

I demonstrate in Chapter 3 that clitic doubling within nominal phrases involves a movement relation between the full nominal phrase associate and Spec,DP. Once the associate moves to Spec,DP, `m-merger` reduces it to just its label (i.e. its Case- and ϕ-features) and adjoins it to D[DEF], as shown below:

(107) a. *Syntactic movement*



b. *Morphological merger*



Clitic doubling of an internal argument of an -N nominalization, however, is impossible in the presence of a denominal adjective that expresses an external θ-role. All three kinds of denominal adjective behave alike in blocking clitic doubling of the internal argument *gradovete* 'the cities' in (108). As (106) demonstrates, other adjectives do not have such a blocking effect.

(108) a. * *postojannoto im negovo razgrabvane (na gradovete)*
the.constant 3.PL his looting of the.cities
'his constant looting of the cities/them'

b. * *postojannoto im Cezarovo razgrabvane (na gradovete)*
the.constant 3.PL Caesar.POSS looting of the.cities
'Caesar's constant looting of the cities/them'

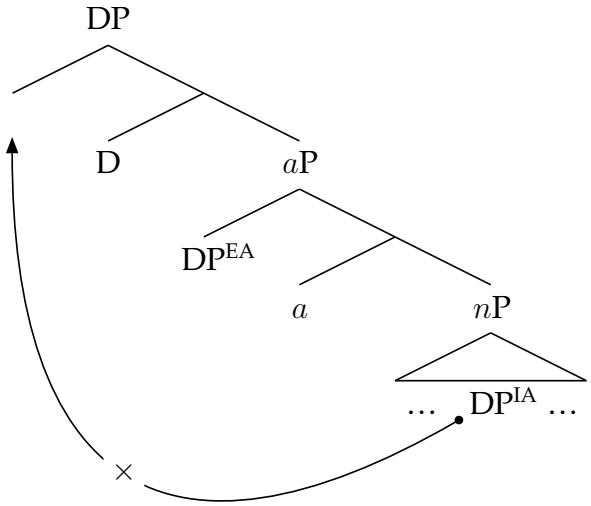
c. * *postojannoto <u>im</u> rimsko razgrabvane (<u>na gradovete</u>)*
the.constant 3.PL Roman looting of the.cities
'the Roman constant looting of the cities/them'

Therefore, denominal adjectives appear to block the relation that must hold between a clitic and its doubled associate (here, the *na*-phrase). As established in Chapter 3 (§3.3), it is only possible to clitic double the structurally most prominent argument within an -N nominalization: the eternal argument in Spec,nP when one is present, or the direct object when there is no external argument.

The decomposition analysis of denominal adjectives allows a straightforward explanation of the blocking effect induced by denominal adjectives and the absence of similar effects with regular prenominal modifiers. In particular, the blocking effect can be seen as a reflex of the relative structural positions in which external and internal arguments of -N nominalizations are introduced. Internal θ-roles are assigned within the complement of the nominalizer n, in positions that are structurally lower (in terms of c-command) than the positions where external arguments are introduced (outside the complement of n). Therefore, the failure of cliticization and clitic doubling of internal arguments across an external argument is expected under a Relativized Minimality view of constraints on the locality of A-movement (Rizzi 1990). Chapter 3 (§3.3) demonstrated at length in the context of cliticization qua A-movement that DP-internal movement in Bulgarian does obey the logic of Relativized Minimality. For instance, a direct object inside an -N nominalization cannot move to Spec,DP across a higher external argument; an indirect object is likewise unable to move

to Spec,DP across an intervening direct object.[32]

(109)



As expected, given that they occupy Spec,nP, external argument *na*-phrases also block cliticization and clitic doubling of an internal argument. For example, the third person masculine clitic *mu* in (110a) can double the internal argument *kanala* 'the channel' unless an external argument is present, as in (110c). If the external argument *decata* 'the children' is, in fact, present, it can be clitic doubled. Such movement-blocking behavior is expected of nominal phrases in specifier position but not of adjectives or adjective phrases, and supports the representation above of the nominal component of denominal adjectives as a specifier in

[32]The ungrammaticality of the examples in (108) is not due to a complementarity between DP-internal clitics and denominal adjectives of more general nature. They can cooccur with object-denoting nominals such as *book* 'book', which support both a *possessor* and an *author* relation:

(i) a. *vsičkite mu Penkini knigi na Vazov*
the.all 3.M.SG Penka.POSS books of Vazov
'all of Vazov's books by Penka'

b. *ljubimata mi nova negova kniga na men*
the.favorite 1.SG new his book of me
'his favorite new book of mine'

the extended nominal projection.

(110) a. *prepluvaneto mu na kanala*
the.swimming 3.SG.M of the.channel
'the swimming of the channel' (Franks & King 2000)

b. *prepluvaneto na decata na kanala*
the.swimming of the.children of the.channel
'the children's swimming of the channel'

c. * *prepluvaneto mu na decata na kanala*
the.swimming 3.SG.M of the.children of the.channel

d. *prepluvaneto im na decata na kanala*
the.swimming 3.PL. of the.children of the.channel

Finally, observe that while intervening denominal adjectives block DP-internal cliticization and clitic doubling, *ot*-phrases (*by*-phrases) do not:

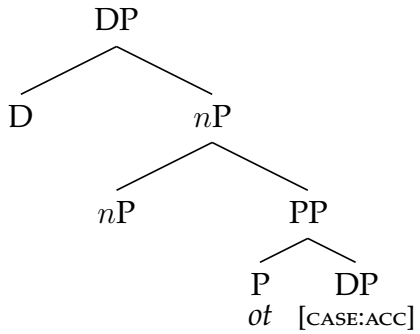
(111) a. *postojannoto i pokorjavane na Galija (ot Cezar)*
the.constant 3.SG.F subjugation of Gaul by Caesar
'the constant subjugation of Gaul (by Caesar)'

b. *čestoto mu podpisvane na dogovora (ot dvete strani)*
the.frequent 3.SG.M signing of the.contract by both sides
'the frequent signing of the contract (by both sides)'

This is also predicted by the present analysis due to the adjunct status of *ot*-phrases (see Chapter 3, §3.3.2.1). This contrast then illuminates a key syntactic difference between denominal adjectives and *ot*-phrases—two of the mechanisms for the expression of external arguments in -N nominalizations. Specifically, the former involves a syntactic specifier as the external argument, while

the latter is an adjunct that contains the nominal phrase interpreted as the external argument (see also fn. 18):

(112)



4.3.2.2 Defective intervention

This section has so far demonstrated that denominal adjectives block DP-internal movement. The syntactic decomposition analysis of denominal adjectives forces a treatment of this blocking effect in terms of the general constraints on the locality of syntactic movement: the nominal component of denominal adjectives is an intervener due to its status as a specifier in the extended nominal projection. This conclusion raises the question of whether the intervening nominal component can itself undergo such movement. As this subsection demonstrates, it is immobile. For example, denominal adjectives cannot be clitic doubled, which is taken as evidence that they do not undergo A-movement; nor can they be focused or topicalized in the left periphery of the nominal phrase, or escape the DP the way that other DP-internal arguments can. In this sense, denominal adjectives give rise to defective intervention: they block movement but do not undergo any movement themselves. Here, I show that this is, in fact,

the expected state of affairs according to the proposed account of denominal adjectives and, in particular, their case assigning properties (see §4.2.2).

Since clitic doubling in Bulgarian involves syntactic movement of an argument, the availability of clitic doubling with denominal adjectives can be used to detect the mobility of their nominal component (cf. §4.3.2.1). Clitic doubling of a denominal adjective within a complex event nominal invariably results in ungrammaticality. In each of the following examples, the third person singular masculine clitic *mu* matches the features of the nominal component of the respective denominal adjective *nego* 'he', *Cezar* 'Ceasar's', or *Rim* 'Rome'.

(113) a. * *postojannoto mu negovo razgrabvane na trakijskite zemi*
the.constant 3.M.SG his looting of the.Thracian lands
'his constant looting of the Thracian lands'

b. * *postojannoto mu Cezarovo razgrabvane na trakijskite zemi*
the.constant 3.M.SG Caesar.POSS looting of the.Thracian lands
'Caesar's constant looting of the Thracian lands'

c. * *postojannoto mu/im rimsko razgrabvane na trakijskite zemi*
the.constant 3.M.SG/3.PL the.Roman looting of the.Thracian lands
'the constant Roman looting of the Thracian lands'

Since DP-internal clitics are not in complementary distribution with denominal adjectives in general (see §4.3.2.1, espescially fn. 32), these examples are taken to demonstrate that denominal adjectives cannot be clitic doubled. Given this much, recall that DP-internal clitic doubling is argued in Chapter 3 to involve A-movement of a nominal phrase to Spec,DP and a subsequent application of `m-`

merger, which rebrackets D[DEF] and its internally merged specifier, adjoining their labels—see e.g. (107). The inability of denominal adjectives (or, rather, their nominal components) to be clitic doubled must then indicate an inability to undergo the syntactic movement involved in cliticization and clitic doubling.

To find out whether the nominal component of denominal adjectives undergoes syntactic movement, we could also ask whether they can be fronted to the left periphery of the DP or the clause in an instance of $\overline{\text{A}}$-movement. Arguments of -N nominalizations can reach the initial position within DPs via focus movement or topicalization of the kind described in Chapter 2 (§2.2.1). Denominal adjectives are not only incapable of undergoing A-movement, as demonstrated above, but they also fail to participate in the kinds of $\overline{\text{A}}$-movement that *na*-phrase arguments undergo freely. The ungrammaticality of the following examples, in which a denominal adjective originating within a complex event nominal has been fronted to the left periphery of the clause, demonstrates the failure of denominal adjectives to undergo such movement:[33]

(114) a. * *negovoto ne očakvah* [*t razgrabvane na trakijskite zemi*]
the.his not I.expect the.looting of the.Thracian lands
'I didn't expect his looting of the Thracian lands'

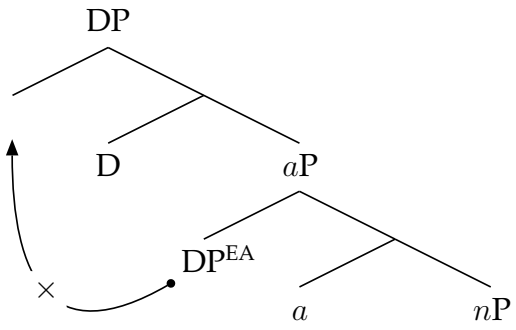
[33]This aspect of the behavior of denominal adjectives is typical of prenominal modifiers in general, which normally do not undergo any syntactic movement at all. The unavailability of such movements is consistent with the general ban on left branch extraction in Bulgarian (Uriagereka 1988, Bošković 2005, Grebenyova 2005). In disallowing left-branch extraction Bulgarian is in the minority among the Slavic languages (the only other Slavic language that disallows left-branch extraction is Macedonian). Left branch extraction of apparently similar adjectives is observed, for example, in Serbian (Zlatić 1997, Ch. 5, p. 34). Uriagereka (1988) and Bošković (2005) suggest the the relevant parametric difference between languages like Serbian on the one hand and Bulgarian and Macedonian on the other has to do with the availability of overt definiteness markers in the latter class of languages, which block left-branch extraction.

b. * *Cezarovoto* *ne očakvah* [*t razgrabvane na trakijskite zemi*]
the.Caezar.POSS not I.expect the.looting of the.Thracian lands
'I didn't expect Caezar's looting of the Thracian lands'

c. * *rimskoto* *ne očakvah* [*t razgrabvane na trakijskite zemi*]
the.Roman not I.expect the.looting of the.Thracian lands
'I didn't expect the Roman looting of the Thracian lands'

The data presented here indicates that, even though denominal adjectives block DP-internal movement, they or their nominal components are themselves unable to undergo clitic doubling (qua A-movement) or extraction out of the DP. Since clitic doubling involves movement to Spec,DP as a subcomponent, I attribute the inability of the nominal component of denominal adjectives to participate in this phenomenon to the failure of this movement to Spec,DP:

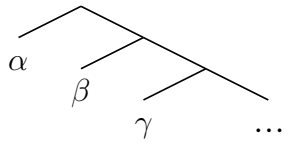
(115)



This failure is expected: since the lexical/oblique case of the DP in Spec,aP has already been assigned to it by a in a specifier-head configuration (see §4.2.2.1), the DP is "frozen in place"—it is rendered inactive for further syntactic manipulation and is unable to undergo any movement (Chomsky 2000, p. 123). In general, for the purposes of internal `Merge`, a goal must be both local and active. In the following configuration, if both β and γ match the probe α but β is not

active, the effects of matching between α and γ are blocked and movement of γ to Spec,αP is bled. Yet, the inactive β is unable to undergo movement itself.

(116)



Note that, since *na*-phrases within nominals bear unmarked case, which is the morphophonological expression of case features that remain unvalued, they cannot be defective interveners (see Chapter 3, §3.3.1.1). This explanation of the immobility of the nominal component D of denominal adjectives has the added advantage that it ties D's immobility to the adjectival nature of a: D is introduced as a specifier of a, whose idiosyncratic case marking properties render D immobile.[34]

4.4 An apparent paradox

The previous section shows that denominal adjectives pattern like nominal specifiers in a number of ways. However, their nominal behavior appears to be inert in one important respect. Despite their nominal characteristics and, in particular, the fact they can be bound, denominal adjectives are themselves deficient

[34]It should be noted that, since goals in clauses, which also bear lexical/oblique case (Chapter 2, §2.4.1) do undergo movement, it cannot be the lexical/oblique case of denominal adjectives *per se* that renders them immobile. This contrast indicates that dative and genitive case behave differently with respect to probing by higher heads: only nominal phrases bearing the latter are inactive. For discussion of *case-discrimination* in ϕ-agreement, the reader is referred to Bobaljik 2008 and Preminger 2011.

antecedents for binding. In this section I demonstrate that they are unable to bind reflexives. This finding creates an apparent paradox in light of the previously established anaphoric and movement-blocking properties of denominal adjectives. The theory developed on the basis of these properties is thus challenged, since it leads to the expectation that denominal adjectives must be legitimate binders. However, I show in this section that the theory is in no need of modification because the deficiency of denominal adjectives as binders is rooted elsewhere—namely, they are not "subjects", in a sense to be made precise below. This independent explanation of their failure to bind reflexives allows the syntactic decomposition analysis of denominal adjectives to be maintained. In addition, it becomes apparent how the theory can easily accommodate the observed crosslinguistic variation with respect to binding by denominal adjectives.

I test the ability of denominal adjectives to bind anaphors via three types of DP-internal reflexives: the full nominal phrase *sebe si*, the reflexive possessive clitic *si*, and the reflexive possessor *svoj*. Within complex event nominals, binding of these reflexives by c-commanding *na*-phrases works unproblematically. For instance, the external argument *Cezar* 'Caesar' in (117a) obligatorily binds the reflexive *sebe si*, which occupies the internal argument position within this -N nominalization. Similarly, (117b) shows a quantified external argument *vseki rabotnik* 'every worker' binding the same kind of reflexive internal argument. It is furthermore clear from these examples that the surface position of the external argument—fronted to the left periphery of DP as in (117a) or in-situ as in

(117b)—has no effect on its binding potential.

(117) a. *Ne očakvam na Cezar preodoljavaneto na sebe si da e lesno za*
not I.expect of Caesar the.getting over of self REFL to be easy for
nego.
him
'I don't expect that Caesar's$_i$ getting over himself$_i$ would be easy for him.'

b. *Usmihvaneto na vseki rabotnik na samija sebe si me iznenada.*
the.smiling of every worker to alone self REFL me surprised
'every worker's$_i$ smiling to himself$_i$ (alone) surprised me.'

The reflexive possessive clitic *si* can be similarly bound by a *na*-phrase that expresses the external argument in an -N nominalization. In (118a) the external argument *rimljanite* 'the Romans' binds *si*, which is contained within the internal argument of the -N nominalization. In (118b) the antecedent for the reflexive possessive clitic is quantified: *vseki futbolist* 'every football player'.

(118) a. *uništožavaneto na rimljanite na imperijata si*
destroying of the.Romans of the.empire REFL
'the Romans'$_i$ destruction of their$_i$ (own) empire'

b. *zavrăštaneto na vseki futbolist v rodinata si*
the.returning of every footbal.player to country REFL
'the returning of every football player$_i$ to his$_i$ (own) country'

Finally, as discussed at length in §4.3.1.1, the reflexive pronominal possessors can also be bound by external argument *na*-phrases. In addition to the examples provided in that section, (119) confirms that an external argument such as *Cezar* 'Caesar' or the quantified *vsjako dete* 'every child' can bind a reflexive possessor

like *svoj* 'one's own (masc)'. In these examples *svoj* is part of either the internal argument of an -N nominalization or an adjunct phrase.

(119) a. *uništožavaneto na Cezar na svojata imperija*
the.destroying of Caesar of the.REFL.POSS empire
'Caesar's$_i$ destruction of his$_i$ (own) empire'

b. *čestoto izlizane na vsjako dete ot svojata staja*
the.frequent exiting of every child from the.REFL.POSS room
'every child's$_i$ frequent exiting from its$_i$ (own) room'

Unlike external arguments that are expressed as *na*-phrases, denominal adjectives are unable to bind any of the three types of reflexives. To begin with, (120) demonstrates that in -N nominalizations prenominal possessors (both pronominal and non-pronominal ones) and nationality adjectives fail to bind the reflexive internal argument *sebe si*.

(120) a. * *nejnoto usmihvane na samata sebe si*
the.her smiling to alone self REFL
'her$_i$ smiling to herself$_i$ (alone)'

b. * *Cezarovoto preodoljavane na sebe si*
the.Caesar.POSS getting.over of self REFL
'Caesar's$_i$ getting over himself$_i$'

c. * *rimskoto uništožavane na sebe si*
the.Roman destroying of self REFL
'the Roman$_i$ destruction of itself$_i$/themselves$_i$'

The reflexive possessive clitic *si* cannot be bound by denominal adjectives in -N nominalizations either. The following examples illustrate this failure with all

three types of denominal adjective and a reflexive clitic that is contained within the internal argument of a -N nominalization:

(121) a. * *vašeto vrăštane ot amerikanskija lager v rodinata si*
the.your returning from the.American camp to the.country REFL
'your$_i$ returning from the American camp to your$_i$ (own) country'

b. * *Cezarovoto naznačavane na blizkite si*
the.Caesar.POSS hiring of the.relatives REFL
'Caesar's$_i$ hiring of his$_i$ (own) relatives'

c. * *rimskoto uništožavane na imperijata si*
the.Roman destroying of the.empire REFL
'the Roman$_i$ destruction of its$_i$/their$_i$ (own) empire'

And finally, the following -N nominalizations, each of which contains a denominal adjective that expresses the external argument and a non-clitic reflexive possessor inside its internal argument, are both ungrammatical. Therefore, non-clitic reflexive possessors behave like the other two types of reflexives described above and fail to be bound by any of the familiar kinds of denominal adjective.[35]

(122) a. * *vašeto često izlizane ot svojata staja*
the.your frequent exiting from the.REFL.POSS room
'your$_i$ frequent exiting from your$_i$ (own) room'

[35]Since denominal adjectives are defective antecedents for reflexive binding, they are also expected not to intervene in reflexive binding relations that are established across them. Unfortunately, we cannot use -N nominalizations to detect such an intervention effect by denominal adjectives because -N nominalizations define their own domains for binding (see §4.3.1.1) and binding from outside (e.g. by a matrix subject) is blocked even when the -N nominalization contains no (overt) external argument.

b. * *Cezarovoto* *uništožavane na svojata imperija*
the.Caesar.POSS destroying of the.REFL.POSS empire
'Caesar's$_i$ destruction of his$_i$ (own) empire'

c. * *rimskoto* *uništožavane na svojata imperija*
the.Roman destroying of REFL empire
'the Roman$_i$ destruction of its$_i$/their$_i$ (own) empire'

In order to understand the failure of reflexive binding by denominal adjectives, it is necessary to reexamine the principles that govern the distribution of reflexives. One aspect of their behavior concerns their adherence to Principle A of the Binding Theory in (123). It is established in §4.3.1.1 that the nominal component of denominal adjectives must be bound by a c-commanding antecedent within the minimal clause or -N nominalization, which constitute the two relevant binding domains in Bulgarian.

(123) *Principle A*

An anaphor (a reflexive or reciprocal pronoun) is interpreted as bound by (and only by) a c-commanding nominal phrase within a specified syntactic domain.

The other aspect of the behavior of these reflexives in Bulgarian, which is the key to understanding their failure to be bound by denominal adjectives, is lexical in nature: they are, in addition, "subject-oriented"—see (124). As demonstrated in §4.3.1.1, and further corroborated in the rest of this section, Spec,vP and Spec,nP are the only positions from which reflexives can be bound in Bulgarian. Therefore, since the nominal component of denominal adjectives occupies a specifier

position that is neither Spec,vP nor Spec,nP, it cannot serve as the antecedent for a reflexive pronoun.

(124) *Constraint on reflexive binding in Bulgarian*

A reflexive pronoun must be bound by a nominal phrase that is externally merged as Spec,vP or Spec,nP.

As we saw in §4.3.1.1, internal arguments in clauses—i.e. arguments that originate within the complement of v—do not bind reflexives, even if they are promoted to Spec,TP in the course of the derivation. For instance, internal arguments and derived subjects of passives were shown to be deficient binders of reflexive pronominal possessors. This conclusion holds true of reflexive pronouns more generally. Consider the failure of a direct object such as *Ivan* 'Ivan' to bind a reflexive indirect object *sebe si* 'himself' or a reflexive clitic *si* contained within an indirect object. Similarly, the derived subject of passives cannot bind *sebe si* or *si* either:

(125) a. * *az predstavih Ivan na sebe/sestra si*
I introduced Ivan to self/sister REFL
'I introduced Ivan$_i$ to himself$_i$/his$_i$ (own) sister'

b. * *Ivan beše predstaven na sebe/sestra si*
Ivan was introduced to self/sister REFL
'Ivan$_i$ was introduced to himself$_i$/his$_i$ (own) sister'

On the other hand, reflexives can be unproblematically bound by external arguments of clauses, which are base generated in Spec,vP. In §4.3.1.1 this was demonstrated with reflexive pronominal possessors. To see that it is a more gen-

eral fact about reflexive pronouns, consider the observation that (125a) above has a legitimate interpretation (shown below) which involves binding of the reflexive pronoun by the clausal subject. Therefore, within clauses—one of the relevant binding domains in Bulgarian—antecedents for reflexive pronouns can be base generated in Spec,vP.

(126) *az predstavih Ivan na sebe/sestra si*
I introduced Ivan to self/sister REFL
'I$_i$ introduced Ivan to myself$_i$/my$_i$ (own) sister'

As far as the other syntactic domain relevant for binding in Bulgarian, -N nominalizations, is concerned, it was demonstrated in §4.3.1.1 that their internal arguments similarly fail to bind reflexive pronominal possessors. As expected, this is true of the other two kinds of reflexives as well: (127) demonstrates that, as in clauses, the direct object is unable to bind a more deeply embedded reflexive pronoun. This excludes positions internal to the complement of n from the set of legitimate antecedent positions.

(127) * *moeto postojanno predstavjane na Ivan na sebe/roditelite si*
the.my constant introducing of Ivan to self/parents REFL
'my constant introducing of Ivan$_i$ to himself$_i$/his$_i$ (own) parents'

In addition, internal arguments that have been promoted to Spec,DP via clitic doubling or DP-internal fronting cannot bind (indirect object) reflexives either. Again, this was shown in §4.3.1.1 in the context of reflexive possessors but it is a more general fact about reflexives in the language, as corroborated by the ungrammaticality of the following examples. They involve either a clitic doubled

or a fronted direct object, which fails to bind the reflexive phrase *sebe si* and the reflexive clitic *si*:

(128) a. * *postojannoto mu predstavjane (na Ivan) na sebe/roditelite si*
the.constant 3.SG.M introducing of Ivan to self/parents REFL
'the constant introducing of Ivan$_i$ to himself$_i$/his$_i$ (own) parents'

b. * *na Ivan postojannoto predstavjane na sebe/roditelite si*
of Ivan the.constant introducing to self/parents REFL
'the constant introducing of Ivan$_i$ to himself$_i$/his$_i$ (own) parents'

Finally, we saw in this section that *na*-phrase external arguments, which are base generated in Spec,nP (Chapter 3, §3.3.2.2), can actually bind reflexive possessors. They can also bind the other kinds of reflexives, as the possibility of binding by the quantified *na*-phrase in (129) reveals. Therefore, the thematic positions associated with external arguments within both clauses and nominalizations—Spec,vP and Spec,nP—are the ones that qualify as legitimate ones for the purposes of reflexive binding. In other words, reflexive binding relations in the language are limited to the thematic domains within both clauses and nominal phases.

(129) a. * *postojannoto preotkrivane na vseki futbolist na samija sebe si*
the.constant re-discovery of every football.player of alone self REFL
'every football player's$_i$ constant rediscovery of himself$_i$'

b. * *postojannoto preotkrivane na vseki futbolist na umenijata si*
the.constant re-discovery of every football.player of skills REFL
'every football player's$_i$ constant rediscovery of his$_i$ (own) skills'

Why denominal adjectives cannot bind reflexives can now be understood as a direct consequence of the constraint on reflexive binding in Bulgarian in (124):

Bulgarian reflexives are lexically specified to be bound by antecedents that are externally merged as either Spec$v$P or Spec,nP. While the nominal component of a denominal adjective does occupy a specifier in the extended nominal projection (Spec,aP), it is not externally merged as Spec,nP. Since the latter is the only position within nominals that hosts antecedents for reflexive binding, denominal adjectives are not expected to qualify as legitimate antecedents. Thus, an important distinction is clarified among the three morphosyntactic mechanisms for the introduction of external arguments within -N nominalizations. The specifiers of n and a as well as the complement of *ot* 'by' are all alike in that they each introduce a nominal phrase that is interpreted as the external argument of an -N nominalization; however, Spec,nP stands out as the only position that can host an antecedent for binding.

Interestingly, there appears to be crosslinguistic variation at least within Slavic with respect to whether denominal adjectives can serve as antecedents for reflexive binding. For example, Corbett (1987) reports that in Upper Sorbian "action nominals", a non-pronominal possessor can bind a reflexive—see (130a). As (130b) illustrates, Czech seems to allow this possibility as well.[36]

(130) a. *Janowy wopyt w swojim ródnym domje*
Jan's visit in his.own paternal home
'Jan's$_i$ visit to his$_i$ (own) paternal home'
(Upper Sorbian; Corbett 1987, p. 331)

[36]It should be noted that these action nominals may not have the same status as -N nominalizations in Bulgarian, especially with respect to their argument structure. In particular, they might be result nominals—something that potentially correlates with a structural difference.

b. *Karlova ranní rozvička ve své pracovně*
Charles's morning exercise in his.own study
'Charles's$_i$ morning exercise in his$_i$ (own) study'
(Czech; Corbett 1987, p. 331)

Assuming that the reflexives in Upper Sorbian and Czech are subject-oriented as in Bulgarian and that the nominal component of denominal adjectives also occupies a specifier position in the syntax, the parametric difference between these languages and Bulgarian must have to do with the position of this specifier. While in Bulgarian the relevant specifier does not allow binding, in Upper Sorbian and Czech the nominal component of the denominal adjective (*Jan* and *Charles*, respectively) must be in a specifier that does allow binding. Such a conjecture provides a plausible structural basis for the observed crosslinguistic differences and is worth exploring further.

Finally, whether denominal adjectives are legitimate binders of reflexives appears to be subject to a certain degree of variation within Bulgarian as well. For instance, Schürcks (2003) (p. 76) reports that non-pronominal possessors in Bulgarian can, in fact, serve as antecedents for the reflexive phrase *sebe si*:[37]

(131) *Marija vidja Ivanovata statija za sebe si*
Maria saw Ivan.POSS article about self REFL
'Maria saw Ivan's article about himself'

There are at least two ways in which the grammars that generate such examples

[37] However, Schürcks (2003) does not provide any examples involving pronominal possessors or -N nominalizations. As suggested in the discussion of Upper Sorbian and Czech action nominals (see also fn. 36), the potential structural differences between different types of denominal adjectives and nominalizations might prove crucial.

might differ from the one I have been concerned with. One possibility is that the relation between *Ivan* 'Ivan' and *sebe si* 'himself' is just a different kind of relation in the dialect described by Schürcks (2003). For instance, "sebe si" reflexives might be logophoric and be able to enter into a relation with discourse entities that are not linguistically introduced but are sufficiently accessible. In this connection, Pollard & Sag (1992) argue that English reflexives in "picture NPs" are, in fact, logophors whose reference is constrained by nonstructural factors (see also Runner, Sussman & Tanenhaus 2002, which builds on this proposal). A second possibility is that the relation between *Ivan* 'Ivan' and *sebe si* 'himself' is indeed one of reflexive binding but that the relevant dialects of Bulgarian employ different versions of the constraint on reflexive binding (124). In other words, it is plausible that in Schürcks's (2003) dialect, which allows binding as in the example above, Spec,aP is sufficiently "subject-like" in the sense that it patterns with Spec,nP in hosting binding antecedents. This would then allow the nominal component of denominal adjectives, which is base generated in Spec,aP, to bind reflexives in that dialect. Given that the constraint on reflexive binding (124) is lexically encoded and associated with a certain class of lexical item, it is likely to be subject to the kind of dialectal variation under discussion.

In sum, denominal adjectives in Bulgarian have been shown in this section to be deficient antecedents for three different kinds of reflexive pronouns. This behavior is somewhat puzzling in light of the overwhelming evidence presented in §4.3 that denominal adjectives are syntactically active and, in particular, be-

have as bindees with respect to the principles of the Binding Theory. Since this kind of evidence serves as the empirical basis for the syntactic decomposition analysis of denominal adjectives developed in §4.2, their failure to bind reflexives is of central importance to the viability of this analysis. Here I demonstrated the plausibility of explaining this failure as the result of other factors, unrelated to the decomposition analysis. In particular, there is independent evidence that the binding of reflexive pronouns in Bulgarian is constrained not only by the binding principles but also by a lexical condition which requires antecedents of reflexive pronouns be externally merged as Spec,vP or Spec,nP. Given this much, the failure of the nominal component of denominal adjectives to bind reflexive pronouns is expected, since it is base generated as the specifier of the adjectivizing a head; reflexive binding is not possible from this position. The decomposition analysis of denominal adjectives can then be maintained without modification.

4.5 Conclusion

This chapter demonstrated the dual behavior of denominal adjectives: on the one hand, they appear to contain an independent nominal projection with respect to syntactic diagnostics; on the other hand, they behave like unitary complex heads with respect to morphophonological criteria. The analysis proposed here treats denominal adjectives as syntactically composed of a functional head in the extended nominal projection and its nominal specifier. This head and the

DP that occupies its specifier are converted into a morphophonological word by `m-merger`.

The syntactic decomposition of denominal adjectives explains the nominal characteristics that they exhibit. First, denominal adjectives are thematically related to -N nominalizations: they are able to express their external θ-roles. Second, they block DP-internal A-movement in an instance of defective intervention. Third, denominal adjectives can be anaphoric elements whose form and distribution is governed by the principles of the Binding Theory.

The subsequent application of `m-merger` explains the adjectival, head-like behavior of denominal adjectives. The categorizing/adjectivizing a head they contain triggers the post-syntactic insertion of inflectional morphology reserved for prenominal modifiers in general. Similarly, the presence of a ensures that denominal adjectives, like all prenominal modifiers are legitimate hosts for the suffixal definiteness marker. Finally, as a result of `m-merger` denominal adjectives are invariably head-like, containing no branching material.

By applying the theory of `m-merger` to the empirical domain of denominal adjectives, this chapter extends the scope of the theory, which was developed on the basis of cliticization and clitic doubling. The success of the present approach in accounting for the full range of intricate properties that characterize denominal adjectives lends further support to a view of the mapping from syntax to morphophonology that incorporates `m-merger`.

Chapter 5

Concluding remarks

5.1 Themes and results

The case studies in this dissertation point to the existence of syntactically independent (phrasal) objects that correspond to proper subparts of morphophonological words. Such mismatches between syntax and morphophonology argue against the adoption of a pre-syntactic lexicon as part of the grammar. Instead they call for the syntactic decomposition of morphophonological words and support a syntactic approach to word formation. At least in the case of clitic-host combinations, nominalizations, and deverbal adjectives in Bulgarian, morphophonological words are claimed to be constructed syntactically and transformed into words by a mapping procedure which involves the application of morphological merger.

The particular implementation of morphological merger in this dissertation

follows previous work on the mapping from syntax to morphophonology along the lines of Marantz 1984 and Baker 1988, and is a generalization of the operation proposed by Matushansky (2006). Specifically, by allowing morphological merger to manipulate the labels of syntactic objects, the revised formulation of the operation makes it possible for branching syntactic phrases to participate in word formation. In turn, that this is empirically necessary was revealed by the investigation of contexts in which a syntactic specifier-head relation is converted into word containment.

In this connection, the analysis of denominal adjectives proposed in Chapter 4 leads to the conclusion that morphological merger can, in addition, express an underlying Case relation between a head and its specifier. In other words, the interpretation of abstract Case (qua argument licensing) by the morphophonology is not limited to morphological case marking (e.g. inflectional morphology) or word order (e.g. directed adjacency). In the case of denominal adjectives, the abstract Case relation between a head and its specifier is expressed by the containment of their morphophonological counterparts (i.e. their labels) within the same morphophonological word (cf. Fábregas 2007, Alexiadou & Stavrou 2011).

A major component of this dissertation concerns the detailed investigation of the structure of clauses and nominals through the lens provided by the Bulgarian data. The case studies on clitic doubling in clauses and nominals as well as event nominalizations explore the extent to which the syntactic structure of nominal phrases parallels that of clauses. The particular analyses developed in

the preceding chapters offer an understanding of clausal and nominal structure within a syntactic view of the formation of verbs and nouns.

5.2 Future directions

A number of research questions arise at this point. For instance, is the same interaction between syntax and morphophonology that yields cliticization and adjectivization in Bulgarian implicated in other phenomena cross-linguistically? Likewise, what other syntactic configurations—besides the specifier-head configuration discussed in this dissertation and those created by head-movement and incorporation—if any, map to morphophonological words? Answers to these empirical questions will hopefully pave the way for an analytical generalization of morphological merger as an operation that builds words. One possibility is that the set of syntactic contexts in which morphological merger applies is indeed restricted to the specifier-head, head-head, and head-complement configurations. If constraining morphological merger in this way is feasible, the questions arises of why it should be so constrained.

The results of the research reported here, as well as of much previous work, suggest that both phrases and words are syntactically constructed. How are these results to be reconciled with apparent differences between the two kinds of domain (e.g. absence of long-distance dependencies within words)? A tantalizing possibility is that such differences are only superficial and can be explained as a function of domain size, while the same structure-building mech-

anisms operate across both phrases and words. This line of inquiry is, in turn, related in a deeper way to another important question: why are there domains of different sizes?

Appendix A

The morphosyntactic status of clitics

The two types of analysis of true clitic doubling considered in Chapter 2 (see §2.1 and §2.3) attribute different properties to the clitics and these different properties should be detectable. According to the agreement analysis, the clitics are the phonological reflex of the valuation of uninterpretable ϕ-features on a functional head via an `Agree` relation. According to the multiple spell-out analysis, on the other hand, the clitics are (pro)nominal elements (e.g. of category D or K) and, as such, are endowed with interpretable ϕ-features of their own. This difference between agreement markers and (pro)nominal elements has several consequences. The aspects of the behavior of clitics explored here include their feature content and sensitivity to the feature content of nearby elements, certain cooccurrence restrictions, and behavior in coordination. While at least some of these diagnostics prove inconclusive in the context of Bulgarian, the results presented here are generally highly suggestive that object clitics are not agreement

markers.

A.1 Feature content

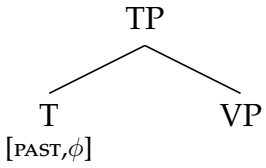
The form of the object clitics in Bulgarian varies with the person, number, and gender of their associate (ϕ-features) and the status of the associate as a direct or indirect object—see the paradigm in (2). This state of affairs is consistent with viewing the clitics as pronominal elements which are endowed with ϕ-features and are assigned Case in the course of the derivation but it is also consistent with the clitics being the reflex of an `Agree` relation. Distinct direct and indirect object agreement marking is observed, for example, in Georgian (Harris 1981:p. 29).

A.2 Tense (in)variance

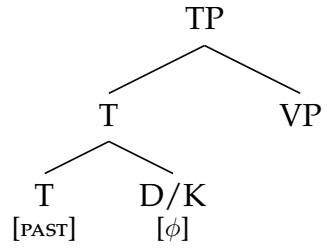
Nevins (2011) notes that if the clitics are the phonological realization of uninterpretable ϕ-features on functional heads, they are expected to be sensitive to the overall featural composition of the relevant head, i.e. to any other features of that head (see also Baker 1996:p. 31). For a clitic which spells out uninterpretable ϕ-features on a T head such sensitivity could, for example, amount to allomorphic variation triggered by tense, which is presumably encoded by another feature on T—see (1a). Pronouns, on the other hand, being bundles of interpretable features with a particular syntactic category, are claimed not to

be expected to show such allomorphic sensitivity—see (1b).[1] Thus, if the clitics show allomorphy dependent on tense, aspect, mood, etc., it could be concluded that they are the reflex of Agree (see Kramer to appear, for an application of this diagnostic in the context of Amharic).

(1) a.



b.



To illustrate the usefulness of this diagnostic, consider subject agreement in English, which is null in the past tense but non-null in non-past (third person singular). According to this diagnostic, subject agreement in English cannot be pronominal in nature because it varies with tense. Note that this diagnostic is informative only if the putative clitic/agreement marker does vary with tense in which case it must be concluded that it spells out the ϕ-features that coexist with other features (e.g. tense) on the same functional head. In contrast to agreement markers, pronouns are claimed to be tense-invariant. The examples below show that object clitics in Bulgarian do not vary with tense while subject agreement does (neither do they vary with aspect). Therefore, this diagnostic does not prove informative with respect to the status of the clitic as a pronoun or a reflex of Agree.

[1] This conclusion only seems to follow under the additional assumption that pronominal elements cannot show contextual allomorphy sensitive to the features of another (adjacent) head.

(2)

a.	*viždam*	***go***	d.	*viždah*	***go***
	see.1.SG.PRES	3.SG.M.ACC		see.1.SG.PAST	3.SG.M.ACC
b.	*viždaš*	***go***	e.	*viždaše*	***go***
	see.2SG.PRES	3.SG.M.ACC		see.2.SG.PAST	3.SG.M.ACC
c.	*vižda*	***go***	f.	*viždaše*	***go***
	see.3.SG.PRES	3.SG.M.ACC		see.3.SG.PAST	3.SG.M.ACC

A.3 Person complementarity effects

The Person-Case Constraint (PCC) is a cooccurrence restriction on combinations of phonologically weak arguments of ditransitive verbs attested in a wide range of genetically unrelated languages. Two versions of the constraint have been recognized:

(3) *The Person-Case Constraint* (Bonet 1991:p. 181-2)

In a combination of a direct object and an indirect object,

a. *Strong*: the direct object has to be third person.

b. *Weak*: if there is a third person, it has to be the direct object.

Nevins (2011) argues that the presence of PCC effects in a language indicates that the elements involved are the reflexes of an `Agree` relation. He observes that PCC effects are never found with tense-sensitive person markers in Romance, Greek, Kashmiri, Albanian, Mohawk, Nahuatl, Southern Tiwa, Kambera, and Warlpiri. All these languages exhibit PCC effects banning third person indirect object markers from occurring together with first person direct object markers

and in none of them do the markers vary with tense. This finding would be unsurprising if it is assumed that (i) tense-sensitive markers must be the result of Agree and (ii) the PCC only affects pronominal elements.[2]

Bulgarian object clitics are affected by the PCC (see also the discussion in §4.2.2.1). First and second person direct object clitics do not cooccur with indirect object clitics:

(4) a. * *Ivan* ***im/mu*** ***ni/te*** *preporăča*
Ivan 3.PL.DAT/3.SG.M.DAT 1.PL.ACC/2.SG.ACC recommended
'Ivan recommended us/you to them/him'

b. * *Marija* ***vi*** ***ni*** *preporăča*
Maria 2.PL.DAT 1.PL.ACC recommended
'Maria recommended us to you'

c. * *toj* ***mi*** ***te*** *preporăča*
he 1.SG.DAT 2.SG.ACC recommended
'he recommended you to me'

On the other hand, third person direct object clitics can cooccur with first, second, and third person indirect object clitics:

(5) a. *Ivan* ***mi*** ***go*** *predstavi*
Ivan 1.SG.DAT 3.SG.M.ACC introduced
'Ivan introduced him to me'

b. *Marija* ***vi*** ***ja*** *preporăča*
Maria 2.PL.DAT 3.SG.F.ACC recommended
'Maria recommended her to you'

[2]Note that Nevins (2011) reanalyzes the object agreement markers in these languages as pronominal elements, contrary to previous analyses (e.g. Baker 2008:p. 98-9).

c. *az* ***im*** ***gi*** *prodadoh*
I 3.PL.DAT 3.PL.ACC sold
'I sold them to them'

These cooccurrence patterns suggest that the direct object clitic has to be third person. In other words, the possible combinations of object clitics in Bulgarian are constrained by the strong version of the PCC.

These facts, in conjunction with the assumptions above, would lead to the conclusion that the Bulgarian object clitics are pronouns and not agreement. While this conclusion is only as accurate as the claim that the PCC only affects pronominal elements, it is highly suggestive that the Bulgarian clitics are not agreement markers. Note that Nevins's (2011) investigation yields no languages in which the PCC affects more than just pronominal elements.

Appendix B

Definiteness marking

Within a definite nominal phrase in Bulgarian, the definiteness marker surfaces as a suffix on the left-most head that exhibits nominal concord for number and gender with the head noun:[1]

(1) a. *masi-te*
tables-the

b. *krăgli-te masi*
round-the tables

c. *golemi-te krăgli masi*
large-the round tables

d. *tri-te golemi krăgli masi*
three-the large round tables

e. *vsički-te tri golemi krăgli masi*
all-the three large round tables

[1]For discussion of the distribution of the definiteness marker in Bulgarian, the reader is directed to Mayer 1987, 1988, Sadock 1991, Franks 2001, Embick & Noyer 2001, Dost & Gribanova 2006.

Degree modifiers or phrasal complements of adjectives do not affect the placement of the suffixal definiteness marker; neither does the inclusion of its host inside a coordinate structure:

(2) a. *gordi-jă săs sina si fermer*
proud with son his farmer
'the farmer (who is) proud of his son'

b. *počti nerazrabotena-ta u nas problematika*
almost undeveloped-the among us problem.area
'the problem area which is almost undeveloped among us'

c. *xubava-ta (interesna) i evtina kniga*
nice-the (interesting) and cheap book
'the nice (interesting) and cheap book'

I assume that the definiteness marker spells out a D[DEF] head, which is displaced by the following post-syntactic rule. The post-syntactic nature of this rule is supported by its sensitivity to linear order, as opposed to hierarchical structure.

(3) *D-placement (in Bulgarian)*

$[_{DP}\ D_{[DEF]} \ldots H \ldots] \rightarrow [_{DP} \ldots [\ H\ D_{[DEF]}\ ] \ldots]$, where H is the left-most head that agrees in features with the head noun.

A definite nominal phrase can contain a clitic that expresses a possessor or an argument of a nominalization:

(4) a. *kola-ta mu*
car-the 3.SG.M
'his car'

b. *umišleno-to im narušavane na reda*
deliberate-the 3.PL disruption of the.order
'their deliberate disruption of order'

A couple of constraints limit the distribution of clitics internal to the nominal phrase. First, only one clitic can be immediately contained within a nominal phrase; second, the clitic immediately follows the definiteness marker if one is present.[2]

[2]That the presence of a clitic is not entirely contingent on the presence of the definiteness marker is revealed by vocatives that do contain a clitic: *dragi mi prijatelju* 'my dear friend'.

Appendix C

Unnacusativity diagnostics

This appendix tests the hypothesis that Bulgarian does not syntactically encode a distinction between unergatives and unaccusatives, which is found in many other languages. Some standard tests (Burzio 1986) do not yield positive results in Bulgarian: all intransitives combine with the same set of auxiliaries and have the same (past participle) agreement paradigms. Some reliable tests have been found within Slavic but, again, not all of them are applicable in Bulgarian: e.g. Pesetsky's (1982) "genitive of negation" test cannot be applied in Bulgarian since the language lacks this phenomenon. The majority of the diagnostics that are applicable in Bulgarian do not successfully distinguish two classes of intransitives.

C.1 Expression as pronominal possessors

As discussed in the main text (§3.3.2 and §3.3.3), the external argument of an -N nominalization can be expressed by a pronominal possessor, a kind of denominal adjective that is only able to encode external θ-roles within complex event nominals (see Chapter 4 and, in particular, §4.1 for motivation of this claim). Therefore, if there is a class of intransitives in Bulgarian which is characterized by unaccusative syntax with a single internal argument, its members are expected to be incompatible with pronominal possessors. However, -N nominalizations that would be characterized as unaccusative in other languages that do encode the distinction grammatically are compatible with pronominal possessors. In each of the following examples, the pronominal possessor expresses the sole argument of the nominalization:

(1) a. *kak se spravjate s vašeto neprekăsnato boleduvane*
how REFL you.cope with your constant being.sick
'how do you cope with your constantly being sick'

b. *tjahnoto često zaspivane na rabotnoto mjasto smuštava vsički*
their frequent falling.asleep at the.working place perplexes everyone
'their frequent falling asleep at the working place perplexes everyone'

c. *tova uveličava verojatnostta ot tjahnoto po-često padane*
this increases the.probability of their more-frequent falling
'this increases the probability of their more frequent falling' (e.g. of the fogs)

d. *negovoto postojanno pojavjavane po vreme na predstavlenieto*
the.his constant appearance during the.performance

'his constant appearance during the performance'

As expected, -N nominalizations based on predicates traditionally categorized as unergatives are also compatible with an external argument expressed by a pronominal possessor:

(2) a. *negovoto postojanno skačane po scenata*
the.his the.constant jumping on the.stage
'his constant jumping on the stage'

b. *zaradi negovoto često izlizane ot zasedatelnata zala, rešenie ne beše vzeto*
due.to his frequent exiting from the.meeting hall a.decision not was made
'due to his frequent exiting from the meeting hall, no decision was made'

C.2 Optionality of arguments in nominalizations

The sole argument of all intransitive -N nominalizations is optional, as discussed in the main text (§3.3.3):

(3) a. *kak se spravjate s neprekăsnatoto boleduvane*
how REFL you.cope with the.constant being.sick
'how do you cope with constantly being sick?'

b. *čestoto tičane e zdravoslovno*
the.frequent running is healthy
'frequent running is good for the health'

C.3 Negation in nominalizations

Bottari (1992) reports that only nominalizations with internal arguments can also contain negation in Italian, (4a) vs. (4b)—in Italian, *descrizione* 'description' is ambiguous between a result and a process interpretation. Then, the contrast between unaccusatives (5a) and unergatives (5b) with respect to the availability of negation reveals that only unaccusative nominalization contain an internal argument (see also Alexiadou 2001, p. 84ff).

(4) a. *la mancata descrizione della vita*
the non description of the city

b. * *la mancata descrizione*
the non description

(5) a. *il mancato arrivato del treno*
the non arrival of the train

b. * *il mancato pianto di Luigi*
the non mourning of Luigi

However, in Bulgarian all intransitive -N nominalizations may contain negation:

(6) a. *ne-zaspivaneto na vodača po vreme na šofirane*
non-falling.asleep.the of the.driver during time of driving
'the non-falling asleep of the driving during driving'

b. *čestoto ne-pristigane na turisti*
the.frequent non-arrival of tourists
'the frequent non-arrival of tourists'

(7) a. *ne-tičaneto na atleta v prodălženie na pet dni*
non-running.the of the.athlete in duration of five days
'the athlete's non-running for five days'

b. *postojannoto ne-peene na pevcite*
the.constant non-singing of the.singers
'the singers' constant non-singing'

C.4 Impersonal passives

Perlmutter (1978) repots that impersonal passives in Dutch can only be formed from unergatives:

(8) a. *Er wordt hier door de jonge lui veel gerdanst.*
it is here by the young people much danced
'It is danced here a lot by the young people.'

b. * *Door de lijken werd al ontbonden.*
by the corpses is already decomposed
'It is already decomposed by the corpses.'

Bulgarian impersonal passives can be formed from any intransitive (see also Fehrmann et al. 2010):

(9) a. *togava se e boleduvalo mnogo*
then REFL be.3.SG be.sick much
'It was sick a lot then (by people).'

b. *tuk obiknoveno se spi dobre*
here usually REFL sleep well
'it's usually slept well here (by people)'

(10) a. *tuk se tancuva mnogo*
here REFL dance much
'It is danced a lot here (by people).'

b. *trjabva da se skača postojanno*
must to REFL jump constantly
'it must be jumped constantly (by people)'

C.5 Distributive *po*-phrases

Babby (1980) and Pesetsky (1982) claim that distributive *po*-phrases are limited to direct objects and subjects of unnacusatives in Russian:

(11) a. *Ja dal malčikam po jabloku.*
I gave boys.DAT apple
'I gave the boys an apple each.' (Pesetsky 1982, p. 69)

b. *Po gruše upalo s každogo dereva*
pear fell from each tree
'A (different) pear fell from each tree.' (Chvany 1975, p. 26)

c. * *V každoj kvartire smejalos po malčiku*
in each apartment laughed boy.DAT
'A (different) boy laughed in each apartment.'
(Schoorlemmer 1995, p. 33)

Similarly, Bulgarian *po*-phrases appear not to be able to serve as the sole argument of unergatives although speakers are not consistent in these judgments:

(12) a. *dadoh na momčetata po jabăkla*
I.gave to the.boys apple
'I gave the boys an apple each.'

b. *ot vsjako dărvo padna po kruša*
from each tree fell pear
'A (different) pear fell from each tree.'

c. * *Văv vsjako studio raboteše po hudožnik*
in each studio worked painter
'A (different) painter worked in each studio.'

C.6 Locative inversion

Babyonyshev (1996) argues that Locative Inversion in Russian without any information structural consequences is only possible with unaccusatives; with unergatives, the pre-verbal PP is topicalized, while the post-verbal subject is focused:

(13) a. *V uglu valjalas kurtka.*
in corner lay jacket
'In the corner lay a jacket.'

b. # *V kvartire svistit Vanja.*
in apartment whistles Vanya
'Vanya is whistling in the apartment.'

The same appears to hold true in Bulgarian but again, the judgments are not that robust:

(14) a. *V ăgăla ležeše jake.*
in corner lay jacket
'In the corner lay a jacket.'

b. # *V kvartirata peeše Ivan.*
in apartment sang Ivan
'Ivan sang in the apartment.'

Appendix D

Morphophonemic rules

These rules are based on Scatton 1984 and the numbered section references as well as any page references are to that work. These are ordered rules, which apply to an underlying form to yield a surface form. The notion of "stem" used in the definition of some rules refers to the unit formed by the root and the lexical aspect affixes (i.e. the categorizing v in the main text).

(1) V→∅ (2.242)

Stem-final vowel deletion before another vowel.

(e.g. *pis-a-*a-h* → *pis-*a-h*)

(2) s→š (2.239)

Permutative softening in *a*-final stems when the stem-final *-a* is truncated by Rule 1, unless in a secondary imperfective (p. 304).

(e.g. *pis-*a-h* → *piš-*a-h*)

(3) -avaj→-vaj (2.249)

Suffix-initial *a* deletion when unstressed in secondary imperfectives (suffix-initial *a* will be stressed after non-stressed stems; otherwise, it is unstressed).

(e.g. *na-pis-avaj-*a-h* → *na-pis-vaj-*a-h*)

(4) Desinence truncation (2.244)

Suffix-initial vowel deletion after the non-stressed verbal suffix *-aj* (also when part of *-avaj*).

(e.g. *na-pis-vaj-*a-h* → *na-pis-vaj-h*)

(5) C→∅ (2.241)

Stem-final consonant deletion before a vowel or word-finally unless in an imperative.

(e.g. *na-pis-vaj-h* → *na-pis-va-h*)

(6) ČA→ČE

Alternation between *a* and *e* in verbal suffixes after an alveo-palatal consonant.

(e.g. *piš-*a-h* → *piš-e-h*)

Bibliography

Abels, Klaus. 2003. *Successive cyclicity, anti-locality, and adposition stranding*: University of Connecticut dissertation.

Abels, Klaus & Ad Neeleman. 2012. Linear asymmetries and the LCA. *Syntax* 15(1). 25–74.

Acquaviva, Paolo. 2008. Roots and lexicality in Distributed Morphology. http://ling.auf.net/lingbuzz/000654.

Adger, David. 2003. *Core syntax*. Oxford: Oxford University Press.

Agouraki, Yoryia. 1992. Clitic-left-dislocation and clitic doubling: A unification. In Hans van de Koot (ed.), *UCL working papers in linguistics*, vol. 4, 45–70. UCL Division of Psychology & Language Sciences.

Alexandrova, Galia. 1997. Pronominal Clitics as g(eneralized) f(amiliarity)-licensing AGR^0. In *Proceedings of FASL: The Princeton Meeting*, 1–31. Ann Arbor, MI: Michigan Slavic Publications.

Alexiadou, Artemis. 1997. *Adverb placement: A case study in antidymmetric syntax*. Amsterdam: John Benjamins.

Alexiadou, Artemis. 2001. *Functional structure in nominals: nominalization and ergativity*. Amsterdam: John Benjamins.

Alexiadou, Artemis & Elena Anagnostopoulou. 1998. Toward a uniform account of scrambling and clitic doubling. In Werner Abraham & Elly van Gelderen (eds.), *German: syntactic problems–problematic syntax*, Max Niemeyer Verlag.

Alexiadou, Artemis & Elena Anagnostopoulou. 2000. Clitic-doubling and (non)-configurationality. In Masako Hirotani, Andries Coetzee, Nancy Hall & Ji-yung Kim (eds.), *Proceedings of the north east linguistic society*, 17–28. Rutgers University: Graduate Linguistic Student Association.

Alexiadou, Artemis, Elena Anagnostopoulou & Florian Schäfer. 2006. The properties of anticausatives crosslinguistically. In Mara Frascarelli (ed.), *Phases of interpretation*, 187–212. Mouton de Gruyter.

Alexiadou, Artemis, Elena Anagnostopoulou & Florian Schäfer. 2009. PP licensing in nominalizations. In Anisa Schardl, Martin Walkow & Muhammad Abdurrahman (eds.), *Proceedings of NELS 38*, University of Massachusetts, Amherst: CLSA.

Alexiadou, Artemis, Liliane Haegeman & Melita Stavrou. 2007. *Noun phrase in the generative perspective* Studies in Generative Grammar. Berlin: Mouton de Gruyter.

Alexiadou, Artemis & Melita Stavrou. 1998. On derived nominals in Greek. In Brian D. Joseph, C. Horrocks, Geoffrey & Irena Philippaki-Warburton (eds.), *Themes in Greek linguistics II*, 101–129. Amsterdam: John Benjamins.

Alexiadou, Artemis & Melita Stavrou. 2011. Ethnic adjectives as pseudo-adjectives: A case study on syntax-morphology interaction and the structure of DP. *Studia Linguistica* 65(2). 117–146.

Alexiadou, Artemis & Chris Wilder. 1998. Adjectival modification and multiple determiners. In Artemis Alexiadou & Chris Wilder (eds.), *Possessors, predicates and movement in the determiner phrase*, 305–332. Amsterdam: John Benjamins Publishing Company.

Anagnostopoulou, Elena. 1994. *Clitic dependencies in Modern Greek*: Salzburg University dissertation.

Anagnostopoulou, Elena. 1999. Conditions on clitic doubling in Greek. In Henk C. van Riemsdijk (ed.), *Clitics in the languages of Europe*, 761–798. Berlin: Mouton de Gruyter.

Anagnostopoulou, Elena. 2003. *The syntax of ditransitives: Evidence from clitics*. Berlin: Mouton de Gruyter.

Anagnostopoulou, Elena. 2005. Strong and weak person restrictions: A feature checking analysis. In Lorie Heggie & Francisco Ordóñez (eds.), *Clitic and affix combinations: theoretical perspectives*, 199–235. Amsterdam: John Benjamins.

Anagnostopoulou, Elena. 2007. Clitic doubling. In Martin Everaert & Henk van Riemsdijk (eds.), *The Blackwell Companion to Syntax*, chap. 14, 519–581. Malden, MA: Blackwell Publishing.

Anagnostopoulou, Elena. 2012. Variation in clitic doubling. Handout, Minicourse "Meaning domains, phases and Agree" (Day 3).

Anderson, Stephen R. 2011. Clitics. In Marc van Oostendorp, Colin J. Ewen, Elizabeth Hume & Keren Rice (eds.), *The Blackwell Companion to Phonology*, 2002–2018. Blackwell Publishing.

Andrejčin, Ljubomir, Petja Asenova, Elena Georgieva, Kalina Ivanova, Ruselina Nicolova, Petăr Pašov, Hristo Părvev, Rusin Rusinov, Valentin Stankov, Stojan Stojanov & Kristalina Čolakova. 1983. *Gramatika na săvremennija Bălgaski knižoven ezik: Morfologija [Grammar of the contemporary Bulgarian literary language: Morphology]*, vol. 2. Bulgarian Academy of Sciences.

Aoun, Joseph. 1999. Clitic-doubled arguments. In Kyle Johnson & Ian Roberts (eds.), *Beyond Principles and Parameters: Essays in Memory of Osvaldo Jaeggli*, 13–42. Dodrecht: Kluwer.

Arregi, Karlos & Andrew Nevins. 2008. Agreement and clitic restrictions in Basque. In Roberta D'Alessandro, Susann Fischer & Gunnar Hrafn Hrafnbjargarson (eds.), *Agreement restrictions*, 49–86. New York: Mouton de Gruyter.

Babby, Leonard. 1980. The syntax of surface case marking. In *Cornell working papers in linguistics*, vol. 1, 1–32. Department of Modern Languages and Linguistics, Cornell University.

Babyonyshev, Maria. 1996. *Structural connections in syntax and processing: Studies in Russian and Japanese*. Cambridge, MA: Massachusetts Institute of Technology dissertation.

Bach, Emmon. 1980. In defense of passive. *Linguistics and Philosophy* 3(3). 297–341.

Baker, Mark. 1985. The mirror principle and morphosyntactic explanation. *Linguistic Inquiry* 16(3). 373–416.

Baker, Mark. 1988. *Incorporation*. Chicago, Illinois: University of Chicago Press.

Baker, Mark. 1996. *The polysynthesis parameter*. Oxford: Oxford University Press.

Baker, Mark, Kyle Johnson & Ian Roberts. 1989. Passive arguments raised. *Linguistic Inquiry* 20(2). 219–251.

Baker, Mark C. 2008. On the nature of the Antiagreement effect: Evidence from wh-in-situ in Ibibio. *Linguistic Inquiry* 39(4). 615–632.

Baker, Mark C. & Nadya Vinokurova. 2010. Two modalities of Case assignment: Case in Sakha. *Natural Language & Linguistic Theory* 28. 593–642.

Bašić, Monika. 2010. On the morphological make-up of nominalizations in Serbian. In Artemis Alexiadou & Monika Rathert (eds.), *Interface explorations: The syntax of nominalizations across languages and frameworks*, Walter de Gruyter.

Belletti, Adriana. 1990. *Generalized verb movement*. Rosenberg & Sellier.

Berent, Gerald P. 1980. On the realization of trace: Macedonian clitic pronouns. In Catherine V. Chvany & Richard D. Brecht (eds.), *Morphosyntax in Slavic*, 150–186. Columbus, OH: Slavica Publishers.

Bhatt, Rajesh & Roumyana Pancheva. 2006. Implicit arguments. In Martin Everaert & Henk van Riemsdijk (eds.), *The Blackwell companion to syntax*, vol. II, 554–584. Blackwell.

Bittner, Maria & Ken Hale. 1996. The structural determination of case and agreement. *Linguistic Inquiry* 27(1). 1–68.

Bobaljik, Jonathan. 2003. Floating quantifiers: Handle with care. In Lisa L.-S. Cheng & Rint Sybesma (eds.), *The second Glot International state-of-the-article book*, 107–148. Mouton de Gruyter.

Bobaljik, Jonathan David. 2008. Where's Phi? Agreement as a postsyntactic operation. In Daniel Harbour, David Adger & Susana Béjar (eds.), *Phi theory*, 295–328. Oxford: Oxford University Press.

Bonet, Eulàlia. 1991. *Morphology after syntax: Pronominal clitics in Romance*. Cambridge, MA: Massachusetts Institute of Technology dissertation.

Borer, Hagit. 1984. *Parametric syntax*. Dordrecht, Holland: Foris Publications.

Borer, Hagit. 2005. *Structuring sense*. Oxford: Oxford University Press.

Bošković, Željko. 1999. On multiple feature checking: multiple wh-fronting and multiple head movement. In Samuel Epstein & Norbert Hornstein (eds.), *Working minimalism*, 159–187. Cambridge, MA: MIT Press.

Bošković, Željko. 2005. On the locality of left branch extraction and the structure of NP. *Studia Linguistica* 59(1). 1–45.

Bottari, Piero. 1992. Romance 'Passive Nominals'. *Geneva Generative Papers* 0(0). 66–80.

Bošković, Željko. 2009. More on the no-DP analysis of article-less languages. *Studia Linguistica* 63. 187–203.

Brandi, Luciana & Patrizia Cordin. 1989. Two Italian dialects and the null subject parameter. In Osvaldo Jaeggli & Kenneth Safir (eds.), *The null subject parameter*, 111–142. Dodrecht: Reidel.

Bresnan, Joan. 1976. On the form and functioning of transformations. *Linguistic Inquiry* 7(1). 3–40.

Bresnan, Joan & Sam A. Mchombo. 1987. Topic, pronoun, and agreement in Chichewa. *Language* 63(4). 741–782.

Browne, Wayles. 1974. On the problem of enclitic placement in Serbo-Croatian. In Richard Brecht & Catherine Chvany (eds.), *Slavic transformational syntax*, vol. 10 Michigan Slavic Materials, 36–52. Ann Arbor: University of Michigan.

Bruening, Benjamin. 2013. *By* phrases in passives and nominals. *Syntax* 16(1). 1–41.

Burzio, Luigi. 1986. *Italian syntax*. Reidel Publishers.

Cardinaletti, Anna. 2002. Against optional and null clitics. right dislocation vs. mariginalization. *Studia Linguistica* 56(1). 29–57.

Cecchetto, Carlo. 2000. Doubling structure and recornstruction. *Probus* 12(1). 93–126.

Chomsky, Noam. 1981. *Lectures on government and binding*. Dordrecht, The Netherlands: Foris Publications.

Chomsky, Noam. 1982. *Some concepts and consequences of the theory of government and binding*. Cambridge, Massachusetts: MIT Press.

Chomsky, Noam. 1986a. *Barriers*. Cambridge, MA: MIT Press.

Chomsky, Noam. 1986b. *Knowledge of language*. New York, NY: Praeger Publishers.

Chomsky, Noam. 1991. Some notes on economy of derivation and representation. In Robert Freidin (ed.), *Principles and parameters in comparative grammar*, 417–454. Cambridge, Massachusetts: MIT Press.

Chomsky, Noam. 1995. *The minimalist program*. Cambridge, MA: MIT Press.

Chomsky, Noam. 2000. Minimalist inquiries: The framework. In R. Martin, D. Michaels & J. Uriagereka (eds.), *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, 89–155. Cambridge, MA: MIT Press.

Chomsky, Noam. 2001. Derivation by phase. In M. Kenstowicz (ed.), *Ken Hale. A life in language*, 1–52. Cambridge, Mass.: MIT Press.

Chomsky, Noam. 2004. Beyond explanatory adequacy. In Adriana Belletti (ed.), *Structures and beyond: The cartography of syntactic structures*, vol. 3, 104–131. Oxford: Oxford University Press.

Chomsky, Noam. 2008. On phases. In Robert Freidin, Carlos Otero & Maria Luisa Zubizarreta (eds.), *Foundational issues in linguistic theory*, 133–166. Cambridge, MA: MIT Press.

Chomsky, Noam & Howard Lasnik. 1993. The theory of principles and parameters. In Arnim von Stechow, W. Sternefeld & T. Vennemann (eds.), *Syntax: an international handbook of contemporary research*, 506–569. Berlin: Walter de Gruyter.

Chung, Sandra & William A. Ladusaw. 2004. *Restriction and saturation*. MIT Press.

Chvany, Catherine V. 1975. *On the syntax of be-sentences in Russian*. Cambridge, MA: Slavica Publishers.

Cinque, Guglielmo. 1980. On extraction from NP in Italian. *Journal of Italian Linguistics* 1/2. 47–99.

Cinque, Guglielmo. 1990. *Types of A′-dependencies*. Cambridge, Massachusetts: MIT Press.

Cinque, Guglielmo. 1994. On the evidence for partial N movement in the Romance DP. In G. Cinque, J. Koster, J. Pollock, L. Rizzi & R. Zanuttini (eds.), *Paths towards universal grammar*, Georgetown: Georgetown University Press.

Cinque, Guglielmo. 1999. *Adverbs and functional heads: a cross-linguistic perspective*. New York: Oxford University Press.

Cinque, Guglielmo. 2010. *The syntax of adjectives: A comparative study*, vol. 57 Linguistic Inquiry Monographs. Cambridge, MA: MIT Press.

Cinque, Guglielmo. 2011. Extraction from DP in Italian revisited. Ms. University of Venice, http://hdl.handle.net/10278/2420.

Collins, Chris. 2005. A smuggling approach to the passive in English. *Syntax* 8(2). 81–120.

Collins, Chris & Höskuldur Thráinsson. 1996. VP-internal structure and object shift in Icelandic. *Linguistic Inquiry* 27(3). 391–444.

Comrie, Bernard. 1976. The syntax of action nominals: A cross-language study. *Lingua* 40. 171–201.

Coppock, Elizabeth & Stephen Wechsler. 2012. The objective conjugation in Hungarian: agreement without phi-features. *Natural Language and Linguistic Theory* 30. 699–740.

Corbett, Greville G. 1987. The morphology/syntax interface: Evidence from possessive adjectives in Slavonic. *Language* 63(2). 299–345.

Corbett, Greville G. 2006. *Agreement*. Cambridge University Press.

Cornilescu, Alexandra & Carmen Dobrovie-Sorin. 2008. Clitic doubling, complex heads and interarboreal operations. In Dalina Kallulli & Liliane Tasmowski (eds.), *Clitic doubling in the Balkan languages*, 289–319. John Benjamins Publishing Company.

Cuervo, Maria Cristina. 2003. *Datives at large*: Massachusetts Institute of Technology dissertation.

Cyxun, Genadij A. 1962. Mestoimennata enklitika i slovoredât v bâlgarskoto izrečenie. *Bâlgarski ezik* 12(4). 283–291.

Demirdache, Hamida. 1991. *Resumptive chains in restrictive relatives, appositives and dislocation structures*. Cambridge, MA: Massachusetts Institute of Technology dissertation.

Déprez, Vivian. 1989. *On the typology of syntactic positions and the nature of chains*. Cambridge, Massachusetts: MIT dissertation.

Diesing, Molly. 1992. *Indefinites*. Cambridge, Massachusetts: MIT Press.

Dimitrova-Vulchanova, Mila & Giuliana Giusti. 1995. Quantified noun phrase structure in Bulgarian. In *University of Venice working papers in linguistics*, vol. 5 1, 43–65. Venezia, Centro Linguistico Interfacoltà. Università degli studi di Venezia.

Dimitrova-Vulchanova, Mila & Giuliana Giusti. 1998. Fragments of Balkan nominal structure. In Artemis Alexiadou & Chris Wilder (eds.), *Possessors, predicates and movement in the determiner phrase*, 333–360. Amsterdam: John Benjamins Publishing Company.

Dimitrova-Vulchanova, Mila & Giuliana Giusti. 1999. Possessors in the Bulgarian DP. In Mila Dimitrova-Vulchanova & Lars Hellan (eds.), *Topics in South Slavic syntax and semantics* (Current Issues in Linguistics Thory 172), 163–192. John Benjamins.

Dimitrova-Vulchanova, Mila & Lars Hellan. 1999. Clitics and Bulgarian clause structure. In Henk C. van Riemsdijk (ed.), *Clitics in the languages of Europe*, 469–514. Walter de Gruyter.

Dobrovie-Sorin, Carmen. 1994. *The syntax of Romanian : comparative studies in Romance*, vol. 40 Studies in Generative Grammar. Berlin: Mouton de Gruyter.

Doggett, Teal Bissell. 2004. *All things being unequal: Locality in movement*. Cambridge, MA: Massachusetts Institute of Technology dissertation.

Dost, Ascander & Vera Gribanova. 2006. Definiteness marking in the Bulgarian. In D. Baumer, D. Montero & M. Scanlon (eds.), *Proceedings of the 25th west coast conference on formal linguistics*, 132–140. Somerville, MA: Cascadilla Proceedings Project.

Embick, David. 1997. *Voice and the interfaces of syntax*: University of Pennsylvania dissertation.

Embick, David. 2004. Unaccusative syntax and verbal alternations. In Artemis Alexiadou, Elena Anagnostopoulou & Martin Evereart (eds.), *The unaccusativity puzzle: Explorations of the syntax-lexicon interface*, 137–158. Oxford: Oxford University Press.

Embick, David. 2010. *Localism versus globalism in morphology and phonology* (Linguistic Inquiry Monographs 60). Cambridge, MA: MIT Press.

Embick, David & Rolf Noyer. 2001. Movement operations after syntax. *Linguistic Inquiry* 32(4). 555–595.

Engdahl, Elisabet. 1985. Parasitic gaps, resumptive pronouns, and subject extractions. *Linguistics* 23(1). 3–44.

Fábregas, Antonio. 2007. The internal syntactic structure of relational adjectives. *Probus* 19. 1–36.

Fanselow, Gisbert & Damir Cavar. 2001. Remarks on the economy of pronunciation. In Gereon Muller & Wolfgang Sternefeld (eds.), *Competition in syntax*, 107–150. Amsterdam: Benjamins.

Fanselow, Gisbert & Anoop Mahajan. 2000. Towards a minimalist theory of wh-expletives, wh-copying, and successive cyclicity. In Uli Lutz, Gereon Muller & Armin von Stechow (eds.), *Wh-scope marking*, 195–230. Amsterdam: John Benjamins.

Fehrmann, Dorothee, Uwe Junghanns & Denisa Lenertová. 2010. Two reflexive markers in Slavic. *Russian Linguistics* 34(3). 203–238.

Filip, Hana. 1999. *Aspect, eventuality types and nominal reference*. New York, NY: Routledge, Taylor & Francis Group (Garland).

Franco, Jon. 2000. Agreement as a continuum: The case of Spanish pronominal clitics. In Frits Beukema & Marcel den Dikken (eds.), *Clitic Phenomena in European Languages*, John Benjamins.

Franks, Steven. 2001. The internal structure of Slavic NPs, with special reference to Bulgarian. In Adam Przepiórkowski & Piotr Bański (eds.), *Generative linguistics in Poland: syntax and morphosyntax*, 53–69. Warszawa: Instytut Podstaw Informatyki PAN.

Franks, Steven. 2006. Another look at *li* placement in Bulgarian. *The Linguistic Review* 23(2). 161–211.

Franks, Steven. 2009. Macedonian pronominal clitics as object agreement markers. In Steven Franks, Vrinda Chidambaram & Brian Joseph (eds.), *A linguist's linguist: Studies in South Slavic linguistics in honor of E. Wayles Browne*, 189–222. Bloomington, IN: Slavica Publishers.

Franks, Steven & Tracy King. 2000. *A handbook of Slavic clitics*. New York: Oxford University Press.

Franks, Steven & Catherine Rudin. 2005. Bulgarian clitics as K^0 heads. In Steven Franks, Frank Y. Gladney & Mila Tasseva-Kurktchieva (eds.), *Formal approaches to Slavic linguistics: the South Carolina meeting*, 106–118. Ann Arbor, MI: Michigan Slavic Publications.

Fu, Jingqi, Tom Roeper & Hagit Borer. 2001. The VP within process nominals: evidence from adverbs and the VP anaphor *do so*. *Natural Language and Linguistic Theory* 19(3). 549–582.

Georgiev, Stanjo. 1999. *Morfologija na Bălgaskija knižoven ezik [Morphology of the Bulgarian literary language]*. Veliko Tărnovo: Abagar.

Gerassimova, Veronika A. & T. Florian Jaeger. 2002. Configurationality and the Direct Object Clitic in Bulgarian. In Malvina Nissim (ed.), *Proceedings of the seventh student session of the esslli 2002*, .

Giorgi, Alessandra & Giuseppe Longobardi. 1991. *The syntax of noun phrases*. Cambridge: Cambridge University Press.

Giusti, Giuliana. 1997. The categorial status of determiners. In Liliane Haegeman (ed.), *The new comparative syntax*, 95–123. Addison Wesley Longman.

Giusti, Giuliana & Melita Stavrou. 2008. Possessive clitics in the DP: Doubling or dislocation? In Dalina Kallulli & Liliane Tasmowski (eds.), *Clitic doubling in the Balkan languages*, 389–433. John Benjamins Publishing Company.

Grebenyova, Lydia. 2005. Sluicing and left-branch extraction out of islands. In John Alderete, Chung-hye Han & Alexei Kochetov (eds.), *Proceedings of the West Coast Conference on Formal Linguistics (WCCFL) XXIV*, 164–172. Somerville, MA: Cascadilla Press.

Grimshaw, Jane. 1990. *Argument structure*. Cambridge, Massachusetts: MIT Press.

Grodzinsky, Yosef & Tanya Reinhart. 1993. The innateness of binding and coreference. *Linguistic Inquiry* 24(1). 69–102.

Guentchéva, Zlatka. 1994. *Thématisation de l'objet en bulgare*. Frankfurt: Peter Lang.

Guentchéva, Zlatka. 2008. Object clitic doubling constructions and topicality in Bulgarian. In Dalina Kallulli & Liliane Tasmowski (eds.), *Clitic doubling in the Balkan languages*, 203–223. John Benjamins Publishing Company.

Haiman, John & Paola Benincà. 1992. *The Rhaeto-Romance languages*. London: Routledge.

Hale, Ken & Samuel Jay Keyser. 2002. *Prolegomenon to a theory of argument structure*. Cambridge, Massachusetts: MIT Press.

Hale, Kenneth & Samuel Jay Keyser. 1993. On argument structure and the lexical expression of syntactic relations. In Kenneth Hale & Samuel Jay Keyser (eds.), *The view from building 20*, 53–110. Cambridge, Massachusetts: MIT Press.

Halle, Morris & Alec Marantz. 1993. Distributed morphology and the pieces of inflection. In Kenneth Hale & Samuel Jay Keyser (eds.), *The view from Building 20*, 111–176. Cambridge, MA: MIT Press.

Halle, Morris & Alec Marantz. 1994. Some key features of Distributed Morphology. In Andrew Carnie & Heidi Harley (eds.), *MIT Working Papers in Linguistics: Papers on phonology and morphology*, vol. 21, 275–288. Cambridge, MA: MITWPL.

Halle, Morris & Ora Matushansky. 2006. The morphophonology of Russian adjectival inflection. *Linguistic Inquiry* 37(3). 351–404.

Harizanov, Boris. 2011. NonInitiality within spell-out domains: Unifying the post-syntactic behavior of Bulgarian dative clitics. In Nick LaCara, Anie Thompson & Matt A. Tucker (eds.), *Morphology at Santa Cruz: Papers in honor of Jorge Hankamer*, Santa Cruz, CA: UCSC Linguistics Research Center.

Harizanov, Boris. 2013. Clitic doubling as movement and multiple copy spell-out. Poster at the 87th Annual Meeting of the Linguistic Society of America.

Harizanov, Boris. to appear a. Clitic doubling at the syntax-morphophonology interface: A-movement and morphological merger in Bulgarian. *Natural Language & Linguistic Theory*.

Harizanov, Boris. to appear b. The role of prosody in the linearization of clitics: Evidence from Bulgarian and Macedonian. In Ivona Kučerová (ed.), *Formal approaches to Slavic linguistics 22*, Ann Arbor, MI: Michigan Slavic Publications.

Harley, Heidi. 1995. *Subjects, events and licensing*: Massachusetts Institute of Technology dissertation.

Harley, Heidi. 2009a. Compounding in Distributed Morphology. In Rochelle Lieber & Pavol Štekauer (eds.), *The Oxford handbook of compounding*, 129–144. New York, NY: Oxford University Press.

Harley, Heidi. 2009b. The morphology of nominalizations and the syntax of vP. In Anastasia Giannakidou & Monika Rathert (eds.), *Quantification, definiteness, and nominalization*, chap. 13, 320–342. New York, NY: Oxford University Press.

Harley, Heidi. 2011. A minimalist approach to argument structure. In Cedric Boeckx (ed.), *The Oxford handbook of linguistic minimalism*, 426–447. Oxford University Press.

Harley, Heidi. 2013. External arguments and the Mirror Principle: On the distinctness of Voice and v. *Lingua* 125. 34–57.

Harley, Heidi & Rolf Noyer. 1998. Mixed nominalizations, short verb movement and object shift in English. In Pius N. Tamanji & Kiyomi Kusumoto (eds.), *Proceedings of the north east linguistic society*, 143–158. University of Toronto: Graduate Linguistic Student Association.

Harley, Heidi & Rolf Noyer. 1999. Distributed morphology. *Glot International* 4(4). 3–9.

Harris, Alice. 1981. *Georgian syntax: a study in relational grammar*, vol. 33 Cambridge studies in linguistics. Cambridge: Cambridge University Press.

Hauge, Kjetil Rå. 1999. *A short grammar of contemporary Bulgarian*. Bloomington, IN: Slavica.

Hazout, Ilan. 1995. Action nominalizations and the lexicalist hypothesis. *Natural Language and Linguistic Theory* 13(3). 355–404.

Heim, Irene & Angelika Kratzer. 1998. *Semantics in generative grammar*. Malden, MA: Blackwell.

Higginbotham, James. 1983. Logical form, binding, and nominals. *Linguistic Inquiry* 14(3). 395–420.

Hiraiwa, Ken. 2001. Multiple agree and the defective intervention constraint in Japanese. In Ora Matushansky (ed.), *The proceedings of the MIT-Harvard Joint Conference*, vol. 40 MITWPL, 67–80. Cambridge, MA: MITWPL.

Hiraiwa, Ken. 2004. *Dimensions of symmetry in syntax: Agreement and clausal architecture*. Cambridge, MA: Massachusetts Institute of Technology dissertation.

Holmberg, Anders. 1986. *Word order and syntactic features*: Stockholm University dissertation.

Hornstein, Norbert. 1977. S and the X-bar convention. *Linguistic Analysis* 3. 137–176.

Hornstein, Norbert. 2001. *Move! A minimalist theory of construal*. Oxford: Blackwell.

Huang, C.-T. James. 1982. *Logical relations in Chinese and the theory of grammar*: Massachusetts Institute of Technology dissertation.

Iatridou, Sabine. 1995. Clitics and island effects. In Roumyana Izvorski & Victoria Tredinnick (eds.), *University of Pennsylvania working papers in linguistics*, vol. 2 1, 11–30. Penn Linguistics Club.

Ito, Junko & Armin Mester. 2009. The extended prosodic word. In Baris Kabak & Jaent Grijzenhout (eds.), *Phonological domains: Universals and derivations*, 135–194. The Hague, The Netherlands: Mouton de Gruyter.

Jackendoff, Ray. 1977. *X' Syntax*. Cambridge, Massachusetts: MIT Press.

Jaeggli, Osvaldo. 1982. *Topics in Romance syntax*. Dordrecht Holland: Foris Publications.

Jaeggli, Osvaldo. 1986. Three Issues in the Theory of Clitics: Case, Doubled NPs, and Extraction in The Syntax of Pronominal Clitics. In Hagit Borer (ed.), *The syntax of pronominal clitics*, vol. 19 Syntax and Semantics, 15–42. Academic Press.

Kallulli, Dalina. 2000. Restrictive relative clauses revisited. In Masako Hirotani, Andries Coetzee, Nancy Hall & Ji-yung Kim (eds.), *Proceedings of the north east linguistic society*, 353–362. Rutgers University: Graduate Linguistic Student Association.

Kallulli, Dalina & Liliane Tasmowski. 2008. Clitic doubling, core syntax and the interfaces. In Dalina Kallulli & Liliane Tasmowski (eds.), *Clitic doubling in the Balkan languages*, 1–32. John Benjamins Publishing Company.

Kandybowicz, Jason. 2007. On fusion and multiple-copy spell-out: The case of verbal repetition. In Norbert Corver & Jairo Nunes (eds.), *The copy theory of movement*, 119–150. Amsterdam: John Benjamins.

Kayne, Richard S. 1975. *French syntax: the transformational cycle*. Cambridge, Massachusetts: MIT Press.

Kayne, Richard S. 1981. ECP extensions. *Linguistic Inquiry* 12. 93–133.

Kayne, Richard S. 1984. *Connectedness and binary branching*. Dordrecht, Holland: Foris Publications.

Kayne, Richard S. 1994. *The antisymmetry of syntax*, vol. 25 Linguistic Inquiry Monographs. Cambridge, MA: MIT Press.

Kayne, Richard S. 2000. *Parameters and universals*. Oxford: Oxford University Press.

Kechagias, Axiotis. 2011. *Regulating word order in Modern Greek: Verb initial and non-verb initial orders & the conceptual-intentional interface*: University College London dissertation.

Keenan, Edward L. 1980. Passive is phrasal (not sentential or lexical). In Teun Hoekstra, Harry van der Hulst & M. Moortgat (eds.), *Lexical grammar*, 181–214. Dordrecht: Foris.

Keenan, Edward L. 1985. Passive in the world's languages. In Timothy Shopen (ed.), *Language typology and syntactic description: Vol. 1, Clause structure*, 243–281. Cambridge: Cambridge University Press.

Kramer, Ruth. 2009. *Definite markers, Phi features and agreement: A morphosyntactic investigation of the Amharic DP*: University of California, Santa Cruz dissertation.

Kramer, Ruth. to appear. Clitic doubling or object agreement: The view from Amharic. *Natural Language & Linguistic Theory*.

Krapova, Iliyana & Guglielmo Cinque. 2008. Clitic reduplication constructions in Bulgarian. In Dalina Kallulli & Liliane Tasmowski (eds.), *Clitic doubling in the Balkan languages*, 257–286. John Benjamins Publishing Company.

Kratzer, Angelika. 1994. On external arguments. In Elena Benedicto & Jeff Runner (eds.), *Functional projections(17)*, 103–130. Amherst: GLSA.

Kratzer, Angelika. 1996. Severing the external argument from its verb. In Johan Rooryck & Laurie Zaring (eds.), *Phrase structure and the lexicon*, 109–137. Dordrecht, The Netherlands: Kluwer Academic Publishers.

Laka, Itziar. 1990. *Negation in syntax: on the nature of functional categories and their projections*: Massachusetts Institute of Technology dissertation.

Landau, Idan. 2006. Chain resolution in Hebrew V(P)-fronting. *Syntax* 9(1). 32–66.

Landau, Idan. 2010. The explicit syntax of implicit arguments. *Linguistic Inquiry* 41(3). 357–388.

Leafgren, John R. 1997. Bulgarian clitic doubling: Overt topicality. *Journal of Slavic Linguistics* 5. 117–143.

Lees, Robert. 1963. *The grammar of English nominalizations*. The Hague: Mouton.

Legate, Julie Anne. 2012. Subjects in Acehnese and the nature of the passive. *Language* 88(3). 495–524.

Levi, Judith N. 1978. *The syntax and semantics of complex nominals*. New York, NY: Academic Press.

Levin, Beth. 1999. Objecthood: An event structure perspective. In *Proceedings of CLS 35*, 223–247. Chicago, IL: University of Chicago.

Lieber, Rochelle. 1984. Grammatical rules and sublexical elements. *Papers from the parasession on lexical semantics, Chicago Linguistic Society* 20. 187–99.

Longobardi, Giuseppe. 1994. Reference and proper names. *Linguistic Inquiry* 25(4). 609–666.

Mahajan, Anoop. 1990. *The A/A-bar distinction and movement theory*. Cambridge, MA: Massachusetts Institute of Technology dissertation.

Marantz, Alec. 1984. *On the nature of grammatical relations*. Cambridge, MA: MIT Press.

Marantz, Alec. 1988. Clitics, morphological merger, and the mapping to phonological structure. In Michael Hammond & Michael Noonan (eds.), *Theoretical morphology: Approaches in modern linguistics*, 253–270. San Diego, California: Academic Press.

Marantz, Alec. 1989. Clitics and phrase structure. In Mark R. Baltin & Anthony S. Kroch (eds.), *Alternative conceptions of phrase structure*, 99–116. Chicago and London: The University of Chicago Press.

Marantz, Alec. 1991. Case and licensing. In Germán Westphal, Benjamin Ao & Hee-Rahk Chae (eds.), *Eastern states conference on linguistics*, 234–253. Cornell University, Ithaca, NY: Cornell Linguistics Club.

Marantz, Alec. 1997. No escape from syntax: Don't try morphological analysis in the privacy of your own lexicon. In Alexis Dimitriadis, Laura Siegel, Clarissa Surek-Clark & Alexander Williams (eds.), *University of Pennsylvania Working Papers in Linguistics*, vol. 4.2, 201–225. University of Pennsylvania: Penn Linguistics Club.

Markova, Angelina. 2010. The syntax of deverbal nominals in Bulgarian. In Artemis Alexiadou & Monika Rathert (eds.), *Interface explorations: The syntax of nominalizations across languages and frameworks*, Berlin: Walter de Gruyter.

Matushansky, Ora. 2006. Head movement in linguistic theory. *Linguistic Inquiry* 37(1). 69–109.

Mayer, G. 1988. *The definite article in contemporary standard bulgarian*. Berlin: Otto Harrassowitz, Wiesbaden.

Mayer, Gerald L. 1987. The morphological categorization of the Bulgarian definite article. *International Journal of Slavic Linguistics and Poetics* XXXV–XXXVI. 143–150.

McCloskey, James. 2000. Quantifier float and wh-movement in an Irish English. *Linguistic Inquiry* 31(1). 57–84.

McDaniel, Dana. 1986. *Conditions on wh-chains*: CUNY dissertation.

McDaniel, Dana. 1989. Partial and multiple Wh-movement. *Natural Language and Linguistic Theory* 7(4). 565–604.

Merchant, Jason. 2008. An asymmetry in voice mismatches in VP-ellipsis and Pseudogapping. *Linguistic Inquiry* 39(1). 169–179.

Neeleman, Ad & Hans van de Koot. 2008. Dutch scrambling and the nature of discourse templates. *Journal of Comparative Germanic Linguistics* 11(2). 137–189.

Neeleman, Ad & Reiko Vermeulen (eds.). 2013. *The syntax of topic, focus, and contrast: An interface-based approach*. Berlin: De Gruyter Mouton.

Nevins, Andrew. 2007. The representation of third person and its consequences for person-case effects. *Natural Language and Linguistic Theory* 25(2). 273–313.

Nevins, Andrew. 2011. Multiple agree with clitics: Person complementarity vs. omnivorous number. *Natural Language and Linguistic Theory* 29(4). 939–971.

Nunes, Jairo. 1999. Linearization of chains and phonetic realization of chain links. In Samuel Epstein & Norbert Hornstein (eds.), *Working minimalism*, 217–249. Cambridge, MA: MIT Press.

Nunes, Jairo. 2004. *Linearization of chains and sideward movement* Linguistic Inquiry Monographs. Cambridge, MA: MIT Press.

Pancheva, Roumyana. 2004. Balkan possessive clitics: the problem of case and category. In Olga Mišeska Tomić (ed.), *Balkan syntax and semantics*, 221–233. Amsterdam: John Benjamins.

Pancheva, Roumyana. 2005. The rise and fall of second-position clitics. *Natural Language & Linguistic Theory* 23(1). 103–167.

Papangeli, Dimitra. 2000. Clitic doubling in Modern Greek: a head-complement relation. *UCL Working Papers in Linguistics* 12. 473–499.

Partee, Barbara Hall. 1989. Binding implicit variables in quantified contexts. In C. R. Wiltshire, R. Graczyk & B. Music (eds.), *Papers from the 25th regional meeting of the Chicago Linguistic Society*, 342–356. Chicago, IL: Chicago Linguistic Society.

Pashov, Petăr. 1999. *Bălgarska gramatika [Bulgarian grammar]*. Sofia: Hermes.

Perlmutter, David. 1978. Impersonal passives and the unaccusative hypothesis. In *Berkeley linguistic society*, vol. IV, 157–189. University of California, Berkeley.

Pesetsky, David. 1982. *Paths and categories*. Cambridge, MA: Massachusetts Institute of Technology dissertation.

Pesetsky, David & Esther Torrego. 2001. T-to-C movement: Causes and consequences. In Michael Kenstowicz (ed.), *Ken Hale: A life in language*, 355–426. MIT Press.

Philippaki-Warburton, Irena, Spyridoula Varlokosta, Michalis Georgiafentis & George Kotzoglou. 2004. Moving from theta-positions: pronominal clitic doubling in Greek. *Lingua* 114. 963–989.

Picallo, Carme M. 1991. Nominals and nominalizations in Catalan. *Probus* 3(3). 279–316.

Poletto, Cecilia. 2000. *The higher functional field: Evidence from Northern Italian dialects*. Oxford University Press.

Pollard, Carl & Ivan A. Sag. 1992. Anaphors in English and the scope of binding theory. *Linguistic Inquiry* 23(2). 261–304.

Pollock, Jean-Yves. 1989. Verb movement, UG and the structure of IP. *Linguistic Inquiry* 20. 365–424.

Potts, Christopher. 2008. Review article: Hagit Borer's Structuring Sense, volumes I and II. *Language* 84(2). 348–369.

Preminger, Omer. 2009. Breaking agreements: Distinguishing agreement and clitic doubling by their failures. *Linguistic Inquiry* 40(4). 619–666.

Preminger, Omer. 2010. Failure to agree is not a failure: phi-agreement with post-verbal subjects in Hebrew. In Jeroen van Craenenbroeck & Johan Rooryck (eds.), *Linguistic variation yearbook*, vol. 9, 241–278. John Benjamins.

Preminger, Omer. 2011. *Agreement as a fallible operation*. Cambridge, MA: Massachusetts Institute of Technology dissertation.

Pylkkänen, Liina. 2002. *Introducing arguments*: Massachusetts Institute of Technology dissertation.

Ramchand, Gillian Catriona. 2008. *Verb meaning and the lexicon* Cambridge Studies in Linguistics. Cambridge, United Kingdom: Cambridge University Press.

Reinhart, Tanya. 1983a. *Anaphora and semantic interpretation*. Chicago, Illinois: University of Chicago Press.

Reinhart, Tanya. 1983b. Coreference and bound anaphora: A restatement of the anaphora questions. *Linguistics and Philosophy* 6. 47–88.

Reinhart, Tanya & Eric Reuland. 1993. Reflexivity. *Linguistic Inquiry* 24(4). 657–720.

Rezac, Milan. 2010. φ-Agree Versus φ-Feature Movement: Evidence from Floating Quantifiers. *Linguistic Inquiry* 41(3). 496–508.

Rezac, Milan. 2011. *Phi-features and the modular architecture of language*. Springer.

Richards, Norvin. 2001. *Movement in language: interactions and architectures*. Oxford: Oxford University Press.

Riemsdijk, H. & F. Zwarts. 1997. Left dislocation in Dutch and the status of copying rules. In E. Anagnostopoulou, H. Riemsdijk & F. Zwarts (eds.), *Materials on left dislocation*, 119–148. Amsterdam: John Benjamins. [Originally appeared in 1974].

Rizzi, Luigi. 1990. *Relativized minimality*. Cambridge, Massachusetts: MIT Press.

Rizzi, Luigi. 1997. The fine structure of the left periphery. In Liliane Haegeman (ed.), *Elements of grammar*, 281–337. Dordrecht: Kluwer Academic Publishers.

Roberts, Ian. 2010. *Agreement and head movement*. Cambridge, MA: MIT Press.

Roeper, Thomas. 1987. Implicit arguments and the head-complement relation. *Linguistic Inquiry* 18(2). 267–310.

Rozwadowska, B. 1995. The duality of Polish -nie/-cie nominals. In E. Gussmann (ed.), *Licensing in syntax and phonology*, vol. 1 PASE studies and monographs, Lublin: Wydawnictwo Folium.

Rudin, Catherine. 1997. Agr-O and Bulgarian pronominal clitics. In Martina Lindseth & Steven Franks (eds.), *Formal approaches to Slavic linguistics: The Indiana meeting, 1996*, 224–252. Ann Arbor: Michigan Slavic Publications.

Rudin, Catherine, Christina Kramer, Loren Billings & Matthew Baerman. 1999. Macedonian and Bulgarian LI questions: beyond syntax. *Natural Language & Linguistic Theory* 17(3). 541–586.

Runner, Jeffrey T., Rachel S. Sussman & Michael K. Tanenhaus. 2002. Logophors in possessed picture noun phrases. In Line Mikkelsen & Christopher Potts (eds.), *WCCFL 21 Proceedings*, 401–414. Somerville, MA: Cascadilla Press.

Sadock, J. 1991. *Autolexical syntax: A theory of parallel grammatical representations*. Chicago: University of Chicago Press.

Scatton, Ernest. 1984. *A reference grammar of Modern Bulgarian*. Columbus, OH: Slavica.

Schneider-Zioga, Patricia. 1994. *The syntax of clitic doubling in Modern Greek*: University of Southern California dissertation.

Schoorlemmer, Maaike. 1995. *Participial passive and aspect in Russian*: Utrecht Univeristy dissertation.

Schoorlemmer, Maaike. 1998. Possessors, articles and definiteness. In Artemis Alexiadou & Chris Wilder (eds.), *Possessors, predicates and movement in the determiner phrase*, 55–86. Amsterdam: John Benjamins Publishing Company.

Schürcks, Lilia. 2003. *Binding and Bulgarian*: University of Groningen dissertation.

Scott, Gary-John. 2002. Stacked adjectival modivication and the structure of nominal phrases. In Guglielmo Cinque (ed.), *Functional structure in DP and IP*, vol. 1 The Cartography of Syntactic Structures, 91–122. Oxford University Press.

Selkirk, Elisabeth. 1995. Sentence prosody: intonation, stress and phrasing. In J. A. Goldsmith (ed.), *The handbook of phonological theory*, London: Blackwell Publishers.

Siloni, Tal. 1997. *Noun phrases and nominalizations: The syntax of DPs*. Dodrecht: Kluwer.

Slavkov, Nikolay. 2008. Formal consequences of dative clitic doubling in Bulgarian ditransitives: An applicative analysis. *Journal of Slavic Linguistics* 16(1). 139–166.

Sportiche, Dominique. 1988. A theory of floating quantifiers and its corollaries for constituent structure. *Linguistic Inquiry* 19(3). 425–449.

Sportiche, Dominique. 1996. Clitic constructions. In Johan Rooryck & Laurie Ann Zaring (eds.), *Phrase structure and the lexicon*, 213–276. Kluwer Academic Publishers.

Sproat, Richard & Chilin Shih. 1988. Prenominal adjectival ordering in English and Mandarin. In *Proceedings of the 18th annual meeting of the North East Linguistics Society*, 465–489. University of Massachusetts, Amherst, MA: GLSA.

Suñer, Margarita. 1988. The role of agreement in clitic-doubled constructions. *Natural Language and Linguistic Theory* 6(3). 391–434.

Suñer, Margarita. 1992. Subject clitics in the Northern Italian vernaculars and the matching hypothesis. *Natural Language and Linguistic Theory* 10(4). 641–672.

Suñer, Margarita. 2000. Object-shift: comparing a Romance language to Germanic. *Probus* 12. 261–289.

Svenonius, Peter. 2008. The position of adjectives and other phrasal modifiers in the decomposition of DP. In Louise McNally & Christopher Kennedy (eds.), *Adjectives and adverbs*, 16–42. Oxford University Press.

Szabolcsi, Anna. 2006. Strong vs. weak islands. In Martin Everaert & Henk van Riemsdijk (eds.), *The Blackwell companion to syntax*, 479–531. Oxford: Blackwell Publishing.

Thráinsson, Höskuldur. 2001. Object shift and scrambling. In Mark Baltin & Chris Collins (eds.), *The handbook of contemporary syntactic theory*, 148–202. Malden, MA: Blackwell Publishing.

Torrego, Esther. 1998. Nominative subjects and PRO-drop INFL. *Syntax* 1(2). 206–219.

Truswell, Robert. 2004. Attributive adjectives and the nominals they modify. Master's thesis, Oxford University. http://artsites.uottawa.ca/robtruswell/doc/mphil.pdf.

Truswell, Robert. 2005. Non-restrictive adjective interpretation and association with focus. In Richard Ashdowne & Thomas Finbow (eds.), *Oxford working papers in linguistics, philology and phonetics*, vol. 9, 133–154. Oxford: Centre for Linguistics and Philology.

Truswell, Robert. 2011. *Events, phrases, and questions*. Oxford: Oxford University Press.

Tsakali, Vina. 2008. "Double" floating quantifiers in Modern Greek and Pontic. In Sjef Barbiers, Olaf Koeneman, Marika Lekakou & Margreet van der Ham (eds.), *Microvariation in syntactic doubling*, vol. 36 Syntax and Semantics, 189–203. Emerald.

Ura, Hiroyuki. 1996. *Multiple feature checking: a theory of grammatical function splitting*. Cambridge, MA: Massachusetts Institute of Technology dissertation.

Uriagereka, Juan. 1988. *On government*: University of Connecticut dissertation.

Uriagereka, Juan. 1995. Aspects of the syntax of clitic placement in Western Romance. *Linguistic Inquiry* 26(1). 79–124.

Vakareliyska, Cynthia M. 1994. *Na*-drop in Bulgarian. *Journal of Slavic Linguistics* 2(1). 121–150.

Vicente, Luis. 2009. A note on the copy vs. multidominance theories of movement. *Catalan Journal of Linguistics* 8. 1–23.

Ward, Gregory, Richard Sproat & Gail McKoon. 1991. A pragmatic analysis of so-called anaphoric islands. *Language* 67(3). 439–474.

Wexler, Kenneth & Peter W. Culicover. 1977. Some syntactic implications of a theory of language learnability. In Peter W. Culicover, Thomas Wasow & Adrian Akmajian (eds.), *Formal syntax*, 7–60. Academic Press.

Wexler, Kenneth & Peter W. Culicover. 1983. *Formal principles of language acquisition*. Cambridge, MA: MIT Press.

Williams, Edwin. 1985. PRO and subject of NP. *Natural Language and Linguistic Theory* 3(3). 297–316.

Williams, Edwin. 1987. Implicit arguments, the Binding Theory, and control. *Natural Language and Linguistic Theory* 5(2). 151–180.

Williams, Edwin. 1997. Lexical and syntactic complex predicates. In Alex Alsina, Joan Bresnan & Peter Sells (eds.), *Complex predicates*, 13–28. Stanford: Center for the Study of Language and Information.

Zlatić, Larisa. 1997. *The structure of the Serbian noun phrase*: University of Texas at Austin dissertation.

Zubizarreta, Maria Luisa. 1985. The relation between morphophonology and morphosyntax: The case of Romance causatives. *Linguistic Inquiry* 16(2). 247–290.

Zubizarreta, Maria Luisa. 1987. *Levels of representation in the lexicon and in the syntax*. Dodrecht: Foris.

Zubizarreta, Maria Luisa. 1998. *Prosody, focus, and word order*. Cambridge, Massachusetts: MIT Press.