

THE ROLE OF PREFIXATION IN THE NOMINALIZING PROCESS

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TO MY BELOVED SON, FOR ALL THAT HE ENDURED SO PATIENTLY

TO MY DEAREST SOUL MATE, FOR HIS UNCONDITIONAL LOVE

TO MY GRANDMOTHER, WHO MADE ME WHO I AM

**"NOW FAITH IS BEING SURE OF WHAT WE HOPE FOR
AND CERTAIN OF WHAT WE DO NOT SEE."**

HEBREW 11: 1

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ABSTRACT

This work deals with the role of aspectual elements (affixes and prepositions) in syntactic structures. A central issue in this study is the syntactic behavior and the interpretation assigned to nominal structures derived on verbal bases. The thesis shows that the functional structure in nouns and verbs is aspectual in nature where prefixes and suffixes, being aspectual morphemes, determine both argument structure and interpretation in both types of derivatives.

The main empirical evidence that supports the theoretical proposals of this study comes from English and Bulgarian. These two languages have been chosen because they exhibit an *apparently* great degree of variation in their aspectual systems, which allows us to confirm some of the most recent cartographic proposals on the postulation of a universal hierarchy of functional aspectual features shared across languages. Bearing in mind that the functional aspectual structure is cross-linguistically uniform, it is argued that the observable cross-linguistic variation found between English and Bulgarian is a byproduct of the overt morphological means a given language has in order to express aspect. The general cartographic proposal concerning the way functional elements are linearized in syntactic structure is exemplified and accounted for following some of the most recent theoretical approaches to inner aspect like the ones derived from syntactic neoconstructionist models together with some morphological models to syntactic structuring encompassed under the Distributed Morphology theory.

The thesis confirms the neoconstructionist proposal that the aspectual interpretation of a given construction essentially depends on the value assigned to a specific functional element by the syntactic context and that the cross-linguistic variation resides largely in the way in which value is assigned to the functional elements: directly (i.e. affixally) or indirectly (i.e. through the features of the internal arguments or prepositions). In order to better explain the cross-linguistic variation between English and Bulgarian, a contrast is established between the standard (Slavic) *versus* the biaspectual paradigms of Bulgarian, since the former instantiates the direct option whereas the latter abides to the indirect mode of valuation. It is shown that it is precisely because of morphological reasons that the biaspectual paradigm, which consists of borrowings, is forced to choose the indirect mode of range assignment in a similar fashion as the Germanic languages. It is thus demonstrated that inter- and intra-linguistic variation is the same kind of variation.

CHAPTER 1: INTRODUCTION

The goal of this thesis is to analyze the behavior of nominalizations in three languages: standard Bulgarian, biaspectual Bulgarian and English. I have chosen this topic because only by analyzing complex derivatives like de-verbal nouns we can see how aspectual functional structure drives both syntax and semantics. As we will see, both de-verbal nouns and verbs may incorporate higher aspectual structure, which has the same effects and leads to the same results in both domains. Therefore, the best way to unify nouns and verbs is by examining the behavior of prefixes within these derivatives, given that prefixation is aspectual in nature. Put differently, ***THE ROLE OF PREFIXATION IN THE NOMINALIZING PROCESS serves to strengthen the role of aspect in argument structure and interpretation in both verbs and de-verbal nouns, and to further reinforce the assumption that functional structure is aspectual in nature and universally given***, with variation being due to the mode in which a language codifies aspect and to the morphological properties of its functional elements.

IN CHAPTER 2 I introduce the reader to THE GENERAL LINGUISTIC SCENARIO within which the current thesis is embedded. It should be noted that the current work adopts different assumptions from various linguistic frameworks. To exemplify, I follow the basic minimalist lines of thought such as those elaborated in Chomsky (1993, 1994, 1995, 2000, et seq.) as well as many ideas from neo-constructionist approaches (Borer 1994, 1999, 2005a,b), together with some assumptions from various morphological frameworks such as the Distributed Morphology one (Halle and Marantz 1993, Marantz 1997, Harley and Noyer 1998) and Baker's (1985) Mirror Principle. Within a more vast empirical study, I will also adopt Cinque's (1999, 2002) main generalizations and claims.

After discussing the theoretical framework, I proceed to describe the way the BULGARIAN ASPECTUAL SYSTEM functions in CHAPTER 3. I start by analyzing two co-existing paradigms in this language: the standard paradigm and the biaspectual paradigm. As we

will see, these paradigms differ significantly with respect to inner aspect which is morphologically driven inasmuch as the biaspectual paradigm, whose lexical items consist of borrowings, is morphologically insensitive in contrast to the standard paradigm in which verbs are either morphologically perfective or imperfective. This will be crucial for our claims concerning language variation. To be more precise, the similarities we will find between English and biaspectual Bulgarian in contrast to standard Bulgarian throughout the whole thesis reside precisely in the morphological insensitiveness on behalf of the former. In other words, contrasting these three languages (English, standard Bulgarian and biaspectual Bulgarian) turns out to be the best way to see how morphology can drive syntax in morphologically sensitive languages. After describing the properties of the two paradigms, I examine the aspectual contribution of prefixes and suffixes and propose a modified account of the Bulgarian prefixes based on semantic, morphological and syntactic factors. As we will see, the prefixal typology will be significant when dealing with nominalization since it will be allowed or disallowed within a noun depending on its type.

After describing the properties of the Bulgarian verbs, I start the discussion **WITH THE WAY INNER ASPECT IS CODIFIED WITHIN THE VERBAL DOMAIN** of English and Bulgarian. I open this section by examining the syntactic behavior of the Bulgarian and English verbs with respect to inner aspect in **CHAPTER 4**, after which my **SYNTACTIC REPRESENTATION** of inner aspect in each language is offered in **CHAPTER 5**.

From these two chapters it will become clear that the ***Bulgarian biaspectual eventive verbs pattern systematically with the English eventive predicates*** with respect to two properties of inner aspect, the object-to-event mapping property and the aspectual contribution of PPs, in contrast to the Bulgarian standard verbs which lack these properties. Treating properties in terms of features in the line of minimalism, I will show that inter- and intra-linguistic variation is the same kind of variation, where ***the observed aspectual differences follow from the way a language codifies inner aspect***. Adopting the assumption that the functional hierarchy associated with grammar is uniform across languages and universally given

(Borer 2005b), I propose that all languages, inasmuch as they have their own particular way of referring to inner aspect (i.e. (a)telicity), possess a universally available functional projection, AspP, which is responsible for the final aspectual interpretation of a given derivative. Thus, the final interpretation of the derivative as either telic or atelic will depend on the value assigned to the head of AspP, which represents an open value in need of range assignment in all languages (meaning 'unvalued' in all languages).

With these assumptions in mind, I claim that inner aspect is morphologically dependent in standard Bulgarian where the presence of morphological perfectivity at any level of derivation signals telicity. By associating morphological perfectivity with the aspectual feature [endpoint] I suggest that the standard Bulgarian (also Slavic) verbal paradigm marks aspect, i.e. assigns value to Asp⁰, via the **direct range assignment mode**, i.e. the [endpoint] feature relevant for the determination of inner aspect is directly merged into the structure either on a prefix or on a perfective verbal stem, blocking thus the possible aspectual side effects of the internal arguments (e.g. the object-to-event mapping property) and the goal PPs. As for the Bulgarian eventive biaspectual verbs and English eventive predicates, they are underspecified, else, doubly specified for such a feature (alternatively, the feature is unassigned), which implies that inner aspect should be calculated compositionally, i.e. according to the surrounding linguistic environment, since this is the only remaining option. This is an instantiation of **indirect range assignment**. Hence, the object-to-event mapping property and the nature of the PPs will be deterministic for inner aspect in this case. Finally, we will also see that stative predicates behave uniformly across paradigms which suggests that statives have some invariable universal feature shared across both (and arguably all) languages. It is precisely this feature that finally superimposes itself onto the whole structure and marks the event as stative.

After offering my syntactic account of inner aspect within the verbal domain of the three languages examined here, I proceed to show how the **same mechanisms found in the verbal systems of these languages are further transferred to their nominal domains**. I open up the discussion with CHAPTER 6 in which I

describe the **NOMINALIZATION TYPES** in each language, after which my **SYNTACTIC ACCOUNT** of these nominalization types is presented in **CHAPTER 7**.

Thus, in **CHAPTER 6** I show that there are two nominalizations types in each language based on argument-structure properties and interpretation: (i) ***Result-Referential nouns***, which lack argument structure properties and event semantics, and (ii) ***Argument-Taking nouns***, which include ***Participant-Structure nouns*** (event-denoting and allowing optional internal arguments) and ***Argument-Structure nouns*** (process-denoting with obligatory internal arguments). In analyzing the syntactic behavior of these nominalization types I focus on the way nominalizing suffixes and aspectual markers (e.g. prefixes, theme vowels, imperfectivizing suffixes) interact, from which I tentatively conclude that aspect is the driving force of argument structure building not only within the verbal domain, but within the nominal domain as well.

In elaborating this section, several issues become crucial:

(i) **THE STATUS OF NOMINALIZERS AS N⁰ HEADS**, which is dependent on the properties of the grammatical gender system of the language, plays a crucial role in the nominalizing process;

(ii) **ARGUMENT STRUCTURE BUILDING WITHIN NOUNS ABIDES THE SAME PRINCIPLES OF ARGUMENT STRUCTURE BUILDING WITHIN VERBS**; as we will see, without aspectual functional structure, there is no argument structure;

(iii) **THE SELECTIONAL AND ASPECTUAL PROPERTIES OF EACH NOMINALIZER** will be deterministic for the final interpretation of the derivative; thus, nominalizers selecting high aspectual nodes will be more verbal-like in properties than those selecting roots;

(iv) **THE SELECTIONAL PROPERTIES OF EACH NOMINALIZER ARE SYNTACTICALLY REFLECTED IN THEIR ATTACHMENT SITE**. Bearing in mind that there is a universally available hierarchy

of aspectual features (Cinque 1999), I will show that ***all aspectual affixes***, be they prefixes or suffixes, ***are linearized according to this hierarchy***. This holds for both verbs and nouns; however, what differentiates verbs from nouns is the fact that once nominalized, further aspectual layers cannot be incorporated within a nominal due to the incompatibility of aspect with nominal structure; therefore, ***the higher in the aspectual hierarchy a nominalizer is, the more aspectual projections it will be able to incorporate***; this will have effects on both arguments structure and interpretation;

(v) depending on the properties of each nominalizer, **MODIFIERS OF NOMINAL STRUCTURE WILL BE CONSEQUENTLY ALLOWED OR DISALLOWED WITHIN A NOMINAL** (e.g. pluralization, indefinite determiners, numerals, etc.). Here, the status of nominalizers as n^0 heads becomes crucial since ***n^0 -headed nominals will systematically allow high functional nominal structure inside them inasmuch as the latter target the former***;

(vi) depending on the properties of each nominalizer and its attachment site in syntax, **MODIFIERS OF VERBAL-ASPECTUAL STRUCTURE WILL BE CONSEQUENTLY ALLOWED OR DISALLOWED WITHIN A NOMINAL** (e.g. manner adverbs, the *for*-adverbial, time-measure phrases, agent-oriented adverbials, etc.); as we will see, ***only nouns incorporating verbal and aspectual layers will accept such modification***.

From the observations above I conclude that the similarities found between the nominalizations across languages are due to the similar selectional restrictions and the similar aspectual properties of the particular nominalizers involved in the derivation of these nouns, which is further reflected in their similar syntactic structure. In other terms, it is syntax and aspectual functional structure that drives interpretation and syntactic behavior.

Finally, I close the thesis with **CHAPTER 8** in which I summarize the main findings we have arrived at throughout this investigation. On presenting the whole range of generalizations

made, we can see that it is precisely prefixation and the way it interacts with other morphemes within a nominal derivative that allows us to establish a parallelism between nominal and verbal structure. Thus, **THE ROLE OF PREFIXATION IN THE NOMINALIZING PROCESS** *encompasses the whole investigation and confirms our major claims* such as:

(i) **Prefixation**, being a perfectivizing device in Bulgarian, has telicizing properties and *is thus directly related to inner aspect*. To explain this, I propose that prefixes bear an inherent feature [endpoint] which, upon merger, serves as a direct range assigner to Asp^o both within verbs and within Argument-Structure nouns. This feature has telicizing properties in all languages when merged on the appropriate element (e.g. a prefix or a particle). Interestingly, prefixes tend to be disallowed with stative bases both with verbs and nouns inasmuch as the feature [state] of the base has an anti-telic effect, thus blocking the [endpoint] feature on the prefix. In other words, prefixation phenomena help us not only prove that inner aspect is morphologically determined in Bulgarian with respect to (im)perfectivity, but also establish a parallelism between verbs and nouns regarding the way (a)telicity is calculated, i.e. according to the feature [endpoint].

(ii) Prefixation phenomena show that *argument structure is built alike in both verbs and nouns*. In this respect, both particles and prefixes, being transitivity-telicizing devices, may function as **quantificational operators** which require a DP in the specifier position of the projection they head (e.g. Asp_QP or another [endpoint]-headed projection) so that they could bind a variable within it and thus satisfy their operator-like properties. Therefore, when attached to potentially transitive atelic bases, these elements require the internal argument obligatorily. This holds for both verbs and deverbal nouns. Since prefixes and particles are aspectual morphemes by virtue of their inherent feature [endpoint], it then follows that *argument structure licensing is aspectually dependent (e.g. only in the presence of an [endpoint] feature are internal arguments obligatorily required within a*

derivative). In other words, aspectual structure drives argument structure within both verbs and nouns.

(iii) The nature of the prefix (e.g. lexical, inner, outer) and the way the prefix types are linearized with respect to one another and with respect to other aspectual affixes within a nominalization is indicative of **the presence of an aspectual hierarchy of functional-aspectual features (Cinque 1999)**. This hierarchy is shared between verbs and nouns, the difference being that prefixation within a nominal is dependent on the properties of the relevant nominalizer. As we mentioned, once the verbal base nominalizes, further prefixation is blocked since prefixes select for verbs, but not nouns.

(iv) The properties of each prefix type (e.g. lexical, inner and outer) and the prefixation possibilities of the loan $[-ira+NE]$ nominalizations indicate **the existence of three syntactic domains of affixation**: (i) outer aspectual domain (above AspP headed by $-ira$), (ii) inner aspectual domain (between VP and AspP), and idiosyncratic domain (below VP). The higher in the structure an affix is, the more morphologically productive and semantically transparent it will be. **This domain distinction holds true for both verbs and de-verbal nouns**. As we will see, the $[-ira+NE]$ derivatives incorporate only those prefixes located above the projection headed by $-ira$ (i.e. above Asp^0). Bearing in mind that this suffix is an aspectual head, then its function is to verbalize. This explains why any layer below the $-ira$ suffix is excluded from these nouns since the loan base, which is usually nominal, does not become a verb until it incorporates the $-ira$ suffix. **This holds for both verbs and nouns based on such verbs**. Crucially, loan verbalizations (the $-ira$ verbs) and nominalizations (the $[-ira+NE]$ nouns) represent a process of productive word formation which is taking place in Bulgarian. I assume that **the productivity of these derivations is structurally driven and due to the fact that the loan verbalizer itself is located in the intermediate syntactic domain (under Asp^0)**. This explains why only intermediate-domain affixes (e.g. quantificational inner prefixes) and higher-domain affixes (e.g. outer prefixes; the $-NE$ nominalizer) are

allowed within such derivatives, but not low-domain affixes (e.g. lexical prefixes, thematic vowels).

(v) The interaction of prefixes and aspectual suffixes within a nominalization (e.g. the Bulgarian theme vowels, the –va imperfectivizer, participial suffixes –N/T, the Voice nominalizer –IE, the –ira verbalizer, etc.) helps us **unify the treatment of aspectual prefixes and suffixes**: given that aspect drives syntax and interpretation, then all aspectual heads, be they prefixes or suffixes, should be treated alike. Furthermore, prefixation phenomena show us that these affixes are linearized according to the same aspectual hierarchy (see Appendix 1.1).

(vi) **Prefixation phenomena indicate some lines of analysis regarding language variation.** If we are right in claiming that all languages calculate inner aspect with respect to the value assigned to Asp^0 , then in standard Bulgarian this is morphologically driven: the presence of morphological perfectivity at any level of derivation signals telicity; the absence of perfectivity gives rise to atelicity. Bearing in mind that prefixes are the perfectivizers *par excellence*, then these elements serve as direct range assigners to Asp^0 . As we will see, any kind of prefix gives rise to telicity by virtue of its inherent [endpoint] feature. **This holds for both verbs and nouns.** Regarding languages like English, which are morphologically insensitive and lack productive prefixation, we observe another tendency for Asp^0 valuation manifested by the indirect mode of range assignment. However, once a prefix-like element is present in the structure, like a particle, the direct mode is chosen and the event is marked as telic. In other words, **the similar behavior of prefixed derivatives and particle-incorporating derivatives speaks of a shared means of Asp^0 valuation by virtue of a shared property, i.e. the [endpoint] feature which both elements bear. In this way, cross-linguistic differences are explained and the importance of the feature [endpoint] for event structure confirmed.**

PART 1: THE GENERAL SCENARIO

CHAPTER 2: THE FRAMEWORK

The main objective of this chapter is to introduce the reader to the general linguistic scenario within which the current thesis is embedded. It should be noted that the current work adopts different assumptions from various linguistic frameworks. Though at first sight it may appear a rather exotic method to approach a given linguistic phenomenon by picking up ideas from apparently contradictory frameworks, I will do my best to show, hopefully by the end of the thesis, that these frameworks are in fact compatible and can nicely fit and be combined when solving the thesis's main quests and inquiries.

More concretely, I follow the basic minimalist lines of thought such as those elaborated in Chomsky (1993, 1994, 1995, 2000, et seq.). Many ideas from neo-constructionist approaches form also part of the theoretical framework of the thesis (Borer 1994, 1999, 2005b), together with some assumptions present in various morphological frameworks such as the Distributed Morphology one (Halle and Marantz 1993, Marantz 1997, Harley and Noyer 1998) and Baker's (1985) Mirror Principle. Within a more vast empirical study, I will also adopt Cinque's (1999, 2002) main generalizations and claims.

Finally, it should be noted that this chapter will only introduce the reader to what is essential and strictly necessary for the work to follow. The prime goal, as previously mentioned, is to set the basic linguistic scenario and terminology. Data of sporadic relevance and frequency will be introduced throughout the chapters when necessary.

The structure of this chapter is as follows: in section 2.1 I will introduce the basic minimalist ideas which I adopt after which a brief introduction to the Distributed Morphology framework (§ 2.2) and Baker's (1985) Mirror Principle (§ 2.3) follow. Section 2.4 then presents the main lines of thought that I adopt from Cinque's (1999) empirical study whereas section 2.6 offers the basic ideas taken from Borer's (2005b) neo-

constructionist approach. Finally, section 2.6 closes the chapter with some notes on languages variation, which will be further elaborated on throughout the whole thesis.

2.1. The Minimalist View

The first half of the twentieth century promoted the Saussurean assumption that language should be studied as a formal system of various elements (e.g. the linguistic sign, the signifier, the signified, and the referent). Thus, it was generally believed that humans have only a partial mastery of the complex system called *langue*.

During the second half of the twentieth century, however, a shift in perspective as to how language should be studied took place. This was achieved by Chomsky's (1965) seminal work, which shed new light onto the way we understand language. Embedded within a generative linguistic framework, language came to be considered a natural object, an innate human capacity which is biologically given. Within such a biological approach to language, the belief is that in the human brain (or mind, in a more abstract sense), there is an innate language faculty (FL) which consists of a series of capacities specifically dedicated to language (e.g. language acquisition, language understanding and language use). Such an internalist and naturalist perspective consequently relates linguistics with the human psychology and the cognitive sciences, whose main goal is to study language as a mental organ within a biologically set linguistic scenario.

With all these assumptions in mind, Chomsky's linguistic enterprise has two main objectives from its very beginning:

(1) Objectives:

- a. To give an account of what individuals know about language, known as *descriptive adequacy*
- b. To explain how these individuals acquire the language they know, i.e. *explanatory adequacy*. This is also known as "the logical problem of acquisition" since it tries to

answer the question of how comes that an individual acquires a given language from a quite limited amount of time and linguistic data.

The Principles and Parameters approach (P&P) of Chomsky (1981), in its attempt to better explain the logical problem of acquisition (i.e. objective (1b)), gets rid of the previous phrase-structure rules (Chomsky 1965),¹ reducing all transformational rules to the unique operation of Move- α . This approach radically breaks from the rich tradition in linguistics and its extensive postulations of language-specific rules and grammatical constructions (passives, relative clauses, etc.). Instead, P&P promotes the idea that there is a certain number of universal principles, abstracted from the general rules, which are invariable among languages. These principles are considered to be part of a Universal Grammar (UG) common to all languages. In this way, it is assumed that much of the linguistic knowledge (UG) is innate and given prior to experience. Thus, the language faculty, i.e. our innate capacity to master and use language, receives more prominence and, as a consequence, explanatory adequacy receives primary stress.

Thus, contrary to previous versions of generative grammar that considered particular grammars to consist of language-specific rule systems embedded within the more general restrictions imposed on them by UG principles, P&P approach considered UG to contain both (universal) principles and (language-specific) parameters. To account for variation, it was proposed that some of the UG principles are parametrizable in a limited number of ways. In this way a particular grammar is directly derived from UG by fixing the corresponding language-specific parametric values. The task of the learner is to fix the values of the parameters of UG on the basis of linguistic experience. In other words, acquisition becomes a task of selecting the particular parameter choice that best fits the learner's linguistic experience from among a variety of possible parameter options made

¹ Previous linguistic trends within the generative framework regarded the particular grammars as systems of language-specific rules such as phrase structure rules and transformational rules. Within such a view, the role of UG was simply to determine the format into which a particular language-specific rule system had to fit whereas the role of the learner was to find out, on the basis of experience, to which system of rules her language fits.

available by UG. Put differently, UG came to represent the initial state (S_0) of the language faculty which determines the class of possible languages. This state (S_0) is genetically given and universal, and consists of a set of invariant principles that all languages share together with a set of parameters that permit variation across languages. To attain a language is to fix the parameters accordingly.

Inasmuch as there is a single computational System, C_{HL} , which is common to all languages, variation should be related to lexical variety. Hence, the parametric options were assumed to be limited to the functional categories of the lexicon, making variation a matter of morphology and phonology in the sense of the Saussurean arbitrariness, i.e. in the sound-meaning pairing for the substantive parts of the lexicon.

In this study, I adopt the basic P&P's assumptions listed above, although I will assume that variation is best explained once we get rid of parametrizable principles, i.e. parameters. To be more precise, the P&P notion of parameter setting is determined by, and therefore equal to, the morpho-phonological properties of the functional vocabulary of a given language (Borer 2005b).

Some of Chomsky's more recent minimalist ideas (Chomsky 1993, 1994, 1995) which I additionally adopt in this study are summarized below.

2.1.1. The Minimalist Program (Chomsky 1995)

The minimalist framework proposed in Chomsky (1993) and further developed in Chomsky (1995 et seq.) builds on the central naturalist ideas of the Principle and Parameter framework (Chomsky 1981). This program represents a set of minimalist inquiries about language, building upon the assumption that UG is designed in a perfect way and contains only what is strictly necessary to meet our conceptual, physical and biological needs. Therefore, the main objective of this program is to find out how much of the P&P model is a result of this optimal and computationally efficient design of FL. Hence, the minimalist program (MP) is

an extension and a further reaffirmation of the P&P approach to language, whose main objective is to reduce the descriptive mechanism to the level of virtual conceptual necessity.

In both P&P and MP approaches the language faculty has two components: (i) a cognitive component and (ii) a performance component.

In MP, the cognitive component is the syntactic component proper and consists of a computational system C_{HL} (also called narrow syntax), a lexicon and a phonological component (PHON).² This component develops into a mature mental grammar (I-language) on the basis of linguistic experience, where I-language is considered a generative procedure generating an infinite set of structural descriptions in a bottom-up fashion.³

The performance component, on the other hand, includes those parts of the articulatory-perceptual (A-P, also known as Sensory-Motor (SM) system) and the conceptual-intentional (C-I) system that are relevant to language use. These systems are external to FL but internal to the minds/brains of humans. The contents of this component are inherent and not subject to variation and language-specific idiosyncrasies.

The cognitive component is further embedded within the performance component. The structural descriptions which are generated are instructions for the A-P (else, SM) and C-I systems which, as a consequence, must be interpretable by them. A-P and C-I can only interpret an instruction if the structural description generated consists of a sound and a meaning, respectively.

² In the P&P approach (also known as Government and Binding), we have the following levels of grammar: (i) Lexicon (plus Morphology) $\rightarrow$ (ii) D-structure $\rightarrow$ (iii) S-structure $\rightarrow$ Phonological Form, and Logical Form (an abstract level of representation that is supposed to act as the interface to the semantic representation). MP eliminates the representational levels of D-structure and S-structure (a level of representation at which representational constraints take place).

³ Chomsky (1986) refers to E-language as the external observable behavior of languages (e.g. utterances and the manifestations of their meanings). E-language is often assumed to be chaotic and corresponds to what Chomsky has previously called ‘performance’. I-language, on the other hand, represents a coherent and systematic set of rules, which map meaning onto form.

The A-P system is expressed by *Phonetic Form* (PF)⁴ whereas the C-I system is expressed by *Logical Form* (LF). Thus, PF and LF represent the two interface levels of representation relevant to language, the former being a level of phonetic representation (sound) at A-P whereas the latter is a logical representation (meaning) level at C-I. The cognitive component (I-language) generates a set of pairs (π, λ) , where π is a formal PF representation of sound and λ a formal LF representation of meaning (formal because they are determined by the syntactic or cognitive component).⁵ Crucially, A-P interprets π only if it satisfies the convergent condition of Full Interpretability (FI). If FI fails then π will not be able to provide the appropriate instructions to A-P:

(2) The Full Interpretability Condition (Chomsky 1995: 194):

“...if π satisfies FI, the derivation D that formed it converges at PF; otherwise, it crashes at PF. For example, if π contains a stressed consonant or a [+high, +low] vowel, then D crashes... If D converges at PF, its output π receives an articulatory-perceptual interpretation, perhaps as gibberish.”

The same is true of LF. If the representation λ consists of legitimate objects then it satisfies FI at LF.⁶ Hence, the derivation forming λ converges at LF. If λ fails FI, D crashes.

Crucially, for FL to be usable by the PF and LF interface systems, it should be legible to them. Thus, the underlying assumption is that language is an optimal solution to legibility conditions (Chomsky 2000). In this respect, MP promotes and further examines the role of the external conditions imposed on the language faculty. These conditions are known as “Bare Output Conditions” and consist of some legibility requirements which the interface systems impose onto language. It is important to note that these conditions prove that π and

⁴ PF is a representation in universal phonetics, with no indications of syntactic elements or relations among them such as X-bar structure, binding, government, etc. (see Chomsky 1996: 194).

⁵ The fact that a structural description must have two levels of representation is due to the design of the language faculty which has the A-P and C-I systems and is related to the fact that humans communicate in words or signs and nothing else (e.g. not via telepathy).

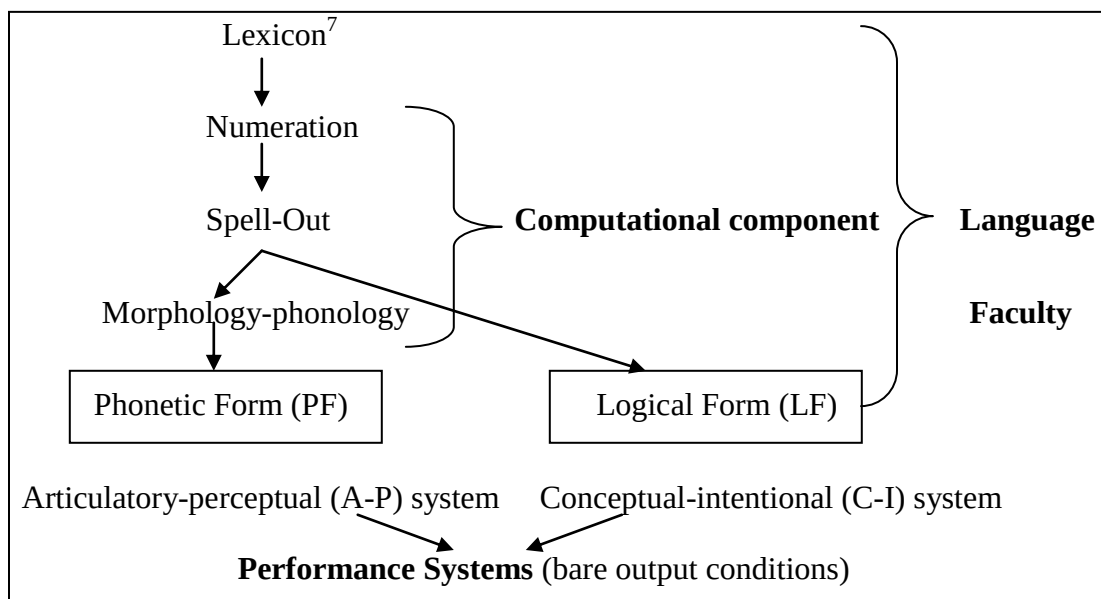
⁶ A legitimate object at LF is a chain $CH = (\alpha_1, ..., \alpha_n)$ at least with CH a head, an argument, a modifier, or an operator-variable construction.

λ are different in nature and that the elements interpreted at A-P are not interpreted at C-I and vice versa. Therefore, at some point, the computation splits into π and λ , respectively, after which there is no further interaction between these computations.

At some point in the computation to LF, there is an operation Spell-Out which applies to the structure Σ already formed. This operation strips away from Σ the elements relevant only to π and the residue, i.e. the material relevant to λ , is mapped to λ . The subsystem that maps Σ to π is called the phonological component and the subsystem that maps the residue to LF the covert component. The pre-Spell-Out computation is called overt (see (3) below).

As for the mapping of Σ to π , it should be noted that Spell-Out first delivers Σ to the module of *Morphology*, i.e. the module which constructs words that are consequently subjected to further phonological processes that finally map it to π , and which eliminates features no longer relevant to the computation. Following Chomsky (1993, 1995) and Halle and Marantz (1993), I assume that Morphology is a level that resides in the PF component after Spell-Out and checks the well-formedness of words. The general model of grammar is presented in (3).

(3) The Language Faculty



⁷ The Lexicon is a non-ordered list of lexical units with their idiosyncratic and intrinsic properties (see Chomsky 1995: 235- 241).

From (3) we see that the Computational component C_{HL} gives a Numeration, i.e. a number of lexical choices, and determines an infinite set of pairs (π, λ) , which satisfy the bare output conditions. The generative procedure maps a lexical choice to a pair (π, λ) via a number of derivative operations such as Select, Merge, Move, feature-checking, feature-deletion, and so on, until the sound-meaning pairing is formed at the interfaces. More precisely, narrow syntax (C_{HL}) functions as follows:

(4) The computational component (Chomsky 1995: 225)

“A linguistic expression (π, λ) satisfies output conditions at the PF and LF interfaces. Beyond that, π and λ must be *compatible*: it is not the case that any sound can mean anything. In particular, π and λ must be based on the same lexical choices. We can, then, think of C_{HL} as a mapping of some array A of lexical choices to the pair (π, λ) . What is A ? At least, it must indicate what the lexical choices are and how many times each is selected by C_{HL} in forming (π, λ) . Let us take a *numeration* to be a set of pairs (LI, i) , where LI is an item of the lexicon and i is its index, understood to be the number of times that LI is selected. Take A to be (at least) a numeration N ; C_{HL} maps N to (π, λ) . The procedure C_{HL} selects an item from N and reduces its index by 1, then performing permissible computations. A computation constructed by C_{HL} does not count as a derivation at all, let alone a convergent one, unless all indices are reduced to zero.”

As we can see, in contrast to P&P approach which is a representational model of the language faculty (reflected in the way C_{HL} operates, i.e. by selecting two representations and then computing to determine whether they are properly paired; selecting one and deriving the other, etc.), MP is a derivational model since it involves successive operations leading to (π, λ) . In fact, the status of C_{HL} as either derivational or representational is a central concern in MP, whose answer is provided in Chomsky (1995: 223) and is as follows: “*My own judgment is that a derivational approach is nonetheless correct, and the particular version of a minimalist program I am considering assigns it even greater prominence*”.⁸

⁸ Within derivational theories to language, computation is seen as containing simple steps, and we find principles of “least effort” that eliminate superfluous elements and operations; local search for computation (locality of movement); “local determinability” (no look ahead), etc. There are two existing trends within a

In contrast to P&P, where primary stress is placed on the logical problem of acquisition, i.e. on explanatory adequacy (also known as the Plato's problem which relates to the question of how comes that a child acquires a language from so poor an input), the MP is primarily concerned with descriptive adequacy, addressing the following questions:

- (5) a. Which are the minimal conditions which the language faculty has to satisfy?
- b. Are these conditions the only ones (i.e. is language a perfect system)?

Regarding (5a), there are two types of conditions:

(6) Minimal conditions which FL has to satisfy

- a. Language-internal conditions: natural conceptual conditions such as simplicity and symmetry, the formulation of general principles and the elimination of redundancies and ad hoc affirmations, and
- b. Conditions external to the cognitive system: legibility conditions related to the requirements imposed on the cognitive system by the external brain/mind systems which has to 'read' and interpret the information generated by the cognitive system (e.g. the information which the A-P system accesses has to be codified in terms of phonetic properties or features).

The main objective of MP is to find out to what extent the language faculty is an *optimal* solution to the conditions in (6).

In this respect, it is believed that the language faculty, being a mental organ, enters in contact with other components of the human brain/mind which impose their own, external conditions on the cognitive system (e.g. conditions (6b)). In order to be properly used, the language

derivational approach to language: strong derivational theories according to which there is no final representation and everything is computed dynamically (Epstein et. al. 1998), and weak derivational trends, which assume some operations to be cyclic, but others to apply at the interface to the entire expression (Chomsky). Finally, and in contrast to such approaches, the representational theories to language get rid of derivations and sustain that all conditions apply to LF/PF representations (Brody 1995).

faculty has to satisfy these conditions, which implies, very crucially, that these conditions determine the design of the cognitive system. This approach to language is known as *Ontological Minimalism* and its aim is to show that the language faculty is a well-designed system, which operates in an optimal way in responding to the external legibility conditions imposed on it. And this is yet another point which differentiates MP from P&P.

However, what both MP and previous approaches share is the study of the natural conceptual conditions (6a) that the language faculty has to satisfy. This is known as *Methodological Minimalism*, whose agenda is further continued and worked on in MP.

Once the questions in (5) are provided with an answer, MP directs the attention to the detection and the consequent elimination of some apparent ‘imperfections’ of the language faculty. These ‘imperfections’ represent properties of the language faculty that are not determined by the legibility conditions (6b) and arise due to the fact that the cognitive linguistic system has to satisfy certain language design conditions in an *optimal* way. Hence, language is and remains a *perfect* system despite such ‘imperfections’.⁹

To exemplify, the existence of uninterpretable features in natural languages and the property of Move- α are two such instantiations of ‘imperfections’. In order to show that these ‘imperfections’ result because of the need to satisfy some language design conditions in an optimal way, Chomsky proposes that Movement is actually a means of eliminating uninterpretable formal features of the linguistic expressions (i.e. features which have to be eliminated so that they could be interpretable at LF). On the one hand, the mechanism of Move- α responds to the legibility conditions imposed on it by the C-I system and, on the other hand, the existence of uninterpretable features is seen as an optimal property of natural languages, providing the possibility to satisfy certain external conditions. Hence, these are only *apparent* imperfections. Thus, the language faculty is proved to be optimally

⁹ Derivations should be *optimal* inasmuch as language itself is designed optimally. Thus, a derivation should satisfy both the bare output conditions (i.e. achieving convergence) and certain natural economy conditions (e.g. Shortest Move, Last Resort, Procrastinate, Suicidal Greed, etc.).

designed so that the inner mental systems with which it interacts could read and interpret the expressions it generates.¹⁰

Having established the basic assumptions of the MP, I now dedicate the following section to comment on the basic syntactic operations adopted in this model.

2.1.2. On features

It is generally assumed that the lexical items, which are stored in the lexicon of a given language and consequently selected to form part of the numeration in (3), consist of features. In order to classify the features or the properties of the lexical items, MP uses four basic criteria:

- (7) a. Their nature or content
 - b. The point of derivation at which they are introduced
 - c. Their interpretability (whether or not they are interpretable for the performance systems)
 - d. The level of derivation at which they are checked

With respect to (7a), the features can be *phonetic* (e.g. [+bilabial]), *semantic* (e.g. [+animate]) or *formal* (e.g. [+N], [+ACC], [+PL]). The first two are interpreted at the levels of PF and LF, respectively. The formal features, on the other hand, have a syntactic role and are used by the computational component.

As for (7b), features can be divided into *intrinsic* and *optional*. Intrinsic features are explicitly listed in the lexical entry (e.g. ‘table’: [+N], [-animate], etc.) whereas optional

¹⁰ In this respect, it should be noted that MP is concerned with proving that the FL is *optimally* designed with respect to the internal mental systems, not language use. Thus, there are computationally well-designed linguistic expressions which are interpretable for the performance systems but which are unintelligible (e.g. the nonce sentences).

features (e.g. number and abstract Case for nouns) are relational features and are added once a lexical item enters the Numeration.

With regards to features, the most important innovation of MP is (7c), i.e. the division of features into interpretable and uninterpretable. The phonetic and semantic features are, *a priori*, interpretable at the PF and LF, respectively. Therefore, the only features affected by this distinction are the formal ones. The formal features interpretable at LF are the ones with intrinsic content (e.g. [+V], [+N], Number for nouns, s(ematic)-selection features for predicates). Formal uninterpretable features lack intrinsic content (e.g. structural Case for nouns or Number for verbs and adjectives).¹¹ These features should be checked and eliminated before the derivation reaches LF so that their content can be read by the computational component.

Finally, depending on the level of derivation at which features are checked (7d), there are strong and weak formal features. Strong features are checked before Spell-Out (i.e. Materialization) whereas weak features are checked after Spell-Out.¹²

(8) Strong features (Chomsky 1995: 232):

“If F is strong, then F is a feature of a nonsubstantive category and F is checked by a categorical feature”

From (8) it follows that substantive elements (e.g. nouns and main verbs) do not have strong features and that strong features always require some category in their checking domain. If overt movement is forced by the checking of a strong feature, then overt movement of β targeting α is possible only if α is non-substantive (e.g. C) and a categorical feature of β is

¹¹ Plural on nouns as in *boys* is an interpretable feature inasmuch as it contributes meaning; thus, *boys* can only refer to more than one boy, but not to just one boy. Inflection on verbs, on the other hand, is a representative of an uninterpretable feature (*Boys cry* vs. *A boy cries*). This is due to the fact that verbs in English agree with their subjects so they merely duplicate the information about number which is present and interpretable on the subject (*boys/boy*), making thus inflection on verbs uninterpretable.

¹² The former involves movement and leads to phonetic changes whereas the latter involves no phonetic changes.

involved in the operation: movement of a *wh*-phrase to [Spec, CP] in Bulgarian is required by the strong D-feature of C (assuming *wh*- to be a variant of D(eterminer), see Chomsky 1995: 232) and involves checking the categorical *wh*-feature of the *wh*-phrase (alternatively, its focus feature as in Bošković 1999 et seq.).¹³

On minimalist assumptions, strong features are visible at PF whereas weak features are invisible at PF. Hence, strong features are not legitimate objects at PF as they are not proper components of phonetic matrices (Chomsky 1995: 198). It then follows that if a strong feature remains after Spell-Out, the derivation crashes. If we reduce feature checking to deletion (i.e. a checked feature is marked ‘invisible’ at the interface), then strong features should be deleted (i.e. checked) before Spell-Out.

(9) Deletion of strong features: (Chomsky 1995: 233)

“Suppose, then, that we put an end to evasion and simply define a strong feature as one that a derivation “cannot tolerate”: a derivation $D \rightarrow \Sigma$ is cancelled if Σ contains a strong feature, in a sense we must make precise. A strong feature thus triggers a rule that eliminates it: [strength] is associated with a pair of operations, one that introduces it into the derivation (actually, a combination of Select and Merge), a second that (quickly) eliminates it....We also virtually derive the conclusion that a strong feature triggers an *overt* operation to eliminate it by checking.”

Another property of strong features is that they induce cyclicity. In this respect, Chomsky (1995: 233) claims that “...*a strong feature cannot be passed by by α that would satisfy it, and later checked by β ; that would permit Relativized Minimality violations (Wh-Island, superraising).*”

However, serious problems with the postulation of strong features have been pointed out recently (see Chomsky 1996, 1997, 2000) where it has been suggested that strong features

¹³ To exemplify, it has been assumed that Spec positions of functional heads are filled by overt Move (else, by Merge of an expletive) due to some strong features such as strong D-feature, strong *wh*-feature, strong accusative case feature, etc.

are essentially ad hoc.¹⁴ Due to this, the distinction strong vs. weak has been eliminated where overt XP movement to some functional Spec has been accounted for by some selectional features such as, for example, generalized EPP feature of C, T, v (Chomsky 2000). I also assume the strong vs. weak distinction to be problematic and therefore unjustifiable, which will additionally facilitate our explanation of language variation.

Having briefly introduced the basic terminology and the basic minimalist ideas I adopt in this thesis, I now direct the attention to the basic syntactic operations available for constructing linguistic expressions.

2.1.3. Basic syntactic operations

As we can see from the representation in (3), a derivation starts with the selection of some lexical items. These selected lexical items, called the Numeration, are the basis out of which the computational component will generate a linguistic expression.¹⁵ The Numeration (NUM) is in fact an unstructured set of lexical items with a numeric index showing the times an item is being selected from the Numeration as in (10):

(10) *The girl kissed the boy*

NUM: {(the, 2), (girl, 1), (kiss-, 1), (–ed, 1), (boy, 1)}

The first operation of narrow syntax, i.e. of the computational component, is the operation *Select*. This operation consists in selecting a lexical unit from the Numeration, reducing its

¹⁴ To exemplify, Chomsky (1996, 1997) argues that the notion of 'strong' as a feature on features is too complex for Minimalist assumptions, as is the mere postulation of 'strong' as a property that should be eliminated as soon as it is introduced in the derivation. Additional problems with this notion come from phase theory (e.g. incompatibility with Cyclic Spell-Out), violation of Procrastinate, the absence of morpho-phonological realization of strong features on functional heads (e.g. the categorial feature [+D] is assumed to be strong on T and C, which accounts for the raising of *John* and *who*, but weak on v, which checks the accusative case feature of *who* in the following sentence: [CP Who_i C+did [TP John_j T [vP t_i [vP t_j v [VP see t_i]]]]?], among others.

¹⁵ In Chomsky (2000) the term Numeration is substituted by the term Lexical Array.

index by 1 and introducing it into the derivation. As we have previously mentioned, the items enter the Numeration with their inherent features already specified (e.g. Gender for nouns). The non-inherent (i.e. optional) features, on the other hand, are assigned to the items once they enter the Numeration (e.g. Number [+SG] and Case [+ACC] for ‘boy’ in (10)). Thus, all lexical items from the Numeration will be specified for all their semantic, syntactic and formal features, be they inherent or optional, interpretable or not, strong or weak.¹⁶

Apart from *Select*, there are two other basic operations: Merge and Move. Let’s start with the first one.

The operation Merge is the basic and simplest computational structure-building operation of narrow syntax. It consists in taking two distinct linguistic objects α and β which can be lexical items, phrases or sentences, and forming a new complex object with a different label γ and with the properties of either α or β .¹⁷

¹⁶ The postulation of a Numeration (or Lexical Array (Chomsky 2000)) makes the computational component better internally designed. To exemplify, a model of grammar which makes use of a Numeration is computationally simpler than one without it. This is due to the fact that the Numeration permits the selection of all lexical items which will form part of a given linguistic expression at once, without the need to turn back to the Lexicon *a posteriori*. Additionally, the economy conditions also rely on a Numeration. Thus, we can compare only derivations with the same Numeration.

¹⁷ The performance systems A-P and C-I interpret three types of linguistic units:

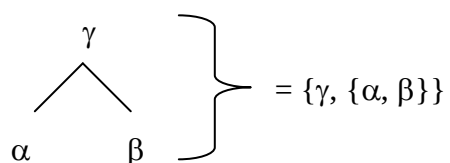
- (i) features (e.g. [+bilabial], [+animate], etc.);
- (ii) feature bundles (lexical pieces), and
- (iii) bundles of feature bundles (phrases and sentences).

Hence, the cognitive component should contain at least three types of elements:

- (i) features or properties (phonetic, syntactic or formal and semantic);
- (ii) lexical units, and
- (iii) complex linguistic expressions.

Additionally, it should be provided with two basic operations: one combining different features in one and the same lexical item, and another one combining lexical units to form bigger syntactic units. And these are the only units and operations available for FL. Whatever other kind of operation or item is proposed, it should be justified on either conceptual grounds or else by the legibility conditions imposed from the outside.

(11) Merge:



Merge applies to two objects α and β , and gives a new object K by eliminating α and β . That is, $K = \{\gamma, \{\alpha, \beta\}\}$, where α, β are objects and γ is the label of K . The label of the newly formed linguistic object has the features of either α or β . If α projects its features, it is then the head of the object $\{\alpha, \{\alpha, \beta\}\}$. Thus, the formal features of the label γ coincide with those of α (Chomsky 1995: 243).¹⁸

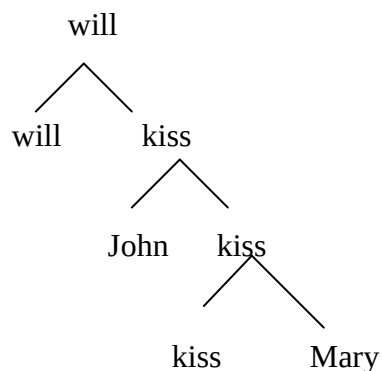
Merge is a recursive operation which can be of two kinds: Merge by Substitution (12a) and Merge by adjunction (12b), which is later substituted by the terms Set-merge and Pair-merge, respectively (Chomsky 2000). The former applies to a set of two linguistic objects $\{\alpha, \beta\}$, whereas the latter applies to an ordered pair of linguistic units $\langle \alpha, \beta \rangle$.

(12) Merge

a. Set Merge: *John will kiss Mary*

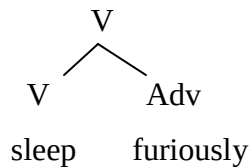
(i) NUM: $\{(\text{John}, 1), (\text{will}, 1), (\text{kiss}, 1), (\text{Mary}, 1)\}$

(ii) Apply Merge:



¹⁸ It then follows that labels are optional since they can always be substituted by either α or β .

b. Pair Merge: ‘a nice painting’ (N + A); ‘run fast’ (V + Adverb).

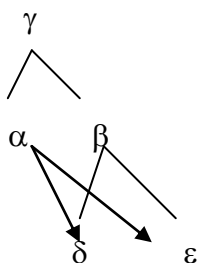


Merge applies as follows: we take the numeration in (12a: i) and start merging ‘Mary’ with ‘kiss’ to consequently derive the VP structure ‘kiss Mary’. Then, the VP ‘kiss Mary’ further merges with the external argument ‘John’, which again gives a VP structure {kiss, {John {kiss {kiss {Mary}}}}}. Finally, the Tense morpheme ‘will’ merges with the whole VP structure and assigns its features to it (12a: ii). This is Set-Merge and is exemplified by merging a transitive verb with its obligatory internal argument. Thus, Set-Merge is an obligatory operation inasmuch as one of the two constituents (i.e. the verb) requires the presence of the other one (i.e. its internal argument), but not vice versa. This is justified as follows: β , being the internal argument, merges with α , the transitive verb, in order to satisfy some semantic-selection feature of α . As a consequence, it is α which will finally project its features.

As for Merge by Adjunction (12b), it is exemplified by merging a noun with a qualitative adjective, or a verb with an unselected manner adverb, for example. Such a Merge is optional and inherently asymmetric: the goal of adjunction projects its features invariantly, i.e. the adjoined element never changes the categorical type of the goal.

Related to the operation Merge is the syntactic relation of c-command, which states that when α merges with β , it c-commands all of the members of β (i.e. δ and ϵ in (13)).

(13) C-command and Merge



To exemplify, Negation takes scope under c-command; a moved constituent should necessarily c-command its trace; the antecedent of an anaphor also c-commands the anaphor, etc. ***In this thesis I adopt the standard MP version of c-command:***

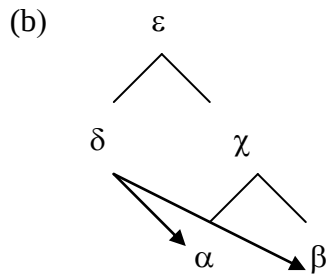
(14) Representational c-command (cf. Reinhart 1981): α c-commands β iff:

- a. α does not dominate β ; β does not dominate α
- b. the first branching node which dominates α also dominates β

The definition in (14) is a representational description of c-command. According to Epstein (1999) such a representational definition is a mere stipulation just because it makes c-command and dominance relations complementary to each other. Additionally, it does not explain why just the first branching node is relevant to c-command. Finally, and most importantly, it does not explain why c-command exists at all, and why it is relevant to syntax. Thus, Epstein (1999) tries to define c-command derivationally, based on the operation Merge. The basic idea underlying his derivational approach consists of considering Merge as the basic syntactic operation of pairing (two) syntactic objects and consequently establishing syntactic relations between them.

(15) Derivational c-command (Epstein 1999)

(a) α c-commands all of the terms of β with which it has been merged¹⁹



In (15b) above δ c-commands all of the terms of χ (i.e. χ , α , and β). However, α and β do not c-command δ since δ does not fall under the first branching node, χ , from which α and β branch. This is a case of *asymmetric* c-command, i.e. δ asymmetrically c-commands α and β . Such an asymmetric relation also holds between a specifier and a complement where it is the specifier which asymmetrically c-commands the head's complement but not vice versa. As for the relations established between α and β , and χ and δ , we can observe that they c-command each other mutually, which is an instantiation of *symmetric* c-command.

Derivational c-command, in contrast to representational c-command, manages to explain why dominance and c-command are complementary. First, if α dominates β , then α cannot have been paired with β via Merge; second, the fact that only the first branching node matters for c-command is due to the fact that it is the node derived by the Merger of α and β . Therefore, specifiers asymmetrically c-command the complements of their heads, but not vice versa, because when the head and the complement Merge, the specifier is still not present in the structure. In other words, the asymmetry of a derivation reflects an asymmetry in syntactic relations such as c-command, which is made available by the fact that categories are introduced one after another, not simultaneously. This explains why δ asymmetrically c-commands α and β in (15b): because δ is introduced in the structure after α and β .

¹⁹ Chomsky's (1994: 65) notion of term is the following:

(i) For any structure K

(a) K is a term of K

(b) if L is a term of K, then the members of L's members are terms of K

Symmetric c-command, on the other hand, is a reflex of a simultaneous introduction of categories in a derivation: α and β in (15b) symmetrically c-command each other because they are introduced in the structure simultaneously, i.e. by Merge.

According to Chomsky, Select and Merge are costless operations, and necessary components of any theory of language (Chomsky 1995: 226). They do not enter discussions of economy and convergence. This is not the case, however, for the third syntactic operation, Move.

Move is a complex operation of narrow syntax and consists of three simpler operations: *Search*, *Agree* and *Merge* (Chomsky 2000, 2001). *Search* is an operation which involves an attractor that acts as a Probe and that searches for a Goal with the adequate features. *Search* is local, i.e. the Probe searches for the Goal in its local domain, where local means the complement of the Probe and everything this complement contains. *Agree*, on the other hand, is the operation by which the formal non-interpretable features of the Probe are checked against the features of the Goal to be consequently eliminated.²⁰ Finally, *Merge* consists of combining the category which contains the Goal with the attracting category, i.e. the Probe.

In other words, Move turns out to be a kind of Merge. This is why, in its latest versions, Move is also referred to as “internal Merge” in contrast to “external Merge” which is “pure” or “simple” Merge (Chomsky 2001):

²⁰ Following Chomsky (2000), the operation *Agree* is the mechanism for checking uninterpretable features in narrow syntax. When this operation applies, the uninterpretable feature set of a lexical item ‘probes’ its c-command domain for an identical set of features on another lexical item, the ‘goal.’ By finding such a matching set, the uninterpretable features of the probe are checked and valued. Only a full set of features on the goal can induce checking of features on the probe; Agree is an ‘all-or-nothing’ or ‘one-fell-swoop’ operation on this theory.

(16) Merge of α and β ²¹

a. External Merge (i.e. “pure” or “simple” Merge): α and β are two distinct linguistic objects (e.g. valence $\rightarrow$ first Merge: complement; second Merge: specifier)

b. Internal Merge (i.e. Move): α contains β and Merge is part of Move (e.g. satisfying an EPP feature)

In this work I adopt the view that Movement is not a costly, last resort “imperfection”, but a natural option given the most minimal definition of what syntax is, i.e. recursive Merge (Chomsky 2001; 2005a). Given the definition of Merge as an operation taking two syntactic objects (or lexical items) and constructing from them a new syntactic object, Move comes for free as an instance of Merge where one of the two assembled syntactic objects is part of the other, i.e. Internal Merge.

I also adopt the view that Merge, both internal and external, is triggered by a single edge feature which serves as Probe. Thus, Merge is always asymmetric and triggered by a Probe searching a Goal. It then turns out that Internal Merge is always parasitic on Agree: the syntactic object that is internally merged must be in an agreement relation with some Probe bearing unvalued features.²²

Further adopting Chomsky's (2001) Goal-Probe approach to feature agreement, I assume features to be checked via a c-command relation between a Probe that lacks feature values and a Goal that bears the corresponding feature values and specifies these values on the Probe. To exemplify, a primary concern in the current study is how inner aspect is determined. Following the Goal-Probe mechanism I will suggest that the (a)telicity of a derivative (i.e. its inner aspect) is calculated in relation to the feature value of an universally available Asp head. ***Thus, Asp° will be a Probe endowed with an***

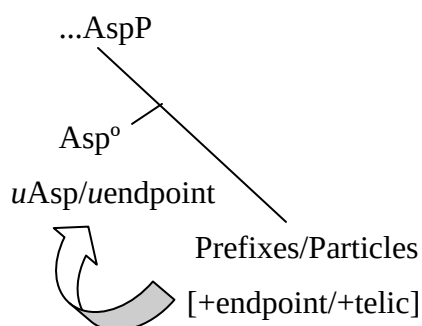
²¹ The two kinds of Merge yield different interface properties: external Merge yields generalized argument structure, whereas internal Merge the rest of the semantic properties: discourse and scope-related properties (see Chomsky 2007: 8).

²² If the very same head bears both the Edge feature for Internal Merge and the (ϕ -features) for Agree, then we have A-movement; otherwise we have A'-movement.

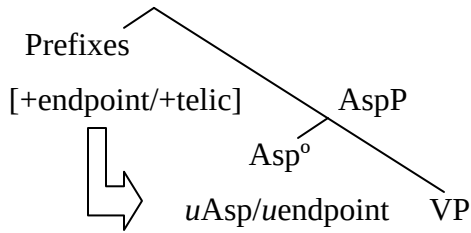
unvalued *uAsp* feature (else, an open value [] à la Borer (2005b)) which is in need of valuation. This is arguably shared across languages. What is language specific, however, are the candidates capable of valuing *Asp*^o, i.e. of probing *Asp*^o. As I will suggest, ***prototypical Goals of Asp*^o *are prefixes in Bulgarian or particles in English.*** These elements, by virtue of their inherent telicizing interpretable feature [endpoint], enter in an Agree relation with *Asp*^o and assign a telic value to its unvalued feature (17). As we will see, I will further elaborate on this feature-checking mechanism by adopting Borer's (2005b) range-assigning model according to which *Asp*^o will be headed by an open value ([]) in need of range assignment. ***For me, a functional category with an open value implies the same as a functional category headed by an unvalued feature inasmuch as in both cases we need a Goal to probe this category, i.e. to assign range to the open value in the former case or to value the feature in the latter.*** Therefore, the two models are quite compatible though I will adopt Borer's range-assigning one. The way inner aspect may be determined within Chomsky's (2001) Goal-Probe model is exemplified in (17).

(17) Goal-Probe relation within the domain of inner aspect (*Asp*: ± endpoint/telic)

a. Lower-domain prefixes



b. Higher-domain prefixes



From (17a) we can observe that there is an unvalued feature *uAsp* (else, *uendpoint*) on *Asp°* and the same instantiation of this feature but this time valued on the prefix/particle [+endpoint/+telic]. Once the two elements are merged, a Probe-Goal relation is established and *Asp°* probes the prefix/particle in its c-command domain and becomes valued, marking the event as [+endpoint], else, telic. This is the case for particles in English and lower prefixes in Bulgarian. However, there is another group of prefixes which are merged above *Asp°* and which are still capable of valuing it (17b). In this case, the Probe-Goal relationship between the two elements (*Asp°* and the prefix) involves valuation from top to bottom (e.g. prefix-to-*Asp°*/Goal-to-Probe), but not from bottom to top as proposed in (Chomsky 1995 et seq.). In order to account for *Asp°* valuation in cases like (17b) I follow Pesetsky and Torrego (2007) and consider valuation to be accomplished by a feature-sharing mechanism.²³ Furthermore, I also assume that, in the same way as CP transmits its features to TP (Chomsky 2007, 2008),²⁴ the prefix in (17b) values *Asp°* by transferring its [+endpoint] feature to it. ***Put differently, *Asp°* inherits the feature [+endpoint] of the prefix and thus gets valued.***

²³ Pesetsky and Torrego (2007) propose that when Agree applies between a probe feature *F* at a syntactic location α and a goal feature *F* at location β , the output is a single feature *F* shared by two locations. In other words, Agree results in *feature sharing* which involves the following assumptions:

- (i) An unvalued feature *F* (a *probe*) on a head *H* at syntactic location α ($F\alpha$) scans its c-command domain for another instance of *F* (a *goal*) at location β ($F\beta$) with which to agree.
- (ii) Replace $F\alpha$ with $F\beta$, so that the same feature is present in both locations.

²⁴ Chomsky (2007) proposes that *T* does not inherently bear phi features of its own, but instead inherits phi features from *C* (see also Richards 2007).

In Chomsky (1995), both interpretable and uninterpretable features have a specific value (e.g. [Number = +plural]. The Attract operation is triggered by a feature which is not interpretable on a target, finds a goal, and moves its formal features into its checking domain. If an uninterpretable feature has matching interpretable features in its checking domain, it is checked. In Chomsky (2000), however, the idea that Agree involves giving the interpretable features of the Goal a syntactic representation in a local relationship to the target is given up. Thus, the interpretable features of the Goal are never displaced as a syntactic atom (versus Chomsky 1995 where they are re-Merged in the Probe's checking domain). **Chomsky (2000) proposes that uninterpretable features are unvalued, and the Agree operation values them from the interpretable features of a Goal**, which are themselves never displaced to the target. Agree needs not create any local relations involving syntactic atoms, only their properties:

(18) Features and Agree (Chomsky 2000: 123-4)

“Manifestation of structural Case depends on uninterpretable features of the probe: finite T (nominative), *v* (accusative), control T (null), on our earlier assumptions. We may therefore regard structural Case as a single undifferentiated feature. The same would be expected for the uninterpretable ϕ -set of the probe. Its manifestation depends on interpretable features (namely, ϕ -features) of the goal, so that it too can be taken to be undifferentiated with respect to the value of individual features of the ϕ -set ([+/- plural], etc.). For both probe and goal, the form of the uninterpretable feature is determined by Agree. To rephrase in traditional terms, verbs agree with nouns, not conversely, and Case is assigned.”

Thus, Agree, being the the operation for feature valuation that assures the deletion of uninterpretable features, includes the following basic assumptions:

(19) Basic assumptions on Agree: Chomsky (2000, 2001)

a. An unvalued feature F (a *probe*) on a head H scans its c-command domain for another instance of F (a *goal*) with which to agree. If the goal has a value, its value is assigned as the value of the probe.

- b. A feature F is uninterpretable iff F is unvalued (Chomsky 2001: 5)
- c. Once an uninterpretable feature is valued, it must delete.²⁵

However, if we follow Chomsky (2000, 2001) and assume that Agree involves a Probe with uninterpretable and hence unvalued feature (19b) and a Goal with a valued interpretable instance of this feature, then we will expect that our *uAsp* feature on the *Asp*^o head, being unvalued, will be inevitably uninterpretable (19b). However, *uAsp*, although unvalued, is interpretable since it contributes semantics by determining the final interpretation of the event as being either telic or atelic by virtue of the value assigned to it. To account for this I follow Pesetsky and Torrego (2007) who divorce (un)interpretability from the status of a feature as being (un)valued, and suggest that ***any unvalued feature, be it interpretable or not, may act as a Probe***. Therefore, ***I assume that the feature on Asp^o is interpretable, since the Asp node is the locus of the semantic telic/atelic distinction, but unvalued.***²⁶ ***It is by virtue of its status as being unvalued that allows it to act as a Probe which searches for a Goal, such as a prefix or a particle, that bears the corresponding inherent interpretable aspectual feature (e.g. [endpoint]). In fact, I assume [endpoint] to be inherent interpretable telicizing feature on both prefixes and particles*** (see

²⁵ It is assumed that once valued, uninterpretable features must be deleted from the narrow syntax (if not, they will be indistinguishable from interpretable features at LF). However, they should be left available for the phonology inasmuch as they may have phonetic effects. The elimination of such features is further justified on economy considerations: the values of uninterpretable features are redundant, and there is empirical motivation from intervention effects (see Chomsky 2000). I will not be concerned with this issue here.

²⁶ Pesetsky and Torrego (2007) propose that the T feature of the category Tense (Tns) is an example of an interpretable unvalued feature acting as a probe. Given that the Tns node is the locus of semantic tense interpretation, and given that in many languages it is the finite verb and not Tns itself that bears the morphology that makes tense distinctions, then the feature T on the finite verb in such languages is an uninterpretable feature that participates in an Agree relation with T on Tns. Since Tns c-commands the finite verb, its T must be the probe in this relation. Consequently, T on Tns must be an interpretable feature that is unvalued and acts as a probe. Likewise, T on the finite verb must be an uninterpretable feature that is valued and acts as a goal.

chapter 3). As for the status of a feature as interpretable or uninterpretable I assume this to be determined in the lexicon, by UG.

Crucially, from (19a) we can observe that locality is an irreducible condition on Agree and not a general economy condition that chooses between competing representations (Chomsky 1995: III). However, economy considerations form an indispensable part of the language faculty. As we will see, prefixes and particles are capable of valuing Asp^0 just because they fall within its local domain. I provide some brief comments on this issue in the following section.

2.1.4. The economy of derivations and representations

Under minimalist assumptions, language is a perfect system and grammars are thus organized so that we obtain optimal computational results using minimal number of symbols (in representations) and operations (in derivations). Therefore, apart from the natural conceptual conditions and the external legibility conditions, there is another kind of condition imposed on language known as ‘The Economy Principle’. Importantly, this condition is independent from the natural conceptual conditions and the legibility conditions because it is not related to simplicity nor does it satisfy any external condition. Rather, this principle tries to eliminate any superfluous element in the computational system, be it symbols in representations or operations in a derivation. It then follows that this principle affects both derivations and representations.

Economy of representations contains another principle, the so called *Principle of Full Interpretation* (FI), which tries to eliminate any unnecessary symbol in a linguistic representation. It thus represents a condition on the well-formedness of representations both at LF and PF, which states that the only possible symbols in a linguistic representation are those which can be interpreted by the performance systems (e.g. C-I at LF and A-P at PF).²⁷

²⁷ To exemplify the way in which FI applies, consider the example below:

(i) *Many every men love a woman

Economy of derivations, on the other hand, affects syntactic operations. It holds that only indispensable operations should be applied and tries to reduce the steps in a derivation to the minimum. Chomsky (1995: IV) proposes that there are three principles of economy of derivations: Last Resort, Procrastinate and the Minimal Link Condition.

Last Resort refers to the assumption that a step in a derivation is legitimate only if it is necessary for convergence (Chomsky 1995: 200).

(20) Last Resort (Chomsky 1995: 201):

“Move α applies to an element α only if morphological properties of α are not otherwise satisfied. The operation cannot apply to α to enable some different element β to satisfy *its* properties.”

To exemplify, raising of an NP driven by the Case Filter takes place only if the Case feature of NP has not been checked.

(21) a. there is [α a strange man] in the garden

b. there seems to [α a strange man] [that it is raining outside] (see Chomsky 1995: 200)

In (21a) α is not in a position for case checking (i.e. not in the checking domain of the matrix inflection) so we have raising of *there* at LF. In (21b), on the other hand, α 's Case properties are satisfied PP-internally, so raising of α is disallowed by Last Resort and freestanding *there* is introduced. Hence, the derivation converges. The fact that (21b) has no coherent interpretation is due to the fact that freestanding *there* receives no semantic interpretation so the result is semi-gibberish. Adjunction of α to *there* would also result in an intelligible interpretation (e.g. ‘there is a strange man to whom it seems that it is raining outside’). However, this violates Last Resort: (21b), being more economical (i.e. economy seen here as

In (i), there are two quantifiers which scope over the same DP ‘men’. As a consequence, one of the quantifiers quantifies vacuously, i.e. it does not quantify at all. Hence, this quantifier cannot be interpreted at LF and FI is violated. Therefore, the derivation crashes.

a shorter derivation which converges without the application of raising), also converges, though unintelligibly.²⁸

It then follows that Last Resort is always “self-serving”; benefiting other elements is not an option. Thus, on minimalist assumptions, every movement takes place in order to satisfy a morphological property of the moved element itself, which is also known as Greed, i.e. self-serving Last Resort.

As for the second economy conditions on derivations, i.e. Procrastinate, it states that LF movement, i.e. covert movement, is cheaper than overt movement (e.g. in Chinese a *wh*-phrases undergo only LF movement and are left in situ in overt syntax whereas in Bulgarian all of the *wh*-phrases should be fronted overtly; hence, *wh*-movement in Chinese, which is covert, is the cheaper option). The fact that covert operations are less costly than overt ones is related to the fact that the system tries to reach PF “as fast as possible”, minimizing overt syntax (Chomsky 1995: 198).²⁹

Apart from Last Resort (or Greed), which assures that only the most economical convergent derivation will survive, there is another economy condition on derivations: The Minimal Link Condition (MLC), which states that each link of a chain must be as short as possible. Thus, if we have two convergent derivations D_1 and D_2 which contain the same number of steps, the derivation which has shorter links will be the one to survive. To exemplify, (22a) is ruled out by the MLC because *John* in (22b) undergoes A-movement to [Spec, TP] in the matrix clause skipping one potential landing site, [Spec, TP] in the embedded clause, which is filled by the expletive:

²⁸ Derivations are driven by feature-checking requirements only, not by a search for intelligibility (Chomsky 1995: 201).

²⁹ As for why some elements move overtly in some languages and covertly in others, Chomsky (1995) claims that it is due to the distinction between ‘strong’ and ‘weak’ features. From a minimalist point of view, feature strength is one element of language variation: a formal feature may or may not be strong, forcing overt movement that violates Procrastinate. However, I assume that such a distinction is problematic for the reasons we already mentioned.

- (22) a. *John_i seems that [it is likely t_i to win the prize]
 b. *[_{TP1} John_i [_{T'1} T1...[_{TP2} it [_{T'2} T2 [_{VP}...t_i ...]]]]]

All of the economy principles mentioned above assure that a derivation should be *optimal* (from an economical point of view), which is in fact a consequence of the minimalist view of language as a perfect system.

In this work I adopt the above minimalist assumptions in their general lines. In relation to my primary concern here, ***I will propose that the determination of inner aspect, i.e. of whether a predicate is telic or atelic, depends on the way the unvalued feature of the head of the universally available functional category AspP is being checked, i.e. valued. This unvalued feature on the Probe Asp° searches for a corresponding interpretable feature on an appropriate Goal in its surrounding environment, and, once discovered, enters into an Agree relation with it. As a consequence, the value of Asp° is specified, and inner aspect is successfully calculated.*** There are various candidates which can serve as appropriate Goals to Asp° such as prefixes, particles, NP internal arguments, PPs, etc. However, the availability of these devices for the codification of inner aspect, i.e. for valuing the [uF] on Asp, is language specific, and depends on certain properties related to these elements. For further details, see chapter 4.

Now I turn to some basic issues and ideas which I borrow from the Distributed Morphology framework.

2.2. A Distributed Morphology view

The current thesis is concerned with the morphological expression of certain functional aspectual values, where morphological elements are further decomposed into syntactic nodes. Therefore, some notes are needed as far as the status of morphological expressions within syntax and their relevance for syntax and interpretation is concerned. Furthermore,

the main object of investigation here are nominalizations, which have been usually considered to belong to both the syntactic domain and the morphological domain. Therefore, the status of morphology within the architecture of grammar becomes significant for us in order to properly account for the observed properties of nominalizations.

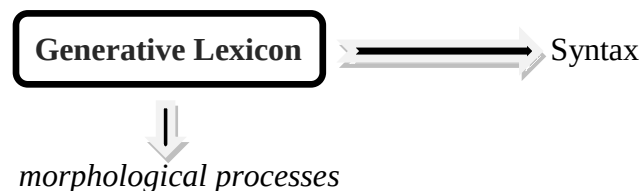
In attempting to provide an appropriate account of morphology in grammar there are two routes to follow. One can either assume that morphology is a pre-syntactic generative component of grammar or else opt for the claim that it is a post-syntactic interpretative component. ***The central claim of the current thesis is that morphology is not an independent generative component but is rather syntax-driven.*** Regarding the way morphology operates, we have again two possible ways of analysis: a lexical one and a syntactic one, which I briefly discuss below.

2.2.1. Some introductory notes on lexicalist versus syntactic theories of morphology

Lexicalist theories assume that morphological operations take place in the lexicon which, being an independent generative level, contains all the components and mechanisms necessary for the creation of words (Halle 1973). Such components can be either morphemes (Lieber 1980, Selkirk 1982, Scalise 1984) or words (Aronoff 1976, Anderson 1992).

A crucial tenet of lexicalism is the belief that the lexicon, being prior to syntax, feeds syntax and the properties of the morphological pieces are not at all determined by syntax. That is, the syntactic behavior of the lexical items is morphologically, i.e. lexically, driven.

(23) The lexicalist view



Such a lexicalist theory is postulated and theoretically developed in Chomsky (1970) where it is claimed that the following facts can only be explained on the basis of the lexicon but not syntax:

- (24) a. **Morphological irregularity:** there are processes which cannot be always applied to all of the words from a given category (e.g. not all Bulgarian adjectives give an abstract –ost/–est noun: *svež* → *svežest* ‘fresh → the state of being fresh’, *gord* → *gordost* ‘proud → pride’, *bjal* → **bjalost* ‘white → *whiteness’, etc.).
- b. **Semantic irregularity** (i.e. idiosyncrasy): the meaning of the derivative cannot be decomposed into the meaning of its parts (e.g. idiosyncratic prefixed formations: (i) Bulgarian: *merja* ‘mete, measure’ → *na-merja* ‘find’ → *ot-merja* ‘weight’; *kaža* ‘say’ → *do-kaža* ‘prove’ → *na-kaža* ‘punish’ → *o-kaža* ‘render’ → *po-kaža* ‘show’ → *ot-kaža* ‘deny’; (ii) English: *pair* → *re-pair*; *store* → *re-store*; (iii) Catalan: *parar* ‘stop’ → *re-parar* ‘repair’; *escriure* ‘write’ → *pre-scriure* ‘prescribe’)
- c. **Structural differences:** some processes are category-changing and hence lexical (nominalization ‘John’s destruction of the city’) in contrast to others which are category-preserving (e.g. the gerund ‘John’s destroying the city’) and hence syntactic.

According to the lexicalist hypothesis, syntax only accounts for regular processes (e.g. number, tense, case assignment) whereas the idiosyncratic processes and the category-changing processes are the result of lexical rules.³⁰

In contrast to lexicalist theories, syntactic theories of morphology reject the existence of a generative lexicon and assume that all word formation is syntactically determined (Baker 1988; Lieber 1992; Halle and Marantz 1993, etc.). Thus, it is syntax which determines the

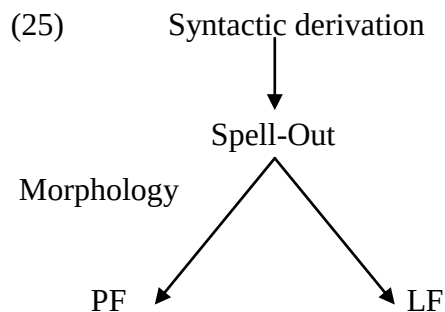
³⁰ There are two versions of the Lexicalist Hypothesis: (i) Strong Lexicalist Hypothesis, which includes inflection within the realm of the Lexicon (Halle 1973, Lieber 1980, Scalise 1984), and (ii) Weak Lexicalist Hypothesis for which inflection is a syntactic process (Siegel 1974, Aronoff 1976).

morphological properties of lexical items and not vice versa. In this study I adopt this syntactic trend.

In what follows I will just briefly introduce the major tenets of one such theory such as the Distributed Morphology one (Halle & Marantz 1993, Marantz 1997, 2001, Harley & Noyer 1998).

2.2.2. Some basic assumptions of Distributed Morphology

Distributed Morphology (DM) (see Halle & Marantz 1993) is a syntactic approach to morphology which assumes that syntax is the only generative component responsible for the formation of words and phrases. Under this approach, all identifiable morphemes are the realization of terminal nodes of a hierarchical syntactic structure. In a similar fashion as the minimalist theory (Chomsky 1995), DM considers abstract feature bundles to be manipulated by syntax via Merge, Move, Agree, etc. Once the syntactic tree is constructed, the derivation further splits into a semantic level of representation, LF, and a phonological one, PF, respectively. A schematic representation is provided in (25) below:



DM assumes linguistic structures to be produced in both syntax and after syntax, i.e. at the morphological component (called morphological operations). PF in DM is the place where many of these morphological operations occur whereas narrow syntax builds up structure by manipulating feature bundles. Thus, in contrast to lexicalist theories, syntax does not manipulate lexical items at all but just morpho-syntactic features. These features are then combined via the basic syntactic operations of Move and Merge, which is additionally

restricted by certain principles and parameters. As for LF, it is a mere level of representation where some semantic relations (e.g. quantifier scope) take place but which is devoid of any capacity to express meaning.

2.2.2.1. Basic concepts and terminology

There are three central concepts which distinguish DM from other morphological theories: Late Insertion, Underspecification, and Syntactic Hierarchical Structure All the Way Down (see Harley & Noyer 1999).

Late Insertion refers to the fact that syntactic terminals are provided with phonological expression only in the mapping to PF. That is, syntactic categories have no phonological content before Spell-Out and it is only after syntax, i.e. when Spell-Out applies, that syntactic categories become phonological expressions called Vocabulary Items.³¹ Following certain morphological trends (e.g. Beard 1995), DM assumes that all (or some) phonological features are not part of the lexical primitives prior to or during the syntactic computation. Instead, the phonological features of the abstract functional elements are late inserted during the post-syntactic morphological computation to PF. I will go against such a claim in section 2.5.

Underspecification of Vocabulary Items holds that vocabulary items need not be fully specified for the syntactic position in which they should be inserted. Rather, a vocabulary item is often considered a default signal that is inserted into the structure where no specific form is available.

Finally, *Syntactic Hierarchical Structure All the Way Down* makes reference to the fact that elements in both morphology and syntax enter into the same constituent structure types such as, for example, binary branching trees.

³¹ It is assumed that on the way to PF, terminal nodes can undergo readjustment operations (e.g. fusion).

Within such a theory, the concept of the lexicon receives a different treatment. To exemplify, in contrast to the Lexicalist Hypothesis (Chomsky 1970), DM assumes the role of the lexicon to be *distributed* through various other components, which finally leads to the total elimination of the lexicon as an independent component of grammar. As a consequence, both lexical items and lexicalizations are also eliminated from the theory.³² Hence, the atoms of syntax (and morphology) cannot be lexical items as we know them, but rather some different kind of entity, i.e. morphemes. I discuss this issue in what follows.

2.2.2.2. Morphemes and Vocabulary Items

The atoms of morpho-syntactic representation in DM are called ‘morphemes’. In contrast to the vocabulary items, which have phonological content, morphemes refer exclusively to the syntactic or morphological terminal node and its content, but not to the phonological expression of the terminal. Therefore, morphemes are abstract and consist of syntactic and semantic features made available by UG. The terminals which syntax manipulates may consist of two types of morphemes:

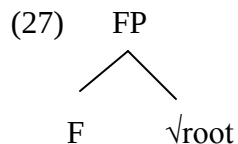
(26) Morpheme types

- a. **Abstract (functional) morphemes** (f-morphemes): bundles of universal grammatical features. These are category defining and correspond to functional categories with the following characteristics:
 - (i) composed of non-phonetic features (e.g. [past], [pl]);
 - (ii) no choice for Spell-Out;
 - (iii) their content determines their phonological expression (i.e. their Vocabulary insertion)
- b. **Roots** (l-morphemes): language-specific phonological features with the following properties: (i) category neutral, and (ii) correspond to lexical categories.

³² Within DM the term lexical(ized) may refer to at least two concepts: (i) idiomatic, and (ii) not syntactically derived. Idiomatic expressions (i) form part of the Encyclopedic entries in DM whereas (ii) may refer to the fact that some structure is a result of morphological processes, i.e. constructed after syntax, at the morphological component.

In this thesis I will defend the existence of category-neutral roots (26b) together with the presence of functional morphemes (26a) in narrow syntax. However, following Borer (2005b), I will go against the abstractness of the latter and the lack of phonological content of both roots and morphemes before Spell-Out. Thus, I assume that category neutral entities (i.e. substantive roots) enter at the syntactic component and are further categorized by a functional node (e.g. n° , a° , v°), which may be expressed by either a free or a bound functional morpheme (including derivational affixes).

A crucial factor for the current study is the basic distinction between f- and l-morphemes (i.e. functional categories and roots). **Following DM assumptions, I will assume that all categories (Ns, Vs, and As) are derived from more basic morphemes. An acategorial element is given a category label in a local relation with its licenser, i.e. a category-providing f-morpheme (FP in (27)).**



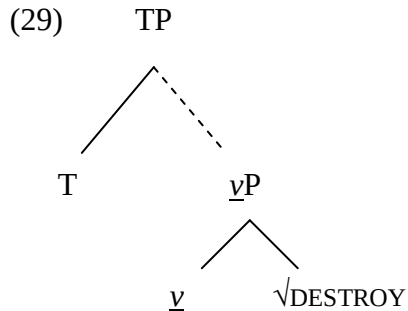
This is known as the “Categorization Assumption” (Marantz 2006) according to which roots cannot be pronounced and interpreted without being categorized by an f-morpheme (e.g. FP in (27) above).

(28) The Categorization Assumption (from Embick & Noyer 2007: 296):

“Roots cannot appear without being categorized; Roots are categorized by combining with category-defining functional heads”.

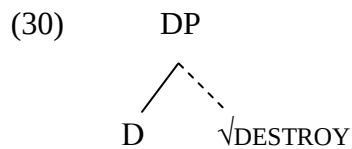
Much research has been done on the nature of F (Marantz 1997, 2000; Harley & Noyer 1997, 1998, 1999, 2000; Alexiadou 2001; Arad 2005, etc.). There is agreement that in the

verbal domain F corresponds to $\underline{v}$. Thus, [*the enemy* [$\underline{v_P}$ *destroyed the city*_{ACC}]] conforms to the following abstract architecture.



Crucially, the role of v is just to verbalize the root; in order for a root to become a full verb phrase we need other f-morphemes apart from v , such as Aspect and Tense, to be present in the nearest c-commanding domain. Embick (1997), for example, assumes that if the Tense f-morpheme is not inserted, then the root remains a participle (e.g. *destroy-(ing)*) but not a verb (e.g. *destroy-(s)*).

A noun, on the other hand, is an acategorial root ($\sqrt{}$) inserted in a nominal environment, i.e. licensed by a category changing f-morpheme such as the Determiner (D). Thus, [*the enemy's destruction of the city*]_{DP} has the following representation:



In (30), adjustment morphological rules will spell out *destroy*, directly or indirectly dominated by D, as *destruction*.

Vocabulary items, on the other hand, form part of the vocabulary list and imply two things: (i) a phonological expression for the abstract morphemes and (ii) information as to where this phonological unit should be inserted (31).

(31) Vocabulary items:

- a. phonological signal ↔ context of insertion
- b. /s/ ↔ [_, + plural]

Another difference between f- and l-morphemes, apart from category specification, is the way these elements are spelled-out. Spell-Out, or else, Vocabulary Insertion, is a cyclic operation which consists of associating vocabulary items (i.e. phonological material) with abstract morphemes. This operation functions differently depending on whether an f- or an l-morph is being sent so Spell-Out.

In the case of an f-morph Spell-Out, vocabulary items compete for insertion, subject to the Subset Principle (Halle 1997):

(32) The Subset Principle (from Embick & Noyer 2007: 298):

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

The feature content of a vocabulary item makes this item a plausible candidate for insertion at a terminal node. Therefore, only items with similar characteristics (e.g. from what is traditionally regarded as a ‘paradigm’) may compete for insertion at this node but not any item whatsoever. As for the final winner, it is the one which has the most complex feature specification.³³

The Spell-Out of l-morphs (i.e. roots), on the other hand, works differently. In this case, there is no choice for the insertion of a vocabulary item into an l-morph. We can thus insert any noun such as *cat*, *dog*, *table*, *boy* into an l-slot locally related to D. What determine

³³ Noyer (1997) proposes a universal hierarchy of features according to which the winner status of a vocabulary item in the case of competition is determined (e.g. 1 person > 2 person > dual > plural). The item with the highest feature in this hierarchy is the one to finally win.

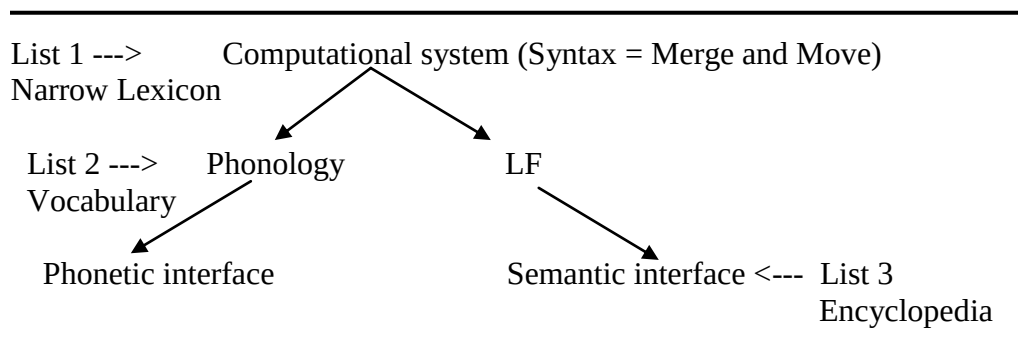
Spell-Out are the licensing conditions imposed by the licensors, i.e. the f-morphs.³⁴ **A similar intuition, which is found in Borer (2005b), is also adopted in this study where functional nodes will be shown to finally determine argument structure and interpretation irrespective of the root material incorporated within the structure.**

Now let us provide some notes on the status of the lexicon within DM.

2.2.2.3. Some notes on lexicon-replacements

DM assumes the functions of the lexicon to be distributed among various other components of grammar. These components are subsumed under a number of non-computational (distributed) lists that replace and take the functions of the lexicon.

(33) DM grammar (Marantz 1997: 204)



Narrow Lexicon, or List 1, is generative and contains the units with which syntax operates, i.e. the roots and the bundles of grammatical features of a given language.³⁵ It is precisely List 1 which directly replaces the traditional notion of a lexicon.

³⁴ There is, in fact, no agreement as to whether competition affects only abstract morphemes (Harley & Noyer 1999, Embick & Noyer 2007) or both abstract morphemes and roots (Harley 2008).

³⁵ Recall that the latter are determined by UG and may be further subjected to language-specific principles.

Vocabulary, or List 2, on the other hand, is non-generative. Its role is to provide the phonological forms for the roots and the sets of grammatical features.³⁶ In this way, the Vocabulary list links syntactic terminal nodes (i.e. grammatical features) with their phonological realizations. This list contains the vocabulary items which compete for insertion at the terminal nodes.

Finally, List 3, or the Encyclopedia, is also non-generative. It is the place for storing *idioms* and consists of encyclopedic entries which relate vocabulary items to meanings. In this respect, I follow DM and assume that an ‘idiom’ is an expression whose meaning is not fully predictable from its morpho-syntactic form. It then follows that f-morphs are not idioms in contrast to l-morphs which are always idioms. We will see that a similar distinction is also adopted by Borer (2005b) and will be adopted in this study, though without the postulation of a dedicated space for the storage of idioms such as the Encyclopedia.

To exemplify, a conventional idiom such a ‘kick the bucket’ meaning ‘die’ is accounted for in DM by the assumption that part of the Encyclopedic entry for the root ‘kick’ should specify that if such a root appears in the environment of ‘the bucket’ as its direct object, then ‘kick’ may be interpreted as ‘die’. Importantly, external arguments are not included in the Encyclopedic entry as a contextual conditioner for a root since they cannot be possible interpretative conditioners (Marantz 1984).

Crucially, DM’s treatment of lexical primitives is a major departure from standard minimalist theories. Most importantly, the fact that there is no single generative lexicon that feeds syntax, together with the fact that lexical primitives are combined into complex word structures by syntactic and post-syntactic mechanisms, goes against minimalist assumptions. In this respect, Marantz (1997) addresses some open questions regarding the Lexicon-replacement lists in DM.

³⁶ Marantz (1997) claims that whether the roots bear some phonological specification or not may turn out to be irrelevant for the overall structure of grammar. In case roots do not come with a phonological specification from the narrow lexicon, then such specification is provided by the Vocabulary (List 2).

(34) The Lexicon in DM (Marantz 1997: 204-205):

“It is an important and open question how much information about roots is present in the narrow Lexicon (e.g., does the narrow lexicon contain sufficient information to identify particular roots or does it contain only information about classes of roots, of the sort discussed in section 3 below), whether the phonological forms of roots are among the Vocabulary items, and whether and how the particular choice of root from the narrow Lexicon or from the Vocabulary feeds semantic interpretation.”

Regarding this issue, I will try to show that roots enter syntax already bearing a phonological specification from the narrow lexicon, though I will not adopt the term ‘a narrow lexicon’.

Since the lexicon is inexistent within a theory such as DM, and since LF is considered a mere representational level devoid of meaning, a question which immediately arises is how meaning is constructed. I address this issue below.

2.2.2.4. Constructing meaning in Distributed Morphology

We have already mentioned that Vocabulary insertion takes place at PF, i.e. after syntax. Moreover, Vocabulary is not present at LF since LF is a mere level of representation devoid of any capacity to express meaning. Hence, the meaning of an expression is determined and interpreted on the basis of the entire derivation of that expression.

In a certain sense, this line of analysis reminds us of the way constructionist theories vision the determination of meaning (Goldberg 1995). Such theories assume that it is the construction which assigns meaning to the linguistic expression. We will further see that a similar intuition lies behind Borer’s (2005b) exo-skeletal approach to grammar as well (see § 2.5). I also adopt a similar line of thought in this thesis.

Another point at which DM parallels syntactic (constructionist) approaches to grammar is the assumption that thematic roles are reduced to structural configurations à la Hale and Keyser (1993, 1998). Themes, for example, are the arguments projected as a sister of the

root whereas Agents are those arguments located in the Specifier position of Event Phrase (see Harley 1995). Here again we find parallelism between DM and Borer (2005b) (see § 2.5). In contrast to Hale and Keyser (1993), however, DM makes no difference between ‘l-syntax’, which occurs in the lexicon, and ‘s-syntax’ since there is only one module, Syntax, in this theory (see Marantz 1997).

Now let us turn to the way idiosyncratic meaning is accounted for in DM and within the current study.

2.2.3. Some notes on idiosyncrasy

As we will see, prefixes in Bulgarian, which form a crucial part of the current thesis’s agenda, show high degree of idiosyncrasy. Therefore, some brief comments on the treatment of idiosyncrasy should be included here.

Lexicalist theories of grammar assume that the sound-meaning correspondences of words (both derived and non-derived) are provided in the lexicon and that it is the lexicon where possible idiosyncratic meanings of words are stored. Syntax, on the other hand, provides complex structures which are made up of words. The assumption under lexicalism is that ***syntactically derived structures are semantically transparent and compositional, i.e. the meaning of the whole construction is predictable from the meaning of the parts which compose it. I also follow such an intuition.*** However, to claim that syntax never allows for any idiosyncratic relations to occur is problematic due to the existence of many phrasal syntactically derived idioms across languages. As Jackendoff (1996) shows, (lexically-derived) words and (syntactically-derived) complex structures show the same type/degree of idiosyncrasy.

(35) Idioms (Jackendoff 1996)

- a. Light verbs: *take a break, take a piss, take a leap*, etc.
- b. Individual words: e.g. *kaža* ‘say’

- (i) *na-kaža* ‘punish’ (iv) *iz-kaža* ‘express’ (vii) *o-kaža* ‘render’
 (ii) *raz-kaža* ‘narrate’ (v) *po-kaža* ‘show’
 (iii) *do-kaža* ‘prove’ (vi) *ot-kaža* ‘deny’

The relation that the light verb *take* in (35a) has with its derivatives is the same as the one established between the Bulgarian verbal stem *kaža* ‘say’ in (35b) and its prefixed forms in that both convey the same degree of idiosyncrasy. Hence, there is no reason to treat word-sized (or lexical-morphological) idiosyncrasy as different from the more structurally complex syntactic idiosyncrasy.

The data in (35), however, serve as a basis for Jackendoff to claim that, due to their similar idiosyncratic status, all idioms, be they complex syntactic structures or words, are derived in the lexicon. However, following DM line of thought, I will adopt just the opposite path of reasoning and assume that idiosyncrasy can be syntactically explained since syntax is the only generative component for me as well.

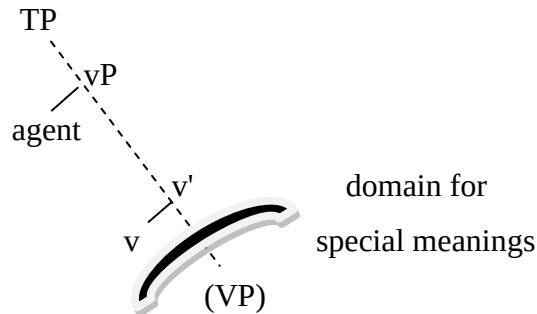
Interestingly, not all items can have an idiosyncratic meaning, which suggests that it is useless to view idiosyncrasy as a lexical phenomenon where certain filters apply to give some special meaning to the corresponding item. ***Idiosyncrasy is, in fact, a by-product of syntactic structure, i.e. in order to be assigned a special meaning, the particular item needs to have certain syntactic configuration.*** The fact that an eventive structure with an overt agent cannot be idiosyncratic confirms such a view (Marantz 1997).

- (36) a. *make ends meet* (special meaning)
 b. *make oneself swim* (compositional, non-idiosyncratic meaning)

From the data in (36) we can conclude that for a structure to be idiosyncratic, it can contain neither a causative verb nor an agent. This is not a pure coincidence since both agents and causers are located in the specifier position of a light verb phrase (vP) (Kratzer 1996; Chomsky 1995). Hence, idiosyncrasy is located in the domain of light *v* excluding,

however, both the eventive nature of *v* (Chomsky 1995) and its specifier which contains the agent. A syntactic representation is offered in (37) below.

(37) The domain of idiosyncrasy



Additional evidence for the syntactic status of idioms comes from the fact that idioms show aspectual distinctions. Thus, *kick the bucket* is interpreted as bounded, i.e. telic, and cannot be used in the progressive (e.g. **He was kicking the bucket when I entered the room*). Therefore, despite their demoted semantics, idiomatic expressions are syntactic objects, not merely morphological (or lexical) ones.

According to Marantz (1997), idiosyncrasy corresponds to certain syntactic locality domains:

(38) Marantz (1997: 207-208) on idioms:

“However, we can make a much stronger argument from special meanings against the special status of words. Because it’s not true that a structure of any size can mean anything. Rather, roots may have special meanings (actually, they *must* have “special” meanings since they’re defined as the elements whose meanings are not completely determined by their grammatical features) in the (syntactic) context of other elements **within a locality domain**. The locality domains for special meanings are defined syntactically. Since phonological word structure is created post-syntactically [...], and many functional heads and grammatical morphemes may be packaged inside a single phonological word, these locality domains may sometimes be smaller than a (phonological) word, meaning that some words, like some phrases, **cannot** have special meanings—can’t be ‘idioms’.”

Following the assumptions so far, ***I assume that there is only one generative component, syntax, and that morphological constituents are accessible to syntax. Furthermore, the way morphemes are ordered is syntax-driven and determined by the properties of the functional structure itself, which is, in turn, universally given. Significantly, it is not only the surface order, but the meaning obtained for the derived structure as well that can be anticipated on syntactic grounds.*** Therefore, it follows that the best way to treat morphology is adopting a syntactic approach as the DM one, though not in the strictest sense. In the following section I provide some further points which make us consider syntax as the only transformational component of grammar.

2.2.4. In favor of syntax as a transformational component

It has been previously mentioned that syntax is the only transformational component of grammar which is responsible for word-formation processes. Evidence for this claim, apart from the already presented one, is provided by the fact that syntax can access the words' internal structure (39).

(39) a. *She is a flutist because it is a beautiful instrument*

b. <i>Él suda mucho</i>	Spanish
he sweats a lot	(implies 'a lot of sweat')

b'. <i>*Él enmarca mucho el cuadro</i>	
*he frames a lot the picture	(*a lot of picture)

From (39a) we can observe that the pronoun *it* makes direct reference to the internal structure of the word 'flutist', namely the instrument 'flute'. As for (39b, b'), the conclusion to draw is that adverbials are also sensitive to a word's internal properties. Thus, *mucho* 'a lot' is fine with a verb derived from a mass noun such as *sudor* 'sweat' (39b) but not with a denominal verb formed from a count noun such as *marco* 'frame' (39b').

Hence, we can no more sustain the Lexical Integrity Hypothesis of Di Sciullo & Williams (1987), for example, or theories with similar frameworks (see also Bresnan & Mchombo 1995) according to which syntax is blind to the internal morphological properties of words and only morphology can operate on stems and morphemes to produce words in contrast to syntax which operates on whole words already formed.

Another piece of evidence in favor of the syntactic nature of word formation comes from the order of derivational and inflectional morphemes. Following a lexicalist trend, one expects that derivation is prior to inflection since derivation belongs to the lexicon whereas inflection is syntactic in nature. However, such a view has met some criticism since there are cases where inflection is internal to derivation (40).

(40) Inflection > Derivation (from Ferrari 2005: 26)

(i) *papel* (sg) > *papeis* (pl)

Brazilian Portuguese

(ii) *papelzinho* (sg+dim) > *papei* (pl)–*zinho*(dim)–s(pl)

pape-i-zinho-s

paper-PL-DIM-PL

‘little papers’

Additional evidence supporting the syntactic nature of word formation comes from the fact that morphological structure mirrors syntactic structure, an observation formalized under the inductive generalization known as “The Mirror Principle” of Baker (1985) (this will be further commented on in section 2.3 below). It cannot be a pure coincidence that the morphemes in a word exhibit the same order as bigger syntactic constituents within the clause. Hence, an appropriate conclusion to draw is that ***syntax drives morphology and finally determines affix order, i.e. affix order obeys syntactic criteria***. Note that this claim is of crucial significance for the current work since one of the main goals of my study is to show that syntax determines morphological structure and that morphemes are ordered along a fixed hierarchy of functional (i.e. syntactic) projections (Cinque 1999). Further data in support of this view will be presented throughout the whole thesis.

TO RECAP, I follow DM and assume that functional morphemes are accessible to syntax. Due to their functional character, they project as functional heads, whose role in narrow syntax is to categorize the categoriless roots they have under their scope. The combination of a root and a categorizing morpheme is achieved by the help of the basic syntactic operations of Merge and Move, in the light of minimalism. As for the roots, they form part of the substantive lexicon inasmuch as they refer to some particular lexical concept, but not to any grammatical value. However, in contrast to DM, I do not make use of a distributed lexicon. ***Rather, I assume all roots and grammatical morphemes, including derivational affixes, to form part of the lexicon of a given language. Thus, as already suggested in Borer (2005b), a language has a substantive (e.g. roots) and a functional (e.g. categorizers) lexicon.***

Another point subsumed under DM to which I object, and which is important for the current analysis, refers to the mapping between syntax and morphology.³⁷ I precisely disagree with DM's assumption that there are certain PF operations which can affect the order of the terminal nodes on their way to Spell-Out.

(41) Halle & Marantz (1993: 121):

“... in DM the ordering, number, feature composition, and hierarchical positioning of terminal nodes may change in the derivation of M[orphological] S[tructure], but only in highly constrained and fairly well understood ways”.

From the above quotation it becomes clear that the status of morphological structure (at PF) as syntactic structure is shaken. This is due to the postulation of some PF operations that can alter the initial syntactic structure such as readjustment rules together with the existence of disassociated morphemes, which prevents one-to-one mapping from syntax to

³⁷ Recall here that I have previously objected to the assumption that roots enter at the syntactic component devoid of any phonological features. Thus, I assume that (at least some) phonological features should be present on roots. These phonological features may be abstract but specific enough in order to provide the correct choice of the VI (see also Borer's 2005b for a similar proposal).

morphology. In other words, morphemes and features can be added to the structure at Spell-Out obeying certain language-specific requirements, which prevents morphological structure at PF to be a faithful reflex of some syntactic structure, despite the fact that such syntax-morphology mismatches are highly restricted.

Regarding this issue, the point of view adopted in this thesis is the one advocated by Cinque (1999) according to which there is a fixed hierarchy of functional projections available to all languages. I further follow Baker (1985) and assume that the morphological surface order of a given structure directly reflects its syntactic structure, implying that the mapping between syntax and morphology is symmetric. I briefly comment on these claims in what follows.

2.3. “The Mirror Principle” (Baker 1985): Some brief notes

A point in common between DM and Baker (1985) is the rejection of the traditional view on word formation according to which morphology operates on stems and morphemes to produce words, while syntax operates on words to produce phrases and sentences. Such a view is known as the “Lexical Integrity Principle”, which makes sure that syntactic rules cannot operate on word parts, so that, for instance, affixes cannot be detached from a word by syntactic rules (see Di Sciullo & Williams 1987; Bresnan & Mchombo 1995, etc.).

In contrast to such a view, DM and Baker (1985) assume that syntax operates on both words and morphemes and that word formation obeys syntactic principles of structure building. Thus, the morphological structure of a complex word is derived through head-movement of the lexical root to the heads under which the morphemes are base-generated. It then follows that morpheme order systematically reflects the order of the corresponding phrases, which is known as the “Mirror Principle”.

The “Mirror Principle” (Baker 1985) is an empirical generalization which states that morphological structure directly reflects syntactic structure and vice versa, assuring thus a symmetric mapping between syntactic and morphological orderings.

(42) The Mirror Principle

a. Baker (1985):

“The order of affixes reflects the order in which the associated syntactic ‘operations’ apply”.

b. Baker (2002: 326):

“...the order of morphemes in a complex word reflects the natural syntactic embedding of the heads that correspond to those morphemes”.

Following a syntactic view to morphology, the Mirror Principle turns out to be the result of the strict locality of head movement (i.e. the Head Movement Constraint (cf. Travis 1984), and further obeys Relativized Minimality (Rizzi 1990). ***In similar lines with DM, Baker (1985) assumes morphemes, be they free or bound, to actively participate in syntax, which is a desired outcome for this study.***

Adopting such a line of analysis, we can easily predict the tendency of affixes to be ordered in a predictable way across languages (e.g. inflectional morphemes tend to occur outside derivational morphemes; or Greenberg’s Universal 39 according to which if both number and case morphemes are present in the structure, then the number marker almost always comes between the noun base and the case marker, etc.). Since words are formed in syntax, then all morphemes will be ordered in a way which directly reflects the order of their functional heads. ***If we take into account that functional heads are invariantly ordered cross-linguistically, so will be the overt morphological realizations of these heads, i.e. the affixes themselves, which establishes a close relation between syntax and morphology.***³⁸

Crucially, however, Baker (1985) does not specify the principles which make affixes merge the way they merge into syntactic structure. To answer this question, I follow Cinque

³⁸ It has been noted that Bantu languages pose a problem to the Mirror Principle generalization inasmuch as there are verbal derivational suffixes with a fixed order that does not follow from this principle and even violates it (see Hyman 2003, 2006; Good 2005, 2007).

(1999) and assume that the explanation is feature-driven. I give some further details in what follows.

2.4. Cinque's Universal Hierarchy of Clausal Functional Projections (1999)

Based on his vast empirical study of the behavior of adverbs cross-linguistically, Cinque (1999) concludes that the order of some verbal affixes in agglutinating languages (e.g. temporal, modal and aspectual suffixes) mirrors the order of the corresponding adverbs in non-agglutinative languages. In order to explain this observation, he assumes that there is a fine-grained hierarchy of functional projections in which affixes and adverbs merge in order to check their features. Thus, Cinque (1999, 2004) assumes that adverbs are functional in nature and are ordered along a fixed hierarchy of functional features.³⁹ For him, adverbs are base-generated (merged) under a checking relation with the corresponding functional heads of the clause hierarchy.⁴⁰ Hence, the relative order between adverbs (which is linear, transitive and antisymmetric) is due to the structural (syntactic) positions they occupy within the functional array of the given language, not to purely semantic scope principles of the conceptual-intentional interface.⁴¹

³⁹ Evidence for the functional nature of adverbs comes from sign language and language acquisition (see Cinque 2004). In sign language, for example, lexical information conveyed by verbs and nouns is expressed manually whereas functional information such as aspect has both manual and non-manual expression. In this respect, adverbs behave like functional material (Cinque 2004: 684).

⁴⁰ Each functional head licenses a unique specifier position, where the adverb is base-generated. In case a given adverb shows up in two different positions with the same interpretation, then this adverb has undergone movement. If, on the other hand, a given adverb appears in two different positions but with different interpretations, then two different adverbs with the same phonological form should be postulated.

⁴¹ Cinque (2004: 685) argues against the adjunction analysis of adverbs which follows purely semantic scope principles. According to him, such an analysis provides no explanation as to why we find the adverbs we find among languages and not some different kinds of adverbs (e.g. there are no adverbs expressing our sentential attitude toward our assertions, i.e. whether we utter something with love or hate, etc.). Therefore, such information must be encoded in the functional space of the UG lexicon with the possible formal means to relate the functional head distinctions to the corresponding AdvP distinctions. Additionally, a semantic scope approach cannot account for the relative order between the adverb and the verb or between an adverb and one of the arguments of the clause.

I claim that such an assumption can be syntactically explained by the mechanism of c-command: the structurally higher elements c-command the structurally inferior elements which determines both the linearization patterns observed between these elements together with the observed scope relations between them. Since c-command is a universal syntactic mechanism, such a tendency is also universal and should therefore hold cross-linguistically.

If we apply this line of analysis to affixes, we are led to conclude that ***affix linearization is also feature-driven: the different affix types are instantiations/expressions of different syntactic features that project their own functional phrases*** (e.g. AspectCompletivePhrase, PastPhrase, etc.). Hence, whenever a morpheme is endowed with some functional feature, it merges in syntax under the particular syntactic node dedicated to that feature no matter its category type and morphological status. To exemplify, whatever type of morphemes, be they free (e.g. particles, adverbs, PPs, etc.) or bound (i.e. prefixes and suffixes), which are endowed with a feature related to past tense, will be derived under PastPhrase.

On par with the Mirror Principle, the general intuition behind Cinque's (1999) theory is that morphology reflects syntax and vice versa. For Cinque (1999), this is due to the fact there is a universal fixed hierarchy of functional features which is part of UG. These features further project into functional phrases, and thus build up a hierarchy of functional projections. Therefore, ***the fixed orderings found among verbal affixes is a reflex of the deep hierarchical ordering of the relevant functional projections under which the affixes are base-generated***. Such a view to affix ordering is nativist and language-internal.⁴² Crucially, the fact that syntactic features are hierarchically ordered cross-linguistically explains why the overt morphological realizations of such features (i.e. the affixes) are also hierarchically ordered. The hierarchy of functional features is represented in (43).

⁴² Some language-external principles may be discourse structure, processing demands, sensory perception (e.g. color terms), etc.

(43) Cinque's (1999) hierarchy of aspectual features (see Cinque 2002: 47):

MoodP_{speech act} > MoodP_{evaluative} > MoodP_{evidential} > ModP_{epistemic} > TP_{Past} > TP_{Future} > MoodP_{irrealis} > TP_{anterior} > ModP_{alethic} > AspP_{habitual} > AspP_{repetitive(I)} > AspP_{frequentative(I)} > ModP_{volition} > AspP_{celerative(I)} > AspP_{terminative} > AspP_{continuative} > AspP_{perfect} > AspP_{retrospective} > AspP_{proximative} > AspP_{durative} > AspP_{progressive} > AspP_{prospective} > AspP_{inceptive(I)} > ModP_{obligation} > ModP_{ability} > AspP_{frustrative/success} > ModP_{permission} > AspP_{conative} > AspP_{completive(I)} > Aspect Pl completive (tutto) > VoiceP > AspP_{repetitive(II)} > AspP_{frequentative(II)} > AspP_{celerative(II)} > AspP_{inceptive(II)} > AspP_{completive(II)} > V

Evidence for the existence of the hierarchy in (43) and for its universal and functional nature comes from the fact that the number and the type of the different classes of AdvPs and their relative orders exactly matches the number, the type and the relative order of functional head morphemes across languages (Cinque 1999). This is additionally reinforced by acquisition data. As Cinque (2004) observes, works on first language acquisition of functional elements and adverbs show that *"just as the acquisition (maturation) of aspectual distinctions precedes that of temporal ones (Antinucci and Miller, 1976; Weist, 1986; Schlyter, 1990), so are lower aspectual adverbs apparently acquired earlier than temporal (and still higher) ones. [...] Whether or not such findings can be constructed as evidence for a genetically determined order of maturation of functional categories (Ouhalla, 1991, cited in Clahsen et al., 1994: 87), [...] they do show that the emergence of adverbs in first language acquisition is closely tied to that of the functional heads they correspond to; another indication of the intrinsic functional character of adverbs"* (Cinque 2004: 684-685). In a sense, the fact that acquisition follows the underlying hierarchy in (43) across languages confirms its universal character. As for whether this hierarchy is genetically given or not, we can only speculate.

In this thesis I adopt Cinque's (1999) view that affixes are merged under some particular functional projections by virtue of some inherent functional feature they express (e.g. [past] for PastPhrase). To exemplify, the Bulgarian aspectual prefixes, due to their inherent aspectual features, will have their own dedicated projections within the hierarchy of Cinque (43). As we will see,

this will be the case for the inner and outer aspectual prefixes. However, elements which lack functional features, such as the Bulgarian idiosyncratic (lexical) prefixes, will not have their place within this hierarchy, which will further imply that the relative order between them will not be fixed along the same aspectual hierarchy from (43).

TO RECAP, my treatment of affixation phenomena, which occupy great deal of the thesis, heavily relies on the assumptions made in Baker (1985) and Cinque (1999). I therefore assume that the order of affixes does not follow from principles external to morphology proper such as semantic scope (see Rice 2000), but rather from the order of syntactic operations (Baker 1985) and the functional projections themselves (Cinque 1999).

Now we are ready to present some ideas which I adopt from neo-constructionist approaches as the one elaborated in Borer (2005b). As we will see, there are many things which such approaches share with syntactic theories of word formation as the ones just discussed.

2.5. A neo-constructionist perspective: Borer (2005b)

Borer (2005b) adopts a neo-constructionist exo-skeletal approach to language according to which there is only one computational component, syntax, which is responsible for the formation of hierarchical structure and grammatical word formation processes.⁴³ In contrast to endo-skeletal approaches according to which idiosyncrasy and unpredictable syntactic properties are tied to the lexicon (i.e. listed lexical items), exo-skeletal approaches reduce both the formal properties of the lexical items (e.g. syntactic properties such as argument structure, category type, etc.) and their semantics to formal computational systems (e.g. syntax or morphology). As a consequence, the lexicon, which consists of little beyond language-specific sound-meaning pairings, turns out to be rather impoverished. For ease of exposition, I list three of Borer's (2005b) crucial assumptions which I adopt in this study.

⁴³ Constructionist theories (Goldberg 1995) view constructions as primitive elements of the lexicon with their proper semantics. Neo-constructionist theories (Marantz 1997), on the other hand, assume that constructions determine grammatical meaning but are neither primitive nor language-specific.

(44) Assumptions in Borer (2005b)

a. **The properties of the functional structure are innate and universal.** The list of functional nodes and the relative order between them is also given by UG. (Note that such an assumption implies that the aspectual hierarchy of Cinque (1999) is also innate and universal).

b. **Functional structure is syntactically given, not reducible to semantic selection.** Evidence for this comes from the fact that only open-class (i.e. substantive) items (else, concepts, or roots in DM) are flexible and can be contextualized in contrast to grammatical formatives. Moreover, selectional restrictions are often overridden by the grammatical environment, a phenomenon also known as coercion (i), but not vice versa (ii).

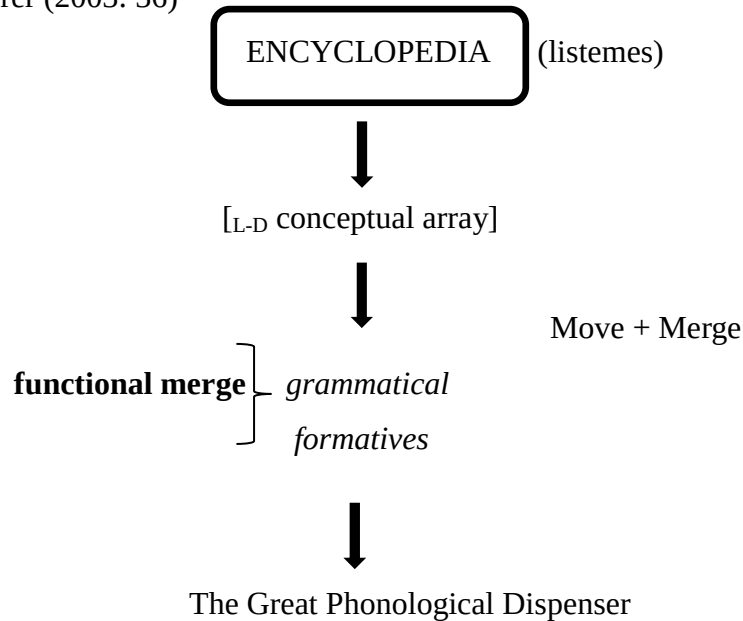
(i) *many sands* (the mass noun *sand* receives a count interpretation in the context of plural marking)

(ii) **too little carpets for the money* (a plural-marked noun will never receive a mass interpretation, no matter how salient the context; cf. *too little carpet for the money*) (from Borer (2003: 34, fn. 4))

c. **All available semantic differences are due to the grammatical properties of the functional structure**, where infelicitous combinations arise due to the interaction of the properties of the extra-linguistic conceptual system with world knowledge.

A schematic representation of the grammar in such an approach to language is provided in (45) below.

(45) Borer (2003: 36)



The Encyclopedia is the general reservoir of *listemes* (else, encyclopedic items) which are arbitrary sound-meaning pairings (i.e. <abstract phonological representation>–<concept> pairs) devoid of any formal grammatical information such as category, argument structure, or word-formation. These will correspond to roots in DM. These category-less concepts are initially selected to form part of the *conceptual array*. Since there is no category determination, once the listemes are selected from the conceptual array they are inserted as an unordered set into an unmarked lexical phrasal domain L-DOMAIN/L-D (e.g. [L-D sink, boat, dog]). The categorizing of L-D then takes place by the merger of some functional material (i.e. some grammatical formative) from the functional lexicon of the grammar which can be of two types, independent grammatical formatives (46a) or grammatical formatives in the form of features (46b). Finally, phonological features are assigned to the [<grammatical formative> + listeme] unit.

(46) The functional lexicon of the grammar⁴⁴

- a. Independent functional morphemes, f-morphs (e.g. *the*, *will*, etc.)
- b. Phonologically abstract Head features (e.g. <pst> for past tense)

In fact, (46) above represents the two possible ways of licensing functional structure, i.e. two ways to categorize L-D, which are universally available. To exemplify, we can either project an abstract head feature with the resulting [L.<feature>] formation being the input to phonology (L stands for listeme) (46b), or else merge an f-morph (be it free ‘will’ or bound ‘-tion’). A grammatical formative α thus merges with L-D and projects some functional structure which categorizes the L-D it dominates. For example, if α is a past Tense marker, the merger of this functional formative <pst>_T will verbalize the L-D as in (47). Again, this reminds us of the way categorization is achieved in DM, i.e. by merging a categoriless root (the listeme) with a categorizing functional element (the head feature).

(47) [_T <pst>_T [_{L-D} sink, boat, dog]]

Note that any of the listemes from L-D (*sink*, *boat* or *dog*) can, in principle, merge a copy in T (though, under standard assumptions, only one may do so) (see (48) below). The element which moves will become the head of L-D (as it has merged a copy in a head position). Since the context is [_T [_{L-D}]], L-D will become a VP and the head in T a V. Finally, a post-derivational phonological storage area, i.e. the great phonological dispenser in (44) above, will dispense for the resulting V+<pst> structure a well-formed phonological representation assuring thus a converging derivation.

- (48) a. [_T [_V sink]-<pst>_T [_{VP} [_V ~~sink~~], boat, dog]] (sank)
 b. [_T [_V dog]-<pst>_T [_{VP} sink, boat, [_V ~~dog~~]] (dogged)
 c. [_T [_V boat]-<pst>_T [_{VP} sink, [_V ~~boat~~], dog]] (boated)

Borer (2003: 35)

⁴⁴ Note that the list is incomplete since we should also add the open values which constitute the functional heads (see the subsequent discussion).

Phrase structure of functional projections is one way of categorizing L-D (e.g. in a [_T [_{L-D}]] context, L-D becomes a VP (47, 48) whereas [_D [_{L-D}]] and [_# [_{L-D}]] contexts make L-D an NP).⁴⁵ The second way of categorizing L-D is by morphological structure in the form of category bearing morphemes such as *-tion*, *-ize*, *-al*, *-full*, etc. (49). Since these are members of the functional lexicon (45), they provide the category label to L-D.

(49) Categorizing L-D via morphological structure

- a. *-tion*, N, [[_V] _____N] (nominalized structure, e.g. *formation*; L-D is NP)
- b. *-al*, A, [[_N] _____A] (adjectivized structure, e.g. *formal*; L-D is AP)
- c. *-ize*, V, [[_A] _____V] (verbalized structure, e.g. *formalize*; L-D is VP)

From the assumptions so far we can observe that the dividing line is between substantive vocabulary (i.e. listemes; else, roots) and functional vocabulary (i.e. categorizers) plus syntactic structure, but not between vocabulary items (i.e. lexicon) and syntactic structure. Since the properties of the concepts (i.e. of listemes) do not feed directly into the determination of any grammatical properties, it is impossible to establish any direct interface between the conceptual system and grammar. On cognitive grounds, however, the grammatical and conceptual systems' outputs are compared, which is known as the Making Sense Component in Borer (2005b):

(50) The Making Sense Component (Borer 2005b: 9)

'A grammatical structure will return an interpretation as well, based on combinatorial, computational principles of interpretation assignment, as linked with the structural and the formal-semantic properties of functional vocabulary and syntactic structure. In a cognitive place which is neither the grammar nor the conceptual system—call it the 'making sense' component—these two outputs will be compared. [...] In the event of a mismatch, the grammar will always prevail. [...] Within an XS-model, then, the particular final meaning associated with any phrase is a combination of, on the one hand, its syntactic structure and the interpretation returned for that structure by the formal semantic component, and, on the other hand, by whatever value is assigned by the conceptual system and world knowledge

⁴⁵ #P refers to Quantity Phrase within the nominal domain, which is responsible for the telic, non-mass interpretation of nominal derivatives.

to the particular listeme embedded within that structure.'

Under the theory of Borer (2003, 2005b) functional heads are treated in terms of open values with category labels which must be assigned range by the appropriate functional operator (Borer 2005b: 18). As for the assigners to these specific open values, they belong to the functional lexicon of the grammar and can be free f-morphs (46a) or abstract head features (46b). Since the latter are features, they require the support of some head which results in obligatory head movement. This is one mode of assigning range to the open value of the relevant functional head which is called direct range assignment (51a: i, b: i). Another way of assigning range is indirectly, i.e. indirect range assignment, which can be achieved by the merger of some element from the functional lexicon which is not a head and which is not specified as a possible range assigner for a particular open value. This indirect way of assigning range can be accomplished by an adverb of quantification or some discourse Operator (51a: ii), or else via Spec-H° Agreement (51b: ii). (Note that one and the same grammatical formative can bind more than one open value.

(51) On range assignment (<e> = open value; # = categorial membership of <e>)

a. Assigning range to <e>_# (the open value which heads Asp_QP (#P), i.e. the projection responsible for telicity)

(i) Direct range assignment:

1. A free f-morph (e.g. 'three', 'most', 'all') merges with the open value <e>

e.g. [_{#P} most³ <e³>_# [NP]]

2. Hebrew: by a dual abstract head feature

e.g. [_{#P} ~~yom~~ <dual²> <e²>_# [_{NP} ~~yom~~ (day)]] = *yomayin* 'two days'

(ii) Indirect range assignment: by the merger of an adverb of quantification (or some discourse operator)

e.g. Adv⁴ [_{#P} <e⁴>_# [NP]]

b. Assigning range to <e>_d (<e>_d is the open value which heads DPs)

(i) Direct range assignment: by the merger of an f-morph: 'the', 'this', 'that'

(ii) Indirect range assignment: by a possessive in Spec,DP (Spec-H° Agreement)

Importantly, the claim that the category label of the open value indicates the possible range assigners to that value is an advantage of the theory since it predicts that double marking, which corresponds to vacuous quantification, does not exist in natural languages (Borer 2005a, fn. 4). Thus, **the dog's the ear* is ungrammatical because of double marking: there are two range assigners to the open value of D: the genitive phrase, which assigns range indirectly from the specifier position (51b: ii), and the free f-morph 'the', which is a direct range assigner (51b: i).

It should be noted that Borer's division of functional heads into open values and assigners to those values allows that two assigners be linked to a specific category to which they assign range (e.g. both 'the' and 'that' are linked to $\langle e \rangle_D$, the open value which heads D). Such a relation, as Borer observes, cannot be established within the MP since the label of a functional category constitutes the head but not any concrete morpho-syntactic category. However, ***I will show that multiple prefixation, if treated à la Borer (2005b), becomes problematic since it should constitute a case of double (perfectivity) marking*** (see chapter 5, § 5.1.2.).

A question which remains to be explained is the way argument structure is dealt with within such an approach. According to Borer (2005b), ***argument structure is licensed by functional syntactic structure where functional structure is interpreted as event structure***. In other words, ***it is functional structure which dominates semantics***. Evidence for this claim comes from the variable behavior verbs which vary between unaccusatives (52b) and unergatives (52a).

(52) Variable behavior verbs

- a. Unaccusative behavior: telic, non-agentive: *John jumped into the ditch; John ran to home*
- b. Unergative behavior: atelic, agentive: *John has jumped; John has run*

Previous semantic theories regard the unaccusative-unergative distinction as being associated with some systematic semantic content (e.g. telicity and agentivity), which should be specified in the lexical entry of each verb (Dowty 1991). However, Borer

(2005b) claims that some properties of the syntactic diagnostics for unaccusative-unergative distinction (e.g. auxiliary selection) cannot be reduced to the telic-atelic distinction because the variable behavior of these verbs is not reducible to the compositional semantics of the predicates but is rather syntactically derived. Thus, unaccusatives have syntactically projected internal arguments in contrast to unergatives which project external arguments in syntax. What this suggests is that it is a syntactic difference which finally accounts for the distinct semantics of these verbs (see Borer 2005b: 37).⁴⁶

More evidence for the driving force of syntax comes from the fact that all accomplishment (i.e. telic) verbs are ambiguous between accomplishments (telic) and activities (atelic) (see also Mittwoch 1991), which is again influenced by the properties of the functional environment.

(53) Accomplishment-activities verbs (from Borer 2005b: 43)

- a. (i) *I sprayed the wall with paint in two hours* (telic, accomplishment)

<i>cf. spray the wall</i>	telic, accomplishment
<i>spray with paint</i>	atelic, activity
- (ii) *I sprayed the paint on the wall in two hours* (telic, accomplishment)

<i>cf. spray the paint</i>	accomplishment
<i>spray on the wall</i>	activity
- b. (i) *I ate the cake in ten minutes* accomplishment
- (ii) *I ate at the cake (*in ten minutes)* activity

If we assume as in lexicalist theories that the telic/atelic distinction is already specified in the lexical entry of the verb, it will then follow that all accomplishment verbs will have two entries, one telic with respect to the theme (e.g. *spray the wall*, *spray the paint*) and another one atelic with respect to location (e.g. *spray with paint*, *spray on the wall*). However, such a state of affairs turns out to be rather anti-economic and contradicted by the data in (54)

⁴⁶ Additional evidence for the claim that the unaccusative-unergative distinction is hierarchically represented in syntax comes from possessive datives in Hebrew which are not sensitive to (a)telicity (Borer 2005b: 37).

where even in the presence of a theme argument we still have an accomplishment-activity ambiguity.

- (54) a. *John built houses* (*in three months) activity, atelic
b. *John built the houses in three months* telic, accomplishment

Based on these data, Borer (2005b) concludes that the distinct aktionsart values are associated with and computed on the basis of distinct syntactic structure but not specified in the lexical entries of the verbs. It then follows that argument structure does not project from the lexicon as defended in semantic theories (Levin & Rappaport Hovav 1995) since we should always need two entries for every variable behavior verb. Once such an approach is rejected, it then follows that neither the syntax of these verbs nor argument structure in general can project from the lexicon:

(55) On variable behavior verbs: Borer (2005b: 46)

“Variable behavior verbs are single items. The structure within which they are embedded and the interpretation of that structure is not derived from the properties of the lexicon. They are rather in line with general properties of functional structure and its mapping onto the interpretational component”.

Apart from argument structure, aspect is also dependent on the structure. In fact, it is aktionsart, which is computed on the basis of syntactic structure, which is the building block for the syntax of arguments:

(56) On argument structure: Borer (2005b: 46)

“Aspectuality is not a property of verbs, or any argument takers, but rather of specific, universal syntactic structures. ‘agent’/‘non-agent’ is an entailment of the aktionsart of the whole event. Because the event of ‘window’s breaking’ is telic, then the argument in ‘the window broke’ is non-agentive. Because an event such as ‘laughing’ is atelic, the argument in ‘Kim laughed’ is agentive. Hence, all direct arguments bare a relationship with the event, rather than the verb, and the verb itself is a modifier of that event, rather than a determinant of its interpretation”.

In similar lines with Borer (2005b), I will defend the view that ***the only structure which is relevant for the projection and interpretation of arguments is aktionsart structure. Hence, the syntactically relevant argument roles are those which are aspectually relevant*** (Tenny 1987, 1994, cited in Borer 2005b: 48). Put differently, ***it is aspect, calculated on the basis of syntactic structure, which finally determines argument structure***. Such a close relationship between aspect and argument structure is further supported by the data in (57).

(57) Argument structure and aktionsart (Borer 2005b: 47-48)

- a. A quantity direct object⁴⁷ → telicity
- e.g. *He ran the mile in five minutes.*

⁴⁷ Quantity here refers to Verkuyl's (1972) 'specific quantity of A', which is an aspectually relevant property needed for the emergence of telicity and usually sought within the domain of quantification. For Borer (2005a,b) bare mass nouns and bare plurals fail to denote quantities since they are homogeneous (see Krifka 1989a). The quantity–non-quantity distinction within the nominal domain corresponds to the telicity–atelicity distinction in the event domain. Thus, telic events denote quantities since they involve quantification over divisions in contrast to atelic events which are homogeneous, where homogeneity is understood in Borer (2005a,b) in a very specific structural sense—the failure to project QP (#P). For Borer a predicate P is homogeneous iff P is cumulative and divisive, and P is quantity iff P is not homogeneous (not cumulative and not divisive). In the nominal domain, quantity is realized as syntactic structure #P whereas in the aspectual domain quantity is realized as a functional head dominating an open value in need of range assignment.

- (i) Non-quantity (homogeneous) structures (#P does not project) (from Borer 2005b: 74)
 - a. determinerless mass: [_{DP} <e>_d [_{NP} salt]]
 - b. determinerless plural: [_{DP} <e>_d [_{CL} dog [_{NP} ~~dog~~]]]
- (ii) Quantity (non-homogeneous) structures (#P always projects) (from Borer 2005b: 74)
 - a. quantity indefinite mass: [_{DP} <e>_d [_{#P} Q <e>_# [_{NP} salt]]]
 - b. quantity indefinite plurals: [_{DP} <e>_d [_{#P} Q <e>_# [_{CL} dog [_{NP} ~~dog~~]]]
 - c. quantity indefinite singular: [_{DP} <e>_d [_{#P} a <e>_# [_{NP} dog]]]
 - d. definite mass: [_{DP} the <e>_d [_{#P} ~~the~~ <e>_# [_{NP} salt]]]
 - e. definite plurals: [_{DP} the <e>_d [_{#P} ~~the~~ <e>_# [_{CL} dogs [_{NP} ~~dog~~]]]
 - f. definite singular: [_{DP} the <e>_d [_{#P} ~~the~~ <e>_# [_{CL} ~~the~~ [_{NP} dog]]]

- b. A cognate object → telicity
e.g. *He sang a ballad in five minutes.*
- c. The X's way construction → telicity
e.g. *He sang his way to the Met in five minutes.*
- d. A fake reflexive → telicity
e.g. *He sang himself to sleep in ten minutes.*
- e. An exceptional case marked object (in resultative constructions) → telicity
e.g. *He ran us ragged in an hour.*
- f. Verb-particle constructions → telicity
e.g. *He thought an answer up in five minutes.*
- g. The conative alternation → atelicity⁴⁸
e.g. *He ate at the cake for ten minutes.*

All of the data above suggest that argument structure cannot be derived from the lexical entry itself, nor can the relation between structure and argument interpretation be mediated through a head selecting the arguments as in UTAH (Baker 1988). The fact that adjectival passives are syntactically unergative with no implicit external argument (cf. *droppable* vs. *dropped*) confirms such a view where the arguments of a single listeme 'drop', which is devoid of any syntactic information, obtain various interpretation depending on the syntactic context in which the listeme is merged.

(58) The universally fixed event roles (e.g. 'drop')

- a. [_{FP1} [subj-of-change] <e>_{F1} [_{VP} [_V drop]]] unaccusative
- b. [_{FP2} [subj-of-process] <e>_{F2} [_{VP} [_V drop]]] unergative
- c. [_{FP2} [subj-of-process] <e>_{F2} [_{FP1} [subj-of-change] <e>_{F1} [_{VP} [_V drop]]]] transitive
- d. [_{DP}...<e>_d [_{NP} [_N drop]]] noun

⁴⁸ Atelic structures also arise in the presence of a mass noun or a bare plural noun, or when the internal argument is in partitive case (in contrast to telicizing accusative case) in languages like Finnish (Rosen 1999).

e. [_{FP3} [subj-of-state] <e>_{F3} [_{AP} [_A drop (-AFFIX)]]] adjeptive
(functional + morphological structure)

Regarding (58) Borer (2005b) assumes that when a listeme such as 'drop' is merged within a given functional structure, it receives various interpretations according to this precise structure. To exemplify, 'drop' within a nominalizing structure (58d) has no arguments since this structure does not license neither internal nor external arguments. This reminds us of the semi-Davidsonian approach in Kratzer (1994b, 1996) according to which it is not the verb which assigns external arguments but a functional projection above VP, i.e. VoiceP. However, for Borer's (2005b) neo-Davidsonian approach, not only external arguments but also the internal ones are licensed by functional structure. Thus, the two direct arguments in her approach, the Originator (i.e., the external argument) and the subject-of-quantity (i.e., the internal argument for telic predicates), are computed on the basis of their corresponding functional structure. The Originator argument role emerges in the context of Event Phrase (EP) whereas the subject-of-quantity argument emerges when Asp_QP (Aspectual Quantity Phrase) projects. Crucially, note that ***it is not the structure itself which assigns the roles; rather, these roles are assigned as an entailment of that structure*** (Borer 2005b: 64). Further details on this topic will be presented in chapter 5, section 5.1.

In lines with Van Valin and Dowty, according to whom aktionsart is the relevant domain of event structure and argument structure characterization, and Tenny who claims that thematic roles should be substituted for aspectual roles, I follow Borer (2005b) and assume that the ***different aktionsart values arise due to distinct structural configurations with which they are associated***. In other words, ***inner aspect is not a property of verbs but of specific universal formal structures***. Consequently, the 'agent'/'non-agent' roles associated with arguments are an entailment of the aktionsart of the whole event. Therefore, only the aspectually relevant argument roles are syntactically represented. As a consequence, only the direct arguments bare a relationship with the event (not the verb) where the verb itself is a modifier of that event, rather than a determinant of its interpretation (Borer 2005b: 46). Note that this is due

to the fact that these arguments occupy the specifier position of the relevant functional node where this position is dedicated to the computation of event structure. I will also defend such a view in my investigation.

Evidence for the close relationship between aktionsart and argument structure has already been presented in (57) above. ***As for Bulgarian, I will show that the presence of a perfectivizing prefix gives rise to a telic event and may impose certain restrictions on the interpretation and projection of arguments.***

We have also seen that within Borer's (2005b) approach the basic atoms with which functional structure operates are listemes which contain a unique phonological index and conceptual package, devoid of any grammatical marking (be it morphological or syntactic), i.e. devoid of any formal properties. ***Similarly, I will suggest that the primitives with which syntax operates are roots, again devoid of any formal properties. However, in the case of lexical prefixation, we have verbal stems, and not roots, which may enter syntax for further manipulation.***

A question arises with respect to the status of listemes (else, roots), which relates to whether or not these elements should be phonologically specified before they enter syntax or not. In this respect, it is important to observe that within Borer's approach, though *prima facie* very similar in spirit to the Distributed Morphology view (Halle & Marantz 1993), listemes should necessarily merge with their phonological indexes, i.e. bearing phonological content, in order to prevent a possible erroneous derivation of 'show' from 'see', for example. In contrast to Borer (2005b), however, the DM framework assumes syntactic terminals to be provided with phonological expression only in the mapping to PF, known as Late Insertion, implying that syntactic categories have no phonological content before Spell-Out; it is only after syntax, i.e. when Spell-Out applies, that syntactic categories become phonological expressions called vocabulary items. Regarding this, I follow Borer (2005b) and assume that roots enter syntax with a phonological content

though I will not discuss this issue in details.

TO SUM UP, I adopt Borer's (2005b) syntactic approach according to which both event structure and argument interpretation are based on syntactic structure. Furthermore, the semantics of event structure is read off the syntax of functional structure where all arguments are finally reduced to event participants (e.g. the external argument is the Originator; the internal argument is subject-of-quantity for telic predicates). I further assume, together with Borer (2005b), that the formal (morphological or syntactic) structural configurations give rise to syntactic category, argument structure configurations and morphological derivations. However, there are some assumptions made in Borer (2005b) which turn out to be problematic when dealing with Bulgarian. The majority of these assumptions are related to inner aspect which I address in chapter 5, section 5.1. For the time being it just suffices to bear in mind one particular objection, namely, the status of double marking.

Regarding double marking, Borer (2005b) assumes that once we assign range to a given open value (e.g. $[\text{AspQ} \langle e \rangle_{\#}]$, the head of $\text{Asp}_{\text{QUANTITY}}\text{P}$, which is present in telic structures), then the event is marked as telic and further valuation should be blocked. However, multiple prefixation, which consists of assigning a value to $[\text{AspQ} \langle e \rangle_{\#}]$ more than once, is a common phenomenon in Slavic, suggesting that the problem of double perfectivity still remains an open issue in need of explanation within Borer's approach. In order to avoid this problem, I will propose that ***Slavic prefixes are best treated not as head features but as bound f-morphs projecting independently along the functional hierarchy of aspectual features of Cinque (1999)***, a possibility already hinted at in Borer (2005b).

(59) On double marking: Borer (2005b: 157, fn. 5):

“One prefix may be incorporated adverb or a preposition which is not associated with range assignment at all. Alternatively, functional structures may be considered more expansive with outer prefixes indicating the existence of some additional open value above AspQ in need of range assignment.”

For further critical observations, see chapter 5, section 5.1.

An important question which remains to be answered is whether the class of idioms can be narrowed down, which, if answered positively, would additionally imply that there is more articulated functional structure. Borer (2005b) treats achievements as idioms because they are more specified than normal listemes due to the requirement that Asp_Q project in their presence. In this way, we explain the telic character of such verbs. To exemplify, the verbs ‘notice’ and ‘find’ are idioms with a phonologically unrealized locative (LOC) which assigns range to Asp_Q (and possibly also to $\langle e \rangle_E$, the open value heading the Event Phrase). As for the predicates ‘discover’, ‘find’ and ‘spot’, they may sometimes incorporate a LOC/Σ and thus be idioms, or not. Since I adopt Cinque’s (1999) articulated hierarchy of aspectual features one may be led to assume that some verbs treated as idioms in Borer (2005b) are syntactically decomposable. Thus, ‘discover’, for example, will consist of a lexical (idiosyncratic) prefix together with a root (e.g. *DIS-cover*), something which also holds for the Bulgarian representative of ‘find’ (*NA-merja*) which incorporates a lexical prefix as well. However, we will see that there are some verbs in Bulgarian, called primary perfectives, which do not contain a prefix but are perfective and hence telic. Therefore, the only way to analyze such verbs is to consider them a kind of idioms which, in the same way as English achievements, will only appear within a quantity (telic) structure. Therefore, we are led to conclude ***that we cannot completely get rid of idioms cross-linguistically.***

Other elements treated as idioms in Borer (2005b) are: (i) verbs with hidden existential/locative operator (e.g. ‘arrive’), (ii) idiomatic expressions like ‘kick the bucket’; (iii) phrasal verbs (e.g. ‘take over’); (iv) *pluralia tantum* nouns (e.g. ‘trousers’); (v) obligatory transitive verbs (since they require an objective open value, $\langle e \rangle$, correlating with either Asp_QP or F^sP)⁴⁹; (vi) verbs with obligatory sentential complements, etc. Such elements are often claimed to be costly (and marked) because they get their meaning from an already structured phonological material which results in a tension between complex

⁴⁹ F^sP , Functional Shell Phrase, is the projection present within atelic transitive structure (e.g. *push the cart*). It stands in complementary distribution with Asp_QP , the projection responsible for quantity (telic) structures.

syntactic structure and non-compositional semantics. However, I will not discuss this kind of idioms here and will just abide to [prefix + Verb] idiosyncrasies or to primary perfective (i.e. bare, or unprefixed telic) verbal idioms.

TO SUMMARIZE, the general theoretical framework adopted in this study is the Minimalist program (Chomsky 1993, 1995). There are two central issues which will be examined in this thesis: the codification of inner aspect, which will have significant consequences on the language variation issue, and the relationship between syntax and morphology.

Regarding the morpho-syntactic issue, I adopt a syntactic view to morphology as in the Distributed Morphology framework (Halle & Marantz 1993, Marantz 1997, 2001, Harley & Noyer 1998), Baker (1985) and Borer (2005b), and assume that there is only one generative component, syntax, and that morphological constituents are accessible to syntax. I further assume, following DM and Borer (2005b), that ***functional morphemes (be they free or bound), by virtue of their functional features, project in syntax as functional heads, thus categorizing the category neutral roots they have under their scope***. The combination of a root and a categorizing morpheme is achieved by the help of the basic syntactic operations of Merge and Move, in the light of minimalism. ***Bearing in mind that functional features are ordered along a fixed hierarchy of (aspectual) projections (Cinque 1999), it will follow that the linearization of morphemes is syntax-driven and determined by the properties of the functional structure itself, which is, in turn, universally given*** (Cinque 1999, Borer 2005b). A similar analysis is offered in Baker (1985) according to whom words are also formed in syntax, which implies that ***all morphemes will be ordered in a way which directly reflects the order of their underlying functional heads***. Since functional heads are invariantly ordered cross-linguistically, so will be the overt morphological realizations of these heads, i.e. the proper morphemes.

My treatment of affixation phenomena will heavily rely on the assumptions made in Baker (1985) and Cinque (1999). ***I therefore assume that the order of affixes does***

not follow from principles external to morphology proper such as semantic scope (see Rice 2000), but rather from the order of syntactic operations (Baker 1985) and the linearization of the functional projections themselves (Cinque 1999).

Significantly, it is not only the surface order, but the meaning obtained for the derived structure as well that can be anticipated on syntactic grounds (Borer 2005b). Related to this issue is also the status of argument structure within such a theory as I am proposing here. In this respect, I follow Borer (2005b) and assume that both event structure and argument interpretation are based on syntactic structure, and that the syntactically relevant argument roles are those which are aspectually relevant (Tenny 1987, 1994, cited in Borer 2005b: 48). Put differently, it is aspect, calculated on the basis of syntactic structure, which finally determines argument structure. It then follows that the semantics of event structure is read off the syntax of functional structure where all arguments are finally reduced to event participants (e.g. the external argument is the Originator; the internal argument is subject-of-quantity for telic predicates). In other words, ***the formal (morphological or syntactic) structural configurations give rise not only to syntactic category and morphological derivations but also to argument structure configurations.***

Regarding inner aspect, I will propose that whether a predicate is telic or atelic depends on the way the unvalued feature of the head of a universally available functional projection AspP is being checked, i.e. valued. This unvalued feature on the Probe Asp^o searches for a matching interpretable feature set on an appropriate Goal in its surrounding environment. Once the Goal is discovered, an Agree relation between the Probe and the Goal is established and Asp^o is successfully valued. As a consequence, inner aspect is calculated. Put in Borer's terms, Asp^o represents an open value in need of range assignment. Once the range assigner to <e>_{ASP} is merged, it assigns value to Asp^o and inner aspect is determined in relation to that value. As for the available devices for Asp valuation, i.e. the range assigners to Asp^o, they are language specific (see chapter 5).

Note that my postulation of a universal AspP in relation to which inner aspect is computed, together with the claim that the features of the Goal determine aspect, is apparently contradictory with Borer's (2005b) assumption that it is the construction itself which determines aspect. However, as I will suggest in chapter 5, section 5.3, there are language-specific elements like prefixes in Bulgarian or particles in English which require the projection of certain structure (quantity-telic structure in Borer 2005b), and thus determine the final interpretation of a predicate with respect to that structure, as proposed in Borer (2005b). In other words, if we take functional features to project to syntax under certain structural configurations (particles as heads of Asp_QP), then we may assimilate construction-based approaches to inner aspect with feature-based approaches, thus obtaining the same results and avoiding contradictions. See chapter 5, section 5.3 for further details.

Before I proceed to the following chapter, let me mention some final observations regarding language variation.

2.6. On language variation

The study of language variation has been dedicated great attention in the past years. Interest in the locus of variability increased, making the topic of variation an extremely productive research area for linguists, biolinguists, and sociolinguists.

The consciousness of the existence of variation in language dates back from early on, documented by Sapir's (1921: 147) observation that "everyone knows that language is variable" (taken from Wolfram 2006). However, little advances have been achieved on the issue until the past half century, a panorama best reflected by Wolfram's words:

(60) Variation: Wolfram (2006: 333)

“Notwithstanding the pervasive nature of variability in language, it has often been disregarded or dismissed as tangential to the description of structural patterning and irrelevant to the study of linguistic competence. In fact, it was not until the advent of sociolinguistics a half-century ago that the admission of language variation became more than a footnote to linguistic description. The study of language variation is now one of the most rapidly expanding subfields of linguistics with a well-established cohort of researchers, regular conferences, and scholarly journals, but its status is still somewhat marginal within theoretical linguistics, notwithstanding the insistence of William Labov that the study of language variation is central to the solution of fundamental problems in linguistic theory (e.g. Labov 1966, 2001)”.

It turns out, as Boeckx (2011) notes, that what we know about language variation nowadays is not that different from what we knew about variation some time ago. This state of affairs underlines the following Darwin’s words:

(61) Darwin (1859[1964]: 167), taken from Boeckx (2011):

“Our ignorance of the laws of variation is profound”

In the attempts to explain language variation, many formulations and reformulations have been postulated, which I briefly discuss in what follows.

2.6.1. From P&P to MP

The interest to explore the universal and language-specific aspects of the languages of the world originates from the very beginning of language study. Under the P&P approach within the Government and Binding framework, for example, UG was considered to contain universal principles, which all languages shared, and parameters that accounted for the observed cross-linguistic mismatches. The latter were viewed as open values of the former, which had to be fixed according to the linguistic input the child received as she acquired the particular language. Such a parametric syntax view is depicted in (62).

(62) Chomsky (1981: 6) (taken from Boeckx (2011)):

“[i]deally, we hope to find that complexes of properties...are reducible to a single parameter, fixed in one way or another”

However, as Boeckx (2011) observes, the P&P expectations on language variation failed on empirical grounds, inasmuch as Government and Binding (GB) theorists discovered a great amount of variation points which had minor repercussions (i.e. micro-parameters) instead of few macro-parameters. Furthermore, the postulation of parameters, else, parametrized principles, as part of UG is problematic since it overspecifies UG, on the one hand, and predicts that a child has to choose just one among the many possible languages that UG supports, on the other hand.

With these considerations in mind, the minimalist program gets rid of the notion of the GB parametrized principles, which is consequently led to the maximum in Chomsky (2007).

(63) Chomsky (2007: 3):

“Throughout the modern history of generative grammar, the problem of determining the character of FL has been approached “from top down”: How much must be attributed to UG to account for language acquisition? The M[inimalist] P[rogram] seeks to approach the problem “from bottom up”: How little can be attributed to UG while still accounting for the variety of I-languages attained?”

For Chomsky (2007), the best way to determine the character of FL is adopting the strong minimalist thesis (SMT), which assumes FL to be perfectly designed. In this way, UG turns out to represent “*what remains when the gap [between SMT and the true nature of FL] has been reduced to the minimum, when all third effects have been identified*”. It then follows that “*UG consists of the mechanisms specific to FL, arising somehow in the course of the evolution of language*” (see Chomsky 2007: 3). To exemplify, UG must contain:

(64) a. An operation that takes structures already formed and combines them into new structures: (unbounded) Merge

b. Atomic elements, i.e. lexical items, which are complex objects, a “structured array

of properties (*features*) to which Merge and other operations apply to form expressions” (Chomsky 2007: 4).

- c. Principles that map external data to linguistic experience, which permits acquisition to take place

This new minimalist perspective on language fostered the minimalist fever for a universal, non-parametric syntax, which is best reflected by Boeckx’ (2011) version (66) of the Uniformity Hypothesis of Chomsky (65).

(65) The Uniformity Hypothesis (Chomsky 2001: 2):

“In the absence of compelling evidence to the contrary, assume languages to be uniform, with variety restricted to easily detectable properties of utterances”.

(66) Strong Uniformity Hypothesis (Boeckx 2011)

“Principles of narrow syntax are not subject to parametrization; nor are they affected by lexical parameters”

In this thesis, I follow Boeckx (2011) and assume that narrow syntax is not subject to variation, be it parametric or not. Thus, if we take minimalism seriously, syntax is cross-linguistically uniform and “*at the heart of the faculty of language, underlying all languages*”, as Boeckx claims. Language variation should therefore be restricted to the morpho-phonological component (PF), and principles of efficient computation can in no way be parametrized (e.g. we cannot assume that the principle of Shortest Move is operative in some languages but not in others). The underlying reason for such a strong anti-parametric stand is clearly stated in Boeckx (2011):

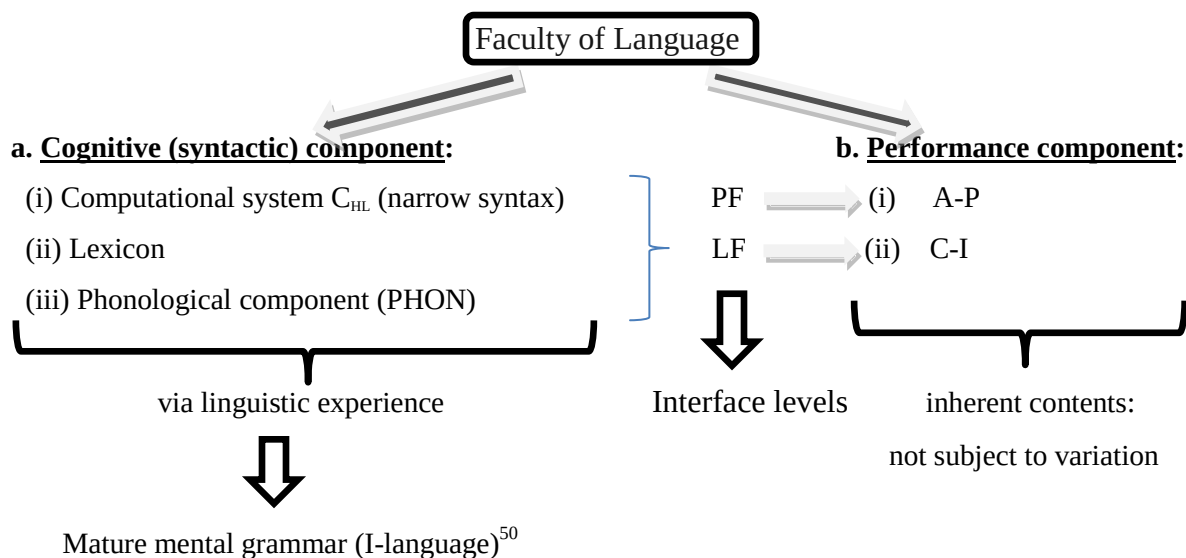
(67) Boeckx (2011):

“Put differently, if minimalist research is on the right track, there can be no parameters within the statements of the general principles that shape natural language syntax. In other words, narrow syntax solves interface design specifications optimally in the same way in all languages (contra Baker 2006 and Fukui 2006). Modifying Marantz (1995: 380), minimalism can be seen as the end of parametric syntax. I believe that this conclusion is a natural consequence of the claim at the heart of the generative/biolinguistic enterprise that

there is only one language, Human, and that this organ/faculty emerged very recently in the species, too recently for multiple solutions to design specifications to have been explored”.

With these assumptions in mind, I assume that parameters do not belong to FL itself, but rather emerge as a consequence of the way FL meets certain optimal language design conditions (Chomsky 2008). In this respect, the relationship between FL and C-I is favored over the externalization of language via Spell-Out to the A-P system. It then follows that parameters appear in order to satisfy some properties of the language system imposed by the mapping to A-P. **Consequently, variation is restricted to the PF component of language inasmuch as the cognitive syntactic component of FL (68a) is uniform across languages, thus not subject to variation, as is also the second component of FL, the performance one (68b), whose contents are inherent and universal.** I schematize the general MP framework in (68).

(68) Components of the Faculty of Language



If we take these observations seriously, we can no longer sustain the claim, based on Chomsky (1995), that the reasons why some elements move overtly in some languages and covertly in others is due to the distinction between ‘strong’ and ‘weak’ (formal) features.

⁵⁰ I-language is considered a generative procedure generating an infinite set of structural descriptions

Rather, it will be at the PF component, and adopting a copy theory of movement (Corver & Nunes 2007), where elements will be either realized in their base position (thus giving the illusion of not moving) or in the one in which they move (thus violating Procrastinate).⁵¹

All things being equal, I assume that feature strength is not an element of language variation.

Turning back to the claim that the operations internal to narrow syntax are designed in order to serve the needs of the C-I performance component (e.g. elimination of uninterpretable features) and not those of A-P, we are led to conclude with Chomsky (2008) that the mapping from syntax to semantics is favored over the mapping from syntax to phonology, and that there is, as a consequence, a significant difference between variation at the interface levels. I dedicate some notes on this issue in what follows.

2.6.1.1. Variation at the interface levels

Following Chomsky (2007, 2008) I assume that there is a difference between LF and PF inasmuch as the former is uniform across languages and devoid of idiosyncrasies in contrast to the latter.

(69) a. On externalization: Chomsky (2008: 9-10):

“Externalization is not a simple task. It has to relate two quite different systems: one is a sensorymotor system that appears to have been basically intact for hundreds of thousands of years; the second one is a newly emerged computational system for thought, which is perfect, insofar as the strong minimalist thesis is correct. We would expect then that

⁵¹ The copy theory of movement (Chomsky 1993) gets rid of the notion of traces and assumes that a moved element leaves behind a copy of itself, rather than a trace. Thus, a trace becomes a copy of a moved element which, in the case of overt movement, will be deleted at PF but still available for interpretation at LF. Such a theoretical move is driven by the Inclusiveness Condition (Chomsky 1995) according to which the output of a system cannot contain anything beyond its input, i.e. the machinery of syntax (C_{HL}) does not introduce any new features that are not already contained in the lexical items. In this way, syntax may only rearrange elements but not create new objects such as traces or indices left after movement. For details on the issue, see Corver & Nunes (2007).

morphology and phonology – the linguistic processes that convert internal syntactic objects to the entities accessible to the sensorymotor system – might turn out to be quite intricate, varied, and subject to accidental historical events. Parameterization and diversity, then, would be mostly – maybe entirely – restricted to externalization. That is pretty much what we seem to find: a computational system efficiently generating expressions that provide the language of thought, and complex and highly varied modes of externalization, which, furthermore, are readily susceptible to historical change”.

b. Chomsky (2007: 10):

“Various considerations, then, seem to converge rather plausibly on the conclusion that language may be optimized relative to the CI interface, with mapping to SM an ancillary procedure, and complex to the extent that SM has no prior adaptation to these needs. Insofar as SMT holds, generation of structures mapped to CI will be optimal for the CI interface and common to languages apart from parametric and lexical choices (phenomena that require explanation), while phonology, morphology, and whatever else is involved in externalization might be variable and complex and subject to large-scale historical accident, satisfying the linking condition in ways that are as good as possible. That is not a bad first approximation to what the study of language seems to yield. It is why, for example, Otto Jespersen felt that universal syntax might exist, while “no one ever dreamed of a universal morphology.”

This state of affairs is also depicted in Boeckx (2011):

(70) PF versus LF (Boeckx 2011):

“In other words, narrow syntax is optimally designed to meet demands from the meaning side, and externalization (PF) is akin to an afterthought, or appendix. Since variation clearly exists on the sound/sign side (an unavoidable consequence of the fact that this is the aspect of language that is used for communication and learning, and communication/imitation/reproduction is a more or less, imperfect affair), but no evidence exists that it is found at the meaning side, it is not implausible to think of narrow syntax as completely uniform (meeting LF demands), and not affected (design wise) or adapted to cope with or code for variation in the disguise of (syntactic) parameters. To put it differently, the LF/PF-asymmetry naturally leads one to expect a uniform narrow syntax, designed to meet the uniform demands at the meaning side in an optimal fashion”.

With all these assumptions in mind, we expect that syntactic computation does not crosslinguistically vary in its basic and essential properties. Variation is not to be expected at the way structure is represented either, since the structural representation of Θ -roles has been shown to be uniform across languages. Thus, agents are typically associated with [Spec, VP], themes or patients with complement to V, and so on (see Chomsky 1995: 61). At every level, complements are Θ -positions, Θ -marked the same way at each level, obeying The Projection Principle (see Chomsky 1995: 54). This kind of approach is what underlines Borer's theoretical agenda, and I adopt it here. Therefore, following a narrow theory of parametric variation of the sort just discussed, languages should differ in properties of functional features (Chomsky 1995: 69), which implies that the locus of variation is the formal-morphological features of the lexicon (Chomsky 1995: 222).

(71) (Chomsky 1995: 192)

“Furthermore, parametric differences must be reduced to morphological properties if the Minimalist Program is framed in terms so far assumed. There are strong reasons to suspect that LF conditions are not relevant. We expect languages to be very similar at the LF level, differing only as a reflex of properties detectable at PF; the reasons basically reduce to considerations of learnability. Thus, we expect that at the LF level there will be no differences between languages with phrases overtly raised or in situ (e.g., *wh*-phrases or verbs). Hence, we are led to seek morphological properties that are reflected at PF”.

In fact, there is a general consensus regarding the nature of the UG parameters under minimalist assumptions, which is basically related to the postulation and manipulation of features. And this is the only possible way in which narrow syntax can be affected. Bearing these observations in mind, I follow Boeckx and assume that “*all languages make use of the same pool of features, and that one of the ways in which languages differ is how they express the relevant feature F* ”. Thus, following Fortuny (2008) and Gallego (2008), Boeckx concludes that “*languages may choose to express f_1 and f_2 separately (analytically) or as a bundle (syncretically)*”. Treating lexical parameters in such terms is desirable from a minimalist viewpoint inasmuch as narrow syntax remains the same, independently of whether f_1 and f_2 form a bundle or not.

Following the lines of thought presented above, I consider variation to be a post-syntactic morpho-phonological phenomenon. It is precisely at Spell-Out, where syntactic structures become linearized, that the main points of variation discussed in the literature take place (e.g. whether a specifier is overtly expressed, whether the head or the tail of a chain is pronounced, whether a head is affixal and requires the presence of another head, etc.). Importantly, such a view of variation as a result of externalization considerations is also supported by the minimalist, essentially biolinguistic treatment of the way language is designed. I turn to this issue in what follows.

2.6.1.2. Language-design factors and variation

According to Chomsky (2007: 2), there are three factors which determine language design:

- (72) a. 1st factor: genetic endowment: sets limits on the attainable languages, thus making acquisition possible
b. 2nd factor: the environment: external data, converted to the experience that selects one language or another within a narrow range
c. 3rd factor: generic good design principles transcending the limits of genetics: principles not specific to FL, such as efficient computation

The first factor, genetic endowment, is what makes it possible for humans to interpret part of the environment as linguistic experience. The second factor is related to our experience, and is assumed to lead to variation, though within a fairly narrow range, as in the case of other subsystems of the human capacity and the organism generally. Finally, third factor principles are those not specific to FL such as principles of data analysis that might be used in language acquisition and other domains, or principles of structural architecture and developmental constraints, including principles of efficient computation (see Chomsky 2005b: 6).

Variation from the point of view of these factors has been discussed in various works. To exemplify, Yang (2010) applies these factors to language acquisition making the following assumptions:

(73) Yang (2010)

- a. **Variation based on 1st factor principles:** *“The child’s task is one of selection from a narrow range of options (e.g., parameter values, constraint rankings) that are realized in her linguistic environment”.*⁵²
- b. **Variation based on 2nd factor effects, i.e. experience:** *“This type of variation can be identified with the periphery of the language faculty (Chomsky, 1981: 8): ‘marked elements and constructions’, including ‘borrowing, historical residues, inventions’ and other idiosyncrasies. The child’s task, as we shall see, is one of evaluation: decision making processes that determine the scope of inductive generalizations based on the input yet still ‘within a fairly narrow range’.*
- c. **Variation based on 3rd factor principles:** language variation can also abide at least certain principles not specific to the faculty of language: *“The acquisition of the periphery system [...] reflects general principles of efficient computation which manipulate linguistic structures so as to optimize the time course of online processing, very much in the spirit of the evaluation measure in the earlier studies of generative grammar (Chomsky, 1965; Chomsky and Halle, 1968). Both types of learning mechanisms show sensitivity to certain statistical properties of the linguistic data that have been largely ignored in works that ask too much of Universal Grammar but would be difficult to capture under approaches that rely solely on experience”.*

As we will see, ***second factor principles will be significant for some proposals made in this work. To exemplify, when dealing with borrowings, which belong to the biaspectual paradigm of Bulgarian, we will see that the child evaluates the input data she receives, making inductive generalizations. This further permits the child to adopt specific word-formation devices in accordance with the generalizations already formed and thus overcome certain***

⁵² Evidence for the genetic endowment of language comes from the “fixed range of linguistic options, some of which are not present in the input data, but which the child nevertheless spontaneously accesses and gradually eliminates during the course of acquisition” (Yang 2010).

communicative obstacles. To give an example, the child, being aware of the productive –ira verbalization process active within the biaspectual non-native paradigm of Bulgarian where productive loan (–ira) formations are produced, adopts this strategy when necessary in order to get the message through. Thus, a child dominating a foreign language often selects a loan root (e.g. *print*) if access to the native root (*pechatam* 'print') is momentary unavailable, which is then verbalized by –ira and thus made native-like (e.g. *print–iram* 'to print'). In cases like this, we may regard –ira suffixation as a tendency for which the child opts in order to both overcome communication obstacles and at the same time maximize the similarities across systems (e.g. standard Bulgarian and biaspectual Bulgarian paradigms), consequently harmonizing conflicting parametric values (–ira verbs are always biaspectual in contrast to standard verbs which are either telic or atelic). As a result, the child also economizes what she is to memorize (e.g. instead of memorizing the standard Bulgarian verb *pechatam* 'print', an already known foreign root *print* is used and consequently nativized via –ira suffixation). ***This also reflects the fact that the child strives for parametric value consistency, which is an economy principle in itself*** (e.g. the Superset bias, Boeckx 2011).

The three language-design factors mentioned above are, in fact, are at the core of the minimalist investigations. Taking into account the recent development of the human capacity for language, minimalist theorists conclude that variation arises where second factors play a role, i.e. at externalization. This is nicely summarized in Boeckx (2011):

(74) Boeckx (2011):

“Darwin’s Problem (the logical problem of language evolution) becomes very hard to approach if a GB-style architecture is assumed. [...] If very little about language is specified genetically, and much of the core of language (narrow syntax) is the result of 3rd factor effects, variation emerges as the direct result of underspecification. It is because so little is specified about language in the genome that the varied, and ever-changing environment gives us variation in the externalized aspects of language. To take an obvious example, it is because Merge is symmetric that both head-first and head-last are possible options. [...] Variation [...] arises exactly where we expect it: not where 3rd factors reign (narrow syntax), but where the 2nd factor plays a prominent role (externalization)”.

Furthermore, and more relevant to the topic of this thesis, is the proposal that linearization is also a result of the mapping to the sensory-motor (SM) system (else, A-P). ***The overall idea is that syntactic structures are mapped onto linear phonetic strings based on dominance relations, i.e. c-command.*** This assumption is reflected by Kayne's (1994) Linear Correspondence Axiom (LCA) according to which there is a direct mapping between syntactic structure and linear order. This linearization aims at explaining the following tendency:

(75) If α asymmetrically c-commands β , then α precedes β .

The relevance of c-command to narrow syntax and the mapping to C-I have been extensively discussed, where scope relations are treated as instances of c-command. The general tendency, therefore, is that ***at the A-P (else, sensory-motor) side, c-command determines linearization***, as already suggested in Kayne (1994), and further developed in Chomsky (2007, 2008):

(76) On linearization: Chomsky (2007: 7)⁵³

“At the SM side, the idea that the broader notion of c-command determines linearization is the core principle of Kayne's LCA and the very fruitful work it has inspired, and if the foregoing is correct, LCA can plausibly be interpreted as part of the mapping to SM. That requires some device to deal with ordering of Merged LIs, either (as in Kayne's work) a further elaboration of Merge and c-command to allow non-branching nodes, or some other departure from SMT, non-trivial it appears”.

(77) On linearization: Chomsky (2008: 6)

“there is now substantial evidence that ordering is restricted to the externalization of internal computation to the sensorymotor system, and plays no role in core syntax and semantics”

Linearization is seen as a matter of externalization to SM (i.e. A-P), that is, as a PF

⁵³ Another possible way to explain linearization is within a parsing account for properties of ordering, as has been argued for rightward displacement of complex phrases (Chomsky 2007: 7).

phenomenon, driven by the narrow syntactic notion of c-command. In this respect, it should be noted that apart from ordering, c-command is also responsible for quantification phenomenon, where operator-variable chains are viewed as obeying an underlying c-command relation:

(78) C-command and quantification: Chomsky (2007: 8):

“CI clearly permits interpretation of quantification in some manner. Language should provide such a device if expressive potential is to be adequately utilized. There are various logically equivalent devices, among them variable-free logics. The most familiar notation is operator-variable constructions. But that device virtually comes free, given EM and IM expressing the duality of semantics imposed by CI – which may well be why it is the most commonly used formal device, and the easiest to learn. In the simplest case, the copy merged to the edge by IM is the operator taking scope over the copy that had previously been merged by EM, the latter understood as the variable”

I will adopt such a view to quantification where we will see that structurally higher prefixes both precede in linear order the structurally lower prefixes and take scope over them, thereby confirming our previous assumptions on linearization and quantification.

Now I discuss the basic ideas on variation which I adopt from Borer’s neo-constructionist approach.

2.6.2. The neo-constructionist perspective

A similar treatment of variation as the one discussed above is what lies at the core of the whole of Borer’s theoretical agenda from its very beginning as well:

(79) Borer (1984: 3):

“[...] variation [is restricted] to the possibilities which are offered by one single component: the inflectional component”

Based on this assumption, the theoretical approach of Borer (2005a,b) has strong

predictions on language variation. For Borer, ***variation is related to the morpho-phonological properties of grammatical formatives*** and not to syntactic structures or the semantics of grammatical formatives (Borer 2005b: 15). Since the functional hierarchy associated with grammar is uniform across languages, as are the functional category labels associated with the functional open values (e.g. $\langle e \rangle_d$, $[\text{Asp}_Q \langle e \rangle_\#]$, etc.), which in turn require the projection of the corresponding functional phrases (e.g. DP, Asp_QP , etc.), then ***variation within the functional domain can only be attributed to the mode in which such open values are assigned range***. Thus, a macro-parametric explanation to language variation is excluded where the acquisition of syntax and of the phonological properties of the grammatical formatives are consolidated. Such a task is indeed simplified since phonological representations are language specific and must be learnt on the basis of exposure in any case (see Borer 2005b: 344). Though the grammatical computational operations are universal, the applicability of grammatical principles can only be constrained by the (morpho-)phonology of the grammatical formatives of the given language.

Note that such a view to variation is also compatible with Cinque's (1999) hierarchy of functional projections. I follow Borer (2005b) and assume that functional eventive structure determines both semantics and argument structure, on the one hand, and that aspectual features are hierarchically ordered along a fixed hierarchy of projections made available by UG, on the other hand. This is arguably uniform across languages.

Before I close this chapter, I would like to briefly comment on one question which has remained unmentioned. This has to do with the constant claim that the lexicon is one possible candidate for hosting parameters and therefore a locus of variation, inasmuch as idiosyncrasies take place there (Chomsky 1995). In fact, it has been long assumed that language variation is restricted to the properties of the lexicon, rather than that of the computational system. In particular, it is concerned with the features of the functional elements of this lexicon like the N-feature and V-feature of Tense (T). These features are optionally either *strong* or *weak*, where strong features are visible at PF if unchecked (and

so must be checked and eliminated before Spell-Out to avoid the presence of illegitimate, uninterpretable objects at PF) and weak features are invisible at PF even if unchecked. The word order of a particular language has been thus explained as a consequence of the strength of the features of the functional categories. However, we have already mentioned that the distinction weak vs. strong is no longer sustainable within a minimalist framework, so this cannot be a possible way of accounting for variation. Furthermore, with the invention of l-syntax (lexical syntax, see Hale and Keyser 1993, 2002), it became clear that great part of the apparently chaotic lexical pre-syntactic component is highly restricted by principles of the post-syntactic area, the PF component. Such an intuition is adopted and further developed by DM theorists and neo-constructionists (Borer 2005a,b). Thus, the role of the lexicon in determining syntactic derivations has been reduced to the minimum and, parametric variation is considered a matter of morphology.

TO SUM UP, I follow a minimalist perspective on variation according to which languages vary at the externalization level, i.e. at PF. At LF, languages are uniform, as is the functional hierarchy associated with grammar. ***Therefore, variation can only be attributed to the morpho-phonological properties of grammatical formatives, and to the mode in which functional open values are assigned range, i.e. valued (Borer 2005b).*** Crucially, ***all languages have at their disposal a set of universal functional features which build into syntactic structure.*** It is on the basis of the feature configuration of the structure that interpretation and argument structure are computed. Following Cinque (1999), ***I assume these features to be ordered along a fixed universally available hierarchy of functional projections which forms part of UG.*** ***However, the materialization of these features, which takes place at PF, is language-specific and belongs to the morphology of the language, which is a domain of variation.*** To exemplify, there is a variety of functional aspectual values which are materialized in the form of a prefix in Bulgarian but via adverbs in languages like Spanish. Consequently, the surface order after Spell-Out may vary from one language to another, being subject to the specific morphological properties

of the relevant syntactic nodes, though the underlying syntactic structure is invariant.

As for the principles which justify Cinque's universal hierarchy of functional features, they cannot be second factor principles (73b) since the hierarchy is not subject to variation and is not determined by experience (i.e. the input). Hence, they are either first factor principles (73a), belonging to the genetic endowment of humans (e.g. UG principles), or third factor principles, which are principles not specific to FL such as efficient computation (73c). Note that claiming that these principles are part of UG is an oversimplification since it ultimately stipulates a property of UG; crucially, if we take minimalism seriously, we should derive stipulations from virtual conceptual necessity. Thus, I rather believe that the principles should be of the latter, third-factor type, probably related to principles of structural architecture and developmental constraints:

(80) Chomsky (2005b: 6):

"The third factor falls into several subtypes: (a) principles of data analysis that might be used in language acquisition and other domains; (b) principles of structural architecture and developmental constraints that enter into canalization, organic form, and action over a wide range, including principles of efficient computation, which would be expected to be of particular significance for computational systems such as language. It is the second of these subcategories that should be of particular significance in determining the nature of attainable languages."

However, what is the precise nature of these conditions remains to be understood. As Chomsky (2005b: 10) acknowledges, "...*these "external" conditions are only partially understood: we have to learn about the conditions that set the problem in the course of trying to solve it.*" I will make no firm claims regarding this issue but rather leave it for further investigation.

With the above considerations in mind, I will abandon the postulation of parameters of whatever kind. Such a stand is further supported by the problematic nature of parameter-setting itself as a model explaining language variation since it predicts that there would be no switching of a parameter once it is set by the child. However, Bulgarian children do

develop sensitivity to foreign word-formation devices that involve a different parameter setting, if we are to adopt such a terminology, where such a parameter setting is different from the native one. This, as we will see, is exemplified by the co-existence of two verbal systems in Bulgarian, the native (standard Slavic) one, and the foreign (borrowed) one, and the way inner aspect is codified within each such system. Importantly, a Bulgarian child is sensitive to both parameter settings, and often makes use of certain rules from one system and applies them to elements from the second system, implying thus that parameter setting is not a proper way of accounting for variation, nor its setting comes as a sudden choice which the child has to make on the basis of the input.

I now proceed to the role of aspectual affixation in Bulgarian and to introducing the standard and the biaspectual paradigms of this language, since these are of primary concern in this study.

CHAPTER 3: THE ASPECTUAL ROLE OF AFFIXATION IN BULGARIAN

This chapter offers some details on the way the Bulgarian aspectual system functions. I will explore the Bulgarian ‘standard’ aspectual paradigm, i.e. the paradigm which Bulgarian shares with the rest of the Slavic languages (§ 3.2.1), after which I will introduce the more unexplored and controversial topic of the Bulgarian biaspectual verbs (§ 3.2.2). Having once described the general scenario of aspectuality in Bulgarian, I will examine the aspectual contribution of prefixation in this language (§ 3.3) and propose a modified analysis of the Bulgarian prefixes based on semantic, morphological and syntactic factors. Finally, in section 3.4 I discuss the (aspectual) function of the Bulgarian suffixes with special attention to thematic vowels (§ 3.4.1) and the secondary imperfective suffix (§ 3.4.2). I close the chapter with some concluding remarks (§ 3.5).

3.1. Some notes on Aspect

When dealing with Aspect we should bear in mind that there are two major trends, the Slavic tradition and the Germanic (Western) view on aspect.

Slavic grammarians consider Aspect (Russian *vid*)¹ a grammatical category with two values—perfective and imperfective—which are manifested overtly, i.e. morphologically, in Slavic. Within the domain of grammatical Aspect, most Slavic verbs form aspectual triplets which consist of (i) a non-derived primary imperfective verb (e.g. Bulgarian *pisha* ‘write’

¹ As Mlynarczyk (2004) observes, *vid* was first used in Greč (1827) to refer to non-tense distinctions. Apart from *vid*, tenses were also separated from ‘aspects’ which referred to circumstances of the action. It was precisely this latter concept that facilitated the transfer of the concept of aspect to Germanic languages, where it came to be known as *Aktionsart*, a German term for ‘manner of action’.

(IMPF1)), (ii) a perfective verb derived from the former via some morphologically available device, most typically prefixation (e.g. *NA-pisha* 'write' (PF)), and (iii) a secondary imperfective verb derived from the perfective one via suffixation (e.g. $[[NA-pis]^{PF}-vam]$ 'write' (IMPF2)) (see Manova 2005: 239–243). The perfective verb and its secondary imperfective derivative (IMPF2) are viewed as two forms of the same verb which do not differ semantically. Hence, ***prefixes and suffixes are formal, morphological means for marking grammatical Aspect in Slavic.***

Apart from grammatical Aspect, we also have ***lexical aspect for which the German term 'Aktionsart' is used*** (the term originates in Brugmann 1904, cited in Mlynarczyk 2004), which literally means 'kind of action' (see fn. 1). In contrast to grammatical Aspect, which is often viewed as involving the (subjective) perspective from which the event is viewed (e.g. 'from the outside' as one indivisible whole for morphologically perfective verbs, or 'from the inside' as a process for imperfective verbs), Aktionsart is considered a property of the event since it describes the manner in which the event takes place and is thus more objective (see Mlynarczyk 2004: 57).

In fact, to distinguish between Aspect and Aktionsart was not an easy task, and various criteria, both semantic and morphological, have been proposed in the course of investigation in order to separate the two categories.² One of the most influential criterion used to distinguish Aspect from Aktionsart was the 'subjective/objective' distinction. The first scholar who explicitly distinguished Aspect and Aktionsart in Slavic was Agrell in 1908 for whom Aktionsart was a notion additional to the one of Aspect. Later, it was Isačenko (1962) who tried to distinguish between Aspect, Aktionsart, and 'Verbalcharacter' claiming that Aktionsart is derived by formal means whereas 'Verbalcharacter' refers to the lexical meaning of verb. This was how the basis of aspectology was set, which is best reflected in the words of Mlynarczyk (2004, chapter 2, p.5): "*Summing up, the work of Agrell marks a transition from aspectological 'prehistory' to aspectology as a mature science: his work established the terminology and distinctions that have been the setting for*

² Linguists working in this field are Jacobsohn (1926, 1933), Porzig (1927) (who was inspired by Jacobsohn 1926), and Hermann (1927) (cited in Mlynarczyk 2004).

subsequent work. There were two big changes needed for this transition to take place. The first change was made by Greč, who separated tenses from aspect/Aktionsart; the second change was Agrell's own separation of aspect from Aktionsart. The two shifts provided the basic conceptual tools that would shape the development of the study of aspect and Aktionsart in the twentieth century".³

However, although both Slavic and Germanic aspectologists agreed on the two-way distinction between (grammatical) Aspect and (lexical) Aktionsart, the two concepts had different influence within each trend. As Mlynarczyk (2004) observes, although the distinction between Aspect and Aktionsart began to be accepted in Slavic aspectology in the early 1930s, "*the notion of Aktionsart did not make it into textbooks on Slavic grammars until the second half of the twentieth century, and it did not make it into Slavic dictionaries until very recently*". On the other hand, the author notes that in Germanic aspectology, "*the first half of the twentieth century saw linguists devoting considerable energy to discussing the issue of the existence or non-existence of Agrell's narrow category of aspect in non-Slavic languages*".

In this work, I will preserve the distinction Aspect-Aktionsart and show that some elements, e.g. the ***Bulgarian prefixes, can be both formal markers of Aspect in the strict grammatical sense of Slavacists as well as Aktionsart elements***. Before we see how this may be so, some notes on the most recent treatments of aspect within the Western tradition are in order since I adopt some in this study.

Within the 20th century Western tradition, under the influence of Chomsky and Montague, the category of aspect received a highly formal character. On trying to show that ***aspect in Germanic languages is expressed by different stylistic and syntactic means in contrast to the morphological means in Slavic***, attention was drawn to the interaction of aspectual constructions and direct objects. This aspectual analysis at the VP level originated in the work of Verkuyl (1972) and was further

³ Note that Agrell comes from the Germanic tradition but works on Slavic aspect/Aktionsart.

developed in the works of Schoorlemmer (1995), Krifka (1989b) and many others. Within an approach like this, **aspect is treated as an abstract category which could be realized differently across languages**. Crucially, such a way of envisioning aspect is primarily **based on various binary oppositions within natural languages like PF-IMPF, terminative-non-terminative, telic-atelic, bounded-unbounded**, all of which related to the internal nature of events and the way we view them. In other words, this resulted in a rather *semantic* view of aspect.

Embedded within this Western approach to aspect, the most recent tendency is to treat aspect as a linguistic phenomenon which is concerned with the structural properties of the event itself (Rothstein 2004). Throughout the literature on Western aspectology, the term aspect has been used to refer to two distinct domains: inner and outer aspect (Travis 1991), situation and viewpoint aspect (Smith 1991), or lexical and grammatical aspect⁴ (de Swart 1998). ***I will also assume aspect to be related to the internal structure of the event denoted by the verb with two possible domains of operation: inner and outer.*** Within such a view, aspect can be relevant to grammatical processes at the following levels (see Filip 2005a):

(1) Aspect and grammatical processes

- a. **At the V° level:** verb meaning is specified
- b. **At the VP (V') level:** INNER ASPECT (direct objects; properties of the DPs and adverbial modifiers become relevant; also called compositional telicity) → ***Context-free level of interpretation of event semantics***
- c. **At the IP level:** OUTER ASPECT operators of grammatical aspect → overt functional heads (e.g. –ing or –va) take scope over telic and atelic predicates → ***Propositional semantics level***

⁴ The perfective-imperfective distinction in Slavic is expressed by inflectional morphemes on the verb, i.e. aspect in this case appears as grammaticalized in the form of verbal aspectual morphemes, and due to this it has received the name of ‘grammatical aspect’ (de Swart 1998).

Inner aspect, in the broadest sense, refers to Aktionsart (Vendler 1967) and telicity (1b). It is thus concerned with the internal temporal (or sub-event) constituency of an event (Comrie 1976; Smith 1991) and with the way a predicate describes an event. Aspectually, the event can be described as complete (i.e. telic) or incomplete (i.e. atelic).

Outer aspect, on the other hand, makes reference to the perfective/imperfective distinction in Romance, the progressive/perfect distinction in English, or the secondary imperfective in Slavic (1c).

There are various ways to linguistically encode inner aspect across languages. On the one hand, inner aspect can be encoded in the lexical class of the verb (1a). This has received various labels in the literature of aspectology: ‘inherent lexical aspect’ (Comrie 1976, van Valin 1990), ‘aspectual class’ (Dowty 1979), ‘aspect’ (Tenny 1987, 1994). All of these labels are used to describe two phenomena: (i) the division of verbs into lexical classes such as states, activities, accomplishments and achievements (Vendler 1957), and (ii) the super-ordinate distinction of predicates into telic (event-denoting) and atelic (process-denoting) (Garey 1957, Dowty 1972, 1979). ***In this investigation I will take the term inner aspect to be interchangeable with the term (a)telicity.***

Throughout this study I will primarily be concerned with inner aspect though, when the occasion may demand it, some reference to outer aspect will be made as well. Furthermore, when dealing with the Bulgarian prefixes, some additional semantic aspectual values will become relevant, too (see § 3.3).

Following a formal approach to aspect in the spirit of the Western trends and in lines with minimalism, I consider the structure of the event to be decoded by aspectually relevant features. In this respect, I agree with the general intuition of MacDonald (2006, 2008a,b), among many others, who assumes that a crucial event structure property relevant to inner aspect is the feature endpoint (MacDonald’s (2006, 2008b) *final event* feature <fe>, or Krifka’s (1992) ‘set terminal point’). As it will be shown in chapter 5, it is precisely this feature which accounts

for the cross-linguistic variation with respect to inner aspect that we find between English and Bulgarian eventive predicates, on the one hand, and between Bulgarian eventive standard verbs and Bulgarian eventive biaspectual verbs, on the other hand. That is, the same feature is used to account for both inter- and intra-linguistic variation. However, in contrast to MacDonald (2008b), I consider the feature *beginning* (his *initial event* <ie>) irrelevant to inner aspect since all predicates, excluding statives, have this feature. Thus, my major claim will be that in the absence of <fe>/<endpoint> what emerges is the default interpretation of the initial phase of the event, i.e. the feature <ie> (see chapter 5). For the time being, it just suffices to bear in mind that the feature [endpoint], which is a feature shared by all prefixes in Bulgarian (§ 3.3) and the Aorist thematic vowel (§ 3.4.1), is crucial for the determination of inner aspect, i.e. telicity.

In more general lines, I follow MacDonald (2008b) and assume that different event structures correspond to different aspectual predicate types (e.g. accomplishments, achievements and activities).

(2) Event features and inner aspect

a. <endpoint>: an event structure property

(i) endpoint: telic predicates (e.g. accomplishments and achievements)

e.g. *John built the plane in ten minutes.*

(ii) no endpoint: atelic predicates (e.g. activities)

e.g. *John carried the bag *in ten minutes.*

b. <duration>: an event structure property

(i) Accomplishments: extended in time; have duration

e.g. *John drank a bottle of wine.*

(ii) Achievements: punctual in time; no duration

e.g. *John spotted a plane.*

The features *endpoint* (or not) and *duration* (or not) are event structure properties (MacDonald 2008b). As we will see in section 3.4, [duration] is a basic property of some of the Bulgarian suffixes whereas the feature [endpoint] is present on all prefixes. Hence, **the**

Bulgarian aspectual affixes play a crucial role for the determination of event structure, a phenomenon also shared by the rest of the Slavic languages.

A COMMENT IS IN ORDER HERE. ***As I have previously observed, the main interest here will be inner aspect, or (a)telicity. However, contrary to previous analysis, I will show that the perfective/imperfective distinction in Bulgarian, which has been considered to pertain to the domain of grammatical (i.e. outer) aspect should, in fact, be transferred to the domain of inner aspect in some precise cases. The reason for this is that all primary imperfective verbs, i.e. all underived verbs in their default morphological imperfective (IMPF1) aspect (excluding their general factual usages),⁵ give atelic predicates (3a) whereas all perfective verbs give telic predicates (3b).***

⁵ The imperfective aspect in Slavic, in contrast to the perfective aspect, has several meanings (Bondarko 1971, Maslov 1984) such as **progressive** (*Ne me zakachaj, rabotja^{IMPF}* 'Do not bother me, I am working); **habitual** (e.g. *Vseki den cheta^{IMPF} kniga* 'Every day I read a book'), and a **factual** meaning (e.g. *Vot na etoj stene visela^{IMPF} kartina* 'Here on this wall there hung (lit.: was hanging) a picture', from Apresjan 1980). In contrast to the progressive and the habitual uses of the imperfective, which can be easily transferred to other European languages, it is hard to find an adequate translation for the factual denotation since it corresponds to various semantic nuances. Within the factual denotation, we should emphasize the **factual resultative** which encodes an event that has reached a limit (this is the case for imperfective verbs in the past tense as in *chel^{IMPF} sŭm tazi kniga* 'I have read this book'). Crucially, the factual-resultative imperfective may be substituted by the perfective (*[pro-chel^{IMPF}]^{PF} sŭm tazi kniga* 'I have read this book (through)'). In other words, though the primary imperfective forms denote processes (or states), there are cases where a primary imperfective verb can be used to express a bounded event manifested by the general-factual use of the imperfective. ***To account for this, I follow the general assumption among Bulgarian linguists and assume that the imperfective can take on some functions of the perfective due to the fact that it is the unmarked member of the category aspect (PF/IMPF).*** Something similar happens in the case of the prophetic use of the present tense, i.e. the unmarked tense, where we can have future reference (e.g. *I promise that I come tomorrow*), which is known as prophetic present in Bulgarian. However, only the default (i.e. unmarked) members of a given category can take on other functions but not the marked members. Thus, perfective verbs cannot be used to denote unbounded events, nor can future be used to denote the present moment of speech.

(3) The perfective/imperfective distinction and (a)telicity in Bulgarian (see Appendix 3.5)

a. Imperfectives: atelicity (IMPF1 verbs)

*Ivan pi kafe-to dva chasa/*za dve minuti*

Ivan drank.IMPF coffee-the two hours/*in two minutes

‘Ivan drank the coffee for two hours/*in two minutes’

b. Perfectives: telicity (PF verbs)

*Ivan IZ-pi kafe-to *dva chasa/za dve minuti*

Ivan IZ-drank.PF coffee-the *two hours/in two minutes

‘Ivan drank the coffee *for two hours/in two minutes’

c. Secondary imperfectives: telicity (IMPF2 verbs)

*Ivan IZ-pi-va kafe-to *dva chasa/za dve minuti*

Ivan IZ-drank.PF-IMPF2 coffee-the *two hours/in two minutes

‘Ivan was drinking the coffee *for two hours/in two minutes’

I claim that IMPF1 verbs (3a) are atelic in contrast to PF (3b) and IMPF2 (3c) verbs, which are telic (see chapter 4). Note here that IMPF2 verbs are telic because they incorporate perfectivity within them: [pref + V]^{PF} + -va]]^{IMPF2} (3c). Observe that claiming that **IMPF1-PF/IMPF2** is a distinction at the inner aspectual level does not necessarily shake the validity of the inner-outer aspectual distinction since we still have **PF-IMPF2**, which is an opposition at the outer aspectual level where notion like (a)telicity become irrelevant (note that both PF and IMPF2 verbs are telic). **Thus, what is crucial for the determination of inner aspect, i.e. (a)telicity, is the presence or absence of perfectivity at the VP level where PF will always equal telicity.** In this respect, note that IMPF1 verbs (3a) lack any perfectivizing prefix and thus give atelic predicates in contrast to IMPF2 verbs (3c) which preserve the prefix of their base verb in their derivational history (e.g. the prefixed PF verb in (3b)) and hence remain telic, although morphologically imperfective. As I will show, this is related to the fact that **prefixes, and morphological perfectivity in the general case, are an instantiation of the telicizing [endpoint] feature. In this way, we reconcile the morphological nature of perfectivity in Bulgarian with its functional, telicizing character. Thus, grammatical markers of**

perfective aspect (e.g. prefixes) become markers of inner aspect (e.g. of telicity) when certain conditions are met (e.g. an inherent [endpoint] feature on all prefixes within a fully developed morphologically-driven system of aspect like the one found in Bulgarian). More data in support of this claim will be further provided in chapter 4.

Before we enter into details on the topic of telicity, i.e. inner aspect (see chapter 4), we need to understand the way the Bulgarian verbal system functions and the exact aspectual contribution of the aspectual affixation in this language. The following section offers the relevant data on the Bulgarian verbal paradigms.

3.2. The Bulgarian verbal system⁶

Bulgarian, like the rest of the Slavic languages, marks aspect by aspectual morphemes (prefixes or suffixes) on the verb. Verbs form aspectual pairs in this language, perfective and imperfective.⁷ That is, a single verbal meaning can yield both forms (e.g. *kupja* 'buy' (PF) → *kupuvam* 'buy' (IMPF2)).⁸

⁶ The Bulgarian verbal morphology is the most complex among the Slavic languages. Apart from aspect, verbs in Bulgarian exhibit the following morpho-syntactic features: person (3), number (2), tense (9), mood (3), voice (2), and mode of expression (2), the latter referring to evidentiality (Manova 2007: 22). Furthermore, unlike the rest of the Slavic languages, Bulgarian has no restrictions on the combination of tense and aspect, i.e. perfective verbs may appear in the imperfect tense and imperfective verbs may be used in the aorist (unlike Serbian and Croatian), and all verbs have forms for the future tense (unlike Russian) (see Manova 2007: 22).

⁷ Bulgarian perfective verbs cannot be embedded within phrasal verbs (such as 'begin/finish/continue') and they are ungrammatical in main clauses in the present and imperfect tense. Additionally, they do not form negative imperative and active present participles. As for imperfectivity, there are no positive tests to identify it.

⁸ Bulgarian has often been claimed to be the Slavic language with the most grammaticalized aspectual system (Comrie 1976, Ivanchev 1976, Maslov 1959), displaying almost non-defective aspectual derivation. This is so because an imperfective form can be derived from virtually any perfective verb. That is, imperfectivization is considered a sign of the productivity of the aspectual system. The other Slavic languages, however, do not show such productivity. There are many *perfectiva tantum* verbs which have no imperfective counterparts in

(4) Aspectual triplets: (4b) and (4c) → aspectual pairs

a. Primary imperfectives (IMPF1): *pisha* 'write'

b. Prefixed perfectives (PF):

na-pisha 'write (down)'; *pre-pisha* 'copy'

c. Secondary imperfectives (IMPF2):

$[na-pis]^{PF} -va(m)]^{IMPF2}$ 'be writing (down)', $[pre-pis]^{PF} -va(m)]^{IMPF2}$ 'be copying'

There is a discussion among Bulgarian linguists as to whether aspect is a lexical-grammatical or morphological category. Followers of the first line of thought claim that aspect is not a word-formation morphological category (Kostov 1939) and that the verbs in Bulgarian do not change in aspect the way they change in tense, person, number and mood. Stojanov (1964), for this matter, claims that aspect is an autonomous grammatical meaning, not a paradigmatic one. For him, in the same way as each noun has a given (inherent) gender, every verb has its inherent grammatical aspectual meaning which does not change throughout its various forms. Therefore, Stojanov (1964) (and the rest of the followers of such a view to aspect) assumes that *napisha* (PF) → *napisvam* (IMPF2) 'write (down)' (4b, c) have different bases and belong to different conjugations (e.g. conjugation I and III, respectively),⁹ exhibiting different paradigms. Hence, the logical conclusion to which

these languages. Additionally, many forms already bearing a perfective marker cannot be further imperfectivized. In this respect, Pashov (1999: 134) claims that ninety per cent of Bulgarian verbs form perfective-imperfective aspectual pairs.

⁹ There are three verbal conjugations in Bulgarian according to the ending of the present verbal base (which coincides with the form of the third person singular present tense). The verbs which have –E as their present ending (e.g. *chet-E* [read-3PsSg-E] 'reads') belong to the first conjugation. The verbs from the second conjugation end in –I (e.g. *govor-I* [speak-3PsSg-I] 'speaks'), and those from the third conjugation in –A/–JA (*razkazv-A* tell-3PsSg-A 'tells'). Thus, all –va derivatives, i.e. all IMPF2 verbs, will belong to the productive III conjugation. Bearing in mind that Bulgarian is an inflecting-fusional type of language where clear distinction is made between derivational and inflectional suffixes (Skalichka 1979, cited in Manova 2007: 24), and if we take a language's inflectional morphology to correspond to its inflectional paradigm (Stump 2001), then, following Manova (2005, 2007) inflection class assignment in Bulgarian is based on the relation between the aorist and the present stem of the verb (see Appendix 1.2), where inflectional class is intended to mean "a set of lexemes whose members each select the set of inflectional realizations" (Aronoff 1994: 64, cited in Manova 2007: 23). As we just saw, according to the present tense base, verbs fall into three

followers of this view arrive is that such forms are separate lexemes, i.e. different words (Bojadjiev et al. 1999), but not aspectual pairs.

Another line of analysis concerning Slavic aspect is presented in the works of various linguists who treat aspect as a morphological category (The Academy Grammar 1983; Stankov 1980, Maslov 1956, Ivacnhev 1971, among others). According to these authors the perfective-imperfective distinction in Bulgarian represents an opposition of aspectual bases of the same verb. That is, the PF $\rightarrow$ IMPF2 forms (e.g. *napisha* (PF) in (4b) $\rightarrow$ *napisvam* (IMPF2) in (4c) meaning 'write (down)') are forms of the same lexeme which totally coincide in their lexical meaning and 'manner of action', with the only difference between them being their grammatical aspect. For this matter, Maslov (1956), who also supports such a view to aspect, claims that Bulgarian has developed a full system of imperfectivization, i.e. from each perfective verb we can obtain its corresponding imperfective aspectual pair (see fn. 8), which represents an additional piece of evidence for the morphological nature of the category aspect. Thus, whenever we additionally imperfectivize a perfective verbal form, we obtain PF-IMPF2 aspectual pairs of the same verb, not different lexemes.

Crucially, it should be noted that for these linguists the primary imperfective forms (e.g. *pisha* 'write' (IMPF1) in (4a), which are non-derived, are aspectually defective since they do not have a perfective pair. For them the perfectivized form of these primary imperfectives, e.g. *napisha* 'write' (PF) in (4b), is derivationally related to the primary imperfective base *pisha* 'write' (IMPF1) but is semantically different due to the semantic contribution of the perfectivizing prefix in general. Hence, primary imperfectives (4a) and derived perfectives (4b) are two different lexemes and not two different forms of the same verb in contrast to perfectives (4b) and their secondary imperfectivized pair (4c), which constitute two different forms of the same lexeme. In other words, ***a distinction should be made between IMPF1 $\rightarrow$ PF, on the one hand, and PF $\rightarrow$ IMPF2, on the other***

inflectional classes: *e*-type, *i*-type and *a*-type (i.e. first, second and third conjugation, respectively). Crucially, verbs from the same conjugation type can be allotted to different inflectional classes (see Appendix 1.2).

hand, where only the latter share lexical meaning but not the former inasmuch as prefixes add some semantic value to the derived verb.

In this study I will defend the latter view. Thus, I will claim that the perfective-imperfective distinction (e.g. PF $\rightarrow$ IMPF2) is a morphological one, e.g. *napisha* ‘write’ (PF) and its secondary imperfective derivative *napisvam* ‘write’ (IMPF2) represent aspectual pairs, i.e. forms of the same lexeme, with the only difference between them being their grammatical aspect. I assume this to be due to the inflectional character of IMPF2 suffixes (see Manova 2007 for an extensive discussion on the derivational-inflectional character of aspect in Bulgarian). ***However, I will also claim that there are some prefixes, the so-called pure perfectivizers, whose sole function is to perfectivize an imperfective verbal base. Since these prefixes do not add any special semantics to the derived verb apart from the one shared by all perfectives, i.e. that of completion (e.g. ‘completely’), the relevant pair, e.g. jam ‘eat’ (IMPF1) – izjam ‘eat (up/completely)’ (PF), will constitute two different aspectual forms of the same lexeme jam ‘eat’.*** That is, in contrast to Maslov (1956) and followers, I will propose that primary imperfective verbs (e.g. *pisha* ‘write’, *jam* ‘eat’, etc.) are not always aspectually defective but can also enter into the aspectual opposition IMPF1 $\rightarrow$ PF in the presence of a pure perfectivizing prefix. See section 3.2.1.2 for further comments on the treatment of pure perfectivizers as semantically empty prefixes.

Adopting a morphological view to aspect and not a lexical one simplifies the acquisition of verbal entries since the child will find out, arguably on the basis of experience, that prefixes, apart from word-formation devices in many cases (e.g. in the case of the lexical-idiosyncratic prefixes as in *dam* ‘give’ $\rightarrow$ *izdam* ‘betray; publish’), are also markers of grammatical aspect and participate in the formation of aspectual pairs with the same meaning. The same holds for imperfectivizing (IMPF2) suffixes (e.g. *-va*) which mark imperfective (outer) aspect (see (1c)). Thus, instead of having to acquire two different lexical entries (e.g. *napisha* ‘write’ (PF) and its secondary imperfective derivative *napisvam* ‘write’ (IMPF2)), the child will successfully make the desired generalization that (almost)

any perfective verb in Bulgarian (4b) can give an imperfective pair via an imperfectivizing suffix (e.g. –va) with the same lexical meaning but different grammatical (outer) aspect (4c). As a consequence, the child, having already observed the contextual usages of each aspectual form, will also know that these words, despite their shared semantics (e.g. 'write'), will be used in different contexts: to refer to a completed action in the case of perfectives, or to refer to a durativized action for the imperfectives.

Now we are prepared to enter into more details on the Bulgarian verbal system and the two co-existing paradigms within it, the standard (§ 3.2.1) and the biaspectual (§ 3.2.2) ones.

3.2.1. The standard verbal paradigm

The standard verbal paradigm of Bulgarian is the one shared by the rest of the Slavic languages. As we have previously mentioned, aspect is marked by aspectual morphemes on the verb in Bulgarian where both suffixes and prefixes have an aspectual function. In the absence of any aspectual affix the verb, in the great majority of cases, remains in its default, i.e. (morphologically) unmarked, imperfective aspect (4a). Such verbs are called primary imperfectives (IMPF1) where *primary* implies that there are no morphological processes (e.g. prefixation or suffixation) involved in their derivation (5a).¹⁰ However, there is an idiosyncratic list of some fifty verbs which lack an aspectual affix but give perfective predicates (Maslov 1956: 183-184; see also Pashov 1999: 136). These verbs are called *primary* (or simplex) perfectives (5b).¹¹

(5) Primary (underived or simplex) verbal entries

- a. **The general trend → Primary imperfectives (IMPF1):** *nosja* 'carry', *cheta* 'read', *mija* 'wash', *mirisha* 'smell', *spja* 'sleep', *rasta* 'grow', *leža* 'lie', *gresha* 'sin', etc.

¹⁰ As Maslov (1956: 183) observes, the majority of the morphologically simple verbs (i.e. which do not include neither a prefix nor a suffix in their form) are primary imperfective.

¹¹ According to the Bulgarian Academy Grammar (1983) and Maslov (1982), there are some 50 primary perfective verbs in Bulgarian, whereas Stojanov (1993) claims that they are at about 80. The reader is referred to Appendix 3.1: (1) for the list of primary perfectives in Bulgarian.

- b. **Exceptional character** → **Primary perfectives**: *dam* ‘give’, *kaža* ‘say’, *resha* ‘decide’, *rodja* ‘give birth’, *hvūrlja* ‘throw’, *vidja* ‘see’, *skocha* ‘jump’, *udarja* ‘hit’, etc.

The majority of the primary perfective verbs (5b) can be further imperfectivized via suffixation, e.g. *udarja* ‘hit’ (PF) → *udrjam* ‘hit’ (IMPF2). As already mentioned, ***such forms constitute aspectual pairs since there is no prefix involved in the derivation of the second member of this pair and which can contribute some kind of semantics to the derived form.*** This is basically the way the standard verbal system looks like.

Let us now turn our attention to the aspectual role of suffixation in standard Bulgarian.

3.2.1.1. Suffixation within the standard verbal paradigm

Pashov (1999: 134) claims that in the case of aspectual pairs, i.e. verbs which have the same meaning but different morphological aspect (i.e. PF → IMPF2), the imperfective verbal form is always obtained by the perfective one via aspectual suffixation (6a). Suffixes that bring about imperfectivity are *–a(m)*, *–ja(m)*, *–va(m)*, *–ava(m)*, *–java(m)*, and *–uva(m)*.¹² I will use *–va* as the representative of IMPF2 since the prototype of IMPF2 verbs is [PREFIX-ROOT-*v-a-m*] where *–(V)va* is the imperfectivizer by default (Manova 2007: 33). These suffixes are known as secondary imperfective (IMPF2) suffixes. They are added to perfective verbs, both prefixed (derived) as in (6b) and primary (non-derived) as in (6a), to make them imperfective. An example is provided below.

(6) The secondary imperfective suffix (aspectual pairs)

a. Attached to primary perfectives:

(i) <i>kup-ja</i>	→ <i>kup–uva -m</i>
buy-ja.1PS.SG	→ kup-Ø.TH.VOW–uva.IMPF2-m.1PS.SG
‘buy’ (PF)	→ ‘buy’ (IMPF2)

¹² The type of suffix depends on the conjugation of the verb (Pashov: 1999: 134). Of all IMPF2 suffixes, only *–va* and *–(j)ava* are productive. Note that unlike other Slavic languages, IMPF2 suffixes cannot attach to IMPF1 verbs in Bulgarian.

- (ii) *skoch-a* → *skach-a-m*
 jump-a.1PS.SG → jump-Ø.TH.VOW-a.IMPF2-m.1PS.SG
 ‘jump’ (PF) → ‘jump’ (IMPF2)
- (iii) *rod-ja* → *ražd-a-m*
 give birth-ja.1PS.SG → give birth-Ø.TH.VOW-a.IMPF2-m.1PS.SG
 ‘give birth’ (PF) → ‘give birth’ (IMPF2)

b. Attached to derived (i.e. prefixed) perfectives¹³

- (i) *pish-a* → [*PRE-pish*]-a → [*PRE-pis*]-va-m
 write-a.1PS.SG → [PRE-write]-a.1PS.SG → [PRE-write]-va.IMPF2-m.1PS.SG
 ‘write’ (IMPF1) → ‘copy’ (PF) → ‘copy’ (IMPF2)
- (ii) *chet-a* → [*PRO-chet*]-a → [*PRO-chit*]-a-m
 read-a.1PS.SG → [PRO-read]-a.1PS.SG → [PRO-read]-Ø.TH.VOW-a.IMPF2-m.1PS.SG
 ‘read’ (IMPF1) → ‘read completely’ (PF) → ‘read completely’ (IMPF2)

From the examples above we see that, for a perfective verb to become imperfective, the secondary imperfective suffix *-va* (or one of its allomorphs) is needed. In (6a: ii) we observe that there is a change in the root vowel. Following Svenonius (2004a), this may be accounted for by the regressive Vowel-Vowel simplification rule, a general morpho-phonological rule in Slavic.¹⁴

¹³ By ‘derived’ or ‘prefixed’ perfectives I mean perfective verbs which are derived from imperfective ones via prefixation.

¹⁴ Svenonius (2004a) proposes that, for a consonant to mutate, there need to be two vowels. For him, certain sequences of two vowels result in palatalization of the preceding consonant. Palatalization takes place when one of the vowels is eliminated. Thus, we may suppose that, when in contact with the imperfective morpheme (‘-a’ in this case), the thematic vowel is eliminated. Something similar happens in (6a: iii), where we have a consonant mutation. Istratkova (2004) also observes that deriving (im)perfectivity often implies a change in the root vowel or/and consonant gradation (pp. 301-302).

Perfective verbs, on the other hand, can be derived either by prefixation (which is the most usual case, e.g. (6b)), or by suffixation. The relevant perfectivizing suffix in this respect is the semelfactive morpheme *-n* in (7) below.¹⁵

(7) The semelfactive suffix

- a. *dŭrp-a-m* → *drŭp-n-a*
 pull-a.TH.VOW-m.1PS.SG → pull-n.SEM-a.TH.VOW
 ‘pull’ (IMPF1) → ‘pull, give a pull’ (PF)
- b. *rev-a* → *rev-n-a*
 cry-a.1PS.SG → cry-n.SEM-a.TH.VOW
 ‘cry’ (IMPF1) → ‘raise a howl’ (PF)

Apart from having a perfectivizing function, the semelfactive suffix adds a new meaning to the derived verb where the newly formed verbs indicate punctual events.¹⁶ In fact, prefixes have similar functions. From the examples in (6b: i, ii) we observe that apart from rendering perfectivity, prefixes can also modify the meaning of the derived verb. Thus, from *pisha* ‘write’ we get *PRE-pisha* ‘copy’, from *cheta* ‘read’ we get *PRO-cheta* ‘read through’.

Let us now turn our attention to prefixation.

¹⁵ Another perfectivizing verbal suffix is *-sa* (of Greek origin) with allomorphs *-jasa*, *-osa*, *-isa*, *-disa*. This suffix is added to adjectives or nouns: *jadosa* ‘irritate; make angry’ from *jad* ‘anger’; *belosa* ‘whiten’ from *bjal* ‘white’. See the Bulgarian Academy Grammar (1983: § 360).

¹⁶ Svenonius (2004a) regards the semelfactive suffix (‘*-n*’, or ‘*-nu*’ in Russian) as a thematic vowel and claims that ‘*-n(u)*’ stems are perfective. I will not discuss this suffix since it is not relevant to the proposals made in this work.

3.2.1.2. Prefixation within the standard verbal paradigm

Before I proceed to the discussion of some previous treatments of Slavic prefixation, some terminological clarifications are in order regarding my theoretical view on Aspectuality when applied to prefixation. ***I follow Slavic grammarians and consider prefixes to be overt morphological means for marking grammatical (i.e. perfective) aspect.*** However, apart from grammatical aspect, we also have lexical aspect, i.e. ***Aktionsart, which within Slavic trends describes the manner in which the event takes place.*** To exemplify, Czochralski (1975) divides Aktionsarten into imperfective and perfective Aktionsarten claiming that the latter are much more developed than the imperfective ones (Czochralski (1975: 24) cited in Mlynarczyk 2004). Thus, ***the perfective Aktionsarten includes resultative*** (*po-pravja* 'to repair/to have repaired' (PF) from *pravja* 'to make' (IMPF1)), ***ingressive*** (*za-mirisha* 'to start smelling' (PF) from *mirisha* 'to smell' (IMPF1)), ***delimitative*** (*po-cheta* 'to read for a while' (PF) from *cheta* 'to read' (IMPF1)), ***distributive*** (*po-palja* 'to burn one thing after another' (PF) from *palja* 'burn' (IMPF1)), ***evolutive*** (*raz-peja se* 'to get into singing' (PF) from *peja* 'sing' (IMPF1)), ***partial-resultative*** (*po-izlekuvam se* 'to have cured partly' (PF) from *lekuvam se* 'to cure' (IMPF1)).¹⁷ As ***for the imperfective Aktionsart, a distinction should be made between iterative*** (*po-iz-pjavam* 'to sing from time to time' (IMPF2) from *peja* 'sing' (IMPF1)), ***comitative*** (Polish: *przygrywać* 'to play (to something)/accompany by playing' from *grać* 'to play'), and ***extended iterative***, the latter consisting of ***two sub-categories: diminutative iterative*** (*po-valjava* 'to rain a little/from time to time' (IMPF2) from *valja* 'to rain') and ***intensive iterative*** (*raz-tŭrsvam se* 'to look (for something) eagerly' from *tŭrsja* 'to look (for something)').

When applying the term aspect to prefixation, we should bear in mind that prefixes relate to both grammatical Aspect, in the sense of traditional Slavic grammars, and lexical

¹⁷ To illustrate the perfective and imperfective Aktionsarten, I provide examples in Bulgarian and not Polish as is in Czochralski (1975).

(Aktionsart) aspect in the sense of Czochralski (1975). To exemplify, prefixation derives the perfective member of the aspectual pair (PF-IMP2) so it is a formal device for marking grammatical Aspect in all Slavic languages. ***Thus, all prefixes are inherently aspectual in this sense. However, some prefixes also have specific Aktionsartal (i.e. semantic) values à la Czochralski (1975) which refer to the manner in which the event takes place (or ‘circumstance of the action’ à la Greč 1827, see fn. 1).*** To exemplify, we can distinguish between prefixes with a temporal value (e.g. *PO-jam* ‘eat for a while’), a manner value (*PRE-jam* ‘eat excessively’), etc. ***Hence, when I use the term ‘aspectual value’ with prefixes I refer to their semantic (Aktionsartal) contribution but not to grammatical Aspect proper inasmuch as prefixes are always perfectivizers, i.e. markers of grammatical (perfective) aspect.***

However, we should not misinterpret the notion of Aktiosart in Czochralski (1975) and the Slavic tradition with the term Aktionsart used in Vendler (1967) since the former refers to the idiosyncratic lexical semantic contribution of prefixes studied from the point of view of the lexicalization of various ‘Aktionsart’ classes, or ‘manner of action’ classes (Agrell, 1908; Maslov, 1959 et seq.; Isačenko, 1960, 1962) whereas the latter refers to inherent lexical aspect which divides verbs into activities, states, accomplishments and achievements. In order to prevent misunderstandings, I will use aktionsart/lexical aspect when intended to mean lexical aspect à la Vendler and aktiosartal/aspectual features/value when referring to the Slavic concept of ‘manner of action’.

Bearing these considerations in mind, we should note that Slavic prefixes derive from prepositions, whose basic function is to orient the action in time and space. Out of the vast array of prepositions in Bulgarian (e.g. at about 50, see Appendix 3.2: (1)), we obtain 18

prefixes which correspond relatively well to their homophonous prepositions (see Appendix 3.3: (2)).¹⁸

Prefixes are generally divided in two groups, lexical and super-lexical (Svenonius 2004a,b,c; Istratkova 2004, Babko-Malaya 1999, among many others). Lexical prefixes are considered to have an unstable meaning and to display a rich idiosyncrasy. They are also claimed to derive completely new lexical items, i.e. verbs with new meanings (8).

(8) Lexical prefixes

a. *kaža* ‘say’

(i) <i>NA-kaža</i> ‘punish’	(iv) <i>IZ-kaža</i> ‘express’	(vii) <i>O-kaža</i> ‘render’
(ii) <i>RAZ-kaža</i> ‘narrate’	(v) <i>PO-kaža</i> ‘show’	
(iii) <i>DO-kaža</i> ‘prove’	(vi) <i>OT-kaža</i> ‘deny’	

b. *dam* ‘give’

(i) <i>ZA-dam</i> ‘ask’	(iv) <i>OT-dam</i> ‘dedicate’	(vii) <i>PRI-dam</i> ‘add; attach’
(ii) <i>PRE-dam</i> ‘deliver’	(v) <i>IZ-dam</i> ₁ ‘publish’	
(iii) <i>PRO-dam</i> ‘sell’	(vi) <i>IZ-dam</i> ₂ ‘betray’	

In contrast to lexical prefixes, super-lexical prefixes are claimed to have a fixed meaning like ‘begin’, ‘finish’, ‘again’, etc.

(9) Super-lexical prefixes: **cheta** ‘read’

- a. *PO-cheta* ‘read a little bit’
- b. *RAZ-cheta se* ‘start reading a lot’
- c. *DO-cheta* ‘finish reading’
- d. *NA-cheta se* ‘read enough’
- e. *ZA-cheta se* ‘start reading’
- f. *PRE-PRO-cheta* ‘read through again’

¹⁸ Note that the prefixes OB-, PRE-, PRO- and RAZ- do not function as prepositions in contemporary Bulgarian (see the Bulgarian Academy Grammar, vol. II: 216).

From (9) we can observe that super-lexical prefixes do not change the meaning of the verb they attach to but just modify it. They are also claimed to correspond to aspectual words or adverbial phrases in English and other languages (Babko-Malaya 1999: 76).

Istratkova (2004) provides the following inherent meanings of super-lexical prefixes in Bulgarian:¹⁹

(10) Inherent (Aktionsart/aspectual) meanings of super-lexical prefixes in Bulgarian

- a. **PRE-** ‘to do again’ [PRE-*kupja* ‘buy **again**’]
- b. **RAZ-** ‘to do in excess, to the very end, in many directions’
[RAZ-*prodam* ‘sell **excessively**’]
- c. **NA-** ‘cumulative’ (requires a plural or mass nominal argument)
[NA-*prodam* ‘sell **a lot**’]
- d. **PO-**: three types:²⁰
 - (i) distributive over subjects and objects ‘little by little’
[PO-NA-*prodam* ‘sell many things **little by little**’]
 - (ii) delimitative ‘for a while’ [PO-*peja* ‘sing **for a while**’]
 - (iii) attenuative ‘do with low intensity’ [PO-*prodam* ‘sell **a little bit**’]
- e. **ZA-** ‘to begin’ [ZA-*peja* ‘**start to** sing’]
- f. **DO-** ‘to finish’ [DO-*peja* ‘**finish** singing’]
- g. **IZ-** ‘to do completely’ [IZ-RAZ-*prodam* ‘sell **completely** in excess’]

We can observe that in contrast to lexical prefixes, super-lexical prefixes have an adverbial-like function but not a lexical one.

Finally, some linguists claim that there is a third group of prefixes with a pure perfectivizing role (see Babko-Malaya 1999, Svenonius 2004a, Markova 2007, *versus* Filip

¹⁹ Examples taken from Istratkova (2004: 312).

²⁰ Note that Součková (2004) assumes there to be only one super-lexical prefix PO- in Czech which is an extensive measure function that may quantify times (‘for a short time’), distances (‘for a short distance’), and intensity (‘to a low degree’, ‘a little bit’).

1999).²¹ Such prefixes are considered to be semantically empty whose function is to yield an imperfective verb perfective and indicate that the process denoted by the verb is completed (Babko-Malaya 1999: 51).²²

(11) Purely perfectivizing prefixes

a. <i>jam</i>	→ <i>iz-jam</i>	b. <i>melja</i>	→ <i>s-melja</i>
eat	→ IZ.PF-eat	grind	→ S. PF-grind
‘eat’ (IMPF1)	→ eat up (PF)	‘grind’ (IMPF1)	→ ‘grind up’ (PF)

Since pure perfectivizers do not add any special semantics to the derived perfective form, we can treat the IMPF1-PF forms in (11) as aspectual pairs in the same way as the forms in (6). However, to claim that there are semantically empty prefixes in Bulgarian goes in contrast with all assumptions on emptiness within the Slavic tradition. To exemplify, Slavic grammarians take as a diagnostic for (semantic) emptiness the lack of secondary imperfectivization. Thus, it is assumed that if the IMPF2 member of the aspectual triplet IMPF1 → PF → IMPF2 is missing, then the aspectual pair is IMPF1 → PF, and the prefix used to derive the perfective member should be empty, i.e. it is a mere aspectual formant marking grammatical aspect (recall that aspectual pairs consist of verbs with the same meaning). This is the case for most Slavic languages (e.g. in Russian, although not in Bulgarian, there is no IMPF2 *[[*na-pisy*]^{PF}-*vat*]^{IMPF2} ‘write to the end’ since the IMPF1 *pisat* ‘write’ and the

²¹ However, see Svenonius (2004c) for a different proposal where purely perfectivizing prefixes fall within the group of the lexical ones.

²² As Dickey (2000: 8) (cited in Manova 2007: 26) observes, many cognitively underived verbs such as *eat*, *drink*, *go*, *call*, *build*, *write*, etc. form aspectual pairs of this type. Janda (2004), on the other hand, investigates 283 Russian verb clusters within a cognitive based model and concludes that most of the IMPF1 verbs denoting states (gnomic situations) or activities (process + repetition) have a PF verb with an empty prefix which she labels ‘natural perfectives’. Interestingly, although IMPF1 → PF pairs are assumed to always differ semantically in Bulgarian, verbs bearing an ‘empty’ prefix have a somewhat restricted syntactic behavior in Bulgarian. As Manova (2007: 26) observes, such verbs cannot be used in the present actual and refer to future (e.g. *da na-pisha*-PF *pismoto i idvam* and *na-pisvam*-IMPF2 *pismoto i idvam* both mean ‘I will write down the letter and come’). Consequently, such verbs, even if IMPF2, cannot serve as the answer to the question ‘What are you doing?’, i.e. *prepisvam* (IMPF2) ‘I copy out’ is a possible answer to this question, whereas *napisvam* (IMPF2) ‘I write down’ is not.

IMPF2 derivative are semantically identical, which blocks the realization of IMPF2, and one uses IMPF1 instead). If the IMPF2 member of the triplet is present, then the aspectual pair is constituted by PF → IMPF2, since the prefix has contributed new meaning to IMPF1, so IMPF1 and IMPF2 are not semantically identical (e.g. *znaja* ‘know’ (IMPF1) → *pri-znaja* ‘admit’ (PF) → *pri-zna-vam* ‘admit’ (IMPF2)). In such cases, the prefix is regarded as a derivational affix (Mlynarczyk 2004: 56, fn. 8). When applying this test to Bulgarian we can observe that almost all perfective verbs have a secondarily imperfectivized variant, implying that no semantically empty prefixes exist in this language (recall that Pashov 1999 observes that 90 per cent of the Bulgarian perfectives verbs give an IMPF2 pair).

Postulating semantically empty prefixes is also problematic within the framework here inasmuch as I regard these prefixes as quantificational devices (see chapter 4) which bear the completive aspectual/Aktionsart value. Thus, these prefixes can be translated as ‘completely’ (e.g. *jam* ‘eat’ (IMPF1) → *iz-jam* ‘eat completely’ (PF)). However, the ***completive Aktionsart is the one shared by all perfective (telic) predicates (telic events tend to be completed), so in a sense it is the default perfective/telic interpretation.*** For this reason, although I use the term ‘purely perfectivizing’ prefixes, I will not regard them as semantically empty since apart from serving as markers of grammatical aspect, they are also instantiations of the completive Aktionsart. However, the pair IMPF1 → [pure perfectivizer + IMPF1]^{PF} is aspectual like PF → IMPF2 since the pure perfectivizer merely denotes a completed, i.e. telic event. However, this is just a descriptive explanation and has no theoretical implications. What is significant for the proposals advocated in this work is not whether IMPF1 → [pure perfectivizer + IMPF1]^{PF} is aspectual like PF → IMPF2 but the fact that all prefixes, including the pure perfectivizers, perfectivize and telicize the base.

Before I close this section we should note that although prefixes are perfectivizer *per excellence*, we should take into account that this is not always the case. As Manova (2007: 35) observes, ***prefixation does not automatically mean perfectivity.*** To exemplify, apart from the vast majority of perfectivizing prefixes as the one examined so far, there is a group of prefixes with exclusively derivational function which contribute

lexical meaning without perfectivizing the base. ***This is the case for some verbs derived from prefixed nouns*** which are imperfective despite the presence of the prefix: *bez-delnik* [without-week day] 'loafer' (N) → *bez-delni-cha* [without-week day-v^o] 'to loaf' (IMPF1 V); *sŭ-žitel* [with-inhabitant] 'room-mate' (N) → *sŭ-žitel-stvam* [with-inhabitant-v^o] 'to live together' (IMPF1 V); *iz-obilie* 'abundance' (N) → *iz-obil-stvam* 'to abound' (IMPF1 V). In these examples we have word-formation prefixes forming nouns from other nouns and homophonous to perfectivizing prefixes (Manova 2007: 35-36). I will not deal with cases like these here.

Another group of prefixed imperfectives include verbs expressing states or processes of inherent long duration. Crucially, in such cases the morphological structure of the verb does not correspond to its grammatical aspect inasmuch as prefixation does not signal perfectivity, as expected. Some examples are: *pri-nad-leža* [at-above-lie] 'to belong', *sŭ-dŭržam* [with-hold] 'to contain', *ot-stoja* [from-stand] 'to be at a distance', *pred-stoja* [before-stand] 'to be forthcoming', *sŭ-stoja se* [with-stand refl] 'to consist of', *pod-leža* [below-lie] 'to be subject to', *za-visja* [behind-hand] 'to depend on', etc. This state of affairs is indicative of the fact that ***perfectivization is blocked due to a semantic incompatibility between the denotation of the base and the inherent semantics of prefixation itself.*** In this respect, (Manova 2007) notes that homophonous verbs with semantics different from 'state' or 'process of inherent long duration' are perfective (12a', b').

(12) Prefixation of stative bases (from Manova 2007: 36)

- a. *stoja* 'I stand' (IMPF1) → *ot-stoja* [from-stay] '(I) am at distance' (IMPF1)
- a'. *stoja* 'I stand' (IMPF1) → *ot-stoja* [from-stay] '(I) defend' (PF)
- b. *stoja* 'I stand' (IMPF1) → *sŭ-stoja se* [with-stay refl] '(I) consist of' (IMPF1)
- b'. *stoja* 'I stand' (IMPF1) → *sŭ-stoja se* [with-stay refl] '(I) take place' (PF)

As we will see, this will become crucial for our analysis of stative verbs inasmuch as it will help us distinguish between prototypical perfectivizers and some pure locative prefixes as the ones incorporated into the stative base (see chapter 5, § 5.3.3).

TO RECAPITULATE, we have seen that both prefixes and suffixes have an aspectual role in Bulgarian (and in the rest of the Slavic languages). In the absence of aspectual affixation the verb, as a general rule, is primary imperfective (5a) though there are some exceptions to this rule (5b). As for prefixes, they perfectivize the verb to which they are added. Suffixes, on the other hand, are imperfectivizers (with the exception of the semelfactive suffix *-n* which gives perfective verbs, among few other suffixes, see fn. 15). Due to the fact that this system of aspectual marking is shared by all Slavic languages, I refer to it as the *standard* (Slavic) paradigm. However, as we shall see in the following section, there are also verbs which do not rely on aspectual affixation for the codification of inner aspect. Such verbs will fall within the non-standard, or biaspectual, verbal paradigm.

3.2.2. The biaspectual verbal paradigm

Apart from what I have labeled as ‘standard’ verbs, there are also biaspectual verbs in Bulgarian. These are almost exclusively loan words (13).

- (13) **Biaspectual verbs:** *operiram* ‘operate’, *reagiram* ‘react’, *harakteriziram* ‘characterize’, *stabiliziram* ‘stabilize’, *kritikuvam* ‘criticize’, *kontraatakuvam* ‘contra attack’, *arestuvam* ‘arrest’, etc. (see Pahsov 1999: 138).²³

These verbs can be used as both perfective and imperfective without changing their morphological form. Throughout the literature on Slavic aspectology it has been constantly observed that there are various ways to test perfectivity (see fn. 7). To exemplify some, (morphologically) perfective verbs are not allowed as complements of phase verbs (14a), in the present tense (14b') or in the negative imperative construction (14c').²⁴

²³ See Appendix 3.3: (3) for a special case of biaspectual verbs in Bulgarian, the so-called lexical biaspectuals, which are not loan words but native verbs that function as either perfective or imperfective depending on their lexical meaning or the tense used.

²⁴ Phase verbs are verbs which make reference to some of the internal phases which constitute the event denoted by the verb such as its beginning (e.g. the verb ‘to start’, ‘to begin’), duration (e.g. the verb ‘to continue’) or end (e.g. the verb ‘to finish’, ‘to end’) (Coseriu 1976).

(14) **Testing (im)perfectivity with standard verbs**

a. Phase verbs (imperfective verbs only)

Ivan započna da jade jabŭlka-ta IMPF1

Ivan started to eat.IMPF apple-the

‘Ivan started to eat the apple’

a'. **Ivan započna da iz-jade jabŭlka-ta* *PF

Ivan started to iz-eat.PF apple-the

*‘Ivan started to eat (up) the apple’

b. Present tense (imperfectives only)

Ivan v moment-a jade jabŭlka-ta IMPF1

Ivan in moment-the eat.IMPF apple-the

‘Ivan eats (is eating) the apple at the moment’

b'. **Ivan v moment-a iz-jade jabŭlka-ta* *PF

Ivan in moment-the iz-eat.PF apple-the

*‘Ivan eats (up) the apple at the moment’

c. The negative imperative (imperfectives only)

Ne jaž jabŭlka-ta! IMPF1

Not eat.IMPF apple-the

‘Do not eat the apple!’

c'. **Ne iz-jaž jabŭlka-ta!* *PF

Not iz-eat.PF apple-the

*‘Do not eat (up) the apple!’

Due to the fact that biaspectual verbs are (morphologically) ambiguous between perfective and imperfective, when used as imperfective, they will allow for the constructions in (14). The relevant data are presented in (15).

(15) **Testing (im)perfectivity with biaspectuals**

a. Phase verbs (imperfectives only)

Ivan započna da analizira statija-ta

Ivan started to analyze.BIASP article-the

‘Ivan started to analyze the article’

b. Present tense (imperfectives only)

Ivan v moment-a analizira statija-ta

Ivan in moment-the analyze.BIASP article-the

‘Ivan analyzes the article at the moment’

c. The negative imperative (imperfectives only)

Ne analiziraj тази statija!

Not analyze.BIASP this article

‘Do not analyze this article!’

From (15) we can see that the biaspectual verb *analiziram* ‘analyze’ is grammatical as a complement of the phase verb ‘to start’ (15a), in the present tense (15b) and in the negative imperative construction (15c). Such an aspectual behavior is also observed for standard imperfective verbs (14a, b, c) but not for standard perfective ones (14a', b', c').

Hence, one may suggest that biaspectual verbs behave in the same way as standard imperfectives with respect to the traditional perfectivity tests used in the literature. However, this is only apparent. Since there are no positive tests which exclude imperfective verbs, it is difficult, at first glance, to see that biaspectuals can also behave in a perfective-like manner. In order to show this, and since, as we will further see in chapter 4, perfectivity equals telicity in my analysis, I use the well-established test for determining telicity. According to this test, only telic (or morphologically perfective) verbs will accept the time-span adverbial ‘in X time’ since it can only modify telic predicates whereas atelic predicates will only allow for the durative adverbial ‘for X time’. Before I go on I would like to mention some observations regarding the (a)telicity tests used here.

Throughout the whole thesis I will use the *in*-adverbial versus the *for*-adverbial modification as an indication of telicity and atelicity, respectively. Following Borer (2005b) ***I assume that the in-adverbial is related to inner aspect inasmuch as it is a predicate modifier of quantity telic structure***, whereas the *for*-adverbial is representative of outer aspect. Unlike the predicate modifier ‘in X time’, which requires the presence of the telicizing projection (e.g. Asp_QP in Borer) and modifies it (thus, becoming incompatible with atelic predicates since they lack this projection, e.g. **Kim ran in three hours*), the *for*-adverbial affects the event structure of a predicate. It is therefore more like an operator of sorts which turns non-quantity predicates into bound predicates (e.g. *Kim ran* is a homogenous expression in contrast to *Kim ran for three hours* which is non-homogeneous: no sub-event of *Kim ran for three hours* can be an event of running on behalf of Kim for three hours) (see Borer 2005b: 233). However, though the final event denoted by *Kim ran for three hours* is a bound one, the *Kim ran* part of this event remains homogeneous (e.g. activity), as Borer observes. ***The fact that the for-adverbial is used as an indicator of atelicity resides in its ‘anti-telicity’ effects for Borer, inasmuch as it blocks the presence of telic structures*** (e.g. Asp_QP) and is therefore compatible with homogeneous (atelic) predicates, i.e. activities or statives. However, regarding this issue, I assume that since the *for*-adverbial is related to outer aspect it should be in principle compatible with telic structures as well. This is in fact empirically confirmed. In such cases, however, a different interpretation arises whereby the final denotation of the event is iterative. Thus, *John spotted the plane for hours* is interpreted as a repeated telic events of John spotting the same plane in the duration of (several) hours.

A COMMENT IS IN ORDER HERE. From the very beginning of this chapter I have clarified that the IMPF1-PF distinction within the standard verbal paradigm overlaps with the atelic-telic one within the inner aspectual domain though, by now, it has been widely assumed throughout the literature on aspectology that both distinctions (i.e. (im)perfectivity and (a)telicity) belong to two different domains: outer aspect for the former and inner aspect for the latter. However, as I will claim here, all perfective verbs in Bulgarian give telic predicates whereas all imperfective verbs give atelic ones (excluding the secondary

imperfectivized forms, since they incorporate a perfective-telic base which cannot be obviated, see section 3.4.2). Hence, perfective verbs will be compatible with the time-span adverbial but not with the durative one (excluding iterative readings) whereas imperfectives will show just the opposite behavior (on the sole exception of the statement that perfectivity equals telicity, see section 3.3.2.3 on PO-verbs). This claim is proved by the data in (16).

(16) The standard paradigm: (im)perfectivity equals (a)telicity

a. Imperfectives (IMPF1)= atelic

*Ivan pi kafe-to edin čas/*za edin čas*

Ivan drank coffee-the one hour/*in one hour

‘Ivan drank the coffee for an hour/*in an hour’

b. Perfectives = telic (see Appendix 3.5)

*Ivan iz-pi kafe-to *edin čas/za edin čas*

Ivan iz-drunk.PF coffee-the *one hour/in one hour

‘Ivan drank up the coffee *for an hour/in an hour’

As for biaspectual verbs, since they are morphologically ambiguous between perfective and imperfective, we would expect that both modifiers (e.g. ‘in X time’ and ‘for X time’) would be compatible with them if we are on the right track in claiming that morphological (im)perfectivity equals (a)telicity. That is, these verbs should be ambiguous with respect to telicity in the same way as they are claimed to be aspectually ambiguous, i.e. ambiguous with respect to (im)perfectivity. This prediction is *prima facie* borne out (17).

(17) The biaspectual paradigm: *prima facie* aspectually ambiguous

Toj degustira vino-to dva časa /za dva časa

He tasted.BIASP wine-the two hours/in two hours

‘He tasted the wine for two hours/in two hours.’

However, we will see in chapter 4 that there is more to this apparent aspectual ambiguity of biaspectual verbs. For now it suffices to observe that whereas standard verbs are indeed inflexible with respect to (a)telicity (i.e. primary imperfectives always give atelic predicates

whereas perfectives always give telic ones), biaspectual verbs are more flexible. The corresponding explanation and the relevant details on this topic will be offered in chapter 4.

As for the morphological expression of biaspectual verbs in Bulgarian, it has been claimed that such verbs usually contain the German suffix *-ira/-izira* (18a) or the native suffix *-uva* (18b) (see Appendix 3.3, (1-2)).

- (18) a. **-ira/-izira biaspectuals:** *operiram* ‘operate’, *reagiram* ‘react’, *harakteriziram* ‘characterize’, *instaliram* ‘install’, *afektiram* ‘affect’, etc. (Pahsov 1999: 138).
b. **-uva biaspectuals:**²⁵ *publikuvam* ‘publish’, *kormuvam* ‘drive’, *kritikuvam* ‘criticize’, *atakuvam* ‘attack’, *arestuvam* ‘arrest’, *gostuvam* ‘visit’, *denuvam* ‘spend the day’, *kostuvam* ‘cost’, *přtuvam* ‘travel’, *kormuvam* ‘drive’, etc.

The suffix *-i(zi)ra* (18a) is used to form verbs from loan nouns or adjectives where the final denotation is that the action has come to a result (Georgiev 1999: 201). The suffix *-uva* (18b), on the other hand, attaches to nouns exclusively (Georgiev 1999: 199).²⁶²⁷

Though the majority of biaspectual verbs are derived forms (usually from nouns) via suffixation (*-i(zi)ra/-uva*), there are also few underived (or simplex, primary or bare) biaspectual verbal bases (19).

²⁵ Sometimes, though rarely, the short variant of *-uva*, *-va*, is used: *polzvam* ‘use’, *bujstvam* ‘be delirious’, *komandvam* ‘command, give order’, among others.

²⁶ According to Pashov (1956), the Russian suffix *-icha* is also used to form biaspectual verbs in Bulgarian: e.g. *kolenicha* ‘kneel down’. Another suffix which gives a biaspectual verb is the suffix *-a* which attaches to nouns: *pechatam* ‘print’. However, I will not treat these suffixes here since they are no longer productive.

²⁷ It should be noted here that there is a controversy among specialists as far as derived *-uva* biaspectuals are concerned. Maslov (1956), for example, claims that these correspond to secondary imperfectives, i.e. verbs derived from a perfective verbal base by the addition of the secondary imperfective suffix *-uva*. Others, on the other hand, claim that these secondary imperfective forms are iterative (Chakyrova 1998, 2003, Aleksova & Nikova 2002, among others). I assume *-uva* derivatives to be biaspectual though the main concern here will be the *-ira* verbs.

(19) Underived (primary) biaspectual verbs

- a. I conj: *sipja* ‘pour’, *pljuja* ‘spit’
- b. II conj (class IV): *blagovolja* ‘deign’, *vretenja* ‘shoot up’, *gostja* ‘feast (on)’, *kalja* ‘temper, harden’, *menja* ‘change’.

In this study I will be primarily concerned with the –ira derivatives. A brief summary of the types of biaspectual verbs is offered in Table 1.

Type of biaspectuals	Properties	Examples
Primary²⁸ (bare)	Non-productive	<i>sipja</i> 'spew', <i>pljuja</i> 'spit', <i>blagovolja</i> 'deign, condescend', <i>vretenja</i> 'shoot up', <i>gostja</i> 'feast', <i>kalja</i> 'temper; steel', <i>menja</i> 'change'
–i(zi)ra	Base: foreign Ns or As Very productive the majority of biaspectuals	<i>instaliram</i> ‘install’, <i>parfjuimiram</i> ‘perfume’, <i>blokiram</i> ‘block’, <i>organiziram</i> ‘organize’
–uva (–va)	Base: native or foreign Ns semi-productive some biaspectuals	<i>arestuvam</i> 'arrest', <i>atakuvam</i> 'attack', <i>obrazuvam</i> 'form', <i>publikuvam</i> 'publish', <i>sboguvam se</i> 'say good-bye', <i>dokladvam</i> 'report'

Table 1: Recap on biaspectuals

Interestingly, though a biaspectual verb can be used in both perfective and imperfective contexts (or telic and atelic ones) without changing its form, Bulgarian tries to form aspectual pairs from these verbs in a native (i.e. standard) fashion (Maslov 1956, Pashov 1999). This state of affairs may be explained by a more general tendency in this language to switch all non-standard paradigms to the already well-established standard one. Some examples are provided in (20) below.

²⁸ Note that these forms usually have an IMPF2 pair: *pljuja* 'spit' (BIASP) → *pljuvam* 'spit' (IMPF2); *sipja* 'spew' (BIASP) → *sipvam* 'spew' (IMPF2). I will not deal with these forms here though a reanalysis may be surely in order. In this respect, one may tentatively assume that bare biaspectuals may have probably behaved as aspectually ambiguous in their early stages of development but after a long process of adaptation the bare form may have become reanalyzed as perfective so a secondary imperfectivized derivate became necessary. Interestingly, these forms are rather idiosyncratic and non-productive. I leave this for further research.

(20) Biapectual verbs: forming aspectual pairs in a native-like manner

- a. *deklariram* (PF/IMPF) ‘to declare’ b. *IZ-deklariram* (PF) c. [*IZ-deklarir*]^{PF}–*vam* (IMPF2)
kopiram ‘to copy’ *IZ-kopiram* [*IZ-kopir*]^{PF}–*vam*
reguliram ‘to regulate’ *U-reguliram* [*U-regulir*]^{PF}–*vam*

Sometimes even without previous prefixation (20b) we can make secondary imperfectives in order to focus on the process or repetitive reading of the verbal action (21).²⁹

(21) Extract from P. Vežinov’s *Noshtem s belite kone* (‘A night with the white horses’) taken from Pashov (1999: 138):

- a. *pensioniram* (PF/IMPF) ‘to pension off’

Dosega nikoi ot Uromovtsite ne se e pensioniral (PF/IMPF)

By now nobody from the Uromovs’ has not pensioned off

► Interpretation: (i) nobody HAS EVER pensioned off from this family or (ii) NOW there are no pensioners.

- b. *pensioniram* ‘pension off’ (PF/IMPF) – *pensionir–vam* (IMPF)

Dosega nikoi ot Uromovtsite ne se e pensionir–val (IMPF)

By now nobody from the Uromovs’ has not pensioned off

► Interpretation: only one reading: nobody HAS EVER pensioned off from this family, but not ‘now there are no pensioners’.

It should be noted that these imperfectivized biaspectual forms are quite colloquial. Yet, what this implies is that ***biaspectual verbs allow for both perfectivization (via prefixes)*** as in (20b) ***and secondary imperfectivization*** (20c, 21b). As I already mentioned in chapter 2, this is ***a nice way to maximize similarities across systems (e.g. standard Bulgarian and biaspectual Bulgarian paradigms) and to harmonize conflicting (parametric) values or principles*** (–*ira* verbs are biaspectual in contrast to standard verbs which are either

²⁹ Maslov (1956) observes that there is variation in acceptability among speakers with respect to the standardization of the biaspectual paradigm. Thus, speakers who tend to prefix and suffix such biaspectual forms interpret the bare form (i.e. the bare biaspectual verb) as imperfective.

perfective/telic or imperfective/atelic). As for the kind of prefixes allowed with this verbs, see chapter 4.

Crucially, apart from the native prefixes as in (20b), ***biaspectual verbs may also appear with foreign prefixes*** as in *dez-orientiram* 'disorientate; perplex, confuse', *de-kodiram* 'decode', *re-organiziram* 'reorganize', etc. However, in such cases the prefix, being devoid of any aspectual (perfectivizing) properties, is unable to perfectivize the base and the verb remains biaspectual. What this state of affairs implies is that ***Bulgarian is extremely sensitive to the properties of the morphemes within a derivative where loan elements receive no appropriate interpretation (e.g. loan verbalizers like -ira are aspectually ambiguous, i.e. biaspectual and, similarly, loan prefixes bear no aspectual baggage)***. As we will see, this will be crucial for some of our claims.

Since prefixation is crucial for inner aspect inasmuch as it gives telic predicates, I dedicate the following section to the Bulgarian prefixes and their aspectual functions and contribution before entering into details on the codification of inner aspect in chapter 4.

3.3. The Aspectual Role of Prefixation

It has been widely acknowledged that Slavic languages allow multiple prefixation to the same verb, a linguistic phenomenon also known as ‘stacking’ or polyprefixation (the latter being extensively used in Slavic traditional grammars). Thus, Slavic allows for cases in which there are more than one prefix attached to a single verbal base (22).

(22) *IZ-PO-[NA-kaža]*

completely-one by one-[punish]

‘punish all one by one’

However, as we have briefly mentioned, prefixes do not form a homogeneous group but should be rather divided in at least two groups: lexical (8) and super-lexical (9), with a third

possible group including the pure perfectivizers (11), as suggested in various works on the topic (Babko-Malaya 1999, Svenonius 2004a, Markova 2007, among others). A brief summary of this prefixal typology is provided in Table 2.

LEXICAL	PURE PERFECTIVIZERS	SUPER-LEXICAL
idiosyncratic	compositional	compositional
lexical-derivational role	perfectivizing role	adverbial role
change the argument	require overt direct	event modifiers ³⁰
structure of the verb	object	do not change argument structure of the verb

Table 2: Recap on the previous analysis of prefixes

I will show that the general division of prefixes into lexical (8), super-lexical (9), and purely perfectivizing (11) is not explanatory enough since it cannot account for certain linguistic phenomena observed in Bulgarian. Therefore, in this work, I will propose a slight modification of this classification. Thus, I will prefer to treat prefixes in terms of inner and outer (aspectual) modifiers understood in a strict structural sense (below or above VP). In order to explain the behavior of the Bulgarian prefixes I propose that they should be divided into three groups: lexical (8), inner and outer, where the latter include the majority of the previous super-lexicals (9).

One of the reasons for such a modification is based on argument structure and the way prefixes interact with it. The fact that argument structure is syntactically represented $\underline{v}P$ -internally implies that prefixes derived above $\underline{v}P$ (i.e. **outer prefixes**) cannot modify the selectional properties of the verbal base. Rather, such prefixes are event modifiers, i.e. they **modify the event as a whole**. Therefore, I regard these prefixes as outer aspectual modifiers. Inner prefixes, on the other hand, are derived $\underline{v}P$ -internally and operate on the

³⁰ In this respect, Babko-Malaya (1999: 76-77) claims that super-lexical prefixes are modifiers of verbal phrases or whole sentences whereas lexical prefixes modify the meaning of the verb.

internal parts of the event, i.e. its arguments. Thus, ***inner prefixes are true argument-structure modifiers where under ‘modifiers’ I mean that they either introduce an argument not selected by the verb or modify an argument already selected.***

The reason I abandon the well-established classification of prefixes into lexical (8) and super-lexical (9) is due to the fact that super-lexical prefixes, which are claimed to be derived outside VP (see Svenonius 2004c) and hence should correspond to outer prefixes in my analysis, do not constitute a unified class as there are both inner (10c, d: i, g) and outer (10a, d: ii/iii, e, f) prefixes within this group.³¹ Thus, I do away with the misleading term “super-lexical” and divide this group in two separate classes: inner and outer prefixes. The group of the purely perfectivizing prefixes (11) is also done away with where such prefixes fall within the group of the inner prefixes. Finally, lexical prefixes (8) are maintained as a separate class due to their idiosyncratic behavior and lexical-derivational function.

In fact, we will also see that there is additional evidence, apart from the one coming from argument structure, which calls for a reanalysis of the Bulgarian (arguably all Slavic) prefixes. As we will see, there are further semantic, morphological and syntactic factors in support of my division of prefixes into lexical, inner and outer (see section 3.3.3).

Before I proceed to provide the relevant details on lexical, inner and outer prefixes, I would like to briefly mention some crucial notes on the linearization of affixes in general, and prefixes more specifically.

³¹ A similar proposal is offered in Svenonius (2004c) where prefixes are divided into VP-internal (lexical) and VP-external (super-lexical), i.e. my *inner* and *outer* prefixes respectively. However, contrary to Svenonius (2004c), I claim that cumulatives and distributives are argument-structure modifiers, i.e. my *inner* or his VP-internal prefixes, whereas for him they are VP-external, i.e. my *outer* prefixes.

3.3.1. On Affix Linearization

It has been observed that in the case of multiple prefixation (22), the prefixes are not freely ordered. Thus, Istratkova (2004) observes that super-lexical prefixes in Bulgarian are ordered along the fixed hierarchy in (23).

(23) The hierarchy of super-lexical prefixes for Bulgarian (Istratkova 2004: 318):³²
attenuative PO- 'a little bit' > ZA- 'start' > DO- 'finish' > IZ- 'completely' > distributive PO- 'one by one' > NA- 'many/a lot' > RAZ- 'excessively' > PRE- 'again' > semelfactive suffix –N > lexical prefix > VP

In order to explain the fact that (some) prefixes are hierarchically ordered with respect to one another, I follow Cinque (1999) and assume that there is a universal hierarchy of functional aspectual projections according to which prefixes are merged in syntax by virtue of the inherent aspectual/Aktiosartal feature which they express (note that this possibility is already hinted at in Istratkova 2004 for the Bulgarian super-lexical prefixes, though she does not make attempts to match Cinque's hierarchy with the prefix hierarchy she proposes).

Cinque (1999, 2004), in analyzing the behavior of adverbs cross-linguistically, arrives at the conclusion that adverbs are functional in nature and ordered along a fixed hierarchy of functional features (24) (see chapter 2, § 2.4).³³ For him, adverbs are base-generated (merged) under a checking relation with the corresponding functional head of the clause hierarchy. Hence, the relative order between adverbs (which is linear, transitive and antisymmetric) is due to the structural positions they occupy within the functional array of the given language, not to purely semantic scope principles of the conceptual-intentional

³² For more details on combinational restrictions of super-lexical prefixes in Bulgarian, see Istratkova (2004: 312-316).

³³ Evidence for the functional nature of adverbs comes from sign language and language acquisition (see Cinque 2004). In sign language, for example, lexical information conveyed by verbs and nouns is expressed manually whereas functional information such as aspect has both manual and non-manual expression. In this respect, adverbs behave like functional material (Cinque 2004: 684).

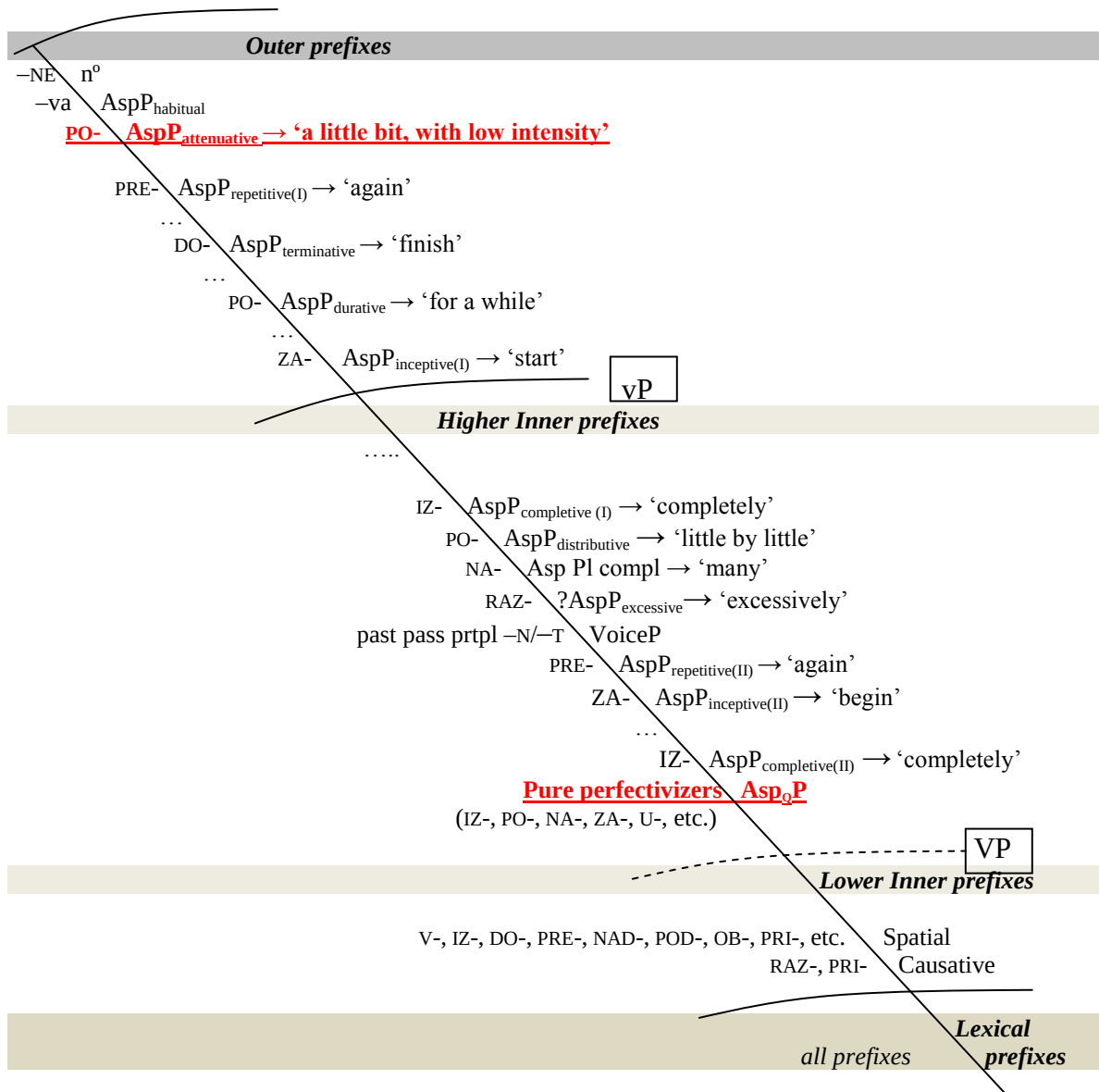
interface.³⁴ Similarly, I will claim that the relative order of prefixes—inner and outer, but not lexical—is fixed along the same aspectual hierarchy in (24), exemplified in (25).

(24) Cinque's (1999) hierarchy of aspectual features (see Cinque 2002: 47):

MoodP_{speech act} > MoodP_{evaluative} > MoodP_{evidential} > ModP_{epistemic} > TP_{Past} > TP_{Future} >
 MoodP_{irrealis} > TP_{anterior} > ModP_{alethic} > **AspP_{habitual}** > **AspP_{repetitive(I)}** > AspP_{frequentative(I)} >
 ModP_{volition} > AspP_{celerative(I)} > **AspP_{terminative}** > AspP_{continuative} > AspP_{perfect} > AspP_{retrospective} >
 AspP_{proximative} > **AspP_{durative}** > AspP_{progressive} > AspP_{prospective} > **AspP_{inceptive(I)}** > ModP_{obligation} >
 ModP_{ability} > AspP_{frustrative/success} > ModP_{permission} > AspP_{conative} > **AspP_{completive(I)}** > **Aspect PI**
completive > **VoiceP** > **AspP_{repetitive(II)}** > AspP_{frequentative(II)} > AspP_{celerative(II)} > **AspP_{inceptive(II)}**
 > **AspP_{completive(II)}** > V

³⁴ Cinque (2004: 685) argues against the adjunction analysis of adverbs which adopts purely semantic scope principles. According to him, such an analysis provides no explanation as to why we find the adverbs we find among languages and not some different kinds of adverbs (e.g. there are no adverbs expressing our sentential attitude toward our assertions, i.e. whether we utter something with love or hate, etc.). Therefore, such information must be encoded in the functional space of the UG lexicon with the possible formal means to relate the functional head distinctions to the corresponding AdvP distinctions. Additionally, a semantic scope approach cannot account for the relative order between the adverb and the verb or between an adverb and one of the arguments of the clause.

(25) The aspectual hierarchy hosting the Bulgarian inner and outer prefixes (Appendix 1.1)



I propose that prefixes, in a similar fashion as adverbs, are the overt morpho-phonological expression of an aspectual feature which allows them to merge as heads of the relevant functional aspectual projection obeying the hierarchy in (24). Evidence for merge comes from the fact that the higher prefix from the hierarchy selects for the lower one and c-commands it and, as a result, the higher prefix scopes over the lower one. Thus, as we shall see in section 3.3.3.3, outer prefixes, which are the highest ones in the aspectual hierarchy, always scope over the inner ones since inner prefixes are merged first. Hence, the order we find is always [outer

[inner [lexical]]]. As for the lexical prefixes, due to the fact that they adjoin to the V head (which is the lowest projection in Cinque's hierarchy in (24)), then there will be no hierarchical dependencies between the prefixes from among this group.³⁵

Note that the aspectual projections heading some Bulgarian prefixes marked in red in (25) are absent from the hierarchy in (24). The lowest projection, Asp_QP is the one heading the pure perfectivizers (as well as particles in English) and corresponds to Borer's (2005b) quantity-telic node. As for the other projection headed by the outer PO- prefix, the fact that it needs to be merged higher up in the structure relates to two observations: (i) there are three types of PO- prefixes in Bulgarian (10d) but only two receive their corresponding structural-aspectual positions (the distributive and the delimitative/durative) whereas the attenuative PO- remains without a place in the hierarchy in (24), and (ii) the capacity of PO- to appear external to the terminative prefix DO- when used as an attenuative aspectual marker (e.g. *PO-DO-pisha* 'finish writing a little') suggests that there should be another position dedicated to attenuative PO- in the hierarchy. That is why we need a higher instance of PO- c-commanding DO- (as shown in (25)). Note that another solution will be to have a lower instance of DO- located below the higher instantiation of PO- merged under AspP_{durative}. I leave this for further research.

Adopting the universal hierarchy in (24) has certain predictions with respect to the behavior of the prefixes which merge in it. Thus, we should expect that only inner and outer prefixes will show fixed order and scope dependencies since they have their fixed place in the

³⁵ I leave aside the discussion concerning the lower and the higher instantiations of a given feature (e.g. AspP_{inceptive}(I) vs. AspP_{inceptive}(II); AspP_{completive}(I) vs. AspP_{completive}(II); AspP_{prepetitive}(I) vs. AspP_{prepetitive}(II)). The prediction is that since these positions are available, we can have one and the same prefix (e.g. completive IZ-) realized twice (e.g. as completive I and completive II). As we can see, this is indeed the case:

(i) *bistrja* 'clarify' → IZ.**compl.I**-PO-IZ.**compl.II**-*bistrja* (completive.I-po-completive.II-clarify) 'manage to clarify a little'.

(ii) *mislja* 'think' → ZA.**incp.I**-PO-ZA.**incp.II**-*mislja se* (inceptive.I-po-inceptive.II-think) 'start to ponder over a little bit/start to be thoughtful a little bit'.

aspectual hierarchy. Bearing in mind that inner and outer prefixes are inserted via merge in narrow syntax along the hierarchy in (24) we can additionally predict that semantically, such prefixes will (tend to) be compositional and transparent, i.e. the morphological complex [prefix + V] could be easily decomposed into a prefixal part and a verbal part, with its final denotation being the combination of the semantics of the prefix together with the semantics of the verb.

A question to ask regarding Cinque's hierarchy of aspectual features is how one can account for this hierarchy in minimalist terms, i.e. how should it be implemented and what determines the insertion of the prefix (inner and outer, but not lexical-idiosyncratic) as an aspectual functional head from the hierarchy. One may, in fact, argue that in order for a prefix to merge as head of AspCOMPLP in (24), for example, it should enter syntax with a digit number specifying that this prefix merges in the position number X (let's say 13) from the aspectual hierarchy. That is, this digit number should carry the exact merge site of the prefix along the hierarchy of functional projections in order to assure that prefixes with a lower digit number will merge first and will be consequently located lower in the hierarchy. However, if Cinque's hierarchy is universally given and prefixes merge as heads of the relevant aspectual projection by virtue of the aspectual feature they express, then one can do away with the claim that the prefix has to enter the numeration with a digit (e.g. digit 13) saying 'you go into position number 13 from the hierarchy'. In fact, if we assume, as in Borer (2005b), that prefixes, apart from their feature [endpoint] (or [quantity] in Borer 2005b) bear an additional value (e.g. [cumulative]), then their insertion as heads of the corresponding aspectual projection (e.g. AspCMLTP) is straightforwardly accounted for.

To exemplify this statement, let us consider the cumulative inner prefix NA- 'a lot' and the durative outer prefix PO- 'for a while', usually labeled as delimitative PO-. When present in the numeration, these prefixes enter with two inherent features: the feature [endpoint] which is inherent to all prefixes (and which also accounts for the fact that all prefixed verbs give telic predicates as will be shown in chapter 4), and an additional aspectual/Aktiosartal feature [cumulative] for NA- and [durative] for PO-.

From now on there are two ways to follow. We can go on with Cinque (1999) and suggest that the functional universal hierarchy is always present in the structure (even when there is no overt realization of a given functional projection) and that the values [cumulative] and [durative] determine the insertion of NA- and PO- as heads of AspCMLTP and AspDURP,³⁶ respectively. Otherwise, we can go on with Giorgi & Pianesi (1997) and propose that *“even though a language may have access to the maximal number of functional projections made available by UG, it will each time utilize only those projections that are needed to host specific lexical or morphological material present in the numeration”* (see Cinque 1999: 133). Hence, once the prefix NA- and PO- are present in the numeration, their features [cumulative] and [durative], respectively, deterministically require the presence of the corresponding aspectual projection (e.g. AspCMLTP and AspDURP) in the structure since they will eventually head these projections. Hence, what allows the implementation of Cinque’s hierarchy as far as prefixes are concerned is the fact that prefixes enter the numeration with an additional inherent feature (e.g. [cumulative] for inner NA-). In this study I adopt Giorgi & Pianesi’s (1997) proposal and suggest that only when some aspectual feature is present in the numeration is the corresponding aspectual projection present in syntax.

Another remaining question to ask is how the features [endpoint] or [cumulative] are justified. The answer is straightforward. On the one hand, such features are semantically justified since both types of features contribute to semantics, i.e. [endpoint] always gives telic predicates whereas [cumulative] is always interpreted as ‘a lot’. On the other hand, these features are also phonologically justified, i.e. at PF, since they always receive an overt morpho-phonological realization in the form of a prefix (e.g. NA-). That is, both features have effects on the PF and LF outputs which suffices to justify the fact that they project in narrow syntax.

Now we are prepared to jump to the modified account of prefixation which I defend here.

³⁶ The outer prefix PO- has often been labeled ‘delimitative’ in the literature on super-lexical prefixes (Svenonius 2004a, Istratekova 2004, among many others). However, since this prefix corresponds to Cinque’s (1999) AspDURP (see (24)), I will prefer to label it as durative PO- and, in consequence, it will head its own AspDURP instead of AspDLMTP. However, this is just a matter of terminology.

3.3.2. A modified account of prefixation

As previously mentioned, I advocate a modified account of prefixation based on three factors: (i) semantic; (ii) morphological, and (iii) syntactic, which shows that prefixes should be divided into three groups:³⁷

- (i) *lexical* (idiosyncratic and argument-structure ‘modifiers’)
- (ii) *inner* (compositional and argument-structure ‘modifiers’)
- (iii) *outer* (compositional and event-structure ‘modifiers’)

LEXICAL	INNER	OUTER
idiosyncratic	compositional	compositional
change the argument structure of the verb	affect the argument structure of the verb	modify the event, not the argument structure of the verb

Table 3: A modified account of prefixation

Before we see how these three types of prefixes differ from one another with respect to the three factors above, I will just briefly describe and exemplify the three prefixal groups. Let us start with the first group, i.e. the lexical (idiosyncratic) prefixes.

3.3.2.1. A modified account of prefixation: lexical prefixes

For the time being it suffices just to mention that the first group of prefixes, i.e. the lexical ones, have an idiosyncratic relation with the verb to which they attach and are derivational morphemes, i.e. they have a lexical-derivational role (e.g. *dam* ‘give’ → *IZ-dam* ‘publish’;

³⁷ It should be noted that Tatevosov (2008) makes a proposal incorporating semantic and syntactic evidence. He defends the existence of a group of intermediate prefixes in Russian (e.g. completive DO- and repetitive PERE-) distinct from both the lexical and the super-lexical ones. One may argue that my division of the super-lexical group into inner and outer prefixes is similar to Tatevosov’s proposal; however, rather than postulating a dedicated projection (e.g. Intermediate Phrase) hosting all intermediate prefixes as in Tatevosov (2008), I will advocate a projection-per-prefix analysis. Furthermore, the intermediate prefixes of Tatevosov are outer prefixes in my analysis which correspond to the group of the super-lexical ones in Svenonius (2004b).

see (8)). It is precisely this role which distinguishes them from the rest of the prefixes (e.g. inner and outer) which are best treated as aspectual operators.

Now let us introduce the second group of prefixes, the inner aspectual ones.

3.3.2.2. A modified account of prefixation: inner prefixes

The inner prefixes interact directly with the argument structure of the base verb. They either modify an argument of the verb by locating or quantifying it, or else introduce a new argument not selected by the verb (Spencer & Zaretskaya 1998). I propose that such prefixes be divided into three groups:

(26) Inner prefix typology

- a. Spatial**
- b. Causative**
- c. Quantificational**

A COMMENT IS IN ORDER HERE. Throughout this section and the following one (§ 3.3.3) it will become clear that the prefixes in (26) cannot be treated in a uniform manner. We will see that though all the prefixes in (26) interact with the argument structure of the verb, the spatial (26a) and the causative (26b) prefixes are special since they do not behave uniformly with respect to the tests provided in section 3.3.3 and they do not have a fixed position neither within Cinque's hierarchy (24) nor with respect to one another. Thus, they will have a kind of intermediate status in between lexical-idiosyncratic and inner prefixes. Bearing this in mind, let us now start with the spatial prefixes (26a).

The first sub-group, the spatial prefixes (26a), attach to verbs of motion and denote the direction of the motion event (from Markova & Padrosa-Trias 2008) as in (27).³⁸

³⁸ The denotation of the spatial prefixes corresponds to the denotation of the corresponding preposition from which the prefix is derived.

(27) **a. Goal**

DO-bjagah (do bolnitsata)
to-ran (to the hospital)
'I ran to the hospital'

c. Locative

POD-chertaja
under-line
'underline'

d. Unselected argument:

*PRE-pluvah *(rekata)*
across-swam *(the river)
'I swam across the river'

b. Source

IZ-bjagah (ot zatvora)
out-ran (out of the prison)
'I ran out of the prison'

c'. Locative

OB-gradja
around-build
'fence in, enclose'

*PRE-pluvah *(prez rekata)*
across-swam *(across the river)
'I swam across the river'

From (27) we can observe that once the prefix stacks onto the verb, the PP in (27a, b) may or may not be overtly realized which suggests that the PP in such constructions is an adjunct whereas the prefix is a Path head (see Acedo-Matellán 2010 for discussion on this issue). As already mentioned, though (quantificational) inner prefixes have their position in Cinque's hierarchy (24), spatial prefixes do not, due to the fact that they do not have any inherent aspectual (i.e. Aktionsart) feature but rather some kind of a Locus feature (apart from their inherent feature [endpoint]). It is this feature Locus which allows them to modify the verb's internal argument locationally, e.g. by indicating the position occupied by some event's participant (27c, c'), or to denote the direction of the motion event with verbs of motion (27a, b). Finally, the fact that sometimes the spatial prefix may introduce an argument not selected by the verb (27d) is due to two facts: (i) this prefix is neither the Goal (e.g. *DO-* in (27a)) nor the Source one (e.g. *IZ-* in (27b)), and (ii) it attaches to verbs of motion. Once the combination of (i) and (ii) takes place, then we either overtly express the PP (27d') or else make the complement of P (e.g. *rekata* 'the river') the verb's internal argument (27d).

The second group of inner prefixes, i.e. the causative ones, are also special inasmuch as they do not have a dedicated position in Cinque's hierarchy neither. The role of these

prefixes is to transitivity an otherwise intransitive verbal base, thus adding an argument to the unprefix verb.

(28) Causative prefixes³⁹

a. <i>RAZ-placha bebeto</i> make-cry baby-the 'make the baby cry'	b. <i>PRI-spja bebeto</i> make-sleep baby-the 'make the baby sleep'

Causative prefixes, in the same way as the spatial ones from (27), are not aspectual operators. However, treating them as lexical prefixes will not help either since the latter are idiosyncratic and derivational. See section 3.3.3.2 for further details.

Finally, the third group of inner prefixes, the quantificational ones, do have a dedicated position within the hierarchy in (24). Within this group, we can distinguish between cumulative, distributive and pure perfectivizing prefixes.

Cumulative prefixes involve the notion of 'all /many' objects (29) whereas distributive prefixes indicate a unique but distributed action consisting of separate acts and consecutively involving many/all of the objects (30).

(29) Cumulative prefixes

a. <i>NA-izljazoha hora</i> NA-came out people 'Many people came out'	b. <i>NA-hapaha go komar-i</i> NA-bit him mosquito-PL 'Many mosquitoes bit him'

(30) Distributive prefixes (correspond to Czochralski's (1975) distributive Aktionsart)

- IZ-PO-NA-RAZ-[PRO-dadoh] knigi*
completely-**one by one**-many-excessively-[sold] the books
'I sold many books in excess completely **one by one**'

³⁹ The causative prefixes may be further subdivided into change of state (*RAZ-hladja* 'cool down', *RAZ-shirja* 'enlarge'), result (*RAZ-gadaja* 'decipher', *RAZ-poznaja* 'recognize', *RAZ-rabotja* 'work out'), and change of form (*RAZ-topja* 'melt').

Both cumulative and distributive prefixes are semantically related in that the notion of plurality is present. Hence, they select for plural nouns (else, mass nouns or collective nouns (29a)).

AN OBSERVATION IS IN ORDER HERE. Cumulative and distributive prefixes are traditionally considered ‘super-lexical’ (see Svenonius 2004a,b). However, in contrast to outer prefixes, cumulatives make direct reference to the internal argument and do obligatorily require its presence. Thus, if an unergative verb is cumulatively prefixed (31b), a clitic is obligatorily present in the structure so that the prefix can operate on it.

(31) Cumulatives: introduce unselected (internal) arguments with unergatives⁴⁰

a. <i>NA-pŕžih kartofi</i> NA-fried potatoes ‘I fried many potatoes’	b. <i>NA-hodih *(se) iz London</i> NA-walked SE through London ‘I walked through London for a lot of time/ a long distance/ to my heart’

One can object that the clitic SE is not an argument of the verb in (31b) but rather a reflexive marker of some kind. However note that SE cannot co-occur with other internal arguments of the verb in similar situations.

(32) a. <i>pljuh dva chasa</i> spat two hours ‘I spat for two hours’	b. <i>IZ-pljuh se</i> out-spat SE ‘I spat out myself’	c. <i>IZ-pljuh kamŭche-to (*se)</i> out-spat stone-the (*SE) ‘I spat (*se) the stone out (*se)’

From (32) we can observe that the verb *pljuja* ‘spit’ can appear without any internal argument at all (32a). However, once prefixed, an internal argument is obligatorily required

⁴⁰ With transitive verbal base, cumulative *NA-* operates on the internal argument, giving rise to the interpretation of ‘many’ (31a). If the base is intransitive (31b), the clitic ‘se’ is introduced so that *NA-* can operate on it. Against the traditional classification of *NA-* as an outer prefix with the meaning of ‘saturation’ (see Svenonius 2004a: 195), I claim that the *NA-* in both (31a) and (31b) is the same instantiation of cumulativeness with possible interpretational differences due to the nature of the verbal base, i.e. its (in)transitivity.

in the structure which can either take the form of the clitic (32b) or else a DP (32c). Additionally, the DP argument in (32c) cannot co-occur with the clitic suggesting that both are internal arguments of the prefixed verb (32c).

TO SUM UP, cumulatives operate directly on the internal argument of the verb and require its presences obligatorily, implying that they should be listed as inner prefixes.

Finally, the pure perfectivizing prefixes behave in a similar way as the quantificational inner prefixes. From (33) we can observe that when a pure perfectivizing prefix attaches to a verbal stem, it requires the presence of the internal argument obligatorily (33a vs. 33b). These prefixes will roughly correspond to Czochralski's (1975) resultative Aktionsart (e.g. *po-pravja* 'to have repaired' (PF) from *pravja* 'to make, to repair' (IMPF1)).

(33) Purely perfectivizing prefixes

- a. *pisha* (poema) (na tetradkata) (s himikalka)
 write (a poem) (on the notebook) (with a pen)
 'I am writing (a poem) (on the notebook) (with a pen)'
- b. *NA-pisah* *(poema) (na tetradkata) (s himikalka)
 NA-wrote *(a poem) (on the notebook) (with a pen))
 'I wrote up a poem (on the notebook with a pen)'

Now let us turn to the third group of prefixes, the outer aspectual modifiers.

3.3.2.3. A modified account of prefixation: outer prefixes

We have previously noted that in contrast to lexical and inner prefixes, which interact with the argument structure of the verb, the outer prefixes do not relate to any of the verb's arguments. Rather, what they really modify is the event denoted by the verb, i.e. they are event modifiers. Within this group, we have three types: (i) temporal, (ii) degree, and (iii) manner prefixes.

The first group of the outer prefixes, the temporal ones, can be roughly divided into three subtypes: (i) phasal prefixes (34, 35), (ii) durative prefixes (36), and (iii) repetitive prefixes (37).⁴¹

(34) Phasal inceptive prefixes (Czochralski's (1975) ingressive Aktionsart)

a. Pure inception:	b. Sudden action + inception	c. Modal inception:
<i>ZA-placha</i>	<i>PRI-boli me (glavata)</i>	<i>PRO-govorja</i>
ZA-cry	PRI-hurt me (the head)	PRO-talk
‘start to cry’	‘start to feel headache suddenly’	‘start to talk (for a baby)’

(35) Phasal terminative prefixes

OT-boli me (glavata)
 OT-hurt me (the head)
 ‘stop feeling headache’

(36) Durative prefixes (correspond to Czochralski's (1975) delimitative Aktionsart)

PO-placha
 PO-cry
 ‘cry for a while’

(37) Repetitive prefixes

PRE-[pro-dam]
 PRE-[sell]
 ‘sell again, resell’

Phasal prefixes (34-35), like phase verbs, make reference to a particular phase of the event such as ‘beginning’ or ‘end’ (Coseriu 1976). Durative prefixes (36) delimit the event

⁴¹ There is another group of prefixes, the anterior action ones, which are temporal in nature and thus semantically related to outer prefixes, e.g. *PRED-platja* ‘pay in advance’ (see Markova & Padrosa-Trias 2008). However, such prefixes are not productive in the same way as the outer ones are so I will leave them aside.

temporally where the interpretation we get is ‘for a while’. As for the repetitive prefixes (37), they indicate iteration in time, i.e. they show that the event is performed for a second time.⁴²

The second group of the outer prefixes, the degree ones, can either strengthen (38a) or lower (38b) the intensity of the event denoted by the verb.

(38) a. High degree

PRE-jam

PRE-eat

‘eat a lot/excessively’

b. Low degree

PO-[PRO-dam]

a little bit-[sell]

‘sell a little bit’

Finally, the third group of the outer prefixes, the manner ones, present the verbal action in a secret manner (39a), as being carried out quickly (39b, b’), or indicate that the action is performed in a reverse manner (39c, c’).

(39) Manner prefixes

a. secret manner⁴³

POD-slusham

POD-listen

‘listen secretly’

b. ‘quickly’

S-pŕřža

S-fry

‘fry rapidly’

b’. *IZ-skocha*

IZ-jump

‘jump out suddenly’

⁴² Iterative prefixes tend to attach to perfective verbs. This may be semantically driven. In order to show that the action is repeated, we need the previous instantiation of this action to be completed. Bearing in mind that perfectivity and completion go hand in hand, such prefixes tend to select for perfective (telic) bases.

⁴³ The notion of ‘secret action’ is taken from Kurteva (2007).

c. **Reversive**

<i>RAZ-vŭrža</i>	<i>c'. OT-pleta</i>
RAZ-tie	OT-knit
‘untie’	‘unknit’

d. **Excessive** (correspond to Czochralski's (1975) evolutive Aktionsart)⁴⁴

<i>RAZ-peja se</i>
RAZ-sing REFL
‘get into singing; sing in excess/excessively’

TO RECAPITULATE, I have proposed a modified analysis of the Bulgarian prefixes by dividing them into three types: lexical, inner and outer. The necessity of such a reanalysis is due to the fact that the general and well-established division of Slavic prefixes into lexical and super-lexical cannot account for the fact that within the latter group there are prefixes (e.g. cumulatives and distributives) which directly interact with the argument structure of the verb. Hence, such prefixes cannot be event modifiers in the same way as the rest of the super-lexical prefixes are. Therefore, I propose that they fall within the group of the inner aspectual prefixes. A recap on the Bulgarian prefix typology is presented in Table 4 below.

Previous analysis	Lexical	Pure PF	Super-lexical			
Modified account	Lexical	Inner		Outer		
	Idiosyncr	PF	QUANT	Temporal	Degree	Manner
		SPATIAL CAUS	-CMLT -DSTR	INCP TRMN RPET DUR	high low	secret sudden reverse excessive

Table 4: Bulgarian prefixal typology

I devote the following section to present further evidence for the modified account of prefixes defended here.

⁴⁴ I will not analyze excessive prefixes here. Note that these prefixes always involve the presence of the reflexive and that apart from the notion of excessiveness, the notion of inception is also present.

3.3.3. Evidence for the Division of Prefixes into Lexical, Inner and Outer

As previously mentioned, there are three additional factors, apart from the argument-structure *versus* event-structure modification, in support of my division of prefixes into lexical, inner and outer. On the one hand, there are semantic factors which show that only the lexical prefixes are idiosyncratic whereas the inner and outer ones are semantically transparent and compositional. On the other hand, there are further syntactic factors establishing again a dividing line between the lexical group *versus* the inner and outer group, where it is only the latter which are hierarchically ordered with respect to one another in contrast to the lexical prefixes which show neither fixed order nor any scope dependencies. Finally, on morphological grounds, the three types of prefixes differ substantially, too. Thus, only outer and quantificational inner prefixes enter productive morphological processes such as complex event nominalizations and prefixation of loan verbs. Spatial and causative inner prefixes, together with the lexical prefixes, do not enter productive morphological processes. A recap on the factors is presented in (40):

(40) Factors for the division of prefixes into lexical, inner and outer

- a. **Semantic:** semantic transparency (non-idiosyncrasy) → inner and outer
- b. **Syntactic:** hierarchical and scope relations → inner and outer
- c. **Morphological:** morphological productivity (complex event nominal formation and prefixation of loan verbs) → quantificational inner and outer

To explain these facts, I claim that the observed differences between the three groups of prefixes are due to the syntactic position such prefixes occupy within Cinque's (1999) hierarchy of aspectual features (24). It will become clear that only prefixes which have a dedicated position within this hierarchy will show a more regular behavior, i.e. (i) strict hierarchical ordering, (ii) compositionality and transparency in meaning, and (iii) morphological productivity. Due to the fact that both the inner and the outer prefixes are placed in syntax (the former above VP and the latter above vP), i.e. in Cinque's hierarchy (which, as shown in (24) starts with V^o), then these prefixes will show a regular behavior.

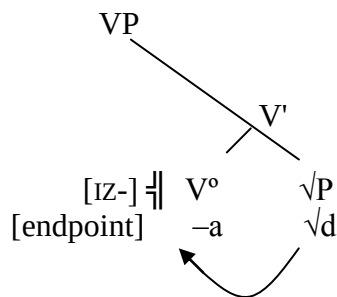
However, this will not hold for the lexical prefixes since they are directly stuck onto the V^o head via adjunction. I start the discussion with the lexical prefixes.

3.3.3.1. On lexical prefixes

We have already mentioned that the lexical prefixes are idiosyncratic (8), i.e. they are not compositional and semantically transparent.⁴⁵ In the analysis defended here, this is due to the fact that such prefixes enter syntax on a complex verbal head via an adjunction process (41). That is, the lexical prefixes are at the bottom line of Cinque's hierarchy which, in the usual case, starts with V^o (see (24)), or, in the case of lexical prefixation, it starts with the complex verbal head [lexical prefix + V^o].

(41) The syntax of lexical prefixes⁴⁶

a. *dam* 'give' → *IZ-dam* 'publish'



From the representation in (41) we can observe that once the root verbalizes via the attachment of the thematic vowel *-a*, a V^o head, the lexical prefix [IZ-] is adjoined to V^o in a stacking-like manner, i.e. it directly stacks onto the verbal head via left adjunction in situ. That is, I claim that lexical staking equals adjunction in situ, i.e. without any further movement being necessary. I claim that such a treatment of the lexical prefixes as adjoined

⁴⁵ This explains why lexically prefixed bases are regarded as new lexical items which have to be learned by the child.

⁴⁶ I use square brackets in examples and syntactic derivations to show the presence of a lexical prefix. The symbol $\parallel$ in syntactic derivations represents lexical stacking to V^o via an adjunction process.

to V^o under (lexical) stacking nicely accounts for the behavior of the lexical prefixes together with their corresponding properties.⁴⁷

⁴⁷ Babko-Malaya (1999) suggests that lexical prefixes are adjoined to a lexical head pre-syntactically. Ramchand (2003) derives prefixes as heads of the Resultative Phrase (RP). The RP is, in turn, a complement of V' (see Svenonius 2004c: 312, for more details). Svenonius (2004c) offers a similar proposal. He suggests that lexical prefixes should be analyzed as small clause predicates assuming a R(esult) head below V, as in (i) below (taken from Svenonius (2004c: 206)):

- (i)
- | | | |
|-------|------|---------|
| VP | | |
| V | RP | |
| throw | | |
| | DP | R' |
| | ball | |
| | R | PP |
| | into | in goal |
- Helder ZA-brosil mjač v vorota angličan*
 Helder INTO-throw ball in goal English
 'Helder kicked the ball into the English goal'

However, deriving the lexical prefixes as R heads is problematic for several reasons. First of all, not all lexical prefixes have resultative semantics (e.g. *kazvam* 'say' vs. [DO-*kazvam*] 'prove' vs. [PO-*kazvam*] 'show', vs. [NA-*kazvam*] 'punish' vs. [PRI-*kazvam*] 'talk', vs. [RAZ-*kazvam*] 'narrate', etc). In second place, lexically-prefixed verbs correspond to new lexical items in other languages (*kazvam* 'say', *do-kazvam* 'prove', *pri-kazvam* 'talk', etc.), which makes one wonder whether they should really correspond to any aspectual head at all (e.g. an R head). In fact, acquisition could provide revealing evidence for the claim that lexically prefixed verbs should be considered new lexical items, totally idiosyncratic and non-compositional, i.e. not heading any functional projection at all. My conjecture is that a child acquiring a language is not conscious of the fact that [DO-*kazvam*] 'prove' derives from *kazvam* 'say' via lexical prefixation. Rather, she learns the new lexical item [DO-*kazvam*] 'prove' independently and not necessarily having previously acquired *kazvam* 'say'. I cannot support this conjecture with independent data on acquisition, but it seems to me a logical assumption. Additionally, deriving these prefixes as syntactic R heads will imply that (i) there will be semantic compositionality between the prefix and the verb and, more importantly that (ii) multiple lexical prefixation will be banned since we, in principle, do not need and cannot have more than just one R head in derivative. However, we have instances where there are two or more lexical prefixes stacking on a verbal stem as in (ii) and (iii).

(ii) <i>pred-raz-po-√lag-a-m</i> PRED-RAZ-[PO-√lag]-a.IMPF-m.1PS.SG PRED-[RAZ-[PUT]]-a.IMPF-m.1PS.SG [PRED-[DISPOSE]-a.IMPF-m.1PS.SG 'pre-dispose'	(iii) <i>raz-pro-stran-java-m</i> RAZ-[PRO-avoid]-java.IMPF-m.1PS.SG [RAZ-[*PRO-avoid]]-java.IMPF-m.1PS.SG 'spread'

From (ii) we see that the cranberry root (i.e. a root which cannot exist on its own) [√lag] undergoes lexical prefixation by three lexical prefixes. Each of these prefixes gives a new lexical meaning to the item they

By now, we have seen that the lexical prefixes have the following properties: (i) idiosyncrasy; (ii) lexical-derivational role, i.e. give a new verb, and (iii) change the argument structure of the verb. Apart from these three properties, they show three other properties as well: (iv) not hierarchically ordered with respect to other lexical prefixes, (v) not morphologically productive, and (vi) have a telicizing effect (characteristic of all of the Bulgarian prefixes). Let us briefly exemplify the last three properties of the lexical prefixes before accounting for them by their syntactic representation as shown in (41).

The lexical prefixes are not hierarchically ordered with respect to one another, which is exemplified in (42).

(42) a. $\text{PRI}^{\text{LEXICAL}}\text{-znaja}$ ⁴⁸

AT-know.PRES.1PS.SG

‘I admit’

b. $\text{PRI}^{\text{LEXICAL}}\text{-PO}^{\text{LEXICAL}}\text{-znaja}$

AT-ALONG-know.PRES.1PS.SG

‘I acknowledge formally’

c. $\text{PO}^{\text{OUTER}/*\text{LEXICAL}}\text{-}[\text{PRI}^{\text{LEXICAL}}\text{-znaja}]$

A LITTLE BIT^{OUTER}/*ALONG^{LEXICAL} [AT^{LEXICAL}-know].PRES.1PS.SG

‘a little bit-[admit].PRES.1PS.SG

‘I admit a little bit of the truth/ I confess some things’

From (42) we can observe that if the two lexical prefixes PRI- and PO- from (42b) change their order, the higher one is inevitably interpreted as an outer prefix, but not as a lexical

attach to. Example (iii), on the other hand, shows that the lexical prefix [PRO-] cannot combine with the stem [*stranja* ‘avoid’] on its own as it does not ascribe a meaning to it. In fact, it needs the second lexical prefix [RAZ-] so that meaning can be ascribed to the verbal stem. (There are, in fact, many cases where a lexical prefix needs the additional presence of another lexical prefix in order to ascribe a new meaning to the verb.) Hence, I claim that these prefixes enter the structure via an adjunction process, i.e. direct stacking to V^0 (41).

⁴⁸ In all lexically prefixed derivations I use the spatial translation of the prefix which corresponds to the denotation of the corresponding preposition from which the prefix is derived, although no fixed meaning can be established when these prefixes participate as lexical ones.

prefix (42c). This implies that the lexical item $\text{PRI}^{\text{LEXICAL}} - \text{PO}^{\text{LEXICAL}} - \text{znaja}$ ‘acknowledge formally’ (42b) is idiosyncratically stored in such a way that the two lexical prefixes which participate in its formation cannot switch places since they constitute an indivisible part of the base verb. Furthermore, if one of the lexical prefixes in (42b) is not present, then the meaning of the verb changes, as in (42a). As we will see, this is not the case for the rest of the prefixes. Interestingly, when the lexical prefixes co-occur with higher inner and outer prefixes, the order is always [outer [inner [lexical [V]]]] as shown in (43), which is again indicative of the fact that the lexical prefix and the verb form an indivisible complex verbal head.

(43) a. $\text{DO-IZ-}[\text{RAZ}^{\text{LEXICAL}} - \text{kaža}]$ FINISH-COMpletely-[RAZ-say] ‘finish narrating completely’	b. $*\text{RAZ}^{\text{LEXICAL}} - \text{DO-IZ-kaža}$ RAZ-FINISH-COMpletely-say *‘finish narrating completely’

Interestingly, the lexical prefixes not only disallow other prefixes (inner or outer) to intervene between them and the verbal head but there is an additional strong tendency to interpret what is closer to the verb as a lexical prefix. Thus, on hearing the example in (43b), one easily analyzes the prefix [IZ-] as a lexical one since the morphologically complex verb [IZ-kaža] ‘express’ exists in Bulgarian. This is, in fact, an additional evidence for the morphological and hence syntactic indivisibility of the lexical prefix and the V^0 head.

The fifth property of the lexical prefixes is their inability to participate in productive morphological processes such as the prefixation of loan verbs and the corresponding loan nominalization. In fact, since the ability of loan verb prefixation implies an ability to give the corresponding loan nominal, I will not get into details on these nominalizations since we have chapter 6 dedicated to this topic. It just suffices to say that Bulgarian –NE nouns are very productive in the same way as the English –ing nominals and that (almost) all verbs, foreign and native, give –NE nominalizations. However, if a lexical prefix cannot stack to a given loan verb then there will be no –NE noun derived from this loan verb and containing the lexical prefix neither. The relevant data are presented in (44, 45).

(44) Verbal prefixation

a. Native verbs: *kaža* ‘say’, *dam* ‘give’, *pitam* ‘ask’

(i) *NA-kaža* ‘punish’ (iii) *ZA-dam* ‘ask’ (v) *VŮZ-pitam* ‘educate’

(ii) *RAZ-kaža* ‘narrate’ (iv) *PRO-dam* ‘sell’ (vi) *IZ-pitam* ‘examine’

b. Loan verbs

(i) **NA-citiram* (ii) **RAZ-citiram* (*citiram* ‘recite’)

(iii) **V-blokiram* (iv) **PRO-blokiram* (*blokiram* ‘block’)

(v) **VŮZ-operiram* (vi) **S-operiram* (*operiram* ‘operate’)

(45) Loan –NE nominalizations

a. (**NA*)-*citir*(v)*a-ne* b. (**PRO*)-*blokir*(v)*a-ne* c. (**S*)-*operir*(v)*a-ne*

(**NA*)-*recite*-NZ (**PRO*)-*block*-NZ (**S*)-*operate*-NZ

‘(**NA*)-reciting’ ‘(**PRO*)-blocking’ ‘(**S*)-operating’

From (44a) we can observe that native verbs can be lexically prefixed and in each case of lexical prefixation we obtain a totally new verb, due to the lexical derivational role of such prefixes. However, this can never be the case with loan verbs since no prefix is able to change the basic denotation of these verbs. Thus, from the native verb *kaža* ‘say’ we get the lexically prefixed form *NA-kaža* ‘punish’, but we cannot prefix *citiram* ‘recite’ and get *NA-citiram* meaning something different from ‘recite’ (44b: i). Additionally, due to the fact that there are no lexically prefixed loan verbs, foreign –NE nominalizations containing lexical prefixes are also excluded (45).

Finally, the sixth property of the lexical prefixes is their ability to give telic predicates. This property, as previously mentioned, is shared by all of the Bulgarian prefixes and can be explained by the fact that all prefixes in Bulgarian bear an inherent [endpoint] feature which delimits the event with the final result being a telic predicate (see chapter 4 for evidence for the [endpoint] feature of the Bulgarian prefixes). However, in contrast to the inner and outer prefixes, which bear an additional inherent feature [cumulative] for inner cumulative NA-, or [durative] for outer durative PO- (see the following section on this features), idiosyncratic prefixes lack such a feature. The fact that these prefixes apart from

the [endpoint] feature, do not have any additional aspectual/Aktionsart value (like, for example, [cumulative]), deprives them of a dedicated position within Cinque's hierarchy of aspectual features in (24). It will then follow that, when present in the numeration such prefixes should enter syntax somehow, irrespective of the fact that they do not have a dedicated aspectual projection due to the lack of any inherent aspectual/Aktionsart feature. Thus, the only alternative left for them is to get into the structure via adjunction to the V^o head, given that prefixes seek for verbal material to stack onto.⁴⁹ In (46) I list all of the properties of the lexical prefixes in Bulgarian which we have seen by now.

(46) Properties of the Bulgarian lexical prefixes

- a. idiosyncrasy
- b. have a lexical-derivational role, i.e. give a new verb
- c. change the argument structure of the verb
- d. not hierarchically ordered with respect to other lexical prefixes
- e. not morphologically productive
- f. have a telicizing effect (characteristic of all of the Bulgarian prefixes)⁵⁰

For ease of exposition, I briefly account for all of the properties one by one in (47).

⁴⁹ There is a general consensus among the Bulgarian linguists that prefixation is verbal in nature. Bojadjev et al. (1999: 238) claim that while suffixes and endings (*okonchaniya*) are elements which form the word, prefixes cannot be attached to the base (root), but to the whole word. That is why prefixes cannot change the category of the word they are attached to. Additionally, Bojadjev et al. (1999: 263-264) claim that prefixation is not typical for nouns, i.e. it is not a noun formation device (some exceptions are: *podklas* 'subclass', *podpolkovnik* 'colonel', *pradjado* 'ancestor, fore-father', *podsystema* 'subsystem', *svrűhsili* 'superpowers' (degree), time: *predistoriya* 'prehistory'; lack: *nemosht* 'impotence', *protivodejstvie* 'counteraction', etc.). Thus, the majority of nouns which apparently seem prefixed (e.g. *iznos* 'export', *izhod* 'exit; outcome', *prepis* 'transcript, copy', *vhod* 'input; entrance') are in fact derived from prefixed verbs. I therefore assume that the presence of a prefix signals the presence of a verbal base which, in turn, implies the presence of a verbalizing thematic vowel.

⁵⁰ See Appendix 3.5.

(47) Accounting for the properties of the Bulgarian lexical prefixes

a. **idiosyncrasy**: the idiosyncratic relation between the prefix and the verb comes from the fact that these prefixes, whenever present in the numeration, can be in principle adjoined to any V^0 head and in any order (see also (47d)). Thus, we can never be able to predict what the contribution of a lexical prefix will be in combination with a given verb since all verbs in principle can be lexically prefixed by any lexical prefix (e.g. *kaža* ‘say’ → *OT-kaža* ‘deny’, *IZ-kaža* ‘express’; *dam* ‘give’ → *OT-dam* ‘dedicate’, *IZ-dam*₁ ‘publish’, *IZ-dam*₂ ‘betray’, where we see that *OT-* and *IZ-* attach to both *kaža* ‘say’ and *dam* ‘give’ and give different lexical items with no shared denotation between the *OT-* and *IZ-* lexical derivatives (see (8)).

b. **have a lexical-derivational role, i.e. give a new verb**: *prima facie*, there is no apparent way to account for the fact that these prefixes, when adjoined to V^0 , will return a totally new verb, i.e. that they will have a semantic effect onto V^0 . To account for this, I suggest that the lexical prefixes, apart from the inherent [endpoint] feature, also bear a [lexical] feature. (Alternatively, a [semantic] or [idiosyncratic] feature). It is this [lexical] feature which will, on the one hand, determine their low adjunction to V^0 (the lexical level), something also reinforced by the fact that there is no dedicated functional projection for them in the universal hierarchy, and, on the other hand, will further explain the fact that when adjoined to V^0 , the prefix will have a lexical-semantic role to discharge, where the resulting morphological complex [lexical prefix + V^0] will eventually constitute a new lexical item.

c. **change the argument structure of the verb**: The fact that this (lexical) adjunction is at a very low level (i.e. V^0), accounts for the fact that such prefixes change the argument structure of the verb. (Recall that argument structure is represented vP internally).

d. **not hierarchically ordered with respect to other lexical prefixes**: the fact that we have an adjunction process (41) implies that such prefixes will not appear in any predictable or fixed order since in case we have two lexical prefixes in the numeration any of them can, in principle, adjoin to the V^0 in any order. Consequently, a lack of fixed order suggests that there will be no scope dependencies between these prefixes.

e. **not morphologically productive**: the fact that these prefixes are not morphologically productive (e.g. do not enter prefixation of loan verbs and, as a

consequence, do not give loan –NE nominalizations) is due to the fact that the non-native verbalizer (e.g. *–ira/–izira*) which participates in the formation of the loan verb is inserted higher up in the structure (see chapter 6). Hence, if a root verbalizes above a given prefix, then there will be no possibility for this prefix to stack onto the root since prefixes select for verbal elements, not roots (see fn. 49). That is, the attachment site of certain affixes (e.g. verbalizers) determines whether a given prefix can appear or not inside the corresponding derivative, a statement which will be further elaborated on in chapter 6.

f. **have a telicizing effect** (characteristic of all of the Bulgarian prefixes): prefixes give telic predicates because of their inherent feature [endpoint] which delimits the event denoted by the verb and makes it bounded, i.e. telic (see the following chapter).

Having discussed the properties of the lexical prefixes, I now turn to the second group of prefixes, the inner ones, and their behavior with respect to the three factors in (40).

3.3.3.2. On inner prefixes

With respect to the first factor, the semantic one (40a), it is clear that the morphological complex [inner prefix + verb] is semantically compositional and transparent. That is, we can always predict what the contribution of the prefix will be once attached to V^0 (48).

(48) a. <u>v</u> -letja	a'. <u>iz</u> -letja
into -fly	out -fly
‘fly into’ (the room)	‘fly out of’ (the room)
b. <u>na</u> -gotvja	b'. <u>s</u> -gotvja
a lot -cook	totally -cook
‘cook a lot (of meals)’	‘finish cooking/cook it all’

As for the second factor, the syntactic one (40b), we have already mentioned that the inner prefixes, in the same way as the outer ones, are aspectual/Aktionsartal in nature and appear in a fixed hierarchical order à la Cinque (1999) (24). The fact that these prefixes occupy a fixed position within Cinque’s hierarchy implies that the inner prefixes are syntactically

(and hence morphologically) higher than the lexical ones, since the latter are adjoined to V° via direct (lexical) stacking (41), but are in turn lower than the outer prefixes, with the relative order always being [*outer* [*inner* [*lexical* [V]]]] as shown in (49).

- (49) a. **DO**^{OUTER}-**IZ**^{INNER}-PO-PRE-[PRO-dam]
 finish-completely-little by little-again-[sell]
 ‘Finish selling (the books) completely little by little again’
 b. ***IZ-DO**-PO-[PRO-dam]
 *completely-finish-little by little-again-[sell]

Finally, with respect to the third factor, the morphological one (40c), it can be noted that not all of the inner prefixes enter productive morphological processes. Hence, they have a somehow intermediate status between lexical and outer prefixes.

(50) Loan verb prefixation

a. **Spatial**

(i) <i>*V-parkiram</i>	(ii) <i>*IZ-shofiram</i>
into-park	out-drive
‘*park into’	‘*drive out of’

b. **Causative**

- *RAZ-nerviram*
 make-irritate
 ‘*make someone nervous’

c. **Quantificational**

- PO-konsumiram*
 little-consume
 ‘consume some/few things’

c'. Pure perfectivizers

(i) <i>deklamiram</i> (PF/IMPF)	(ii) <i>IZ-deklamiram</i> (PF)	‘to recite’
(iii) <i>reguliram</i> (PF/IMPF)	(iv) <i>U-reguliram</i> (PF)	‘to regulate’

(51) Loan -NE nominalizations

a. * <i>v-parkir</i> – <i>va-ne</i>	
into-park-NZ	
‘*parking into’	
b. * <i>RAZ-nervir</i> – <i>va-ne</i>	
make-irritate- NZ	
‘*making someone nervous’	
c. <i>PO-konsumirva-ne</i>	c’. <i>IZ-deklamir</i> -(<i>v</i>) <i>a-ne</i>
PO-consume- NZ	IZ-recite-NZ
‘consuming/consumption’	‘reciting’

From (50-51) we can observe that only the quantificational prefixes give prefixed loan verbs (50c) and, as a consequence, can appear in a loan –NE nominalization (50c) in contrast to the spatial (50a, 51a) and the causative (50b, 51b) ones which cannot.

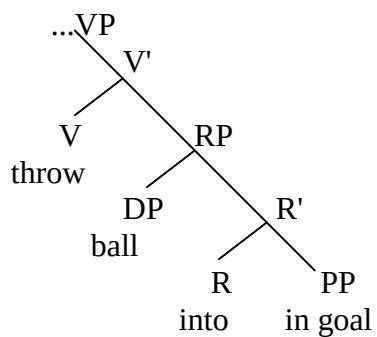
A COMMENT IS NEEDED HERE. It should be noted that the contrast between spatial and causative prefixes on the one hand, and the quantificational prefixes on the other hand, is not a mere coincidence. Interestingly, we have already noted that both the spatial and the causative prefixes are excluded from the functional aspectual hierarchy of Cinque (1999) since neither of them bears any additional aspectual (Aktionsart) feature (except for the telicizing feature [endpoint] which is shared by all the Bulgarian prefixes). A possible way to treat them then is to claim that such prefixes, rather than being inner, are more like lexical since both types (i.e. spatial/causative and lexical) relate directly with the verb’s arguments and lack a position within Cinque’s hierarchy. However, treating them as lexical prefixes will not help since the latter are idiosyncratic and derivational whereas the former are semantically transparent and compositional and unable to give new verbs. Hence, I propose that these prefixes should be treated as independent syntactic heads which attach to the V^o head VP-internally as in (52).

(52) The syntax of spatial and causative prefixes

a. Result heads (Svenonius 2004c: 206)

Helder ZA-brosil mjač v vorota angličan

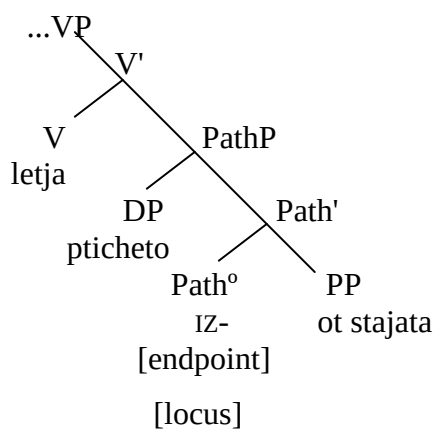
Helder INTO-throw ball in goal English ‘Helder kicked the ball into the English goal’



b. Spatial prefixes: Path heads

pticheto IZ-letjah ot stajata

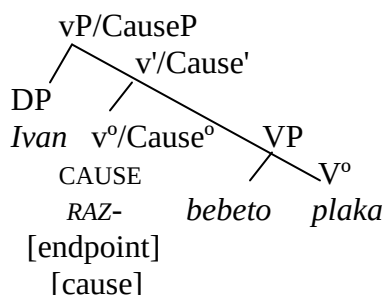
the bird out-flew out of the room → ‘The bird flew out of the room’



c. Causative prefixes: Cause heads⁵¹

Ivan RAZ-plaka bebeto

Ivan cause-cried the baby → 'Ivan made the baby cry'



From (52a, b) we can observe that the spatial prefixes derive as heads of a Resultative Phrase (RP) (see Ramchand (2003), Svenonius (2004c), among many others) where the RP is, in turn, a complement of V'.⁵² Such an analysis is, in fact, usually proposed for the derivation of lexical prefixes but see fn. 47 for some problems with this. However, I will claim that the derivation in (52a, b) can be adopted for the non-idiosyncratic spatial prefixes but not for the lexical ones which is due to two facts. First, the lexical prefixes allow for multiple stacking on V° implying that since there cannot be more than one head per projection, such prefixes cannot be R heads in contrast to the spatial prefixes which do not allow for multiple stacking. Second, a derivation such as (52) where the prefix occupies

⁵¹ I will not propose a detailed syntactic analysis of causative prefixes since this is a rather complex phenomenon. However, I believe causativized verbs in Bulgarian to correspond to syntactic causatives derived from unergative verbs rather than to lexical causatives as is the case for English deadjectival verbs (e.g. *The cook thinned the gravy* = *The cook (caused) the gravy (become) thin*; see Travis (in prep): chapter 6, p.5). Lexical causatives, in contrast to syntactic causatives, are semantically idiosyncratic, change category and undergo phonological changes. Thus, I tentatively assume causative prefixes to be the morphological manifestation of a v-head in the same way as other causative markers are considered little-v heads (see Larson 1988; Kratzer 1996). These “causative” little v heads might attach to roots, to create “lexical causatives,” or to little vPs, to create “syntactic causatives as in (52c). Hence, we can treat morphological derivatives like [causative prefix-V] in lines with serial verb constructions (see Baker 1989, 1991 and Larson 1991), which involve the incorporation of two VPs, the difference being that the higher V° is instantiated by a prefix in Bulgarian. Else, we can opt for a CausativePhrase taking VP as its complement, and not a little v-head, which will be headed by the causative prefix. I leave this topic for further investigation.

⁵² See Rojina (2004) who postulates a Dir(ection)P(hrase) which hosts directional prefixes (e.g. the goal prefixes) and which in turn takes VP as its complement.

an independent head position will imply that the morphological complex [prefix + V] should be semantically transparent. This, however, is the case for causatives and spatial prefixes but not for the lexical ones. I claim that the causative and spatial prefixes are non-idiosyncratic not only because they occupy head positions in syntax but also because they carry a specific content (feature) interpretable at LF ([locus] and [cause]). Hence, a derivation such as (52a, b) fits with the spatial prefixes but not with the lexical ones. Interestingly, note that both the lexical prefixes (41) and the causative and spatial ones (52) are derived vP-internally which, in my analysis, is the reason that, on morphological grounds, they behave similarly. Thus, in the same way as the lexical prefixes, the prefixes in (52) will be unable to enter loan verb prefixation (and hence, loan –NE nominalizations) since the loan verbalizer *–ira/–izira* is placed above vP. The same characteristics hold for the causative prefixes, the difference being that whereas the spatial prefixes are Path heads taking VP as a complement (52b), the causative prefixes arguably derive as causative heads again taking VP as a complement (52c).

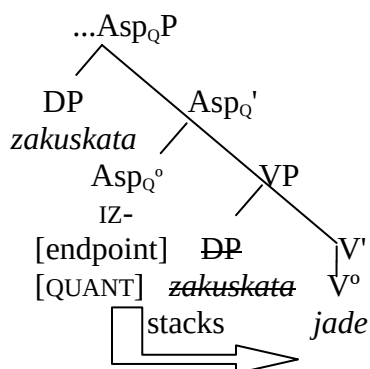
Finally, the quantificational prefixes (50c, 51c) have their dedicated position along the aspectual hierarchy of Cinque (1999) (24) which suggests that they can, in principle, enter productive morphological processes since both verbalizers and nominalizers are also placed above VP, i.e. within Cinque's hierarchy. An example of the syntactic derivation of the quantificational pure perfectivizer *IZ-* is offered in (53) where we can see that such prefixes head their own functional projection, Asp_QP. The same holds for the rest of the quantificational prefixes, e.g. cumulatives and distributives, which will head Asp_{CMLTP} and Asp_{DSTRP}, respectively.⁵³

⁵³ See Appendix 3.4 for the list of functional projections headed by the Bulgarian quantificational inner and outer prefixes.

(53) The syntax of inner quantificational prefixes

IZ-jade zakuska-ta

IZ-ate breakfast-the → ‘S/he ate the breakfast’



Before we go on, I would just like to note that whether head movement takes place in narrow syntax or at PF is not of importance for this study, though I am more inclined to believe that it is a post-syntactic phenomenon.⁵⁴ However, what really matters here is that ***the prefixes which belong to the aspectual hierarchy in (24) do not move in syntax but stack directly onto the preceding verbal structure they have under their scope*** (see also Markova 2007). In fact, the only prefixes which move in syntax are those of a intermediate status between lexical and inner, e.g. the spatial ones (52b) (I make no firm claims regarding causative prefixes).

Another question not discussed by now is the landing site of the internal argument. Following Borer (2005b) I suggest that all arguments occupy the specifier position of their

⁵⁴ It has been suggested that head movement poses some problems. Mahajan (2000), for example, claims that head movement (i) is counter-cyclic, (ii) complicates the notion of c-command because a raised head does not c-command its trace in a straightforward manner, and (iii) does not affect meaning, in contrast to XP movement. Cinque (2000) argues for XP movement exclusively within DP. For him, the order of syntactic objects can be derived by successive leftward movement of larger and larger XPs. The same remnant movement (but without pied-piping the containing phrase) may be involved in the traditionally considered N-to-D raising. Similar proposals for phrasal movement are found in the works of Kayne (1994, 2000, 2001, 2002, 2003), Koopman & Szabolcsi (2000). However, it has also been shown that head movement can be treated as a post-syntactic phenomenon (i.e. at PF) where affixes are linearized (Bobaljik 1995).

corresponding functional projections. Thus, external arguments land in Spec,TP (maybe previously in Spec,vP) where nominative case is assigned to them and then finally raise to Spec,EventP in order to obtain the relevant interpretation (Originator, Causer, Agent). As for the internal argument, its starting point is Spec,VP. Recall that when a verb is quantificationally prefixed, the internal argument is always required so that the quantificational prefix could scope over it (31). Hence, in such cases, I propose that the internal argument raises from Spec,VP to the corresponding specifier of the given functional projection, e.g. Spec,AspCMLTP for cumulative prefixes, Spec,AspDSTRP for distributive prefixes, and Spec,AspQP for purely perfectivizing prefixes, where it is quantificationally bound by the corresponding aspectual operator, i.e. the prefix. As for the pure perfectivizers, I propose that there should be an additional dedicated aspectual projection for them which is lacking from Cinque's hierarchy (24). In order to derive these prefixes, I follow Borer (2002) and propose that they are syntactically derived as heads of Asp_QP (Aspect Quantity Phrase).⁵⁵ The reason for adopting this functional projection is that such prefixes often have uses related to the notion of 'quantity' which is another piece of evidence suggesting that this group of prefixes should fall under the inner quantificational prefixes.

As for the derivation of the Asp_QP projection, it should be derived below the projection hosting the secondary imperfective suffix (Asp^IP for Markova 2007, 2010, or Asp^{DUR}P here; for more details, see § 3.4.2). There are several reasons to follow this path of reasoning. Consider the examples below.

(54) (a) (i) <i>jam</i>	→	(ii) <i>IZ-jam</i>	→	(iii) <i>IZ-jažd-a-m</i>
eat	→	IZ.PF-eat	→	IZ.PF-eat-a.IMPF2-m.1PS.SG
'eat'	→	'eat up' (PF)	→	'eat up' (IMPF2)

⁵⁵ For Borer (2002) the definition of quantity is the following:

- (i) P is quantity if P is not homogeneous
- (ii) P is homogeneous iff P is cumulative and divisive

She considers articles, numerals, and certain quantifiers as quantity expressions. For more on this issue, see Borer (2002). In more general terms, quantity interpretation corresponds to Kiparsky's (1998) notion of boundedness. For critical comments on Borer's (2002) proposal, see Filip (2005a).

(b) (i) *pisha* → (ii) *NA-pisha* → (iii) *NA-pis–va-m*
 write → NA.PF-write → NA.PF-write–va.IMPF2-m.1PS.SG
 ‘write’ → ‘write down’ (PF) → ‘write down’ (IMPF2)

From (54) we see that pure perfectivizers attach to primary imperfective verbs (i) and thus make them perfective (ii). Then, the newly formed perfective verbs (ii) can be further made imperfective via secondary imperfective suffixation (iii). This would suggest that the secondary imperfective morpheme derives higher up in the structure. Due to this, the secondary imperfective suffix scopes over the perfective prefix thus rendering imperfectivity. That is why the Asp_QP should be derived below $Asp^I P$ (else, $Asp^{DUR} P$). Moreover, this behavior holds not only for purely perfectivizing prefixes but for the rest of the prefixes as well (i.e. lexical, inner and outer) since in Bulgarian almost any perfective verb can be further imperfectivized (see also fn. 8). Hence, the secondary imperfective suffix occupies the highest position from the aspectual hierarchy.

Finally, in what follows, I will exemplify the behavior of the outer prefixes with respect to the relevant factors from (40).

3.3.3.3. On outer prefixes

First, we have already seen that the outer prefixes show semantic compositionality and transparency (9-10, 34-39). That is, the morphological complex [outer prefix + verb] is always compositional with the final denotation being the sum of the denotation of the verb plus the semantics provided by the prefix. This, in my view, is due to the fact that such prefixes are merged as independent aspectual heads within the higher syntactic domain, i.e. above vP , where there is no place available for idiosyncrasy.

Second, the outer prefixes always appear in a fixed order with respect to one another since they, in the same way as the inner prefixes, have their dedicated position within Cinque’s (1999) hierarchy. The availability of a dedicated projection within the aspectual hierarchy in (24), as previously proposed, is due to the fact that both types (i.e. inner and outer) bear

an additional aspectual/Aktiosartal value, which assures them a place within this hierarchy. As a consequence, in the case of multiple prefixation (i.e., stacking), the outer prefixes are hierarchically ordered, with the higher prefixes always scoping over the lower ones (55).

(55) a. *RAZ-prodam*

EXCESSIVELY-sell

‘sell everything/in excess’

b. *PO-RAZ-prodam*

A LITTLE BIT-EXCESSIVELY-sell

‘sell almost everything’

From (55) we can observe that the outer attenuative prefix PO- (55b) scopes over the lower inner prefix RAZ-. Thus, in the absence of another prefix, *RAZ-prodam* means ‘sell everything/in excess’. However, once the outer PO- is being attached to (55a), a scope relation between the two prefixes is established where the hierarchically higher PO- scopes over the lower RAZ-, lowering its intensity, with the final result being *PO-RAZ-prodam* ‘sell *almost* everything’. This is, in fact, crucial evidence for the fact that such prefixes (i.e. inner and outer) enter syntax via direct merge where the prefixes which merge later c-command the prefixes which have been already merged. As a result, the structurally higher prefixes (e.g. the outer prefixes) will always scope over the structurally (i.e. syntactically) lower ones (e.g. the inner prefixes).

Finally, with respect to the third factor (40c), all of the outer prefixes enter loan verb prefixation (56) and, consequently, give the corresponding loan –NE nominalizations (57).

(56) Prefixation of loan verbs

a. Phasal inceptive

ZA-vibriram

start-vibrate

‘start vibrating’

a'. Phasal terminative

DO-kopiram

finish-copy

‘finish copying’

b. Repetitive	c. Degree
<i>PRE-grupiram</i>	<i>PO-treniram</i>
again-group	PO-train
‘re-group’	‘train a little bit’ (also ‘for a while’)
d. Manner (rapid)	d’. Reversive manner
<i>IZ-vibriram</i>	<i>OT-aboniram</i>
IZ-vibrate	OT-subscribe
‘give a (sudden) vibration’	‘unsubscribe’

(57) Loan –NE nominalizations

a. <i>DO-kopir–va-ne-to</i>	b. <i>PRE-grupir-(v)a-ne-to</i>
‘finishing the copying’	‘the regrouping’
d. <i>IZ-vibrir–va-ne-to</i>	d’. <i>OT-abonir-(v)a-ne-to</i>
‘the giving of a sudden vibration’	‘the unsubscribing’

As for the syntactic representation of the outer prefixes, they, in the same way as the inner ones, occupy head positions of the corresponding functional projections in (24):

(58) The syntax of outer prefixes

PRE-[PRO^{LEXICAL}-*dam*]
 AGAIN-[sell] → ‘resell, sell again’

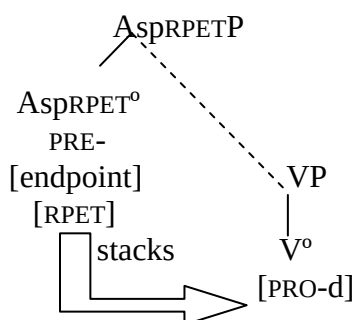


Table 5 captures the main generalizations on the Bulgarian prefix typology at which we have arrived by now.

	LEXICAL	INNER	OUTER
SYNTAX	adjoined to V ^o	between VP and vP	above vP
SEMANTICS	idiosyncrasy	compositional	compositional
MORPHOLOGICAL PRODUCTIVITY	NO	SOME (*SPATIAL/*CAUSATIVE)	YES
SCOPE WITHIN THE SAME GROUP	NO	YES	YES

Table 5: Recap on the data

TO RECAPITULATE, we have seen that there is evidence suggesting that the Bulgarian prefixes should be divided into three groups: lexical, inner and outer.

The first group consists of prefixes which adjoin to V^o and enter into a semantic relation with the verbal head due to their inherent feature [lexical]. It is precisely this feature which allows such prefixes to derive new lexical items once attached to the verbal base. The fact that the lexical prefixes enter the structure by adjunction further explains their lack of hierarchical order and scope dependencies, together with their idiosyncratic relation with the base verb and their possibility to stack (*a priori*, there is nothing to prevent multiple adjunction to a base). Due to the fact that these prefixes are located VP-internally further accounts for their ability to relate directly to the arguments of the verb, on the one hand, and their inability to enter productive morphological processes, on the other hand, since all morphological productivity takes place in the higher syntactic domain above VP.

The second group of prefixes, the inner ones, consists of two different kinds of prefixes: (i) the quantificational prefixes, and (ii) the causative and spatial prefixes. The first subtype, i.e. the quantificational prefixes, includes prefixes which have a dedicated position within Cinque's hierarchy (24). As we have already suggested, this is due to the fact that these prefixes enter syntax with an additional inherent aspectual/Aktiosartal feature (e.g. [cumulative], [distributive], [quantity]). As a consequence, due to their fixed position

within the aspectual hierarchy, these prefixes appear in a fixed order and show scope relations. Moreover, since they have an inherent aspectual feature (apart from their [endpoint] feature), then these prefixes are semantically transparent and compositional where the meaning of the complex [quantificational prefix + V] is the sum of the denotation of the prefix plus the verb. Quantificational prefixes are also morphologically productive. To account for this, we have proposed that it is due to the fact that quantificational prefixes form part of the second syntactic domain, i.e. the one above VP but below vP, together with the fact that they project as independent syntactic heads, a possibility made available to them by their additional inherent aspectual/Aktionsart values. Since productive morphology is located above VP, this group of prefixes then can, in principle, be productive, which, as we have seen, is exactly the case. Finally, the fact that they are derived below vP explains their ability to interact with the argument structure of the verb since, as we know it, argument structure is realized vP-internally. As for the second subtype of inner prefixes, e.g. the causative and the spatial ones, we have observed that in the same way as the rest of the inner prefixes they are semantically transparent and compositional. This, as already mentioned, is due to the fact that these prefixes enter syntax as independent heads and are endowed with two inherent features: (i) the [endpoint] feature common to all of the prefixes, and (ii) a [cause] (for causatives) and [locus] (for spatial prefixes) features as well. However, these features (e.g. [cause] and [locus]) are not aspectual which explains the fact that these prefixes, in contrast to the quantificational inner ones, do not have any dedicated position within the hierarchy of aspectual features. Thus, following Svenonius (2004c), I have proposed that the spatial prefixes are Path^o heads located below VP and heading a small clause projection which V' takes as its complement (I take no firm stand regarding causative prefixes but they can arguably receive a similar explanation). Such an analysis, as we have noted, accounts for two facts. On the one hand, it explains the fact that the causative and spatial prefixes interact with the verb's arguments since argument structure is a vP-internal phenomenon. On the other hand, it also accounts for their inability to enter productive morphological processes since the first syntactic domain, the one below the VP level, to which these prefixes pertain, cannot feed productive morphology. Finally, the third group of prefixes, the outer ones, are those located above vP. These prefixes, in the same way as the inner quantificational ones, have an additional

aspectual/Aktiosartal feature which assures them their place within Cinque's hierarchy. Thus, such prefixes, which are located above the inner ones, i.e. within the highest syntactic domain, are not argument structure modifiers but rather event modifiers. Additionally, since the highest syntactic domain hosts productive morphology, these prefixes are also morphologically very productive. As for their semantic compositionality, it is due to the fact that such prefixes bear an additional aspectual feature (e.g. [durative] for durative PO-, [repetitive] for the repetitive PRE-, etc.) and enter syntax as independent syntactic heads.

Having now seen the aspectual role of prefixation, I dedicate the following section to examine the aspectual function of the Bulgarian aspectual suffixes.

3.4. The Aspectual Role of Suffixation

In the previous section we have arrived at the conclusion that there are three syntactic domains to which prefixes may pertain. This is roughly schematized in (59) below.

(59) Syntactic domains

a. The first syntactic domain: below VP

- no morphological productivity
- inner aspect and argument structure modification
- prefixes: (i) lexical; (ii) inner: causative and spatial; (outer: anterior)

b. The second syntactic domain: between VP-vP

- morphological productivity
- inner aspect and argument structure modification
- prefixes: inner quantificational (cumulatives, distributives, pure perfectivizers)

c. The third syntactic domain: above vP

- morphological productivity
- outer aspect (event modification)
- prefixes: outer (except for the anterior ones)

In this section we will also see that there is an additional support for the three-domain distinction in syntax which is provided by the Bulgarian aspectual suffixes. Here, I will be primarily interested in two types of suffixes: thematic vowels and the secondary imperfective suffix. Thus, I will not make reference to the perfectivizing semelfactive suffix *-n* or other verbal suffixes.⁵⁶ In this respect, I will show that the Bulgarian thematic vowels may be scattered across the three syntactic domains depending on their aspectual nature whereas the secondary imperfective suffix pertains to the highest, i.e. outer aspectual domain. Let us start the discussion with the thematic vowels.

3.4.1. Bulgarian Thematic Vowels

Before entering in details on the topic of thematic vowels, it is important to note that there are three verbal bases which play a crucial role for the derivation of verbs in Bulgarian: the present tense base (60), the Aorist base (61), and the imperfect base (62) (Bojadjev et al. 1999: 287).⁵⁷ These bases are obtained by removing the grammatical morphemes for person and number from the conjugated verbal form. The vowel in which the corresponding base ends once the person and number endings are removed is the corresponding theme vowel (also known as ‘present tense thematic vowels’, ‘Aorist vowels’, and ‘imperfect thematic vowels’).

The present tense thematic vowel, for example, is the one used to determine the three conjugations according to which Bulgarian verbs are classified. If the final vowel of the present tense base is *-E*, then the verb belongs to the first conjugation (60a); if the base ends in *-I*, the verb is from the second conjugation (60b), and if it ends in *-A/-JA* we have

⁵⁶ It is generally assumed among Bulgarian linguists that verbal suffixes have two roles, a derivational and grammatical (categorizing) one (Bojadjev et al. 1999: 263). According to the Bulgarian Academy Grammar 1993, there are more than 30 verbal suffixes (Bulgarian Academy Grammar, vol. II: 228-233).

⁵⁷ Bulgarian has preserved the richness of the verbal system of ancient Bulgarian and nowadays we have nine tenses in Bulgarian: present (*pishe*), Aorist (*pisa*), imperfect (*pisheshe*), perfect (*pisal e*), plusquamperfect (*beshe pisal*), future (*shte pishe*), future in the past (*shteshe da pishe*), future perfect (*shte e pisal*), past future perfect (*shteshe da e pisal*).

verbs from the productive third conjugation (60c).⁵⁸ The Aorist base shows a more variable behavior since it can have different thematic vowels, consonant alternations, and stress shift (Pashov 199: 146). According to the Aorist vowel (61), i.e. the vowel in which the Aorist base ends, the verbs are additionally subdivided into subclasses (‘разред’).⁵⁹ Finally, the imperfect thematic vowel (62) is used in the imperfect tense.

(60) The present tense base

a. First conjugation: thematic vowel: E

(i) Primary imperfective base

pishe-sh **Base: PISHE ‘write’**

write-2PS.SG

‘you write’

(ii) Perfective bases: the same

PRE-pishe-sh ‘you copy’

b. Second conjugation: thematic vowel: I

(i) Primary imperfective base

govori-sh **Base: GOVORI ‘talk’**

talk-2PS.SG

‘you talk’

(ii) Perfective bases: the same

IZ-govori-sh ‘you pronounce’

⁵⁸ The present tense base (60) is used for the formation of the present tense and the imperative (*Pishi!* ‘Write!’). The Aorist base (61) is used for the Aorist active participle (*pisal*), and the past passive participle (*pisan* ‘written’). Finally, the imperfect base (62) is used to form the imperfect tense, the imperfect active participle (*pishel*), present active participle (*pishesht*), and the gerund/‘деепричастие’ (*pishejki*). The imperfect base is derivationally related to the present tense base.

⁵⁹ The first conjugation verbs are classified in seven subclasses; the second conjugation verbs fall into three subclasses, whereas the third conjugation verbs are divided into two subclasses (Bojadjev et al. 1999: 346; Bulgarian Academy Grammar 1983, vol. II: 304-314). In this respect, Pashov (1999: 146) slightly diverges and claims that the II and the III conjugations have three subclasses each.

c. Third conjugation: thematic vowel: A

(i) Primary imperfective base

gleda-sh **Base: GLEDA ‘watch’**

watch-2PS.SG

‘you watch’

(ii) Perfective bases: the same

PRE-gleda-sh ‘you revise’

(61) The Aorist base

a. First conjugation

(i) Primary imperfective base

pisa-hte **Base: PISA ‘write’**

write-AOR.2PS.PL JA = SPJA: JA > E (SHE)

‘you wrote’

(ii) Perfective bases: the same

PRE-pisa-hte ‘You copied’

b. Second conjugation

(i) Primary imperfective base

govori-hte **Base: GOVORI ‘talk’**

talk- AOR.2PS.PL

‘you talked’

(ii) Perfective bases: the same

IZ-govori-hte ‘You pronounced’

c. Third conjugation

(i) Primary imperfective base

gleda-hte **Base: GLEDA ‘watch’**

watch- AOR.2PS.PL

‘you watched’

(ii) Perfective bases: the same

PRE-gleda-hte ‘You revised’

(62) THE IMPERFECT BASE⁶⁰

a. First conjugation

- (i) Primary imperfective bases → **Imperfect thematic vowel**

pish-e-she **Base: PISHE ‘write’**

write-TH.VOW.2/3PS.SG

‘You/(s)he were/was writing’

- (ii) **Perfective bases: IMPF2 suffix –va** → **Imperfect thematic marker**

PRE-pis-va-she ‘You/(s)he were/was copying’

b. Second conjugation

- (i) Primary imperfective base

govor-e-she **Base: GOVORI/GOVORE ‘talk’**

talk-TH.VOW-2/3PS.SG

‘You/(s)he were/was talking’

- (ii) **Perfective bases: IMPF2 suffix –ja**, + theme vowel change (I → A)

IZ-govar-ja-she ‘You/(s)he were/was pronouncing’

c. Third conjugation⁶¹

- (i) Primary imperfective base

gled-a-she **Base: GLEDA ‘watch’**

watch-TH.VOW-2/3PS.SG

‘You/(s)he were/was watching’

- (ii) **Perfective bases: consonant mutation = imperfectivization (D → Ž)**

PRE-gležda-she ‘You/(s)he were/was revising’

From a contemporary point of view, the basic verbal base is the present tense one from which both the Aorist and the imperfect bases are derived, though the Aorist base (for the I

⁶⁰ The imperfect vowel for the I and II conjugation verbs is mutating JA (*pormenlivo* JA) which implies that under stress, we have [JA] (e.g. *chetjàh* ‘I was reading’) and when non-stressed, we have [E] (*misleh* ‘I was thinking’). The 2nd and the 3rd person singular imperfect forms end in [E] because the following suffix is –SHE (e.g. *chete-she* ‘you were reading/he was reading’), which is doubly softened by the presence of the consonant [SH] and the front vowel [E]. For more details, see Pashov (1999: 144).

⁶¹ As we can observe, the verbs from the third conjugation have the same base and therefore the same thematic vowel for all tenses (60c, 61c, 62c).

and II conjugation verbs) coincided with the old infinitival base (Pashov 1999: 148). The imperfect tense, on the other hand, is the most recent one.

What we should note from (60), (61) and (62) is the fact that when dealing with perfective bases (examples (ii)) the imperfect vowel (62a: ii, b: ii, c: ii) is more complex than the rest of the vowels since it incorporates an aspectual secondary imperfectivizing (IMPF2) suffix (e.g. *-va*, *-ja*, and consonant mutation). I follow Manova and assume that the IMPF2 suffix plus the thematic inflectional marker *-a* (e.g. *-v-a*; *-av-a*; *-uv-a*, *-jav-a*, etc.) is the imperfect vowel. Observe the following derivations taken from Manova (2005: 239).

(63) a. **Primary imperfectives (IMPF1)**

IMPF1 = ROOT + THEMATIC MARKER (TM) + INFLECTIONAL SUFFIX (ISUFF)

<i>stro-</i>	<i>j-</i>	<i>a</i>
build	- TM	-1.PS.SG
'I build'		

b. Prefixed perfectives (PF)

PF = PREFIX + IMPF1

<i>do-</i>	<i>stroja</i>
'I complete building'	

c. Secondary imperfectives (IMPF2)

IMPF2 = PREFIX + ROOT + ASPECTUAL SUFFIX (ASUFF) + TM + ISUFF

<i>do-</i>	<i>stro-</i>	<i>jav-</i>	<i>a-</i>	<i>m</i>
'I complete building'				

According to Manova (2005: 240), imperfectivization in Bulgarian can be accomplished either by an aspectual suffix in the derivational slot (e.g. *-jav* in (63c)) or inflectionally, by a thematic marker only. However, the **productive rules of imperfectivization** involve the presence of aspectual suffixes which can be of two types: (i) **two productive IMPF2 suffixes** which are *-v-a* (in *kaz-v-a-m* 'I say' (IMPF2), from *kaža* 'say' (PF)) and *-(j)av-a* (e.g. *izor-av-a-m* 'I plow' (IMPF2), from *iz-ora* 'I plow' (PF)), and (ii) **two unproductive aspectual suffixes** which are *-(j)a* (e.g. *izgovar-ja-m* 'I

articulate') and **–uv-a** (e.g. *kup-uv-a-m* 'I buy'). Since aspectual suffixes always combine with the thematic marker **–a**, I follow Manova (2005) and treat these IMPF2 suffixes as complex thematic markers of the type **–(V)va-**.⁶² For ease of exposition, ***I use –va as the imperfect thematic marker which is used with perfective bases.***⁶³ Furthermore, ***whenever I use the term 'secondary imperfective suffix –va', I refer to this complex imperfect thematic marker*** (e.g. **–va** in (62a: ii)). ***As for the realization of the imperfect thematic vowel with primary imperfective bases*** (62a: i, b: i, c: i), ***I will use the term imperfect thematic vowel only*** (e.g. **–a** in (62c: i)).

Importantly, the nature of the thematic vowel, i.e. whether it is the present, imperfect or the Aorist one, will be crucial for the derivations examined in this study (see chapter 4). In fact, thematic vowels have always generated interest throughout the literature on Slavic aspectology. Many Bulgarian linguists believe that the difference between the imperfect and the Aorist tense is encoded in the thematic vowel, i.e. the base vowel. Both tenses are called *h*-tenses and look almost identical, the only difference being the thematic vowel.

(64) *H*-tenses (*nosja* 'carry')

a. **Aorist:** 'carried'

SG: *nosi-h* (I), *nosi* (you), *nosi* (s/he)

PL: *nosi-hme* (we), *nosi-hte* (you), *nosi-ha* (they)

b. **Imperfect:** 'was/were carrying'

SG: *nose-h* (I), *nose-she* (you), *nose-she* (s/he)

PL: *nose-hme* (we), *nose-hte* (you), *nose-ha* (they)

⁶² As Manova (2005: 243) observes, IMPF2 verbs in Bulgarian are always marked by the thematic marker **–a**, which is the default marker for imperfectivity (there are only very few verbs with TM **–a** which are not imperfective).

⁶³ I prefer to treat **–va** as a complex imperfect thematic marker and not merely as an imperfect thematic vowel since it is more than a vowel: it consists of IMPF2 suffix and the thematic marker **–a**. Note that Svenonius (2004a: 181) regards the suffix **–va** as the thematic vowel as well.

As Pashov (1999: 148) notes, the *-h* consonant (which sometimes takes the form of *-sh*) encodes relation of the verbal action to the past moment. Both *-h* tenses (64) are past tense. The difference in temporal meaning between these tenses is encoded by the thematic vowel. Thus, the Aorist vowel denotes a past action which has come to an end in the past moment whereas the imperfect vowel encodes that this action located in the past moment has not ended. Put differently, we can suggest, together with Stancheva (2003), that ***the Aorist vowel denotes boundedness whereas the imperfect one unboundedness.***

In fact, there is a strong agreement among Bulgarian linguists that thematic vowels are aspectual in nature. Therefore, it is natural to assume, together with Pashov (1976, 1999) and Stancheva (2003), that the morpheme which distinguishes between the present, Aorist and imperfect verbal bases is the thematic vowel on which they are built and which expresses aspect and (un)boundedness. Following this view, and in line with minimalist ideas, I suggest that such an aspectual difference is best treated in terms of inherent features which these vowels express. Thus, ***the present tense thematic vowel is endowed with the feature [duration] which, as we will see in chapter 4, allows for an eventive interpretation of the nouns derived on such bases. The Aorist vowel, on the other hand, is endowed with the feature [endpoint] and denotes a (temporally) bounded and telic event.*** It is precisely this feature which contributes to the resultative semantics of both participles and participial nominalizations built on the Aorist base (see chapter 4). ***As for the imperfect tense base, due to its derivational relation to the present tense base, the relevant feature is again [duration].*** However, we will see in chapter 4 that though derivationally related, there is a difference in attachment site between the present tense and the imperfect vowels. To exemplify, whereas the present tense vowel is merged as a V^0 head, the imperfect vowel, which is manifested in the form of the secondary imperfective suffix *-va*, heads its own functional projection, $Asp^I P$ (Markova 2007) or $Asp^{DUR} P$ here, located above all other aspectual projections (see also (54)). ***Therefore, I claim that when merged on a higher aspect node (e.g. $Asp^I P$ or $Asp^{DUR} P$), the shared feature [duration] licenses the***

process reading of the derived constituent (e.g. –NE nouns, see chapter 4). ***When, on the other hand, the feature [duration] is merged on a lower node, i.e. in the lower syntactic domain (between VP and vP), it then plays two roles: (i) verbalizes the structure and (ii) assigns an eventive reading to the derived constituent.*** For a similar analysis of these vowels, see Stancheva (2003).

A crucial factor for the analysis of thematic vowels is the common view among Slavicists that such vowels signal the presence of a verb in the structure, i.e. they verbalize the structure. Svenonius (2004a), for example, proposes that the Slavic thematic vowels (his ‘theme vowels’) make a categoriless root a verbal stem (see also Borer 2005b for Hebrew thematic vowels as verbalizers). Embedded within a framework such as Distributed Morphology (Marantz 2001), a root is categoriless unless it combines with a categorical head which, in the case of verbs, is the thematic vowel as in Svenonius (2004a). Under the current framework adopted here, ***I propose that the primary function of the thematic vowels in Bulgarian is their verbalizing role implying that thematic vowels are v^o heads*** à la Marantz (2001). However, ***such a verbalizing function is always accompanied by an aspectual role as well, which depends on the type of the vowel in question.***

By now we can conclude that thematic vowels, apart from verbalizing the structure, are also aspectual in nature and, in consequence, contribute to event structure. Thus, the Aorist vowels add a resultative interpretation to the derived noun due to their [endpoint] feature whereas the present tense vowels, which bear the [duration] feature, assign an eventive denotation to the corresponding derivatives (see chapter 4).

3.4.2. The Bulgarian Secondary Imperfective Suffix

Before we proceed to the secondary imperfective suffix, some comments should be made regarding the PF/IMPF morphological distinction in Bulgarian. Recall that I have claimed that all perfective verbs are telic in contrast to the (primary) imperfectives which are atelic.

However, once we perfectivize a verb, or else, telicize it, we can additionally proceed to further imperfectivization via the secondary imperfective suffix (see (54)). Yet, such forms, though formally imperfective, are still telic since they embed a telic event within them, e.g. the one overtly realized by the perfective morphological formation [prefix + V]^{PF}. Bearing in mind that the function of the secondary imperfective suffix is to add duration to the perfective verbal structure due to its feature [duration] (Chakyrova 1998), the emerging picture is then a telic event on which duration is being imposed. As a consequence, the final result of secondary imperfectivization will be either iterativity denoting a constant repetition of telic events (65a), or else continuativity of a complex (i.e. telic) event (65b).

(65) The secondary imperfective suffix

a. Iterativity

iz-jažd-a-h *si* *zakuska-ta* (*vseki den/kogato bjah malŭk*)

iz-eat-IMPF-AOR.1PS.SG refl breakfast-the (every day/when I was young)

‘I ate up my breakfast (every day/when I was young)’

b. Continuativity

iz-jažd-a-h *si* *zakuska-ta* (*kogato tja vlezna*)

iz-eat-IMPF-AOR.1PS.SG refl breakfast-the (when she entered)

‘I was in the process of eating up my breakfast (when she came in)’

In (65a) the interpretation we have is that there is a series of repeated telic events, e.g. ‘the eating up of the breakfast’, which was performed for a certain period of time. That is, the imperfective morpheme, due to its higher position within the syntactic tree (under Asp^P/Asp^{DUR}P), scopes on top of the whole telic event adding duration and thus returning a constant repetition of complex and telic events. In (65b), on the other hand, the imperfective suffix scopes inside the event and again adds duration to it where the interpretation we have is that the single telic event of eating up the breakfast has been performed in a prolonged manner.

Evidence for the [duration] feature of the secondary imperfective suffix comes from the fact that this suffix can, in principle, attach to any of the Bulgarian prefixes (i.e. lexical

(66a), inner (66b) and outer (66c)) with the sole exception being the outer durative prefix PO- (66c'). Bearing in mind that the durative prefix has an inherent [duration] feature, we can tentatively suggest that the incompatibility of this prefix with the secondary imperfective suffix comes from the selectional properties of these elements. To be more precise, ***I suggest that the secondary imperfective suffix selects for the same projection, Asp^IP (else, Asp^{DUR}P), which the durative prefix heads. In other words, the two elements compete for the same position (e.g. Asp^Io/Asp^{DUR}o) and are therefore mutually excluded (66c').***

(66) Prefixation and the secondary imperfective suffix

a. Lexical prefixes

[PRO-d]-ava-m

[sell]-IMPF-1.PS.SG

'I (am) sell(ing)'

b. Inner prefixes

NA-kup-uva -m

a lot-buy-IMPF-1.PS.SG

'I buy a lot (of books)'

c. Outer prefixes

ZA-spi-va-m

start-sleep-IMPF-1.PS.SG

'I start to sleep'

c'. The outer prefix PO-

*PO-pja-va-m

For a while-sing-IMPF-1.PS.SG

*'I (am) sing(ing) for a while'

Recall that the basic Aktionsart of the imperfective aspect in Slavic according to Czochralski (1975) is the iterative (e.g. PO-IZ-pjavam 'to sing from time to time' (IMPF2) from peja 'sing' (IMPF1)). Interestingly, there is a linguistic phenomenon in the Slavic literature called '**grammatical iterativity**', a term first introduced by Ivanchev

(1971, 1976), which is claimed to be the result of **a generalization of the secondary imperfectivization**. That is, grammatical iterativity is considered to be a high abstraction phenomenon used as a linguistic tool to represent consecutive terminated events in the form of an imaginary line (Chakyrova 1998). In ancient Bulgarian, for example, **secondary imperfectivized verbs were used to denote consecutive terminated events**, which represents their iterative use (e.g. (65a)) (Dogramadjieva 1966: 125, from Chakyrova 2003). **Another use of the grammatical iterative is the durative (65b), which, according to Chakyrova (1998), is a secondary effect made available by the presence of the relevant contextual markers** (e.g. ‘when she came in’). It is these markers which make it impossible for the iterative verb to be realized as a complex (i.e. telic) event with the final result being continuativity (65b).⁶⁴

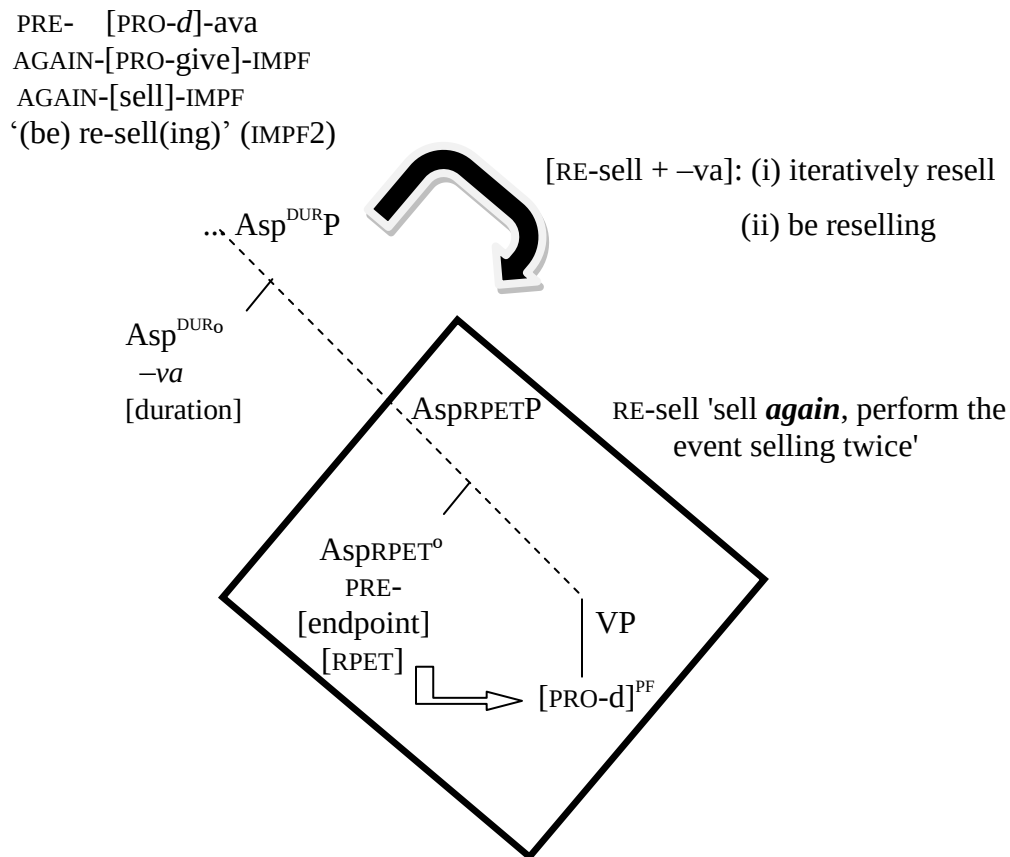
Nowadays there is a debate among Bulgarian linguists as to whether there is grammatical iterativity in Bulgarian or not. Chakyrova (1998), for example, claims that grammatical iterativity has disappeared in Bulgarian. Thus, Bulgarian has no special iterative forms as Czech does (**spavam, pisvam*) and in order to denote iterativity, we make use of the morphological complex IMPF2 formation [[prefix + V]^{PF} –va]].^{IMPF} That is, iterativity is seen as a morphological category with the relevant opposition being iterative: non-iterative. Hence, iterativity is claimed to be an aspectual type, also called functional biaspective (Chakyrova 1998), which is the marked member of the opposition. Since perfectives are unmarked with respect to iterativity due to the fact that they represent a telic event unable to be prolonged by itself, it follows that primary imperfectives are also unmarked. Crucially, it is this unmarked status of imperfectives which is what actually allows IMPF1 verbs to adopt iterative meanings in certain contexts (e.g. *pisha pismo na Maria* ‘I write a letter to Maria’ (durative) vs. *pisha pisma na Maria* ‘I write letters to Maria’ (iterative)).

However, I claim that there is no need to propose a separate morphological category such as iterativity. **I tentatively suggest that what allows the combination of**

⁶⁴ Atanasov (1986) also considers durativity to be a secondary phenomenon which arises once iterativity is thought over by the natives. See Chakyrova (1998) for more details on the topic.

a prefixed verb with the secondary imperfective suffix to return either a repetition of a telic event (65a) or a prolonged telic event (65b) is the presence of the feature [duration] which the secondary imperfective suffix bears. Since this feature c-commands the telicized [prefix + V] morphological complex, it then has the option to either scope on top of this telic event as a whole, thus giving rise to (65a), or else scope inside the event, thus returning (65b). A syntactic derivation of a secondary imperfective verb is provided in (67).

(67) The syntax of secondary imperfectives



TO RECAPITULATE, we have seen that thematic vowels are verbalizers, i.e. they turn a categoriless root into a verbal stem. I have proposed that when such vowels verbalize the structure, they are derived as V heads implying that in this case they form part of the first syntactic domain, the VP one. Such a treatment of thematic vowels has its own implications inasmuch as it predicts that a derivative embedding these vowels will not be as aspectually complex as a derivative embedding higher aspectual suffixes, a prediction which we will be

further examined and supported by data in chapter 4 through the interaction of thematic vowels and derivational suffixes.

Apart from a verbalizing function, thematic vowels also have an aspectual function. Thus, we have seen that the present tense and the imperfect vowels bear the feature [duration] whereas the Aorist thematic vowel bears the feature [endpoint]. Hence, we should expect that a derived constituent containing one of these features will be semantically affected. Thus, past participles, for examples, which are derived from the Aorist base of the verb, have a resultative semantics (e.g. *pisan* ‘written’). The same holds for nominalizations formed on such a base where the final (morphological) product is a result nominal.

As for the feature [duration], it can be realized either on the present tense vowel, a V head, or else on the imperfect vowel, i.e. the secondary imperfective suffix, hence, a higher aspectual (Asp^{DUR}) head (see (67)). ***That is, one and the same feature can be inserted in two different syntactic domains: the lower VP domain in the case of the present tense vowel and the higher aspectual domain for the imperfect vowel.*** As we will see in chapter 7, a noun embedding the former vowel will have an eventive denotation whereas a noun embedding the latter vowel will have a process reading.⁶⁵ This again suggests that the three-way distinction for the syntactic domains at which we have arrived in the preceding sections by examining prefixation is further supported by data on suffixation, both inflectional (thematic vowels and the secondary imperfective suffix) and derivational (e.g. lexical prefixes; also nominalizing suffixes, see chapter 7).

⁶⁵ Recall that thematic vowels are compatible only with verbs. Therefore, to say that a noun embeds (else, incorporates) a thematic vowel is not plausible. However, given that some nouns are built on verbs, which in turn incorporate a given thematic vowel, makes such a claim possible. In other words, whenever I say that a noun incorporates/embeds a thematic vowel I mean that this noun is formed from a verb incorporating/embedding this vowel.

In what follows I summarize the main findings of this chapter.

3.5. Some Concluding Remarks

In this chapter I have discussed the aspectual behavior of the Bulgarian affixes. We have seen that both prefixes and suffixes play a crucial role in the determination of aspect in Bulgarian. I have also tried to show that the term aspect, which has been used in traditional Slavic grammars to encode the morphological perfective-imperfective distinction in Slavic, can be also treated in terms of inner and outer aspect (Travis 1991). Thus, I have proposed that all perfective verbs in Bulgarian give telic predicates whereas all primary imperfective verbs are atelic. As for the secondary imperfectives, e.g. [prefix + V]^{PF} + secondary IMPF –va]]^{IMPF2} (see also (66)), due to the fact that they embed a telic event within them (e.g. the perfective morphological complex [prefix + V]^{PF}), then the final result is a morphologically imperfective but telic predicate upon which duration is being imposed (67). As I have claimed in section 3.4.2, the notion of duration is realized as an inherent feature [duration] which the secondary imperfective morpheme –va bears. Hence, the arising interpretation of a secondary imperfective verb is either iterativity, denoting a constant repetition of telic events (65a), or else continuativity of a complex telic event (65b). Such a difference can arguably be explained by the fact that ***the secondary imperfective suffix, which merges higher up in the structure, is an outer aspectual morpheme which c-commands the telic event within its domain and has the possibility to either scope upon the whole event, thus giving rise to (65a) or else scope within the event (65b).***

As for the relation between morphological perfectivity and telicity, I have claimed that ***all Bulgarian prefixes enter syntax with an inherent feature [endpoint] and that it is precisely this feature which gives rise to a telic event.*** Finally, primary imperfective verbs, which have no aspectual prefix and hence lack an [endpoint] feature, are consequently interpreted in a default (unmarked) manner, i.e. as atelic events. Hence, we can tentatively conclude that only in the presence of an [endpoint]

feature does telicity arise. In the absence of such a feature, the verbs in Bulgarian are unable to give telic predicates, something which will be further elaborated on in the following chapter.

Furthermore, we have also seen that there is another type of verbs in Bulgarian, the biaspectual ones, which are loan words and ambiguous with respect to morphological (im)perfectivity and semantic (a)telicity. However, we have also seen that these verbs often tend to switch to the standard paradigm of Bulgarian by accepting prefixes and suffixes in a native-like manner. Arguably, this is related to the fact that the speakers tend to optimize differences between systems and thus incorporate loan material, i.e. the biaspectual verbs themselves, into the standard paradigm of the language. More details on this topic will be further offered in chapter 4.

As for the syntactic derivation of prefixes, I have adopted Cinque's (1999) hierarchy of aspectual features since it nicely accounts for the linearization of the Bulgarian prefixes (and suffixes as well). Following Cinque (1999) I have proposed that the aspectual prefixes in Bulgarian, i.e. **the prefixes which bear and additional aspectual/Aktionsart value, should form part of the universal hierarchy in (24).** Thus, such prefixes will behave uniformly with respect to the three factors examined in section 3.3.3, i.e. they will be semantically compositional, morphologically productive and hierarchically ordered with respect to one another. As for the rest of the prefixes, e.g. those which lack an additional aspectual/Aktionsart feature, they will show just the opposite behavior. Bearing this in mind, I have arrived at the conclusion that a reanalysis of the general prefix typology in Bulgarian (and arguably in Slavic) is needed. Hence, instead of lexical and super-lexical prefixes (Svenonius 2004a, b), I divide the Bulgarian prefixes into three groups: (i) lexical, (ii) inner, and (iii) outer prefixes.

Finally, by examining the properties of the Bulgarian prefixes, we have also seen that **there is a strong tendency for a three-way distinction in syntax** (59).

First, we have seen that there are prefixes pertaining to ***the lowest syntactic domain, i.e. below VP*** (e.g. the lexical prefixes and the inner spatial and causative ones). Such prefixes interact with the argument structure of the verb (since argument structure is syntactically represented vP-internally). Additionally, these prefixes are not morphologically productive since productive morphology is scattered in the two higher syntactic domains, i.e. above the (lexical) VP level. Second, there are prefixes which form part of the ***intermediate syntactic domain, i.e. the one above VP but below vP*** (e.g. inner quantificational prefixes). These prefixes can affect the argument structure of the base verb but in contrast to the VP-internal prefixes they are morphologically productive. Finally, the prefixes from ***the highest syntactic domain, i.e. above vP***, are event modifiers (e.g. outer prefixes) and are morphologically very productive.

Additional support for ***this three-way distinction in syntax is further provided by the behavior of the Bulgarian suffixes as well***. Thus, verbalizing thematic vowels, which form part of the lowest cycle, are directly related to inner aspect, i.e. (a)telicity. To exemplify this, we have seen that the Aorist vowel, which bears the feature [endpoint], gives rise to resultative derivatives (e.g. past passive participles) in contrast to the present tense vowels which, due to their feature [duration], return eventive derivatives (e.g. eventive nouns, see chapter 7). Finally, outer suffixes, i.e. those located in the highest syntactic domain (e.g. the secondary imperfective suffix), cannot change the telicity of the event embedded under their scope since they are best treated as outer aspectual morphemes not related to inner aspect. Therefore, though the secondary imperfective suffix bears the feature [duration], which is then added to the telic (perfective) verb under its scope, it cannot return an atelic predicate. Hence, the only possibility is an iterative reading (i.e. an event denoting a constant repetition of telic events (65a), or else a prolonged telic event (65b)). Since affixes in Bulgarian are directly related to inner aspect, I dedicate the following chapter to this topic.

PART 2: THE SYNTAX OF INNER ASPECT

**PART 2.1: THE SYNTAX OF INNER
ASPECT: THE VERBAL DOMAIN**

CHAPTER 4: INNER ASPECT IN BULGARIAN AND ENGLISH

The main objective of this chapter is to examine the behavior of the Bulgarian and English verbs with respect to inner aspect. On the one hand, I will show that the Bulgarian biaspectual verbs behave like the English eventive predicates with respect to two properties of inner aspect, the object-to-event mapping property and the aspectual contribution of PPs (MacDonald & Markova 2010). On the other hand, I will also show that the Bulgarian standard verbs lack these properties. Treating properties in terms of features in the line of minimalism, I will show that inter- and intra-linguistic variation is the same kind of variation (Chomsky 2008; MacDonald 2008a,b), where the observed aspectual differences follow from the way a language codifies inner aspect.

Following Borer (2005b) I suggest that the standard Bulgarian (also Slavic) verbal paradigm marks aspect via direct range assignment, i.e. the [endpoint] feature relevant for the determination of inner aspect is directly merged into the structure either on a prefix or on a perfective verbal stem, blocking thus the possible aspectual side effects of the internal arguments (e.g. the object-to-event mapping property) and the goal PPs. That is, the standard perfective verbs in Bulgarian, in the same way as perfectivizing prefixes, bear an inherent feature [endpoint] which, when present in the structure, marks the event as telic without caring for the surrounding linguistic environment. As for the Bulgarian eventive biaspectual verbs and English eventive predicates, they are underspecified for such a feature (else, the feature is unassigned), which implies that inner aspect should be calculated compositionally, i.e. according to the surrounding linguistic environment. Hence, the object-to-event mapping property and the nature of the PPs will be deterministic for inner aspect in this case. Finally, we will also see that stative predicates behave uniformly across paradigms which suggests that stative predicates have some invariable universal feature shared across both (and arguably all) languages. It is precisely this feature that

finally superimposes itself onto the whole structure and marks the event as stative.

An interesting observation to be made is my assumption that the feature [duration], which has been quite often considered to play a crucial role for distinguishing between the Aktionsart/lexical classes such as activities, states, accomplishments and achievements (Vendler 1967, Krifka 1992), is totally irrelevant and artificial. If so, a strong prediction arises concerning telic events, i.e. accomplishments and achievements. Since both telic Aktionsart/lexical classes share the feature [endpoint] and differ only with respect to the feature [duration], then such a distinction can no longer be sustained once we get rid of [duration]. Regarding this claim, I will show, following Borer (2005b), that ***telic events are just of one kind (the distinction accomplishments-achievements being irrelevant) in contrast to atelic events which are either activities or states.***

In section 4.1 I discuss the relation between inner aspect, eventuality types and event features and claim that the traditional accomplishment-achievement distinction (see Vendler 1967) should be eliminated in both Bulgarian and English. Section 4.2 then presents supporting evidence for the overlapping of Bulgarian perfective aspect and telicity, on the one hand, and (primary) imperfective aspect and atelicity, on the other hand, an issue we have already commented on in the previous chapter. After this, the behavior of eventive verbs in English and Bulgarian is discussed (§ 4.3) together with the behavior of statives across languages and paradigms (§ 4.4).

4.1. Some remarks on inner aspect, eventuality types and event features

We have already mentioned that within the Western tradition inner aspect has been used to describe two phenomena: (i) the division of verbs into lexical classes such as states, activities, accomplishments and achievements (also known as Aktionsart/inherent lexical class, Vendler 1967), and (ii) the super-ordinate distinction of predicates into telic (event-denoting) and atelic (process-denoting) (Garey 1957, Dowty 1972, 1979). It has been suggested that both accomplishments (1a) and achievements (1b) describe telic events in

contrast to activities (1c) and states (1d) which describe atelic events.¹

(1) Aktionsart and telicity

- a. Accomplishments: *John drank a bottle of beer in 2 minutes/*for 2 minutes.*
- b. Achievements: *John found the key in 2 minutes/*for 2 minutes.*
- c. Activities: *John sang *in 2 minutes/for 2 minutes.*
- d. States: *John was ill *in 2 minutes/for 2 minutes.*

Apart from a difference in telicity, the predicate types in (1) also differ with respect to two aspectual properties, endpoint (2) and duration (3), which have been widely assumed to be crucial for the determination of event structure (Krifka 1992, MacDonald 2008b, etc.).

(2) [endpoint]: an event structure property

- a. endpoint: telic predicates (e.g. accomplishments and achievements)
e.g. *John built the plane **in ten minutes.***
- b. no endpoint: atelic predicates (e.g. activities)
e.g. *John carried the bag ***in ten minutes.***

(3) [duration]: an event structure property

- a. Accomplishments: extended in time; have duration: *John drank a bottle of wine*
- b. Achievements: punctual in time; no duration: *John spotted a plane.*

¹ Recall from chapter 3, § 3.2.2 that the *in*-adverbial is related to inner aspect inasmuch as it is a predicate modifier of quantity, whereas the *for*-adverbial is representative of outer aspect. Unlike the predicate modifier ‘in X time’, which requires the presence of telic structure and thus indicates telicity, the *for*-adverbial is more like an operator of sorts which turns non-quantity predicates into bound predicates (e.g. *Kim ran* is a homogenous expression in contrast to *Kim ran for three hours* which is non-homogeneous: no sub-event of *Kim ran for three hours* can be an event of running on behalf of Kim for three hours) (see Borer 2005b: 233). Thus, the durative adverbial is incompatible with telic predicates on a single, i.e. non-iterative, event interpretation (Dowty 1979, Tenny 1987, Vendler 1967, Alsina 1999). The fact that the *for*-adverbial is used as an indicator of atelicity resides in its ‘anti-telicity’ effects for Borer, inasmuch as it blocks the presence of telic structures and is therefore compatible with homogeneous (atelic) predicates only, i.e. activities or states.

Following such an assumption, I will propose that [endpoint] is, in fact, a property relevant for the determination of inner aspect. However, in contrast to previous analysis, ***I will suggest that it is the only property needed to encode telicity whereas [duration] is an entailment of the structure. Put differently, [duration] is not at all a necessary ingredient for the determination of event structure.***

Note, however, that such a claim does not mean that [duration] should be eliminated as a possible feature candidate of an element. Moreover, recall that the outer durative prefix PO- has an additional aspectual/Aktionsartal value [duration] in the same way as the secondary imperfective suffix –va (see chapter 3, § 3.4.2). What this claim basically means is that [duration] is unable to determine inner aspect by its own. Evidence for this claim comes from the fact that secondary imperfective verbs in Bulgarian embed [duration] which is brought into the structure as a feature on the secondary imperfectivizer –va. However, though such a feature is present, the *for*-adverbial that targets duration cannot modify the predicate since it remains telic (4b) and behaves in the same way as the prefixed perfective verb from which it is derived (4a).

(4) Secondary imperfectives and telicity

- a. IZ-jad-o-h si zakuska-ta za dve minuti/*dve minuti
 IZ-eat-AOR.1PS.SG REFL breakfast-the in two minutes/*for two minutes
 ‘I ate up my breakfast in two minutes/*for two minutes.’
- b. IZ-jažd-a-h si zakuska-ta za dve minuti/*dve minuti
 IZ-eat-IMPF-AOR.1PS.SG REFL breakfast-the in two minutes/*for two minutes
 ‘I would eat up my breakfast in two minutes/*for two minutes.’

Recall that the durative adverbial ‘for X time’ targets atelic events only (see fn. 1). Hence, its incompatibility with the predicates in (4) implies that both events, the non-durative one (4a) and its durativized derivative (4b), are telic, which is additionally supported by the fact that both of them accept the time-span adverbial *in two minutes*. That is, the feature [duration] cannot atelicize an already telic entity. Put differently, such a feature is unable to

override the telicizing function of the [endpoint] feature present on the perfectivizing prefixes which the two derivatives in (4) share.

Such a state of affairs may, in fact, turn out to be *prima facie* unexpected once we consider the English durativizer *-ing*. Bearing in mind that both the Slavic secondary imperfective suffix *-va* and the English progressive marker *-ing* belong to the domain of outer aspect (Travis 1999, Borer 2005b), then they should be manifestations of the same aspectual phenomenon. However, it is only the English progressive (5b) but not the Bulgarian secondary imperfective (4b) that has the effect of a total elimination of an endpoint (Pustejovsky 1991, Travis 2000).

- (5) a. *He drank a bottle of beer* (in an hour) (*for an hour) (last night)
b. *He was drinking a bottle of beer* (*in an hour) (*for an hour) (when I saw him)

If we compare the examples in (5) we can observe that (5a) describes a telic event that possesses an endpoint, shown by the acceptability of the time-span adverbial *in an hour*.² However, once the progressive is added (5b), no reference to an endpoint can be sustained anymore, as indicated by the unacceptability of neither the durative temporal expression nor the time-span adverbial. In this respect, one may wonder ***why this is not the case for Bulgarian where -va is unable to eliminate the endpoint reading (4b). As I will show, this is due to different mechanisms these two languages apply in order to codify inner aspect.*** In this respect, we will see that English (as a general rule) marks aspect compositionally, in relation to all of the features present in the structure in contrast to Bulgarian which marks it directly upon merger of [endpoint]. Consequently, only within an English-like aspectual system can the interpretation of an endpoint be eliminated in contrast to Bulgarian where once the feature [endpoint] enters the structure, it cannot be overridden. However, what both the progressive *-ing* and the secondary imperfectivizer *-va* have in common is the

² Note that the time-span adverbial targets telic events and refers to the amount of time that elapses before the end of this event. However, it can also express the amount of time that passes before the beginning of the event (Dowty 1979, Tenny 1994).

durativization of the event that can be roughly paraphrased as "to be at the process of V-ing", which is indicative of a shared feature [duration] (else, [process]) between these elements.

Note that if we follow the four-way distinction of the Aktionsart/lexical classes, the situation found in (4) for Bulgarian is not at all controversial. To be explicit, recall that within the telic eventuality class we have two Aktionsart/lexical types, accomplishments, which have duration (3a) and achievements, which lack it (3b). Hence, the insertion of [duration] via the secondary imperfective suffix in (4b) is not at odds with the telic character of the final event. It may simply be the case that this event is both telic, i.e. endpoint-denoting, and has duration, which is precisely the case for accomplishments (3a) in contrast to achievements that lack duration (3b). It then follows that the aspectual durativizing role of the outer aspectual morphemes *-va* is just a secondary phenomenon.

However, I will now proceed to show that the feature [duration] is irrelevant for the codification of inner aspect. Thus, I will claim that ***the only feature relevant to inner aspect is [endpoint]***. Therefore, the traditional ***distinction between accomplishments and achievements cannot be plausibly maintained*** since such eventuality types are both telic, i.e. endpoint-denoting, and differ only with respect to [duration]. I start the discussion with Bulgarian.

4.1.1. On the elimination of the so-called accomplishment-achievement distinction in Bulgarian

I claim that the elimination of the accomplishment-achievement distinction is borne out in Bulgarian since all standard perfective predicates, which are telic, behave the same with respect to the tests used to differentiate between these two eventuality types.³ Thus, I

³ Though the syntactic evidence provided shows that perfective verbs are neither achievements nor accomplishments but simply telic predicates, one may still wonder whether these verbs behave more achievement-like or accomplishment-like. I will take no firm stand regarding this issue since I consider such a question of little theoretical and empirical importance where the labels 'accomplishment' and 'achievement'

sustain the claim that within the telic event group there is just one independent entity, a 'telic event' (else, a 'quantity event' as in Borer 2005b). Let us now proceed to the syntactic evidence used for the elimination of the accomplishment-achievement Aktionsart/lexical distinction in Bulgarian.

In first place, it should be noted that accomplishments and achievements have been claimed to have different event structure properties and thus represent two independent Aktionsart/lexical types in natural languages (Dowty 1979, Tenny 1994, Vendler 1967).⁴ We have already noticed that both of them are considered to describe telic events, the difference being that the former are extended in time (i.e. time elapses between the beginning and the end of the event) whereas the latter are punctual in time (i.e. no time elapses between the beginning and the end of the event since both phases coincide). Put in featural terms, accomplishments and achievements differ with respect to the features [duration] (for accomplishments) and [punctual] (for achievements) (Vendler 1967). In relation to this, it has been claimed that *at time adverbials*, which target a punctual event, combine with achievements but not accomplishments, whereas *finish* combines with accomplishments but not achievements (6).⁵

(6) a. <i>He left at 10 o'clock</i>	non-durative → achievement
a'. <i>*He finished leaving</i>	
b. <i>I finished drawing the circle</i>	durative → accomplishment

However, it has been also shown that the *at* test can sometimes give conflicting results

are merely descriptive. However, there are reasons to believe that achievements, which lack duration, are in a sense more primitive than accomplishments, which have duration. This, on the one hand, is due to the involvement of less features in the case of the former and, on the other hand, to the purely descriptive function of the [duration] feature itself in the case of the latter.

⁴ Note that some linguists consider the accomplishment-achievement distinction a pragmatic rather than a linguistic issue, thus collapsing the two classes into one (Verkuyl 1993): e.g. *Taylor ate a peach* (accomplishment) vs. *Taylor ate a grape* (achievement).

⁵ According to Dowty (1979) only accomplishments are allowed as complements to *finish* since *finish* requires that its complement describe an event that involves both a process and a culmination.

since not all of the achievement predicates are non-durative (7) (Dowty 1986).

- (7)⁶
- | | |
|--|--------------------------|
| a. <i>Karpov bet Kasparov at 10.00 P.M.</i> | non-durative event |
| b. <i>*The Allies beat Germany at 10.00 P.M.</i> | durative event |
| c. <i>*Karpov finished beating Kasparov</i> | [duration] is irrelevant |
| c'. <i>*The Allies finished beating Germany.</i> | [duration] is irrelevant |

From the data in (7) we can observe that the achievement predicate *beat* can sometimes denote a durative event (7b) or a non-durative one (7a). Crucially, the examples in (7c, c') further show that the feature [duration], which distinguishes between durative events (i.e. accomplishments) and non-durative ones (i.e. achievements) turns out to be totally irrelevant for some telic predicates such as *beat*, which additionally questions the independent status of this feature within the domain of inner aspect in general, and of telic events more concretely. As for Bulgarian, all perfective verbs behave as non-durative, i.e. achievement-like, thus rejecting being complements of *finish* and allowing *at* temporal expressions. Examples are provided for both primary perfectives (8a, a') and prefixed perfectives: inner prefixes (8b, b'), outer prefixes (8c, c') and lexical prefixes (8d, d').

(8) Bulgarian perfective predicates: non-durative (achievement-like)

a. <i>rodi</i>	<i>v tri chasa</i>	primary perfectives: achievements
gave-birth.PF at three o'clock		(no prefix)
'She gave birth at 3 o'clock'		
a'. <i>*prestana/*svŭrshi da rodi</i>		
stopped/finished to give-birth.PF		
*'She stopped/finished giving birth'		
b. <i>bebe-to iz-pi mljako-to v tri chasa</i>		prefixed perfectives: achievements
baby-the iz-drunk milk-the at 3 o'clock		(inner prefixes)
'The baby drank the milk at 3 o'clock'		

⁶ Examples taken from Caudal (1999: 2).

- b'. **prestana*/**svŭrshi da* *iz-pie mljako-to*
 stopped/finished to iz-drink milk-the
 *'She/he stopped/finished drinking the milk'
- c. PRE-*jade točno v tri časa* prefixed perfectives: achievements
 PRE-ate exactly at 3 o'clock (outer prefixes)
 'She/he overate exactly at 3 'clock'
- c'. **prestana*/**svŭrshi da* PRE-*jade*
 stopped/finished to PRE-eat
 *'She/he stopped/finished overeating'
- d. [NA-*meri*] *kliuch-a v tri časa* lexically prefixed perfectives: achievements
 NA-measured key-the at three o'clock (idiosyncratic prefixes)
 'She/he found the key at 3 o'clock'
- d'. **prestana*/**svŭrshi da* [NA-*meri*] *ključ-a*⁷
 stopped/finished to NA-measure key-the
 *'She/he stopped/finished finding the key'

From the data in (8) we can conclude that ***all Bulgarian perfective verbs are of the achievement type since they reject being complements of 'finish' and allow 'at' temporal expressions.*** This is no news since it has been widely acknowledged that phase verbs such as *finish*, *begin*, *continue*, etc. reject perfective verbs in Slavic and select for imperfective ones exclusively.⁸ However, even if we further imperfectivize the corresponding perfective verbs in (8a', b', c', d') via the secondary imperfective suffix *-va*, the verb *finish* is ruled out, though *stop* is accepted (9a).

⁷ Interestingly, observe that in Catalan *finish* takes 'find' as a complement but in restricted contexts (ii):

- (i) ??*va acabar de trobar la clau* (??'She/he finished finding the key')
- (ii) *va acabar de trobar la solució* ('She/he managed to find the answer')

I tentatively assume that this is due to our world knowledge which can sometimes play an important role.

⁸ As Manova (2005: 38) observes, the fact that phase verbs require their complements in the imperfective aspect is semantically motivated. For her, phase verbs reject perfective complements because of the nature of the perfective aspect itself, which views an activity from outside (i.e. as a whole) and is thus incompatible with the focus on the beginning/end or the development, in contrast to the imperfective aspect.

(9) a. Secondary imperfectives

prestana/**svŭrshi da ražda*
 stopped/*finished to [give-birth]^{PF}-IMPF
 'She stopped/*finished giving birth'

b. 'finish' with nominalizations

svŭrshi s ražd-a-NE-to
 finished with [give-birth]^{PF}-IMPF-NE-the.NEUT.SG
 'She finished giving birth'

Interestingly, though *stop* can apparently combine with secondary imperfectives (9a), the interpretation we get is one of iterated events of giving birth. Thus, (9a) is interpreted as 'she gave up giving births/birth after birth' or 'she stopped being involved in the events of giving births', which additionally confirms the telic achievement-like character of the underlying event. In this respect, recall that secondary imperfectives, although morphologically imperfective, embed a perfective and hence telic predicate within them and therefore denote telic entities (see also (4)). Furthermore, the verb *svŭrshi* 'finish', when intended to mean 'have something accomplished' (i.e. 'to have something finished'), is also ruled out. Thus, the only option left in order to refer to a single completed event is the combination of *finish* with the corresponding deverbal nominal as in (9b), which can be roughly paraphrased as 'She completed the event of giving birth' but not 'she topped the event of giving birth'.⁹ Therefore, I tentatively assume that in a language where *finish* disallows complementation by a telic verb, an alternative choice is made and a PP taking a –NE nominal as a complement (9b) is selected as a possible candidate in order to denote the same event. Therefore, what the data in (9) indicate is that although duration is inserted into the structure (which is achieved via the [duration] feature on the secondary imperfectivizer –*va*), modification by *finish*, which can in principle combine with accomplishments (i.e. durative telic events), is rejected in Bulgarian though not in English (see 6b). As a

⁹ Note that the single event reading of *finish* with nominalizations like the one in (9b) may be related to the fact that this noun refers to the concrete event of someone giving birth. In other words, this noun does not denote a state, an event or a property, but rather, it refers to a particularized property (tropes) (Montague's 'philosophical entities'), which is a concrete and fully specific entity.

consequence, we cannot sustain the claim that durativized perfectives (i.e. secondary imperfective verbs) are accomplishments in Bulgarian, which again supports the claim that ***all perfective predicates or all predicates incorporating perfectivity at some level of derivation in Bulgarian refer to just one kind of entity—a telic event*** (alternatively, they can be treated as achievement-like events, see fn. 3).

Now let us briefly turn to the rest of the tests used in the literature to differentiate between accomplishment and achievement verbs. The tests I will be examining here are presented in (10).

(10) Testing Aktionsart types (see Dowty 1979: 60)

a. **Pace adverbs** (e.g. *slowly, rapidly*): value the feature [punctual] of the non-stative predicates and distinguishes between verbs with and without temporal duration. Thus, only activities and accomplishments allow for these adverbs (see Van Valin 2005).¹⁰ Some examples are *run fast, dry one's hair slowly*, etc.¹¹

(i) <i>He (slowly) ate the sandwich (slowly)</i>	accomplishment
(ii) <i>He (*slowly) found the key (*slowly)</i>	achievement

b. **The time-span adverbial** (*in X time*): values the feature [telicity] (i.e. my feature [endpoint]) and the internal duration of the predicates and expresses the final inherent point of the event. It is assumed that only accomplishments fully allow this adverbial since they have both an endpoint and duration. Achievements (and semelfactives), on the other hand,

¹⁰ The Aktionsart/lexical types and their corresponding distinctive features used in the framework of Van Valin (2005: 33) are the following:

<u>Aktionsart type</u>	<u>Defining features</u>
State	[+ static] [– dynamic] [– telic] [– punctual]
Activity	[– static] [+ dynamic] [– telic] [– punctual]
Accomplishment	[– static] [– dynamic] [+ telic] [– punctual]
Achievement	[– static] [– dynamic] [+ telic] [+ punctual]
Semelfactive	[– static] [+/– dynamic] [– telic] [+ punctual] [– result state]
Active Accomplishment	[– static] [+ dynamic] [+ telic] [– punctual]

¹¹ There are some achievements which can be modified by the adverb *instantly*: *The bomb exploded instantly*.

lack internal duration and can be accepted only if the time expressed by the adverbial is short: *The bomb exploded in an instant*.

(i) *He read the newspaper in two hours* accomplishment

(ii) **The train arrived in two hours* achievement¹²

c. **The *it takes X time* construction:**¹³ this construction allows for two possible readings depending on whether it measures the amount of time which elapses before the beginning of the event (MacDonald's (2008b) *start-time* interpretation) or whether it refers to the time which passes before the event ends (MacDonald's (2008b) *end-time* interpretation). Since accomplishments have duration, then both interpretations are possible (i). As for achievements (ii), since no time elapses between the beginning and the end of the event, then what the construction measures is the time which elapses before the event begins (Dowty 1979).

(i) *It took Phil ten minutes to drink the pitcher of beer.* accomplishment

It took Sal ten minutes to eat the slice of pizza.

Reading 1 (start-time interpretation): ten minutes passed before Phil began to drink the pitcher of beer/began to eat the slice of pizza.

Reading 2 (end-time interpretation): ten minutes passed before the pitcher of beer was entirely drunk/before the slice of pizza was entirely eaten.

(ii) *It took John ten minutes to catch the raccoon.* achievement

It took Bill ten minutes to spot the plane.

Reading 1 (start-time interpretation) only

(examples from MacDonald 2008b: 10)

d. **The *stop-control* construction:** It is assumed that *stop* is sensitive to the features involved in the makeup of the event. When *stop* takes an accomplishment verb as a

¹² Note that achievements and activities can combine with this adverbial but only with a future reference: *The bomb will explode in an hour*.

¹³ This construction elicits the same readings as the time-span adverbial (10b) (Dowty 1979). As Borer (2005b: 330) observes, when achievements participate in this construction, a reference to the preparatory steps of the event become possible:

(i) *It took them seven hours to win the race*

(ii) *It will take the king two more years to die*

complement, a single event interpretation becomes possible where the event is stopped before it ends. This is related to the fact that time elapses before the event ends, and therefore *stop* can relate to the feature [duration] of the accomplishment predicate. This is clearly seen in (i) where the interpretation which arises is one of a *single event* of drinking beer which starts, continues and stops before its culmination point, i.e. before the bottle of beer is emptied. However, achievements are punctual in nature and there is no time elapsing between the beginning and the end since both phases (e.g. beginning and end) coincide. Hence, such an event cannot stop somewhere before the end and the interpretation we have for (ii) is of different iterated telic events of catching the bear (Dowty 1979).

(i) <i>John stopped drinking the bottle of beer.</i>	accomplishment
(ii) <i>John stopped catching the bear.</i>	achievement

When applying the tests in (10) to the Bulgarian standard perfective verbs we can observe that all of them behave in a uniform manner. Thus, they (i) allow pace adverbs (11a) in the same way as English accomplishments; (ii) accept the time-span adverbial (11b) implying again that they are accomplishments; (iii) elicit only an *end-time* interpretation with *it takes X time* (11b), and (iv) reject the stop-control construction in the same way as achievements (11d). This state of affairs suggests that the ***Bulgarian perfective verbs behave rather uniformly with respect to the standard tests used to differentiate between accomplishment and achievements, although at times they follow the achievement diagnostics and at times the accomplishment ones. However, this uniform behavior on part of all perfective verbs indicates that they denote one kind of event, a telic one.***

(11) Bulgarian perfective predicates and Aktionsart/lexical tests: no clear-cut accomplishment-achievement distinction.

a. **Allow some pace adverbs** (e.g. *quickly*) but tend to reject *slowly*, hence ambiguous

- (i) *rodi* ??*bavno/bŭrzo* primary (unprefixed) perfectives
 gave-birth.PF ??*slowly/quickly*
 'She gave birth ??*slowly/quickly*'
- (ii) *IZ-pi* *bira-ta* ?*bavno/bŭrzo* prefixed perfectives (inner prefixes)
 IZ-drunk beer-the ?*slowly/quickly*
 'He drank (up) the beer ?*slowly/quickly*'
- (iii) *PRE-jade* **bavno/bŭrzo* prefixed perfectives (outer prefixes)
 PRE-ate *slowly/quickly*
 'He overate **slowly/quickly*'

b. **Allow the time-span adverbial 'in X time'** (like accomplishments)

- (i) *rodi* *za dva chasa* primary (unprefixed) perfectives
 gave-birth.PF in two hours
 'She gave birth *in two hours*'
- (ii) *IZ-pi bira-ta* *za dva chasa* prefixed perfectives (inner prefixes)
 IZ-drunk beer-the in two hours
 'He drank (up) the beer *in two hours*'
- (iii) *PRE-jade za dva chasa* prefixed perfectives (outer prefixes)
 PRE-ate in two hours
 'He overate *in two hours*'

c. **Elicit an end-time interpretation with *it takes X time*:** two hours pass before the event of 'giving birth' (i), 'drinking the beer' (ii) and 'overeating' (iii) ends. (like accomplishments)

- (i) *Otne í dva chasa da rodi* primary (unprefixed) perfectives
 took her two hours to give-birth.PF
 'It took her two hours to give birth'
- (ii) *Otne mu dva chasa da IZ-pie bira-ta* prefixed perfectives (inner prefixes)
 took him two hours to IZ-drink beer-the
 'It took him two hours to drink (up) the beer'

(iii) *Otne mu dva chasa da PRE-jade* prefixed perfectives (outer prefixes)

took him two hours to PRE-eat

'It took him two hours to overeat'

d. **Reject the stop-control construction** (see 8a', b', c', d') (like achievements)

**sprja/*prestana da rodi*¹⁴

stopped to give-birth.PF

*'She stopped giving birth'

A summary of the findings is offered in Table 1.

AKTIONSART TESTS	ACCOMPLISHMENTS	ACHIEVEMENTS	BULGARIAN PERFECTIVES
at-time expressions	NOT	YES	YES
complements to 'finish'	YES	NOT	NOT
pace adverbs	YES	NOT YES if short duration	SOME
time-span adverbial	YES	NOT	YES: <i>in X time</i> targets the [endpoint] feature
'it takes X time'	end-time/start-time	start-time	end-time
stop-control construction	single event reading	iterative events reading	NOT ALLOWED

Table 1: Testing Aktionsart classes

From the examples in (8, 9, 11) and the results from Table 1 we can see that all perfective verbs behave quite uniformly with respect to the tests used to differentiate between accomplishments and achievements as if all of these verbs were of the same kind. Thus, all of them reject being complements of *finish* (8, 9), allow some pace adverbs (11a), allow the

¹⁴ Note that *sprja* 'stopped' is allowed with perfective verbs but only under the interpretation of 'in order to': 'she stopped (moving/walking) in order to give birth'.

time-span adverbial (11b),¹⁵ elicit an end-time interpretation with *it takes X time* (11c), and reject the stop-control construction (11d). It then follows that these verbs sometimes resemble accomplishments in their behavior and sometimes achievements, which confirms our claim that such an aspectual distinction is unnecessary and quite artificial. Thus, the linguistic evidence presented here suggests that ***all perfective verbs give the same kind of linguistic object, that of a telic event.*** It then follows that the distinction accomplishments-achievements can no longer be sustained in Bulgarian so the distinguishing feature [duration] also turns out to be irrelevant for the determination of inner aspect, something confirmed by the fact that all perfective predicates both have this feature (11a) and lack it (11b) at the same time. Thus, what finally really matters is the presence/absence of the feature [endpoint] and nothing else. Therefore, the only relevant Aktionsart/lexical entities in Bulgarian, and arguably in the rest of the natural languages, are three: (i) **telic events**, (ii) **atelic events** (e.g. activities/processes/actions), and (iii) **atelic states** (else, stative situation). This is schematically represented in table 2 (terminology adopted from Van Valin 2005).

Aktionsart type	Inner aspect	Primitive features
State	atelic	[non-motion]/[state]
Activity	atelic	empty []
Telic ('quantity', Borer 2005b)	telic	[endpoint]

Table 2: Aktionsart types and features

Putting statives aside for the time being, the conclusion to be drawn is the one already proposed in Borer (2005b), namely that atelicity is what remains in the absence of telicity. Stated differently, we have an atelic event when an [endpoint] feature is absent from the structure; else, we have a telic event with the distinction accomplishments-achievements being totally irrelevant. In the following section I will try to show that such a distinction is also problematic for a well-documented language such as English, contrary to standard

¹⁵ I tentatively suggest that perfective verbs allow for the time-span adverbial since this temporal expression targets the endpoint of the event but not its internal duration in Bulgarian. For a similar proposal, see Borer (2005b).

assumptions.

4.1.2. On the elimination of the so-called accomplishment-achievement distinction in English

In dealing with English data, I will primarily use Borer (2005b) and MacDonald (2008b) as main sources. Crucially, it should be noted that Borer is among the linguists who question the independent linguistic status of the two telic Aktionsart/lexical classes, i.e. accomplishments and achievements. In addressing the issue of the linguistic legitimacy of achievements as a separate class from accomplishments, Borer (2005b) makes two general conclusions:

(12) a. ***achievements and accomplishments do not differ with respect to event structure because they both project a quantity (telic) structure (e.g. Aspect Quantity Phrase)***

b. the only difference between achievements and accomplishments is that the telicity of achievements does not depend on the nature of the internal argument (13a, a'), while it does for accomplishments (13b, b'). Thus, in the presence of a mass internal argument (13b) we have an atelic predicate in contrast to a quantity internal argument (13b'), which gives a telic predicate. This phenomenon is known as the object-to-event mapping (Verkuyl 1972; see section 4.3.1 for further details).

(13) a. <i>John spotted a plane/water *for an hour.</i>	achievement
a'. <i>John found a nugget of gold/gold *for an hour.</i>	achievement
b. <i>John drank water for an hour/*in an hour.</i>	activity
b'. <i>John drank a bottle of water *for an hour/in an hour.</i>	accomplishment

In order to explain the contrast in (13) Borer (2005b) assumes that ***achievements enter narrow syntax with range lexically assigned***, so there is no need for any DP to move to Spec,Asp_QP to assign range, i.e. to mark the event as telic. In other words, ***achievements in English would resemble the Bulgarian primary***

perfective verbs which are already inherently marked as telic. In this way, the nature of the DP complement turns out to be totally irrelevant since these verbs will always give rise to a telic event. However, following MacDonald (2008b) I assume that (at least some) achievements in English do show the object-to-event mapping property (14) in the same way as accomplishments do (13b, b'). Therefore, the validity of Borer's (2005b) second claim (12b) is being questioned.

- (14) a. *John caught the beast in five minutes/*for five minutes*
 b. *John caught wildlife *in five minutes/for five minutes*

From the data in (13) and (14) we can conclude that accomplishments and (at least some) achievements in English do not differ in any significant way from one another when it comes to their internal arguments. Therefore, the only assumption which remains unquestionable is Borer's claim that these two Aktionsart/lexical classes have the same event structure (12a). If we treat event structure in terms of features, it will follow that in the same way as the ***Bulgarian perfective predicates, the English telic predicates*** (i.e. accomplishments and achievements) ***share the same feature, arguably [endpoint], or else, [quantity]*** as in Borer (2005b). This once more shatters the legitimacy of the accomplishment-achievement distinction.

In fact, the mere postulation of accomplishments as a separate aspectual class in its own right is also called into question once we consider the fact accomplishments are always aspectually ambiguous. Thus, Mittwoch (1991) (cited in Borer 2005b: 53) observes that the English accomplishments can be inserted either under telic or under atelic structure. As Mittwoch concludes, all accomplishments in English permit for an atelic process interpretation. A test in case is coordination where it has been suggested that coordinated telic verbs result in a sequential reading (15a) whereas coordinated atelic verbs give rise to a simultaneous interpretation of the predicate (15b). However, many verbs considered telic in English give rise to a simultaneous reading, contrary to expectations (15c).¹⁶

¹⁶ Note that the situation in (15) can be explained if we assume together with Borer (2005b) that telicity is brought by syntactic structure and is not a property of the verb. Thus, listemes receive an interpretation

(15) Coordination

a. <i>The vase broke and fell</i>	(first broke then fell)	(telic)
b. <i>Kim ran and sang</i>	(simultaneously)	(atelic)
c. <i>The yard twisted and spun</i>		(ambiguous)

In addition to this it should be mentioned that some speakers find accomplishments compatible with both the *for*-adverbial and the time-span adverbial at the same time, which confirms Mittwoch's claims and again questions the legitimacy of accomplishments as a separate class in its own right (16).

- (16) a. *John drank the bottle of beer **for an hour/in an hour***
b. *John ate the sandwich **for an hour/in an hour***

Furthermore, various standard tests used to distinguish between the two telic classes also fail, again implying that such a distinction is rather artificial. To exemplify, it has been suggested, contrary to fact (17), that *start* cannot modify achievements (17a), nor can temporal expressions like *last night* (17b) or the time-span adverbial ((17c); see (10b)).

- (17) a. *Kim started to reach the summit*
b. *Kim died sometime last night*
c. *Kim died in ten minutes* (from Borer 2005b: 330)

Apart from this, we have already noted in (10a) that pace adverbs combine with accomplishments but not achievements; yet, again we have seen some exceptions to this generalization (see fn. 11). As a consequence, we can finally agree that there is no clear-cut distinction between accomplishments and achievements.

TO RECAP, we have presented evidence suggesting that the accomplishment-achievement distinction should be removed in both English and Bulgarian. In this respect, we have seen

according to the structure in which they are merged.

that telic verbs in Bulgarian (i.e. the morphologically perfective verbs) behave quite uniformly with respect to the tests used to distinguish between accomplishments and achievements inasmuch as they all reject being complements of *finish* (8, 9), allow some pace adverbs (11a) and the time-span adverbial (11b), elicit an end-time interpretation with *it takes X time* (11c), and reject the stop-control construction (11d). Thus, it seems as if all of these verbs belonged to one single class of verbs, arguably a telic event type. ***As for English, the tests applied in the literature for the accomplishment-achievement distinction have been shown to often give conflicting results.*** First, the well-documented object-to-event mapping property does not only hold for accomplishments, as standardly assumed (13b, b'), but is also present within the achievement type of predicates (14). Second, and as Mittwoch (1991) shows, accomplishments in English are always ambiguous with respect to telicity (15c, 16). Third, we have also seen that the tests used to distinguish accomplishment from achievements are not uncontroversial and present many exceptions to the rule. Thus, contrary to standard assumptions, pace adverbs combine not only with accomplishments (10a) but also achievements (fn. 11); *start* modifies not only accomplishments but also achievements (17a), as do the temporal expressions like *last night* (17b) or the time-span adverbial ((17c); see also (10b)). Hence, in the same way as in Bulgarian, no clear distinction can be established between these two Aktionsart/lexical classes, which leads me to conclude that ***all telic predicates refer to just one single type of event, a telic one*** (else, a quantity one as in Borer 2005b).

Taking this into consideration, one may then wonder how are we to treat the basic difference between accomplishments and achievements, which is duration. I assume that a way to deal with this question is to consider it an ***entailment of the structure, which further depends on the way a given language codifies inner aspect in syntax*** (see chapter 5). In this respect, the Bulgarian standard verbs would not give telic predicates with an *implied* duration (i.e. what is standardly considered 'accomplishments') in contrast to English eventives and Bulgarian biaspectual verbs which arguably would. That is why one has the impression that all of the Bulgarian telic predicates are of the achievement type, though, as I have already mentioned, these labels (accomplishments and achievements) are

merely descriptive (see the following chapter for details on this issue).

Since my starting point for the abovementioned claims are the Bulgarian standard perfective verbs, which always give telic predicates, I dedicate the following section to the discussion of the relation between morphological (im)perfectivity and (a)telicity.

4.2. Inner aspect and the perfective-imperfective distinction in Bulgarian

A crucial statement repeated on various occasions in this study is the claim that all perfective verbs in Bulgarian give telic predicates (18b, b') whereas all primary imperfective ones give atelic predicates (18a). As we have already mentioned, such a claim goes in contrast to the general assumption that the perfective-imperfective distinction should be exclusively treated in terms of grammatical, i.e. outer, aspect (Smith 1991). Rather, I have concluded in the previous chapter that **IMPF1-PF is a distinction relevant to inner aspect whereas PF-IMPF2 relates to outer aspect**. Thus, we have seen that IMPF1 give atelic events (18a) in contrast to PF (18b) and IMPF2 (4b) verbs which are telic. A syntactic representation of perfectivity is offered in (18c).

(18) The IMPF1-PF distinction and telicity in Bulgarian

a. Primary imperfectives: atelicity

*Ivan pi kafe-to dva chasa/*za dva chasa*

Ivan drank.IMPF coffee-the two hours/*in two hours

‘Ivan drank the coffee for two hours/*in two hours’

b. Primary perfectives: telicity

*Ivan kupi kartina(-ta) *dve minuti/za dve minuti*

Ivan bought.PF painting(-the) *two minutes/in two minutes

‘Ivan bought (the) painting *for two minutes/in two minutes’

b'. Prefixed perfectives: telicity

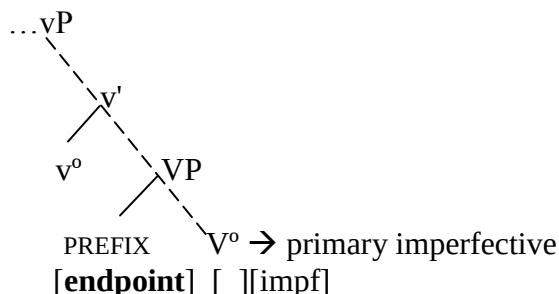
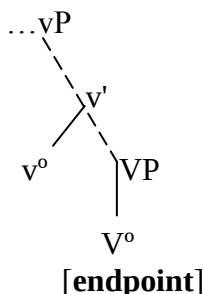
*Ivan IZ-pi kafe-to *dva chasa/za dva chasa*

Ivan IZ-drank.PF coffee-the *two hours/in two hours

‘Ivan drank the coffee *for two hours/in two hours’

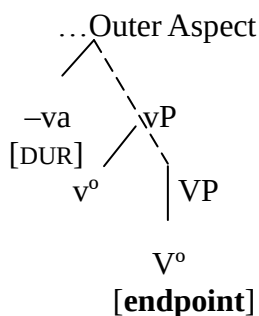
c. Syntactic representation of perfectivity (i.e. telic predicates)

(i) Primary perfectives: (ii) Prefixed perfectives = [prefix + primary imperfective]

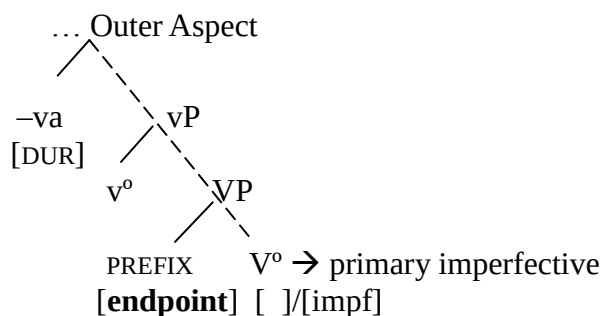


(iii) Secondary imperfectives: [DUR] built upon a telic, [endpoint] event

A. Base: primary perfective



B. Base: prefixed perfective



Primary imperfective verbs (18a) enter syntax devoid of any inherent feature, e.g. [] (18c: ii) (else, they can be specified as [impf]). Hence, in the absence of positive evidence such as an [endpoint] feature, the predicate is interpreted as atelic (18a). However, the value [] on V° (else, the feature [impf]) cannot block the further addition of an endpoint feature, evidenced by the fact that almost all primary imperfective verbs in Bulgarian can be perfectivized, i.e. telicized. Once the feature [endpoint] enters the structure, for example, in the form of a prefix (18b', 18c: ii), the whole event becomes telic. Thus, it is the direct merger of the feature [endpoint] of the prefix which percolates through the whole derivation which finally telicizes the event denoted by the verb. In the case of primary perfectives (18b), I claim that it is the verb itself which enters the numeration already specified for the feature [endpoint] as in (18c: i). Once this feature enters the structure, it percolates throughout the whole derivation and marks the event as telic. In other words, [endpoint] is a lexical property of the primary perfective verbs and of the perfectivizing prefixes in the same way as [gender] is an inherent property for nouns. It then follows that

the same feature [endpoint] can enter syntax either on a prefix (18b', 17c: ii) or else on a primary perfective verb (18b, 18c: i) in Bulgarian. In both cases telicity follows (18c).

Atelicity, on the other hand, is what remains in the absence of telicity (see Borer 2005b). This explains the fact that when the feature [endpoint] is absent from the structure, the predicate remains atelic (18a). Under the syntactic approach to telicity advocated here, I conclude that ***all primary imperfectives (IMPF1) describe atelic events due to the absence of the [endpoint] feature into the structure. However, this is not the case for secondary imperfectives (IMPF2) which, although morphologically imperfective, denote telic events (4b) since the feature [endpoint] cannot be eliminated from the structure.*** In this respect, note that the *-va* suffix, being an outer aspectual morpheme, scopes over a perfective, i.e. telic [endpoint]-incorporating event, be it primary perfective (18c: iii: A) or prefixed perfective (18c: iii: B). Hence, the event denoted by the IMPF2 verb is telic.

As for the prefixed perfective verbs (18b'), I have shown in chapter 3 that all types of prefixes in Bulgarian (e.g. lexical, inner and outer) give telic predicates (19), with the only *apparent* exception being the durative outer prefix *PO-* (19c²) (see Appendix 3.5).

(19) Prefixes as telicity markers

a. Lexical prefixes

*Ivan [PRO-dade] kafe-to *dva chasa/za dva chasa*

Ivan sold.PF coffee-the *two hours/in two hours

‘Ivan sold the coffee *for two hours/in two hours’

b. Inner prefixes: cumulatives

*Ivan NA-gotvi supi(-te) *dva chasa/za dva chasa*

Ivan NA-cooked.PF soups(-the.PL) *two hours/in two hours

‘Ivan cooked a lot of soups/(all the soups) *for two hours/in two hours’

b'. Inner prefixes: pure perfectivizers

*Ivan IZ-pi kafe-to *dva chasa/za dva chasa*

*Ivan IZ-drunk.PF coffee-the *two hours/in two hours*

‘Ivan drank the coffee *for two hours/in two hours’

c. Outer prefixes: phasal (inceptives)

*Ivan ZA-plaka *dva chasa/za dva chasa*

*Ivan ZA-cried.PF *two hours/in two hours*

‘Ivan started to cry *for two hours/in two hours’

c¹. Outer prefixes: temporal (repetitives)

*Ivan PRE-[PRO-dade] kafe-to *dva chasa/za dva chasa*

*Ivan PRE-sold.PF coffee-the *two hours/in two hours*

‘Ivan sold the coffee again *for two hours/in two hours’

⊗ c². Outer prefixes: durative PO-

*Ivan PO-pja dva chasa/*za dva chasa*

*Ivan PO-sang.PF two hours/*in two hours*

‘Ivan sang (for a while) for two hours/*in two hours’

c³. Outer prefixes: degree (high degree)

*Ivan PRE-jade *dva chasa/za dva chasa*

*Ivan PRE-ate.PF *two hours/in two hours*

‘Ivan ate enough/had enough of eating *for two hours/in two hours’

c⁴. Outer prefixes: manner (reversives)

*Ivan OT-vürza vüzel-a *dva chasa/za dva chasa*

*Ivan OT-tied.PF knot-the *two hours/in two hours*

‘Ivan untied the knot *for two hours/in two hours’

From (19) we can observe that when attached to the verb, all types of prefixes (lexical 19a; inner 19b, b', outer 19c, c¹, c³, c⁴) require the time-span adverbial *in X time* suggesting that all of the predicates are telic. The only apparent exception to this rule seems to be the durative outer prefix PO- (19c²) which allows for the durative adverbial *for X time*, indicating that we have an atelic predicate. In fact, this example has led many aspectologists to claim that perfectivity and telicity should not be confused in Slavic, since

not all perfective verbs (e.g. the PO- verb in (19c²)) return telic predicates (Filip 1999; Borik 2000, 2002; Borik and Reinhart 2004; Gehrke 2005, among many others). However, ***the only apparent exception to my claim that all prefixed verbs are telic resides in the behavior of the outer durative prefix PO- ‘for a while’ (19c²).*** I account for this apparent counterexample in what follows.

Recall that the prefix PO- forms part of the Cinque’s (1999) hierarchy of aspectual features (see (25) in chapter 3, or Appendix 1.1) because, as we have already seen, it enters the numeration with two inherent features, the telicizing primitive feature [endpoint] and the additional aspectual/Aktionsart feature [duration] (see the previous chapter, § 3.3.3.3). I suggest that it is precisely this second additional feature [duration] which allows for the atelic modifier *for X time* to appear with such verbs (19c²). Thus, ***what for X time really modifies is not the event as a whole, since this event is telic, but the temporal portion specified and carried by the second inherent feature of the prefix, i.e. the [duration] feature of PO-.*** Additionally, the durative modifier is optional since duration is still implied by the mere presence of PO- and we may or may not specify it overtly by the insertion of the for-adverbial. Hence, the statement that all Bulgarian perfectives are telic proves to be true.

Regarding PO-verbs, we should note that Borer (2005b) has a similar proposal where she suggests that PO-verbs do not allow for measure phrases (e.g. *in X time* in (19c²)) because the time-span is already built into the meaning of PO-. As for the fact that PO-verbs, though telic, accept durative adverbials, she assumes that such adverbials are licensed as modifiers of ‘short’, which forms part of the semantics of PO- (e.g. PO- is translated as ‘for a short time’ and the durative adverbial *for X time* is a response to the question ‘how short?’) (Borer 2005b: 192, fn. 6). Hence, (19c²) is just an *apparent* counterexample to the claim that telicity and perfectivity go hand in hand in Bulgarian (and, arguably, in the rest of the Slavic languages) against standard assumptions.

From the observations in this section we can conclude that what determines inner aspect is the presence or absence of the feature [endpoint]. We have thus seen that whenever this

feature is present in the structure, be it on the verb itself (18c: i) or on the prefix (18c: ii), the event is interpreted as telic. In the absence of such a feature, the event is interpreted by default, i.e. as atelic. Since what marks telicity in the case of prefixed perfectives is the inherent [endpoint] feature on the prefix (18c: ii), and since prefixation is a common phenomenon in Bulgarian, I dedicate the following section to provide evidence in defense of the presence of such a feature on the perfectivizing prefixes.

4.2.1. Evidence for the [endpoint] feature on prefixes

Evidence for the inherent [endpoint] feature on all the Bulgarian prefixes is provided by the data in (20) and (21) (see Appendix 4.1 for the rest of the inner and outer prefix types).

(20) Testing [endpoint] on prefixes: ‘it took X time’ (see Appendix 4.1: (1))

a. Lexical prefixes

Otne mu dva chasa da [PRO-dade] kafe-to
 took him two hours to sell.PF coffee-the
 ‘It took him two hours to sell the coffee’

b. Inner prefixes: pure perfectivizers

Otne mu dva chasa da IZ-pie kafe-to
 took him two hours to IZ-drink.PF coffee-the
 ‘It took him two hours to drink the coffee’

c. Outer prefixes: phasal (inceptives)

Otne mu dva chasa da ZA-pee pesen-ta
 took him two hours to ZA-sing.PF song-the
 ‘It took him two hours to start singing the song’

⊗ c'. Outer prefixes: durative PO-

**Otne mu dva chasa da PO-pee*
 took him two hours to PO-sing.PF
 *‘It took him two hours to sing for a while’

c''. Outer prefixes: degree (high degree)

Otne mu dva chasa da PRE-jade

took him two hours to PRE-eat.PF

‘It took him two hours to have enough of eating’

(21) Testing [endpoint] on prefixes: ‘yesterday s/he V-ed and is still V-ing now’ (see Appendix 4.1: (2))

a. Lexical prefixes

*Vchera Ivan [PRO-dade] kafe-to *i sega prodūlžava da go prodava*

Yesterday Ivan SOLD.PF coffee-the *and now continues to it sell

‘Ivan sold the coffee yesterday *and is still selling it now’

b. Inner prefixes: pure perfectivizers

*Vchera Ivan IZ-pi kafe-to *i sega prodūlžava da go pie*

Yesterday Ivan IZ-drunk.PF coffee-the *and now continues to it drink

‘Ivan drank the coffee yesterday *and is still drinking it now’

c. Outer prefixes: durative PO-

Vchera Ivan PO-pja #i sega prodūlžava da pee

Yesterday Ivan PO-sang.PF #and now continues to sing

‘Ivan sang for a while yesterday #and is still singing now’

⊗ c'. Outer prefixes: phasal (inceptives)

Vchera Ivan ZA-plaka i sega prodūlžava da plache

Yesterday Ivan ZA-cried.PF and now continues to cry

‘Ivan started to cry yesterday and is still crying now’

c''. Outer prefixes: manner (reversive)

*Vchera Ivan OT-vūrza vūzel-a *i sega prodūlžava da go otvrūzva*

Yesterday Ivan OT-tied.PF knot-the *and now continues to it untie

‘Ivan untied the knot yesterday *and is still untying it now’

What (20) shows is that when embedded within the construction *it took X time* all prefixed verbs make reference to the endpoint portion of the event. That is, the interpretation we get for (20a), for example, is that ‘it took Ivan two hours to *have* all of the coffee sold’, or, put

differently, ‘it took him two hours to *finish/accomplish* the event of coffee-selling’. This implies that **‘two hours’ relates to the final phase of the event where such a relation is made available by the [endpoint] feature present in the structure**. As a consequence, the temporal expression **it took X time measures the completion (i.e. the final phase) of the event** but not any other portion of it, supporting **therefore the presence of the [endpoint] feature in the structure which the prefix bears**. The same holds for the rest of the prefixes (see Appendix 4.1: (1)).

Note, though, that there are two exceptions to this rule (20c, c’). In the case of inceptive prefixes (20c), the temporal expression ‘two hours’ does not relate to the final phase of the event but rather to its beginning where the interpretation we have is that ‘it took Ivan two hours to *start* singing the song’. Again, this is explained by the fact **that inceptive prefixes bear an additional aspectual/Aktionsart feature [beginning] (else, [inception]) and it is precisely this feature which the temporal expression targets**.¹⁷ As for the second exception, e.g. the durative prefix PO- (20c’), such verbs are excluded from this construction since **the prefix has duration incorporated as part of its semantics by virtue of its inherent feature [duration]. Thus, an incompatibility arises between this feature and the temporal expression it took X time due to the fact that the latter targets either the endpoint of the event or else its beginning, but not any other portion of it such as its duration. As a consequence, PO-verbs are excluded from this construction**.

As for the second test in (21), e.g. embedding prefixed verbs within the construction ‘Yesterday he V-ed and is still V-ing now’, what we will expect is that if there is an [endpoint] feature present in the structure then it will delimit the event and, as a consequence, the construction will be out since once the event is marked as bounded (else, completed) it can no longer be prolonged (i.e. the second part of the construction, ‘is still

¹⁷ Another example of *it took X time* as measuring the beginning of the event (e.g. the preparatory steps) is when it applies to achievements: *it took him two hours to find the keys* (see (10c) for discussion).

V-ing now', will be out). From the data in (21) we see that this is exactly the case. Thus, we cannot sell all the coffee and then continue selling the same coffee (21a), nor cook a lot of soups and then go on cooking the same soups (Appendix 4.1: (2a)), etc., which indicates that there is indeed an [endpoint] feature present in the structure.

A COMMENT IS IN ORDER HERE. From (21) we can observe that whenever there is an internal argument present in the structure (21a, b, c"; see also Appendix 4.1: 2a, b, b') the sentence is ungrammatical in this construction, which is due to the fact that since the event is telic, the internal argument is totally affected or else consumed. Hence, we can no longer keep on affecting or consuming it. However, in case there is no internal argument, then the event can go on which explains the acceptability of (21c, c'; also Appendix 4.1: 2b"). Yet, in such cases it is not the same event which is involved in both 'yesterday' and 'now' parts of the utterance but rather we have the instantiation of two different events of singing (21c) and eating (Appendix 4.1: 2b"), again suggesting that there is an endpoint to the first (telic) event. Thus, what we interpret in (21c), for example, is that Ivan sang for some time yesterday and is now involved in the event of singing again, but between both events of singing, e.g. 'singing for a while yesterday' (i.e. the PO-verb) and 'singing now', there has been some time in which he did not sing. Hence, we have two distinct events of singing since the first event of singing has an [endpoint] feature inserted by the prefix PO-. The same holds for the rest of the cases. As for inceptive prefixes (21c'), we can observe that the sentence is fine since what the prefix introduces is an additional [beginning] feature which makes it possible for the same event of crying to start in the past 'he started to cry' (e.g. the ZA-V) and continue in the present.¹⁸

¹⁸ An alternative analysis of inceptive prefixes (21c') will be to treat the combination of both inherent features of ZA-, e.g. [endpoint] and [beginning], as entering into a relation between themselves with the final result being that the [endpoint] feature modifying the [beginning] feature. Hence, what we finally interpret is not an endpoint to the whole event denoted by the verb but rather an end oriented towards the beginning of the event, i.e. its initial phase (Filip 2005b). In other words, *Ivan ZA-plaka* 'Ivan START-cried' could also mean that the **preparatory steps** to the event of crying have reached an endpoint (where such an endpoint is carried by the prefix) and thus the process of crying has started. Recall that achievements in English can also involve a reference to the preparatory steps of the event (Borer 2005b).

Hence, from (20) and (21) we can conclude that there is enough linguistic evidence for the presence of an [endpoint] feature on all types of prefixes in Bulgarian (see also Appendix 4.1). Moreover, it is precisely this feature which telicizes the event and makes it possible to establish a correlation between morphological perfectivity and telicity (at least) in Bulgarian (18b, b', c). As for the morphologically primary imperfective verbs, we saw that they give atelic predicates (18a). In the following section I provide some details on the use of the perfective-imperfective distinction in Bulgarian since this can pose some *apparent* problems to my analysis.

4.2.2. A final note on the use of the perfective-imperfective distinction in Bulgarian

A final question which remains unanswered is whether it is always the case that perfectivity equals telicity and (primary) imperfectivity atelicity. As for the perfective forms, I could not find any apparent exception apart from the PO-verbs described in the previous section. Since these apparent counterexamples have already been explained, perfectivity will arguably always equal telicity. However, regarding the second part of the question, i.e. the correlation between (primary) imperfectives and atelicity, there are some widely acknowledged exceptions to this claim that I will try to explain in this subsection.

All traditional grammars agree on the fact that ***the perfective verbal form presents the verbal action as a whole and indivisible unit, encompassing its beginning and end, without making any reference to the internal phases of this event such as its duration*** (Pashov 1999: 134; Bojadjev et al. 1999: 485-487). ***The (primary) imperfective verbal form, on the other hand, is considered to present the verbal action in its process of completion without any reference to the beginning or endpoint of such process.*** Hence, semantically, the distinction between perfective-(primary) imperfective is again reflected in the presence-absence of an endpoint, as I have so far defended.

Adopting such a line of analysis I have claimed that in the absence of an [endpoint] feature, i.e. in the absence of perfectivity, what remains is primary imperfectivity. Therefore, I have suggested that primary imperfective verbs will always give atelic predicates. However, a question which may arise is ***why the morphologically primary imperfective verbs have some apparently telic uses in Bulgarian***. To exemplify, Ivanchev (1971) considers the basic formal distinction between the perfective and imperfective forms to be based on two basic semantic oppositions. For him, the perfective forms, in all their uses, have just one denotation: ***complexity~non-process*** (e.g. result-oriented, or else, includes a result part), in contrast to the primary imperfective forms which have two meanings: ***non-complexity~process*** in their actual uses (e.g. present tense; no result present), and ***complexity~non-process*** in non-actual uses exclusively (Ivanchev 1971, from Bojadjev et al 1999: 484-485). That is, ***the primary imperfective form can take over functions of the perfective one in non-actual contexts (e.g. future tense, historical present tense)*** (23b):

(22) Perfectives: ***complexity~non-process*** (resultant state present)

Ivan na-risuva kartina za dve minuti

Ivan NA-drew a picture in two minutes

'Ivan drew a picture in two minutes'

(23) Primary imperfectives

a. **Actual uses:** ***non-complexity~process*** (no resultant state)

Ivan risuva kartina dva chasa

Ivan draw.IMPf picture two hours

'Ivan draws/is drawing a picture for two hours'

b. **Non-actual uses** (future reference): ***complexity~non-process*** (resultant state)

Pija edno kafe za dve minuti i idvam

drink.IMPf one coffee in two minutes and come

'I drink a coffee in two minutes and (then) I (will) come'

'Once I have drunk my coffee (up) I will come'

From (23) we can observe that the primary imperfective verbs can be used in both telic (23b) and atelic contexts (23a) behaving thus in a similar way as biaspectuals. This has been, in fact, observed in various traditional grammars of Bulgarian (Georgiev 1999, Pashov 1999, Ivanchev 1971, among others). Note, however, that such a claim goes against the proposal defended here that primary imperfectivity equals atelicity since in (23b) we have a primary imperfective verb used in telic context. I claim that such a state of affairs derives from the fact that ***the primary imperfective, being the unmarked member of the opposition primary imperfective—derived perfective, can be used in both marked (i.e. perfective/telic) and unmarked (primary imperfective/atelic) contexts in the same way as the morphologically simple and unmarked present tense can take over functions of the (morphologically) marked future tense (e.g. 'I come in two minutes').*** However, it cannot be the case that the marked member of a given category could take over functions of the unmarked one (e.g. 'I will come' cannot mean 'I come (now)' nor can 'IZ-jam' (eat.PF) mean *'I eat now'). Thus, ***it is the context which will finally determine the interpretation which we assign to the primary imperfective members of the category*** (23b). Therefore, my claim that perfectivity equals telicity and primary imperfectivity equals atelicity turns out to hold true in Bulgarian despite all apparent exceptions.

TO RECAP, we have seen that ***no distinction could be plausibly sustained between accomplishments and achievements in neither Bulgarian nor English. We have further noted that inner aspect depends on morphological (im)perfectivity in Bulgarian where only in the presence of the feature [endpoint] is the structure capable of returning a telic event.*** Thus, in the line of Borer (2005b) I have concluded that in the absence of telicity (i.e. of an [endpoint] feature) what remains is atelicity. ***However, the notion of morphological (im)perfectivity is totally irrelevant in a language such as English, which results in adopting different strategies for codifying inner aspect in this language.*** I dedicate the following section to dealing with the codification of telicity in both English and Bulgarian.

4.3. The behavior of eventive verbs in English and Bulgarian

This section is primarily concerned with the behavior of the English and Bulgarian eventive verbs with respect to telicity. Following MacDonald (2008a,b) I assume that there is a dedicated syntactic domain where inner aspect is calculated (AspP) and that some of the properties relevant to inner aspect such as the ability of the internal argument to give telic predicates (known as the object-to-event mapping property) and the ability of prepositions to turn an atelic predicate into a telic one depend on the feature configurations of this syntactic layer.¹⁹ As MacDonald (2008a,b) shows, English eventive predicates show these properties in contrast to English statives which do not. As for Bulgarian, we find a similar situation where standard verbs do not show these properties in contrast to the biaspectual verbs which do. I start the discussion with the English eventive predicates (§ 4.3.1) after which the behavior of the Bulgarian standard (§ 4.3.2) and biaspectual (§ 4.3.3) eventives is exemplified.

4.3.1. The aspectual properties of English eventive predicates

It has already been shown that an NP internal argument can affect the aspectual interpretation of a predicate (Verkuyl 1972).²⁰ This ability is referred to as the object-to-event mapping property (MacDonald 2008a,b) and is illustrated in (24) for English.

- (24) a. *John drank **a bottle of wine** in 10 minutes/*for 10 minutes*
b. *John drank **wine** *in 10 minutes/for 10 minutes*

¹⁹ I will not treat here the third aspectually relevant property according to MacDonald (2008a,b), e.g. the *sequence of similar events* interpretation, which is a particular multiple events interpretation elicited by bare plurals.

²⁰ Verkuyl (1972) observes that the presence of an argument with some specific property, which he calls ‘specified quantity of A’, is essential for the emergence of telicity. Thus, telic interpretation emerges only in the context of a direct argument with the property α , where α for Borer (2005b) is *quantity* and can be realized in one of the following ways: (i) Kim ate *some* apples; (ii) Andrew drank *too much* beer; (iii) He read *two* books; (iv) Marcia built *a* house. If, on the other hand, the direct argument lacks this property, then we have atelicity: (i) Kim drank *beer* (a mass NP internal argument) or (ii) Kim ate *apples* (a bare plural).

From (24) we can see that the predicate in (24a) is telic whereas the one in (24b) is atelic. Since these predicates only differ with respect to their internal argument, ‘a bottle of wine’ in (24a) and ‘wine’ in (24b), it has been suggested that it is precisely the nature of such arguments which facilitates the telic-atelic interpretation of the English eventive verbs. Following Borer (2005b), I refer to NPs like ‘a bottle of wine’ as [+q]NPs, and to NPs like ‘wine’ as [-q]NPs.²¹

Interestingly, however, there is a group of verbs, the so-called transitive activities (25), which do not show the object-to-event mapping property. These verbs always give atelic predicates irrespective of the nature of their internal arguments.

- (25) a. *John carried **sand** for an hour/*in an hour*
 b. *John carried **a bag of sand** for an hour/*in an hour*

A possible way to explain this is to assume that the object-to-event mapping property relies on incrementality (Krifka 1989a, 1992; Filip 1999). Given that the verb in (25) is not an incremental theme verb then the object-to-event mapping property will not show.^{22,23}

²¹ [q] refers to *quantity* in Borer (2005b). In more general terms, a quantity interpretation corresponds to Kiparsky’s (1998) notion of boundedness.

²² The arguments that stand in an incremental relation to events are called Incremental Themes. It is assumed that incrementality guarantees the transfer of reference properties from the Incremental Theme to the verbal predicate. Thus, only incremental themes (e.g. *apple* in *eat an apple*, see (i)) are believed to affect the telicity of the event but not non-incremental theme objects (e.g. *a log* in *drag a log*).

(i) *He ate an apple*

In (i) *an apple* is the incremental theme since every subpart of the apple that is eaten corresponds to a subpart of the event of eating that apple. When half the apple is eaten, the event is half over; when the apple is entirely consumed, the event is over. Put differently, with physically bounded incremental themes such as a count noun (e.g. *an apple*) the event becomes temporally bounded, hence, telic (i); if, on the other hand, the incremental theme is not physically bounded (e.g. a mass NP such as *apples*), then the event lacks a temporal bound and is therefore atelic (e.g. *eat apples*). *an apple* and *apples* thus become a means of ‘measuring out’ the event, as suggested in Tenny (1994).

²³ The object-to-event mapping property is also known as argument-to-event homomorphism (Dowty 1991, Krifka 1989a, Tenny 1992). The relationship between the argument-to-event homomorphism and

However, MacDonald (2008a,b) notes that the property of an NP should not be confused with incrementality since the ability of an NP to affect the aspectual interpretation of a predicate is independent of whether this NP is an incremental theme or not. Thus, he shows that achievements, which are not incremental theme verbs, also show the object-to-event mapping property (26) (see also (14)).

(26) Achievements: object-to-event mapping $\neq$ incrementality

- a. *John had the bottle of wine in 2 minutes/*for 2 minutes* (telic)
- b. *John had wine for an hour* (non-iterative: atelic)

From (26) we can observe that when the internal argument is a [+q]NP then we have a telic event (26a). When the predicate takes a [-q]NP internal argument (26b), then it behaves like an atelic predicate shown by the acceptability of the *for*-adverbial and by the resulting non-iterative interpretation characteristic of atelic verbs. Moreover, the progressive form of a [-q]NP achievement (27a) entails its perfect one (27b), which additionally confirms its atelic behavior, as already discussed in MacDonald (2008b) (see also Dowty 1979).

- (27) a. *John is having wine.*  (a) entails (b), hence atelic event
- b. *John has had wine.*

Though achievements are not incremental theme verbs, they do show the object-to-event mapping property (14, 26, 27) implying that both properties, the object-to-event mapping and incrementality, are independent from one another (see MacDonald 2008a,b). Evidence for this claim is also provided by the fact that the transitive activity from (25), which lacks the object-to-event mapping property, does show it once a goal PP is inserted (28, 29).

- (28) a. *John carried **the bag** into the bedroom #for an hour.* (telic)
- b. *John is carrying the bag into the bedroom.*  no entailment
- b'. *John has carried the bag into the bedroom.* 

incrementality is quite straightforward since it is the incremental theme proper which defines this homomorphism from properties of an argument to properties of the corresponding event.

- (29) a. *John carried **sand** into the bedroom for an hour.* (atelic)
 b. *John is carrying sand into the bedroom.* entailment
 b'. *John has carried sand into the bedroom.*

From (28) we can see that if a transitive activity takes a [+q]NP internal argument (e.g. *the bag*), then we have an iterative interpretation of the event indicated by ‘#’ in (28a) and no progressive to perfect entailment (28b, b’); hence, the event is telic.²⁴ When the internal argument is marked as [-q] (29), then a non-iterative interpretation holds (29a) together with a progressive to perfect entailment (29b, b’), which confirms the atelic nature of the predicate. That is, in the presence of a goal P (e.g. *into the bedroom*), the object-to-event mapping property holds for transitive activities suggesting that it is a property independent of incrementality.²⁵

Now let us turn to the second aspectually relevant property, i.e. the ability of a preposition to turn an atelic predicate into a telic one, which has been already claimed to hold for English eventive verbs. As MacDonald (2008a,b) shows, a goal PP can turn an activity (i.e. an atelic predicate) into an accomplishment (i.e. a telic predicate), illustrated in (30).²⁶

- (30) a. *John carried a bag for 10 minutes/*in 10 minutes.*
 b. *John carried a bag into the room *for 10 minutes/in 10 minutes.*

²⁴ I use the symbol # before the *for*-adverbial to indicate an iterative interpretation characteristic of telic predicates. In this respect, note that the *for*-adverbial is grammatical on an iterative interpretation in (28), which indicates that the predicate is telic (Alsina 1999, Tenny 1987); see fn. 1.

²⁵ One can object that what is incremental in (28, 29) is not the internal argument but the Path (Dowty 1991). In fact, for Krifka (1992) predicates like *cross the desert* represent a special case of the Incremental Theme, the Incremental Path Theme. However, note that we have object-to-event mapping in the presence of the PP (i.e. the Path argument) which is still dependent on the nature of the internal argument (e.g. with a [+q]NP argument we have a telic predicate as in (28) whereas with a [-q]NP the predicate is atelic as in (29)). Thus, it is the internal argument, and not the PP, which is finally responsible for the telic-atelic interpretation of the event, an issue already discussed in MacDonald (2008a).

²⁶ Goal prepositions accompany verbs of motion and denote the goal of the motion event (e.g. *to, into, onto*). In cognitive theories, the path of a motion event includes information about the source, route and goal (Talmy 1991).

From (30) we can observe that the transitive activity *carry* in (30a) is atelic, and becomes telic due to the addition of the goal PP (30b). Under the analysis adopted here, I claim that this is due to the fact that ***goal PPs in English, in the same way as perfectivizing prefixes in Slavic, introduce an [endpoint] feature into the structure, thus giving rise to telicity.***

From the data above we can conclude with (MacDonald 2008a,b) that the object-to-event mapping property and the ability of a goal P to turn an atelic predicate into a telic predicate are two properties associated with English eventive verbs. In the following section we will see that neither of these two properties holds for the Bulgarian standard verbs (§ 4.3.2) in contrast to the Bulgarian biaspectuals (§ 4.3.3) which do show both properties.

4.3.2. The aspectual properties of Bulgarian standard eventive predicates

Since the verbs in Bulgarian form aspectual pairs (e.g. PF/IMPF) then we should examine the behavior of both morphological forms. Let us start with primary imperfectives.

(31) *Ivan pi kafe /edna chasha kafe edin chas/*za edin chas*

Ivan drank coffee/a cup of coffee one hour/*in one hour

‘Ivan drank coffee/a cup of coffee for an hour/*in an hour.’

From (31) we can observe that Bulgarian imperfective verbs always give atelic predicates regardless of the nature of the internal argument, e.g. *kafe* ‘coffee’ (a [-q]NP) or *edna chasha kafe* ‘a cup of coffee’ (a [+q]NP). Hence, the object-to-event mapping property does not hold for these verbs.

As for the Bulgarian perfective verbs, they always give telic predicates no matter the nature of their direct object (32).

(32) a. Primary perfectives

*Ivan kupi brashno-(to)/edin chuval brashno *edin chas /za edin chas*

Ivan bought.PF flour-(the)/a sack flour *one hour/in one hour

‘Ivan bought (the) flour/a sack of flour *for one hour/in one hour.’

b. Prefixed perfectives

Ivan iz-pi kafe-(to) /edna chasha kafe *edin chas /za edin chas*

Ivan IZ-drunk coffee-*(the)/a cup of coffee *one hour/in one hour

‘Ivan drank *(the) coffee/a cup of coffee *for one hour/in one hour.’

From (32a) we can observe that the primary perfective verb *kupja* ‘buy’ gives rise to a telic event regardless of the nature of its internal argument. However, this is not the case for the prefixed perfective in (32b) where the [-q]NP direct object *kafe* ‘coffee’ is apparently disallowed with the prefixed perfective verb *iz-pi* ‘drank (up)’. It may therefore be the case that the obligatory presence of the determiner with this verb is an instantiation of the object-to-event mapping property. Additionally, note also that the verb *pija* ‘drink’ in (32b) is an incremental theme verb in contrast to *kupja* ‘buy’ (32a) which is not, and which allows for the omission of the determiner. Hence, following Filip (1999, 2005b) one may suggest that if the incremental theme argument is marked as [+q], then we have telicity due to the principle of aspectual composition.²⁷ In Bulgarian, this will be exemplified by the restriction on prefixes to appear with the definite determiner with incremental verbs as in (32b). However, some linguists have already noted that it is not at all clear that the definite determiner marks telicity (Jackendoff 1996; Filip 2005b; MacDonald 2006, 2008b; Nishida 1994).²⁸ Additionally, there are cases of many other prefixed incremental theme verbs in Bulgarian that allow for the omission of the determiner (33). (See Appendix 4.2: (1)).

²⁷ It is assumed that verbs are composed with their Incremental Theme arguments following the principle of aspectual composition (see Krifka 1992). This principle is defined as follows:

- (i) “In simple clauses describing particular eventualities, a quantized Incremental Theme argument of a dynamic predicate V yields a quantized (telic) verbal predicate. A homogeneous Incremental Theme argument generates homogeneous (atelic) verbal predicate” (Filip 2005b: 4)

Put differently, the (a)telicity of the clause is dependent on the aspectual features of its constituents.

²⁸ The determiner in English does not always imply a telic event: e.g. *Bill ate the custard for hours/until he was full* (from Jackendoff 1996: 307, fn.5).

- (33) *Ivan iz-jade sandwich *pet minuti /za pet minuti*
 Ivan IZ-ate sandwich *for five minutes/in five minutes
 ‘Ivan ate up a sandwich *for five minutes/in five minutes.’

In (33) we observe that the incremental theme *sandvich* ‘sandwich’ can appear bear and still give rise to telicity. However, this is not unexpected under some semantic approaches to aspect. To mention one, Filip (2005b: 10) considers singular count nouns (e.g. ‘sandwich’ in (33)) to denote atomic entities that have an inherent cardinality measure ‘ONE-NATURAL-UNIT’ as part of their lexical structure. Bearing in mind that cardinality refers to quantity, then the inherent quantity criterion (e.g. the culmination condition), and consequently telicity, is guaranteed in such cases. However, there are other prefixed perfective incremental verbs which take non-specific mass [-q] internal arguments as in (34) and still give rise to telic events.

- (34) *toj s-mlja brashno *dve mintui/za dve minuti*
 he S-ground flour *two minutes/in two minutes
 ‘He ground flour *for two minutes/in two minutes.’

As for non-incremental theme verbs (35), they do not require a definite (or specific) internal argument (Filip 2005b). (See also Appendix 4.2: (2))

- (35) *toj raz-bŭrka smes *dve minuti /za dve minuti.*
 he RAZ-stirred mixture *two minutes/in two minutes
 ‘He stirred a mixture *for two minutes/in two minutes.’

From the data above we can conclude that what determines the telic interpretation of a standard predicate in Bulgarian is not some aspectually relevant property of the incremental argument as in English but rather the perfectivizing prefix itself (e.g. in the case of prefixed perfectives), which additionally confirms our statement that perfectivity equals telicity in this language. Hence, the object-to-event mapping property is not present with these

verbs.²⁹

An interesting observation which has been widely discussed in the literature is the ability of Slavic perfectivizing prefixes to impose a specific interpretation on the direct object. This is reflected by the fact that bare internal arguments can only receive a specific (i.e. strong) reading in the context of a prefix (Di Sciullo & Slabakova 2005 for Bulgarian, Filip 1999 for Czech, Piñón 1994, 2001 for Polish). As a consequence, this has led many linguists to claim that instead of object-to-event mapping, Slavic instantiates just the inverse of this linguistic phenomenon, i.e. **event-to-object mapping** (Borer 2005b, Filip 1999, Krifka 1992). Thus, *knigi* ‘books’ in (36) cannot remain bare in the context of a prefixed verb which finally results in the obligatory presence of the determiner.

(36) *detsa-ta pro-chetoha knigi-*(te)*
children-the PRO-read books-*(the)
‘The children read the books.’

Interestingly, however, Di Sciullo & Slabakova (2005) note that the prefix scopes not only over the internal argument but over the external argument as well. Thus, in a perfective (telic) context the external argument cannot remain bare neither (37).

(37) *detsa-*(ta) pro-chetoha knigi-te*³⁰
children-*(the) PRO-read books-the
‘The children read the books.’

Moreover, observe that the complements of (goal) prepositions are also in the scope of the prefix, illustrated in (38).

²⁹ See Schoorlemmer (1995) for similar conclusions on Russian.

³⁰ In fact *detsa* ‘children’ in (37) can appear bare but only under a focused reading which is not unexpected since focused elements are usually interpreted as definite. The same observation holds for *knigi* ‘books’ (36).

- (38) *Edno momche za-nese edna kniga na detsa-*(ta)*
 one boy ZA-carried one book to children-*(the)
 ‘A boy carried a book to the children.’

The data in (36-38) suggest that we should not speak of the inverse of the object-to-event mapping in prefixed contexts since external arguments (37) and complements of prepositions (38) do not measure out the event (Tenny 1987) and hence should not enter the object-to-event mapping (MacDonald 2008a,b). Thus, neither a [-q] external argument (39a) nor a [-q] complement of a goal preposition (39b) can turn a predicate atelic (MacDonald 2008a,b).

- (39) a. *Wildlife ate a bag of trash in ten minutes/*for ten minutes.*
 b. *John carried a bag into water in ten minutes/*for ten minutes.*

This leads one to conclude, together with MacDonald, that the effect of the perfectivizing prefix does not result in the inverse of the object-to-event mapping property. However, recall that I have shown that the prefix marks aspect in Bulgarian (19) which is more in line with the event-to-object mapping view than the object-to-event mapping for Slavic. A way to explain the data in (37-38) is to propose that once the event is marked as telic (e.g. by the presence of the prefix), all the participants in this event agree in features thus requiring specific or definite external arguments. Consequently, ***the inverse of the object-to-event mapping, i.e. event-to-object mapping, holds in Bulgarian.*** As for the complements of prepositions (38), it should be noted that even in atelic (unprefixed) contexts, a definite complement is required (40), showing therefore the irrelevance of PP's complements to aspect.

- (40) *Ivan pja na bebe-*(to) v park-a*
 Ivan sang.IMPF to baby-*(the) in park-the
 ‘Ivan sang to the baby in the park’

Most importantly, recall that though internal arguments tend to appear definite in telic

contexts in Bulgarian (36), they do not obligatorily need to be so (32a, 33, 34, 35, Appendix 4.2). Hence, we can still speak of some variant of the event-to-object mapping in this language but definitely not of an object-to-event mapping since what finally really matters for the calculation of inner aspect is the perfective/imperfective nature of the verbal base, i.e. the presence/absence of an [endpoint] feature, and not some other feature of the event's participants.

As for the second aspectual property, i.e. the ability of a preposition to give telic predicates, it does not hold for Bulgarian either. Thus, no preposition can turn an atelic predicate into a telic one.³¹

(41) a. *Nosi kufar-a v staja-ta edin chas/*za edin chas.*

carried suitcase-the in room-the one hour/*in one hour

‘He carried the suitcase in(side) the room for an hour/*in an hour.’

b. *Kara kola-ta do Barselona edin chas/*za edin chas.*

drove car-the to(ward) Barcelona one hour/*in one hour

‘He drove the car to(ward) Barcelona for an hour/*in an hour.’

From (41) we see that imperfective verbs give atelic predicates regardless of the preposition (Beck & Snyder 2001). Interestingly, in order for a preposition to be interpreted as goal, we need a perfective verb (42), which again supports our claim that it is the prefix which determines telicity, and not the preposition itself.

(42) *Ivan za-nese kufar-a v park-a *deset minuti/za deset minuti*

Ivan ZA-carried suitcase-the in park-the *ten minutes/in ten minutes

‘Ivan carried the suitcase into the park *for ten minutes/in ten minutes.’

³¹ This may be due to the fact that there are no true goal prepositions in Bulgarian since all prepositions denote locations by default or are else ambiguous between locations and goals (*do* ‘at/to’, *iz* ‘in/into’, *v* ‘in(side)/into’, etc.). The only prepositions which do not denote pure location are the directional preposition *kŭm* ‘towards’, which describes the path of the motion event, and the source preposition *ot* ‘from’. However, these Ps do not imply an attainment of some goal (vs. *into*, for example) and do not bear an [endpoint] feature; as a consequence, they cannot contribute to telicity.

TO CONCLUDE, ***the Bulgarian standard verbs do not show the object-to-event mapping property and no preposition is capable of turning an atelic (imperfective) verb into a telic one.*** I dedicate the following section to the Bulgarian biaspectual verbs and their behavior with respect to these two properties of inner aspect.

4.3.3. The aspectual properties of Bulgarian biaspectual eventive predicates

In contrast to the Bulgarian standard verbs, the Bulgarian biaspectual verbs do show the two aspectual properties discussed so far. Thus, in the same way as the English eventives, the Bulgarian biaspectual eventive verbs show the object-to-event mapping property (43) and give telic predicates in the presence of a goal preposition (46).³²

(43) Biaspectuals: show the object-to-event mapping property (see also Appendix 4.3)

a. [-q]NP → atelic

*Ivan objad–va sirene deset minuti/*za deset minuti.*

*Ivan dinner–va.BIASP cheese ten minutes/*in ten minutes*

‘Ivan had cheese for ten minutes/*in ten minutes for dinner.’

b. [+q]NP → ambiguous

Ivan objad–va edno parche sirene deset minuti/za deset minuti.

Ivan dinner–va.BIASP one piece cheese ten minutes/in ten minutes

‘Ivan had a piece of cheese for ten minutes/in ten minutes for dinner.’

From (43) we can observe that with a [-q] internal argument, the predicate is atelic (43a) whereas with a [+q] internal argument the predicate is either atelic or telic. In fact, we have already seen the pattern in (43) in English as well (16), exemplified here in (44).³³

(44) a. *John read poetry for an hour/*in an hour.*

b. *John read a newspaper for an hour/in an hour.*

³² See also Slabakova (1997) who claims that Bulgarian biaspectuals behave like English eventive predicates.

³³ A similar situation holds for many consumption verbs in Spanish (Zagona 1996, Nishida 1994).

However, there are other cases in which a [+q] internal argument gives rise to telic predicates exclusively (45) (see also Appendix 4.3: (8, 9)).

(45) a. [-q]NP → atelic

*Ivan konsum-ira bira edin chas /*za edin čas.*

Ivan consumed-ira.BIASP beer one hour/*in one hour

‘Ivan consumed beer for an hour/*in an hour.’

b. [+q]NP → telic

*Ivan konsum-ira butilka-ta s bira *edin čas /za edin čas.*

Ivan consumed-ira.BIASP bottle-the with beer *one hour/in one hour

‘Ivan consumed the bottle of beer *for an hour/in an hour.’

In (45a) the presence of the [-q]NP internal argument results in an atelic interpretation of the predicate, and in (45b) in the presence of a [+q]NP internal argument, the predicate is telic. This is an instantiation of the object-to-event mapping property. Hence, the nature of the internal argument is crucial for the determination of inner aspect with the Bulgarian biaspectual verbs in the same way as it is for the English eventive predicates.

Since Bulgarian biaspectuals and English eventives behave similarly as far as the object-to-event mapping property is concerned, we shall also expect a similar behavior with respect to the second aspectual property, the telicizing role of a goal preposition. As (46) and (47) show, our expectations are borne out.

(46) Biaspectuals and (goal) PPs

a. *korm-uva kola-ta pet minuti /*za pet minuti*

drove-uva.BIASP car-the five minutes/*in five minutes

‘He drove the car for five minutes/*in five minutes.’

b. *korm-uva kola-ta v garaž-a pet minuti/za pet minuti*

drove-uva.BIASP car-the in garage-the five minutes/in five minutes

‘He drove the car in/into the garage for five minutes/in five minutes.’

From (46) we can observe that in the absence of a PP the predicate is atelic (46a) whereas in the presence of a PP a telic interpretation *becomes* available (46b). Interestingly, when the predicate is interpreted as telic (46b), i.e. in the context of the time-span adverbial, the preposition is interpreted as a goal 'into' (e.g. 'he drove the car *into* the garage *in five minutes*') whereas on its atelic reading (46b), i.e. in the context of the *for*-adverbial, the same preposition is interpreted as locative 'in/inside' (e.g. 'he drove the car *inside* the garage *for five minutes*').³⁴ Note that a similar pattern is found in English as well (47).

(47) a. *John drove the car for an hour/*in an hour.*

b. *John drove the car **under the bridge** for an hour/in an hour.*

In (47a) no PP is present and there is only an atelic interpretation available. When the PP is added, as in (47b), a telic interpretation becomes available and the PP may be interpreted as a goal. Note also that an atelic interpretation is still available, and, on this interpretation, the PP is not interpreted as a goal. This is yet another way in which Bulgarian biaspectual verbs pattern with English eventive predicates.

Interestingly, recall that we have mentioned in the previous chapter that biaspectual verbs, in the same way as standard eventives in Bulgarian, can be felicitously prefixed. In such cases, they behave as the rest of the prefixed predicates in this language by giving rise to telic events exclusively. To exemplify, whereas bare biaspectuals (48a) are ambiguous with respect to (a)telicity, their prefixed derivative is unambiguously telic (48b).

³⁴ This state of affairs is indicative of an agreement relation between (the features of) the whole event (telic/atelic) and (the features of) its participants where a telic event gives a goal interpretation of the PP and an atelic event implies a locative PP. This is definitely not what occurs in English (in a sense, we have an event-to-preposition mapping in Bulgarian in contrast to a preposition-to-event mapping in English). A possible way to account for this crucial difference between Bulgarian biaspectuals and English eventives is to suggest that Bulgarian biaspectual verbs of motion do not allow a direct motion reading since such verbs behave more like manner of motion verbs (see Snyder 1995). Hence, the inability of a goal P to give exclusively telic predicates is due to independent reasons instead. I leave this issue for further research.

(48) Prefixed biaspectual verbs → telicity

a. Bare biaspectuals: ambiguous: telic or atelic

toj remontira kola-ta dva chasa/za dva chasa

he repaired car-the two hours/in two hours

‘He repaired the car for two hours/in two hours’

b. Prefixed biaspectuals: telic³⁵

*toj ot-remontira kolata *dva chasa/za dva chasa*

he OT-repaired car-the *two hours/in two hours

‘He repaired the car *for two hours/in two hours’

(‘He had the car repaired *for two hours/in two hours’)

Furthermore, in the same way as with standard eventives, suffixes also have an aspectual function with biaspectuals, leading to a durativized interpretation as in (49) (see the previous chapter).

(49) Suffixed biaspectuals → can be atelic

toj ot-remontir-va kola-ta dva chasa/za dva chasa

he OT-repaired-impf car-the two hours/in two hours

‘He was repairing the car for two hours/in two hours’

This state of affairs is indicative of the fact that **morphology, when present, plays a crucial role for the determination of inner aspect** in the case of eventive biaspectual predicates. As we will see, this is not the case for stative biaspectuals (see section 4.4.3) which, as a general rule, disallow prefixation. Hence, there is some feature in the stative base which blocks the available morphological devices of Bulgarian for the marking of inner aspect and, arguably, a lack of such a feature with eventive biaspectuals which can opt for these devices whenever needed. **Once this option is chosen, biaspectuals behave as the rest of the Bulgarian standard eventive verbs, indicating the aspectual force of morphology in this language.** As I have already observed in the previous chapter, the affixation of biaspectuals is

³⁵ For the kind of prefixes available with biaspectuals, see chapter 3, sections 3.3.3.2, 3.3.3.3.

indicative of an ongoing standardization process that is taking place in Bulgarian, a process which results by the strive on behalf of the speakers to maximize differences across paradigms.³⁶

TO CONCLUDE, we have seen that Bulgarian biaspectual eventive predicates behave like English eventives in that they show the two aspectual properties: (i) the object-to-event mapping property and (ii) the telicizing effect of goal PPs. However, this is not the case for Bulgarian standard verbs since they lack both properties. That is, within the Bulgarian verbal paradigm we find the following aspectual opposition: Bulgarian standard verbs lacking the two properties *versus* Bulgarian biaspectuals showing the properties. As for the English paradigm, a similar opposition is also found but it affects English statives, which lack the properties, *versus* English eventives, which show both properties. That is, a parallelism is thus established between Bulgarian biaspectuals and English eventives on the one hand, and between Bulgarian standard verbs and English statives, on the other hand, as far as the two aspectual properties are concerned. However, ***once the Bulgarian biaspectuals are standardized via the available morphological means of prefixation and suffixation, they behave in the same way as standard eventives.***

In what follows I address the issue of stative predicates and their aspectual behavior across languages.

4.4. Some notes on statives across languages and paradigms

For ease of exposition I start the discussion with the English stative predicates (§4.4.1) after which the group of the Bulgarian standard (§4.4.2) and biaspectual (§4.4.3) statives are tested. Though our primary interest is to test statives against the object-to-event mapping property and PPs (also, prefixation), in section 4.4.4 I offer some additional tests in order to

³⁶ In this respect, recall that the prefixation and suffixation of loan verbs (i.e. of biaspectuals) is still considered colloquial in Bulgarian and is not accepted by all speakers to the same extent.

confirm the claim that all statives behave quite uniformly across languages and paradigms.

4.4.1. English stative verbs

MacDonald (2008b) shows that in contrast to English eventive predicates, English stative predicates lack the two properties that eventives show. Thus, they do not show the object-to-event mapping property (50) and no PP is able to turn the predicate telic (51).

(50) No object-to-event mapping with statives

- a. *John owed a car/money for a week/*in a week.*
- b. *John owned a stereo/equipment for a month/*in a month.*

(51) No telicizing PPs with statives

- a. *John loved the game (to the core) for a year/*in a year.*
- b. *John owed a car (to the bank) for a week/*in a week.*
- c. *John was into film noir for a year/*in a year.* (MacDonald 2008b: 144)

From (50) we see that statives in English are atelic regardless of the presence of a [+/-q]NP internal argument. As for the aspectual contribution of a goal preposition, it also fails to give telic predicates (51). Therefore, we can conclude that English stative predicates differ systematically from English eventive predicates with respect to both properties. This reminds us of the contrast established so far between the Bulgarian biaspectual verbs and the Bulgarian standard verbs which also differ systematically from one another with respect to these two properties. Let us now consider the Bulgarian stative predicates within the standard paradigm.

4.4.2. Bulgarian standard stative verbs

The group of the Bulgarian stative verbs has been discussed from early on in the literature on Slavic aspect (Maslov 1956) where such verbs have been assumed to fall within the group of the ***absolute imperfectives***, i.e. verbs which are *imperfectiva tantum*. These

verbs are imperfective by default and should therefore give atelic events, a claim which is borne out in English and other languages as well. Since we have already seen that [+q] internal arguments (31) and goal PPs (41) do not telicize primary imperfective verbs in Bulgarian, and bearing in mind that statives are primary imperfective, I will not discuss this issue with statives and just mention that statives are also immune to the effects goal Ps and the properties of their internal arguments.

An interesting observation regarding stative predicates in standard Bulgarian is the fact that locative prefixes (see chapter 3, (27c, c')) ***are unable to give telic predicates with these verbs*** (52) in contrast to the rest of the verbs (e.g. standard eventives) which locative prefixes both perfectivize and telicize (52d) (see chapter 3, § 3.2.1.2, ex. (12)).

(52) **Stative verbal bases + locative prefixes = imperfective (atelic) stative verbs (52a-c)**

a. *stoja* 'stay; stand'

(i) *OT-stoja* *IMPF + atelic*

from-stay

'be situated at a specific distance from something'

(ii) *PRED-stoi* *IMPF + atelic*

in front of-stay

'be imminent, be at hand; lie ahead/before'

(iii) *PROTIVO-stoja* *IMPF + atelic*

against-stay

'oppose, resist, withstand, stand against'

(iv) *SŪ-stoja se* *IMPF + atelic*

with-stay REFL

'consist of'

b. *visja* → *ZA-visja* *IMPF + atelic*

hang → *ZA*-hang

'hang' → 'depend, be dependent on'

c. *leža* 'lie'

IMPF + atelic

(i) *POD-leža*

below-lie

'be subject to, be liable to'

(ii) *PRI-NAD-leža*

IMPF + atelic

at-above-lie

'belong to'

d. Eventive verbs + locative prefixes = perfective (telic) eventive verbs

d'. *vikam* 'call; shout' (IMPF1)

(i) *NAD-vikam*

PF + telic

above-shout

'outcry' (PF)

(ii) *PRI-vikam*

PF + telic

at-call

'acclimatize; call' (PF)

(iii) *S-vikam*

PF + telic

with-call

'call, summon' (PF)

d''. *leja* 'pour' (IMPF)

(i) *POD-leja* (*njakomu voda*)

PF + telic

below-pour (someone water)

'ruin someone's chances' (PF)

(ii) *OT-leja*

PF + telic

from-pour

'pour out; cast, mold' (PF)

(iii) *OB-leja*

PF + telic

around-pour

'pour over; bathe' (PF)

In (52a-c) above we see that apart from morphologically simple stative verbs (e.g. *stoja* 'stay', *visja* 'hang', *leža* 'lie'), which are both primary imperfective and atelic as expected,

there are also complex statives formed by the addition of a locative prefix to the primary stative base. However, as already mentioned, ***these prefixes are unable to perfectivize the stative (imperfective) base and the resulting verb is therefore again stative (and imperfective)***. We also saw that ***this is not the case for the eventive imperfective verbs which, when combined with a locative prefix, give perfective (telic) eventive predicates*** (52d', d").

In order to explain the lack of perfectivization with statives (52a-c) I tentatively suggest that locative prefixes cannot perfectivize and, as a consequence, telicize, the Bulgarian stative verbs due to the following reasons: (i) these locative prefixes are prototypically of central coincidence relation, which relation is preserved throughout the whole derivation;³⁷ (ii) statives are non-motion verbs which disables the prefix to be interpreted as a goal; (iii) central-coincidence-relation prefixes, i.e. pure locative prefixes, attach to the stative verb as idiosyncratic prefixes do, i.e. directly to the stative base before syntax; in doing so, such prefixes enter into a kind of an idiosyncratic relation with the base verb where the morphological complex [locative prefix + stative base] gives a totally new stative derivative as in (52a-c). This state of affairs constitutes an additional piece of evidence that ***there is some feature (e.g. [non-motion]/[static]/[state]) which is characteristic of all stative predicates (arguably in any language) and which finally predominates throughout the derivation neutralizing (else, blocking) the perfectivizing role of the Bulgarian locative prefix or the telicizing effect of the English goal preposition***

³⁷ Hale (1986) assumes central coincidence relation to signal a coincidence between the center of the theme and the center of the place (e.g. 'with' in *He provided the horse with a saddle*) in contrast to terminal coincidence relation which involves one edge (else, 'terminus') of the theme's path and place ('onto' in *John put the book onto the shelf*). Prepositions of terminal coincidence relation are *to*, *out of*, *off* whereas central coincidence relation is exemplified by prepositions like *at*, *in*, *with*. It has been suggested that the notions of central and terminal coincidence relations are related to atelicity and telicity, respectively (see Mateu 2002 and references therein).

in (51).³⁸

However, the rest of the prefixes (e.g. lexical, inner and outer) do perfectivize Bulgarian stative verbs (53).

(53) Non-locative prefixes + stative verbs = perfective (telic) predicates (a: ii)

a. *stoja* 'stay, stand' (Pashov 1966: 213)

(i) Locative prefix + stative → IMPF:

OT-*stoja* 'be situated in a specific distance from something' (52a)

PRED-*stoja* 'be imminent, be at hand; lie ahead/before' (52a')

SŮ-*stoja se* 'consist of' (52a'')

(ii) Non-locative prefix + stative V → PF:

➤ Lexical prefixes:

NA-*stoja* 'insist; urge, press'

ZA-*stoja* 'stay/remain long, become a fixture, overstay one's welcome/time'

U-*stoja* 'withstand, resist'

➤ Inner prefixes:

PRE-*stoja* 'stay, remain, sojourn; become stale (for bread)' (excessively)

➤ Outer prefixes:

DO-*stoja* 'sit to the end, sit through, sit out'

DO-[U-*stoja*] 'withstand to the end, resist to the end'

PO-*stoja* 'stay for a while'

PO-[ZA-*stoja*] 'stay/remain for some time'

PO-NA-*stoja se* 'have almost enough of staying'

PO-PRE-*stoja* 'sojourn for a while, remain for some time'

?ZA-[NA-*stoja*] 'start to insist'

ZA-[U-*stoja*] 'start to resist'

³⁸ Note that under semantic approaches to stativity it has been observed that the entity to which the stative verb refers cannot be perceived or located in space (Maienborn 2005, 2007 and references therein).

b. *visja* 'hang' (Pashov 1966: 122)

(i) Locative prefix + stative → IMPF:

ZA-*visja* 'depend on' (37b) (from the locative ZAD- 'behind')

(ii) Non-locative prefix + stative V → PF:

➤ Lexical prefixes:

(?) PRO-*visna* 'hang down, droop; sag' (different stem)

➤ Spatial prefixes:

NAD-*visvam*, NAD-*visna* 'hang, overhang, hang out; threaten, impend'
(different stem)

➤ Inner prefixes:

U-*visna* 'hang down, droop, sag; lop' (different stem) (PURE PF)

U-*visja se* 'hang down, droop' (different stem) (PURE PF)

NA-U-*visja* 'hang up a lot of things; ~ se 'droop a lot of people'

➤ Outer prefixes:

PO-*visna* 'hang, suspend; droop' (different stem)

PO-*visja* 'hang for a while'

c. *leža* 'lie' (Pashov 1966: 164)

(i) Locative prefix + stative → IMPF:

POD-*leža* 'be subject to' (52c)

PRI-NAD-*leža* 'belong to' (52c')

(ii) Non-locative prefix + stative V → PF:

➤ Lexical prefixes:

ZA-*leža se* 'be bedridden, lie sick for a long time; not sell, become unsalable'

IZ-*leža* 'serve one's sentence; ~ se 'lie/remain in bed; idle'

OT-*leža* 'mature, age, become seasoned'

POD-*leža* 'be liable, be subject to'

➤ Spatial:

PRI-ljagam/*legna* 'fit, fit close' (different stem)

➤ Inner:

PRE-*leža* 'lie excessively'

NA-*leža se* 'lie one's fill/enough; no longer feel like lying'

RAZ-*leža se* 'start idling excessively'

➤ Outer:

DO-*leža si* 'lie till the end'

DO-IZ-*leža* 'finish serving one's time, serve the rest of one's sentence'

PO-*leža* 'lie down for a while'

PO-ZA-*leža se* 'be bedridden for a while'

PO-IZ-*leža se* 'idle for some time'

From the data above we may conclude that ***both the nature of the verbal stem and that of the prefix play a crucial role in the determination of the aspectual characteristics of the final derivative. Because of this, the behavior of statives under prefixation will be crucial for our analysis of prefixation itself.*** Thus, ***a static base (i.e. a pure stative), in the combination with a pure locative central-coincidence-relation prefix, gives an imperfective stative (hence, atelic) verb (52a-c) whereas when combined with another kind of prefix, the result is both perfective and telic*** (53a: ii; b: ii; c: ii). Hence, a distinction should be made between unambiguously central-coincidence-relation prefixes, i.e. pure locative prefixes denoting Places (e.g. PRI- 'at', POD- 'below', NAD- 'above', PRED- 'in front of', S(Ů)- 'with', among few others) and the rest of the prefixes which, as a general rule, can either denote Places (i.e. central coincidence relations), or Paths (i.e. terminal coincidence relations), or else be related to other derived aspectual/Aktionsartal notions such as cumulativity, inceptiveness, etc.

Crucially, note that non-stative verbs, in combination with a pure locative prefix, give non-stative telic predicates as we already saw in (52d', d''), exemplify in (54) below.

(54) **Non-stative verbs + pure locative prefixes = perfective (telic) predicates**

a. *pisha* 'write' (IMPF)

a'. POD-*pisha* 'sign, undersign' (PF)

b. *peja* 'sing' (IMPF)

b'. NAD-*peja* 'sing better than' (PF)

c. *pazja* 'guard, protect' (IMPF)

c'. PRED-*pazja* 'protect, preserve' (PF)

This state of affairs again confirms the contribution of the base itself to the final characteristics of the prefixed derivative. Therefore, there is indeed something special about stative bases that prevents pure central-coincidence-relation prefixes to both perfectivize and consequently telicize them. A summary of the data is presented in Table 3 below.

	Stative verbs		Eventive verbs
	Static Vs	ambiguous stative Vs	
Pure CCR ³⁹ prefixes	IMPF stative Vs	PF telic Vs	PF telic Vs
Ambiguous prefixes	PF telic Vs	PF telic Vs	PF telic Vs

Table 3: The interaction between prefixes and verbal bases

In order to explain the data from Table 3 I tentatively suggest that at least some stative verbs (i.e. the pure stative ones, else Kimian states) differ in feature specification and hence in syntactic structure from the rest of the verbs (i.e. from both Davidsonian statives and the eventive verbs).⁴⁰ It is precisely this structure and its featural make-up which finally

³⁹ CCR stands for *central coincidence relation* (Hale 1986, Hale and Keyser 2000); see fn. 37.

⁴⁰ According to Davidson (1967) action verbs come with a hidden event argument which allows them to combine with different linguistic objects (e.g. adverbials, adverbs being predicates which provide information about the event), and have referential properties. Higginbotham (1985) and Parsons (1990) apply this approach to all verbal predicates, including statives, by postulating the existence of an underlying Davidsonian event argument for all of them. However, it has been suggested that a distinction should be made between the so-called Kimian states (Kim 1976), also known as abstract states (e.g. *believe*, *know*, *weigh*, *resemble*, *own*, *be* + adjective), which are property exemplifications at a time (Maienborn 2007) and lack a Davidsonian argument, on the one hand, and non-stative verbs and Davidsonian states (also known as concrete states, e.g. *wait*, *sleep*, *glow*, *gleam*, *sit*, *stand*, etc.), which incorporate the Davidsonian event argument (see Maienborn 2003, 2005, 2007, Rothmayr 2009). This explains why Kimian states are not perceptible and reject event-related adverbials since they do not contain the aspectual operators DO and BECOME (this is exemplified by the stative readings of object-experiencer verbs as in *It annoys me that he has won the lottery*). Eventive verbs and Davidsonian states, on the other hand, contain the operators DO and BECOME in their lexical-semantic structure (shown by the eventive readings of object-experiencer verbs as in *He is annoying me*). Thus, Davidsonian events are assumed to be derived from Kimian states by the insertion of the aspectual operators DO and BECOME (Dowty 1979). The notion of Kimian and Davidsonian statives is comparable to Bach's (1986) notion of "static states" and "dynamic states", respectively.

prevents central-coincidence prefixes (e.g. pure locatives) to denote terminal coincidence relations and thus give perfective (telic) predicates. In syntactic terms, ***I propose that true statives (i.e. Kimian states) are endowed with the feature [state] whereas pure locative prefixes bear the feature [CCR].***⁴¹

Crucially, I claim that the static base combines with the pure locative prefix via direct stacking to V^o (55). As we will see, this also holds for the lexical (idiosyncratic) prefixes (see the previous chapter, § 3.3.3.1). For the time being it suffices to note that such an analysis has an empirical explanative power inasmuch as the number of prefixed imperfective statives (52) is rather limited, as is the exhaustive list of the primary perfective verbs in Slavic. Furthermore, treating the merger of the locative prefix with the Kimian stative base as a stacking phenomenon within the verb phrase (VP) is also confirmed by the

⁴¹ Note that my [CCR] feature may be related to Mateu's (2002) feature [-r], which is in turn related to Hale & Keyser's (1993) notion of 'central coincidence relation'. Within Mateu's (2002) theory of relational semantics, where "*meaning is a function of both non-syntactically transparent conceptual content and syntactically transparent semantic construal*" (Mateu 2002: 44), two types of elements should be distinguished: *relational* and *non-relational*. The former are responsible for the argument structure configurations whereas the latter have only conceptual properties. The relational heads are basically two: a non-eventive relational head [r] (projecting a complement and a specifier) and an eventive head (projecting a complement with the option to project or not an external argument). The structural semantic properties like eventive, non-eventive and non-transitional are directly read off the argument structure configurations whereas the non-configurational semantic properties associated to the relational heads are encoded as grammatically relevant binary features:

(i) [+R]/[-R]: positive/negative semantic value associated with the source relation

[+T]/[-T]: positive/negative semantic value associated to the transitional relation

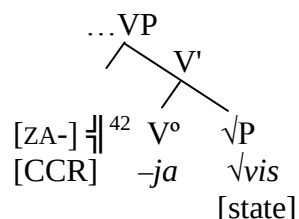
[+r]/[-r]: positive/negative semantic value associated to the non-eventive relation (from Mateu 2002: 33)

This is how the features [+r]/[-r] become grammatically relevant where all atelic predicates incorporate the [-r] feature, including statives (e.g. atelic non-stative unaccusatives → [+T, -r] 'roll'; ***atelic stative unaccusatives*** → [-T, -r] 'live'; ***atelic stative transitives*** → [-R, -r] 'love'; atelic agentive transitives → [+R, -r] 'push' (Mateu 2002: 38)), whereas telicity emerges in the presence of the feature [+r], which relates to Hale & Keyser's (1993) 'terminal coincidence relation' (e.g. telic causative verbs → [+R, +r] 'clear'; telic unaccusatives → [+T, +r] 'die'). Although I do not adopt a relational semantic approach as in Mateu (1997, 1999, 2002), I do not exclude the possibility that the notions of central and terminal coincidence relations are significant to grammatical properties. In fact, my feature [endpoint], which encodes telicity, may be compatible with Mateu's [+r] feature, and my feature [CCR] with his [-r] feature when applied to statives.

unpredictable, i.e. idiosyncratic output of this combination (e.g. from *visja* ‘hang’ we obtain *ZA-visja* ‘depend on’, see (52)) since idiosyncratic processes are assumed to take place within VP. A syntactic representation follows.

(55) Prefixed Kimian States:

[pure locative prefix^{CCR} + stative verb^[STATE]] = stative verb



From (55) we can observe that the root $\sqrt{\text{vis}}$ ‘hang’ merges with the theme vowel *-ja* which verbalizes it, after which the locative prefix *ZA-* stacks. Note that the root enters the numeration provided with the feature [state] due to its pure static denotation (arguably, this verb is a Kimian state). Since the base itself lacks an [endpoint] feature and the prefix is a pure central coincidence relation, the combination of the [state] base and the CCR prefix gives rise to a stative atelic predicate, hence, morphologically imperfective. ***I tentatively assume that only in the case of VP-internal stacking as in (55) is a pure central-coincidence-relation prefix capable of conserving its feature [CCR] and thus preserve the stative atelic properties of its base.*** As for the rest of the possible morphological combinations (56), I assume that the prefix, due to its non-idiosyncratic and aspectual/Aktionsart nature, merges higher up in the structure, i.e. above VP (here we should note some exceptions such as the prefixed formations in (54) where the prefixes are lexical rather than aspectual)/Aktionsart.⁴³ As a consequence, this prefix enters the numeration with its inherent aspectual feature [endpoint], thus giving rise to a telic derivative as expected.

⁴² Recall that $\frac{||}{||}$ refers to lexical stacking characteristic for lexical prefixes.

⁴³ Note that the prefixes in (54), though prototypically pure locative, are lexical when attached to eventive bases which explains the idiosyncratic nature of the derivative. See chapter 5, § 5.3.3 for their derivation.

(56) The interaction of prefixes and verbal bases: a morphological make-up

a. **Pure (Kimian) statives (i.e. static verbs) + pure locative prefixes**

[pure LOC prefix^{CCR} + static V^[STATE]] = **stative atelic V** (see (52a, b, c; 55))

a'. **Pure (Kimian) statives + high-attaching prefixes** (see (53a: ii; b: ii; c: ii; 54a))

[prefix^[ENDPOINT] + static V^[STATE]] = **non-stative telic V** (due to [endpoint])

b. ***Davidsonian statives + pure locative prefixes**

[pure LOC prefix^[CCR] + Davidsonian stative V] = **not a possible combination**

chakam 'wait' (IMPF) → NO LOCATIVE PREFIXES

blestja 'shine; glow' (IMPF) → NO LOCATIVE PREFIXES

b'. **Davidsonian statives + high-attaching prefixes**

[prefix^[ENDPOINT] + Davidsonian stative V] = **non-stative telic V** (due to [endpoint])

chakam 'wait' (IMPF) → DO-*chakam* 'FINISH-wait' (wait till someone comes: PF)

blestja 'shine; glow' (IMPF) → ZA-*blestja* 'START-shine' (start shining: PF)

c. **Eventives + pure locative (idiosyncratic) prefixes**

[pure locative prefix^{[ENDPOINT]([LOC], [ASP], [LEX])} + eventive V] = **eventive telic V** (52d, 54)

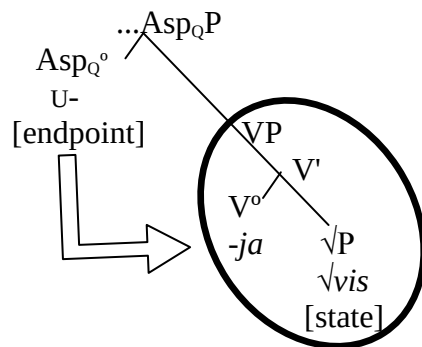
- *The prefix acquires aspectual (52d'), spatial (52d'') or idiosyncratic (54a') value, so it attaches higher up in the structure with its inherent aspectual [endpoint] feature (and an additional Aktionsartal, locative or lexical feature)*

c'. **Eventives + high-attaching prefixes**

[prefix^[ENDPOINT] + eventive V] = **eventive telic V** (due to [endpoint])

What the combinatorial possibilities between prefixes and bases indicate is that in the presence of an [endpoint] all derivatives are telic (56a', b', c, c'). Thus, only when the base is purely stative and the prefix a pure central coincidence relation (56a) is the final result an atelic stative predicate. In this respect note the contrast between Kimian states (56a) and Davidsonian statives (56b), the latter disallowing any pure central-coincidence-relation prefix and, as a consequence, giving always a perfective-telic derivative under prefixation. A syntactic representation of a stative base and a high-attaching (aspectual/Aktionsartal) prefix (54b: ii; 56a', b') is presented in (57). The same holds for the rest of the telic derivatives in (56), excluding (56a) whose derivation was already given in (55).

(57) Prefixed statives: [non-locative prefix^[ENDPOINT] + stative verb^[STATE]] = telic verb



In contrast to (55), (57) is an exemplification of a higher (i.e. above VP) aspectual stacking where the inner prefix U-, which is endowed with the feature [endpoint] like the rest of the aspectual/Aktionsart prefixes, merges as a head of its own functional aspectual projection Asp_QP. As a result, it stacks to the preceding verbal structure under its scope ($\sqrt{\text{vis-ja}}$ ‘hang’) and by virtue of its feature [endpoint] marks the resulting derivation $\text{U-}[\sqrt{\text{vis-ja}}]^{\text{IMPF}}$ as telic, and hence, non-stative ($[\text{U-}[\sqrt{\text{vis-ja}}]^{\text{IMPF}}]^{\text{PF}}$ ‘hang, become hung’, see (53b: ii)). The fact that this prefix stacks above the VP explains the semantic compositionality and transparency between the prefix and the base together with the resulting telic structure.

TO SUM UP, the data in (55-57) show that **once the feature [endpoint] is present in the structure, be it merged on the prefix or else on the verbal base itself, then we have no option for having an imperfective (and hence, atelic) predicate, be it eventive or non-eventive (i.e. stative).** Such a strong prediction will be shown to hold for the Bulgarian standard verbal paradigm but not for the Bulgarian biaspectual verbs. As we will further see in chapter 5 (§ 5.3.3) the main point of variation regarding this issue resides in the different means both paradigms apply to encode inner aspect (i.e. telicity). Before this, let us describe the syntactic behavior of the Bulgarian stative biaspectual verbs.

4.4.3. Bulgarian stative biaspectual verbs

There are two types of biaspectual statives in Bulgarian, some of which embed a nominalizing projection, i.e. formed from nouns, and others which do not embed a noun but are rather derived on the top of a categoriless root. The first group consists of verbs formed from either a loan nominal base as in (58) or else a native nominal base (59). I label them N-incorporating biaspectuals. We can additionally observe that the borrowed forms are derived by the German suffix *–i(zi)ra* whereas the native N-incorporating statives are usually formed with the suffix *–(u)va*.

(58) Borrowed N-incorporating *–izira* statives

a. <i>harakter–iziram</i>	b. <i>simvol–iziram</i>
character–iziram	symbol–iziram
‘characterize’	‘symbolize’

(59) Native N-incorporating *–uva* statives

a. <i>kmet–uvam</i>	b. <i>chlen–uvam</i>
mayor–uvam	member–uvam
‘be/work as a mayor’	‘be/participate as a member’

As for the root statives, they are loan verbs, too, and are formed by the suffix *–ira* (60).

(60) Borrowed root *–ira* statives

a. <i>ignor–iram</i>	b. <i>domin–iram</i>
‘ignore’	‘dominate’

As expected, in the same way as English statives, the biaspectual statives do not show the object-to-event mapping property (61a) and do not telicize when a PP is added (61b).

(61) a. No object-to-event mapping with biaspectual statives

*Poverieto egzistira pet veka/*za dve minuti*⁴⁴

‘The belief existed for five centuries/*in two minutes’

b. No telicizing PPs with statives

*ljubov-ta mu mi lipsva do bolka pet godini/*za dve minuti*

love-the his me lacked to pain five years/*in two minutes

‘I missed his love to pain for five years/*in two minutes’

Before we proceed an observation should be made regarding the relationship between morphological (im)perfectivity and (a)telicity. It has been noted that stative verbs are uniformly atelic across languages. Bearing in mind that the claim defended here is that the formally (i.e. morphologically) primary imperfective verbs are atelic whereas the formally perfective ones are telic, it will then follow that biaspectuals are both telic and atelic at the same time, be they eventive or not, which is reflected in their morphological ambiguity.⁴⁵ As we already saw, this is exactly the case for the Bulgarian biaspectual eventive predicates, which are ambiguous between a telic and an atelic interpretation. However, ***the postulation that stative biaspectuals exist is a kind of problematic since stative verbs, as a general rule, cannot be aspectually ambiguous since they do not behave as telic predicates in the natural languages.*** I claim that such verbs are just formally biaspectual, i.e. on morphological grounds (see fn. 45). This ‘ambiguity’ is overtly manifested in Bulgarian by the suffix *–i(zi)ra* (if the verbs are borrowings) or else the suffix *–uva* (in the case of N-

⁴⁴ Note that there is variation regarding ‘in X time’ where some natives interpret it as ‘for X time’ (i.e. the *in*-adverbial is used to measure the duration of the state of affairs and to specify for how long the state of affairs lasted). However, the intended reading here is the time-span one, which indicates the time needed in order to *complete* the action, but not the durative reading, and on this reading ‘in X time’ is out.

⁴⁵ Rather than morphologically ambiguous with respect to (im)perfectivity, the biaspectual verbs, since they enter the Bulgarian lexicon as borrowings, are deprived of any notions regarding their morphological status. This is due to the fact that morphology is highly language-specific, on the one hand, and that notions such as morphological (im)perfectivity are totally irrelevant in the language from which the words are borrowed (e.g. English). Put differently, the Bulgarian biaspectual verbs are morphologically underspecified, hence, biaspectual. Thus, in the same way as English eventives, they can be both telic and atelic at the same time.

incorporating native verbs) (see Pashov 1999 and Stancheva 2003). However, the fact that these verbs are stative prevents them from behaving in a telic-like manner which is, in principle, possible due to their formally ambiguous aspectual character. Such a state of affairs implies that what prevails in this case is the lexical specification of these verbs as stative, i.e. their feature [state]. Put differently, ***it is the feature specificity of the statives across paradigms (e.g. [state]) which dominates the structure and blocks the otherwise possible telic behavior of the biaspectual stative predicates.*** Else, we can assume that the morphological nature of the base is irrelevant in the case of the biaspectual verbs or even inexistent. Thus, the Bulgarian biaspectual verbs will be treated just like English verbs where morphological (i.e. grammatical aspect) plays no role. A summary of our classification is provided in Table 4.

Standard (native) statives	Biaspectual statives		
	Borrowed –i(zi)ra		Native N-incorporating –uva verbs
	N-incorporating –izira Vs	root/underived –ira Vs	

Table 4: Classifying the Bulgarian statives

TO RECAP, we have seen that Kimian states in English and Bulgarian (be they native or biaspectual) are always atelic, blocking thus the telicizing effect of a goal PP or a quantity internal argument (i.e. the object-to-event mapping property fails with these verbs). As we have already observed, this has to do with the fact that (cross-linguistically) ***Kimian states enter the structure endowed with a special feature (e.g. [state]) which has a blocking effect on intervening features within the surrounding linguistic environment.*** Concerning the Bulgarian standard verbs, we have seen that prefixation becomes crucial when determining inner aspect. Thus, all prefixed verbs fall within the telic event types. However, once transferred within the domain of statives, prefixation gives slightly different results. ***The fact that some prefixes (the pure central-coincidence-relation ones) are unable to telicize some stative bases indicates that a distinction should be made within the Bulgarian standard paradigm between true***

(abstract) states (i.e. Kimian states), on the one hand, and concrete states (i.e. Davidsonian states), on the other hand. Significantly, this will not only affect the way we analyze certain prefixes (e.g. the VP-internal pure central-coincidence-relation ones), but will also point to the relevance of the feature characteristics of the base itself. Thus, the interaction of the prefixal features with those of the base becomes a prime concern when dealing with prefixation.

Before I proceed to a syntactic account of inner aspect across languages, I provide some stativity tests in order to show that all true statives (i.e. Kimian states) behave uniformly across paradigms.

4.4.4. On some stativity tests: unifying statives across paradigms

In order to show that the group of the biaspectual statives behaves in the same way as the standard statives, i.e. the native statives which are unambiguously and exclusively marked as imperfective rather than biaspectual, I analyze eighteen Bulgarian standard and eighteen Bulgarian biaspectual stative verbs. This will be significant for two reasons: (i) this will confirm the postulation that there is a common aspectual feature (e.g. [state]) which all true statives share, and (ii) this will affect the combinatorial possibilities of the Bulgarian prefixes. Since these tests have already been shown to hold true for English, I will not deal with this language here (see MacDonald 2008b and references therein). In (62) I provide the tests applied in this study in order to detect the stative behavior of a given predicate.⁴⁶

⁴⁶ Another test which I will not discuss here but which appears in the Appendix 4.4.9 is the unacceptability of statives in the start-give up construction (e.g. *X started V-ing but then gave it up*). This property is derived as a direct consequence of statives being “abstract objects for the exemplification of a property P at a holder x and a time t” (Maienborn 2005: 295, ex. (47)). Thus, the property holds true once it occurs, which explains the fact that once a state starts, it immediately becomes true and hence cannot be negated. Consequently, saying **I started to own the car but I gave it up* is totally out, in contrast to *I started to draw the picture but I gave it up*. Again this has to do with the event structure of the statives where no phases exist, in contrast to the so-called accomplishments which have phasal structure: initial phase, process (or sub-process), and final phase. The results show that only three out of eighteen standard statives can enter this construction and only under an

(62) Testing statives within the Bulgarian paradigms:

- a. unacceptability as infinitival complements of perception verbs
- b. unacceptability in the pseudo-cleft construction (Lakoff 1966, Dowty 1979)
- c. unacceptability as complements of phase verbs**
- d. unavailability of both inner and outer prefixation**

Before I proceed, some notes regarding the tests in (62) are in order here. We should bear in mind that Kimian states are “abstract objects for the exemplification of a property P at a holder x and a time t” (Maienborn 2005: 295). Due to their abstractness, it has been shown that unlike eventive verbs and Davidsonian statives (see fn. 40), the true stative verbs (i.e. the Kimian states) have the following ontological properties (the first two being directly derived from the status of these verbs as abstract objects).

(63) Ontological properties of Kimian states (K-states) (from Maienborn 2005: 295, ex. (48)):

- a. K-states are not accessible to direct perception and have no location in space
Consequence: they cannot serve as infinitival complements of perception verbs, explaining thus test 1 (62a) and do not combine with locative modifiers (62d): disallow spatial prefixes.
- b. K-states are accessible to (higher) cognitive operations (e.g. anaphoric reference).⁴⁷
- c. K-states can be located in time
Consequence: they allow temporal modification (e.g. *He was angry yesterday*)

The fact that K-states are abstract explains their inability to be spatially bound (e.g. **He was hungry in front of the refrigerator*) and perceived, thus rejecting spatial prefixes (62d)

activity reading (e.g. *vjarvam* ‘believe’; *pritežavam* ‘possess’ and *podkrepijam* ‘support’: e.g. *Ivan započna da pritežava aktsii, no posle se otkaza* ‘Ivan started to possess shares but then gave it up, meaning ‘Ivan became a share-holder but then gave it up’). As for the biaspectual statives, five verbs out of eighteen allow this construction under the same conditions, i.e. under an activity reading (e.g. *ministervstvam* ‘be a minister’ (reading: ‘become/ behave as a minister’), *postojanstvam* ‘persevere’, *rimuvam* ‘rhyme’, *chlenuvam* ‘be a member (reading: ‘become a member’), *kandidatiram se* ‘be/apply for a candidate’, *favoritiziram* ‘favor’). This indicates a rather unified behavior of statives across paradigms.

⁴⁷ To exemplify, ‘this’ refers back to the **state** of John being angry: *John is angry. This will soon be over.*

and being complements of perception verbs (62a),⁴⁸ respectively. As for the second linguistic diagnostics (62b), Lakoff (1966) suggests that statives do not enter the pseudo-cleft construction (62b, 64b) in contrast to non-statives (64a).

(64) a. *What Harry did was learn the answer to these questions.*

b. **What Harry did was know the answer.* (Lakoff 1966: 7)

To explain this, it has been suggested that the pseudo-cleft construction brings into focus the action itself (*What X did was...*), thus unitizing the event (Frawley 1992: 150). Since only activities are unitizable because of their sensitivity to the time interval in contrast to statives, the latter are disallowed under pseudo-clefting.⁴⁹ However, Potts (2001) suggests that (64b) has to do with a much broader constraint on statives, which resides in an incompatibility of main-verb *do* with these predicates.^{50,51}

⁴⁸ Note that adjectival nominalizations (e.g. *–ness*; *–dom*) can act as complements of perception verbs:

(i) *I noticed /saw John's nervousness.*

Bearing in mind that nominalizations can refer to states, events, properties, or particularized properties (tropes) (Montague's 'philosophical entities'), then the acceptability of (i) could be explained by the fact that *–ness* nominalizations refer to tropes (i.e. particularized properties) which are concrete, fully specific entities (e.g. *John's happiness* is a trope nominalization in contrast to the gerundive *John's being tired*, which refers to a state and hence is excluded as a complement of perception verbs, e.g. **I saw John's being tired*). This additionally confirms the distinction between abstract and concrete states. See Moltmann (2007) and references therein on trope nominalizations.

⁴⁹ Unitization refers to boundedness in time. As Frawley (1992) suggests, the active/stative distinction corresponds to bounded/unbounded distinction. Hence, statives would resemble mass nouns in contrast to actives which relate to count nouns: "Activities, like bounded entities and count nouns, are characterized by internal heterogeneity (the relevance of subprocess) and unitization or *boundedness in time*; statives, on the other hand, are characterized by internal homogeneity and continuousness; they are unbounded in time, just as mass nouns are unbounded in space" (Frawley 1992: 148, fn.2).

⁵⁰ Potts (2001: 1) observes that statives and the pseudo-cleft are not incompatible, in principle, given the grammaticality of (i) and (ii):

(i) *What John knows is the answer.*

(ii) *What Martha desires is a bowl of pea soup.*

⁵¹ Note that this is not the case for auxiliary *do*.

(i) *Clyde does (too) know the combination to the safe!*

As for the third test (62c), it has to do with the behavior of phase verbs such as *start*, *continue*, *stop*, *finish*.⁵² Regarding phase-verb complementation, Dowty (1979: 60) shows that only accomplishments can be found as complements to *finish* (e.g. *John finished painting a picture*^{ACCOMPLISHMENT}/**walking*^{ACTIVITY}/**noticing the painting*^{ACHIEVEMENT}/**resembling his mother*^{STATIVE}). **This has to do with the selectional restrictions of *finish* which requires that its complement describe an event that involves both a process and a culmination. The verb *stop*, on the other hand, selects for complements with an underlying duration, thus allowing all Aktionsart/lexical classes but achievements.**⁵³ Testing statives with respect to phase verbs will have a direct consequence on outer prefixation (62d). Thus, if phasal prefixes and phase verbs are two different morphological manifestations of the same phenomenon, we will expect that the phasal prefixes (e.g. inceptive ZA- ‘start’, terminative DO- ‘finish’ and durative PO- ‘for a while’) will be out if the stative is rejected as a complement to the corresponding phase verb (e.g. *start*, *finish*, *continue*).⁵⁴ The verbs investigated in this work are listed in Table 5.

(ii) *Does Clyde desire to spend more time in jail?*

(iii) *Clyde knows the combination. And Bonny does, too.* (Potts 2001: 2)

⁵² Recall that these verbs, which are also known as “phasal” verbs, relate to the underlying phases of the event. Roughly, we can distinguish between three phases (or intervals): interval-start (“ingressive”: *begin*, *start*); interval-middle (“continuative”: *continue*) and interval-terminative (“egressive”: *stop*, *finish*).

⁵³ Note that although both accomplishments and activities can appear as complements to *stop*, they trigger different entailments. To exemplify, *John stopped walking* (activity) implies that John did walk in contrast to *John stopped painting the picture* (accomplishment) does not entail that John painted a/the picture.

⁵⁴ See Engerer (2010a) for a four-way distinction within the field of phasal semantics:

- (i) **Phasal verbs** (*begin*, *start*; *stop*, *end*, *finish*; *continue*, *resume*): at the lexical level; linguistic universal
- (ii) **Phasal Aktionsart** (affixation): at the morphological level
- (iii) **Telic phases** (telic verbs, e.g. *die*): at the lexical level (idiosyncrasy); linguistic universal
- (iv) **Aspectual phases**: phasal meanings enter into the semantics of uttered sentences, determining whether the truth conditions characterize the event’s evaluation interval as including end point or not. This perfective (endpoint included)/imperfective (endpoint not included) distinction is aspectual in nature, and the encoding of this distinction is largely dependent of the language type in question (see also Leiss 1992; Andersson 1972; Janda 2003; Smith 1991; Verkuyl 1993 cited in Engerer 2010a).

Standard statives	Biaspectual statives (10 –(u)va and 8 –i(zi)ra verbs)
1. <i>teža</i> ‘weigh’	<i>bituva</i> ‘exist’
2. <i>trjabvam</i> ‘need, be of need’	<i>kostvam</i> ‘cost’
3. <i>znacha</i> ‘mean’	<i>kvartiruvam</i> ‘lodge’
4. <i>ima</i> ‘there is’	<i>ministerstvam</i> ‘be a minister’ (also <i>kmetuvam</i> ‘be a mayor’)
5. <i>imam</i> ‘have’	<i>postojanstvam</i> ‘persevere, persist’
6. <i>moga</i> ‘can, be able to’	<i>rimuva</i> ‘rhyme’
7. <i>prilicham</i> ‘resemble’	<i>sūshtestvuvam</i> ‘exist’
8. <i>strahuvam se</i> ‘have fear’	<i>sūsedstvam</i> ‘be a neighbor’
9. <i>znaja</i> ‘know’	<i>chlenuvam</i> ‘be a member of; belong to’
10. <i>sūstoja se</i> ‘consist of’	<i>preziram</i> ‘despise’
11. <i>sladneja/sladnja</i> ‘have a sweet taste, taste sweet’ (also <i>gorcha</i> ‘taste bitter’)	<i>dominiram</i> ‘dominate; predominate, prevail’
12. <i>tjenja</i> ‘value’	<i>harakteriziram</i> ‘characterize’
13. <i>vjarvam</i> ‘believe’	<i>simvoliziram</i> ‘symbolize’
14. <i>traja</i> ‘last’	<i>lipsvam</i> ‘lack’
15. <i>pritežavam</i> ‘possess’	<i>egzistiram</i> ‘exist’
16. <i>zavisja</i> ‘depend (on)’	<i>kandidatiram se</i> ‘stand, be a candidate’
17. <i>prinadleža</i> ‘belong (to)’	<i>podoziram</i> ‘suspect, be suspicious of’
18. <i>podkrepijam</i> ‘support’	<i>favoriziram</i> ‘favor’

Table 5: The stative verbs tested

The results show no significant differences between the two paradigms, though biaspectual stative verbs are slightly more prone to outer prefixation than native statives (see (65d", table 8)). Therefore, both types of statives behave as true statives in their great majority. The general overview of the results is offered in (65).

(65) Statives across paradigms:⁵⁵

a. Unacceptability as infinitival complements of perception verbs: no significant difference:

► SS: 17 verbs are out; BS: 11 verbs are out

b. Unacceptability in the pseudo-cleft construction: no significant difference

► SS: 17 verbs are out; BS: 12 verbs are out

c. Unacceptability as complements of phase verbs

(i) *start*: SS: 1 verb is out; BS: 7 verbs are out

(ii) *stop*: SS: 2 verbs are out; BS: 5 verbs are out (no significant difference)

(iii) *finish* (identical results): SS: all 18 verbs are out; BS: all 18 verbs are out

(iv) *continue*: SS: 4 verbs are out; BS: 2 verbs are out (no significant difference)

d. Unavailability of both inner and outer prefixation

d'. Inner prefixation (see table 7) (no significant difference)

(i) **Pure perfectivizers**: SS: 4 instantiations; BS: 1 instantiation

(ii) **Cumulative/saturative NA-**: SS: 2 instantiations; BS: 3 instantiations

(iii) **Excessive RAZ-**: SS: 0 instantiations; BS: 1 instantiation

d''. Outer prefixation (see table 8) (BS: more prone to allow inceptives (ii) and duratives (v); else, no significant difference)

(i) **inceptive DO-**: SS: 3 instantiations; BS: 1 instantiation

(ii) **inceptive ZA-**: SS: 3 instantiations; BS: 8 instantiations

(iii) **sudden inception PRI-**: SS: 2 instantiations; BS: 0 instantiations

(iv) **terminative DO-**: SS: 1 instantiation; BS: 0 instantiations

(v) **durative PO-**: SS: 2 instantiations; BS: 5 instantiations

(vi) **attenuative PO-**: SS: 2 instantiations; BS: 0 instantiations

(vii) **repetitive PRE-**: SS: 0 instantiations; BS: 1 instantiation

As we can observe from (65), the results are more or less identical, with no significant differences being detected across paradigms. A schematized and detailed summary of the findings is offered in tables 6, 7 and 8 below (the numbers in the table correspond to the number of the verb from table 5).

⁵⁵ SS refers to standards statives; BS to biaspectual statives.

TESTS ----- VERBS	Pseudo-cleft construction	Compl of perception Verbs	Compl of <i>start</i>	Compl of <i>stop</i> and <i>finish</i>	Compl of <i>continue</i>	Start- give up construction
Standard statives	NOT: 1-3; 5-18 OK: 4	NOT: 1-17 OK: 18	NOT: 1, 6, 9, 10, 14, 15, 17 OK: the rest	FINISH: ALL ARE OUT Stop: NOT: 3, 4, 6, 10, 14 OK: the rest	NOT: 6, 9, 10, 14 OK: the rest	OK (only under activity reading): 13, 15, 18 NOT: the rest
Biaspectual statives	NOT: 1, 6-10, 12-15, 17 OK: the rest	NOT: 1, 2, 6-8, 11-15, 17, 18 OK: the rest	NOT: 7 OK: the rest	FINISH: ALL ARE OUT <i>srpja</i> ‘stop’ NOT: 4, 8 OK: the rest <i>prestana</i> ‘stop’ NOT: 2, 8 OK: the rest	NOT: 14, 16 OK: the rest	OK (only under activity reading): 4, 5, 6, 9, 16, 18 NOT: the rest

Table 6: General result summary (see Appendices 4.4.1, 4.3.2, 4.4.3, 4.4.4, 4.4.5, 4.4.9)

PREFIX ----- VERBS	PURE PERFECTIVIZERS	CUMULATIVE or SATURATIVE NA-	DISTRIBUTIVE PO-	EXCESSIVE RAZ-	SPATIAL PREFIXES	CAUSATIVE PREFIXES
Standard statives	OK: 6, 9, 12, 13 NOT: the rest	OK: 5, ?13 NOT: the rest	NONE ACCEPTS THEM	NONE ACCEPTS THEM	NONE ACCEPTS THEM	NONE ACCEPTS THEM
Biasp. statives	OK: 12 NOT: the rest	OK: 3, 4, 9 NOT: the rest	NONE ACCEPTS THEM	OK: 4 NOT: the rest	NONE ACCEPTS THEM	NONE ACCEPTS THEM

Table 7: Result summary on inner prefixation (see Appendices 4.4.6, 4.4.7)

PREFIX ----- VERBS	INCEPTIVE ‘START’	TERMINATIVE ‘STOP’: DO-	DURATIVE ‘FOR A WHILE’ PO-	REPETITIVE ‘AGAIN’ PRE-	ANTERIOR PRED-	HIGH DEGREE	LOW DEGREE ATTENUATIVE PO-	REVERSIVE
Stand. statives	Allow DO- : 1, 2, 5 Allow ZA- : 1, 7, 11 Allow PRI- : 2, 11 NOT: the rest	OK: 14 NOT: the rest	OK: 1, 18 NOT: the rest	NONE ACCEPTS IT	NONE ACCEPTS IT	NONE ACCEPT S THEM	OK: 1, 18 NOT: the rest	NONE ACCEPTS THEM
Biasp. Statives	Allow ZA- : 1, 3, 4, 9, 10, 11, 13, 15 Allow DO- : 14 NOT: the rest	NONE ACCEPTS IT	OK: 1, 3, 4, 5, 9 NOT: the rest	OK: 16 NOT: the rest	NONE ACCEPTS IT	NONE ACCEPTS THEM	NONE ACCEPTS IT	NONE ACCEPTS THEM

Table 8: Result summary on outer prefixation (see Appendix 4.4.8)

The results above show that the vast majority of statives (17 SS, 11 BS) do not appear as complements of perception verbs, which confirms their abstract nature (65a). Similar results are obtained from pseudo-clefting where 17 SS and 12 BS reject this construction, again confirming the abstract non-unitizable nature of these predicates (65b).

Regarding the behavior of statives with respect to phase verbs, we can observe that none of the statives examined here is selected by *finish* (65c: iii). Recall that *finish* selects for verbs which have duration and culmination. The fact that all statives are disallowed with this verb confirms the fact that they are indeed internally homogeneous and continuous. Thus, though statives have temporal duration, they have no internal phases such as endpoint, else, culmination. As for the phase verbs *stop* and *continue*, they should be in principle compatible with statives since they select for durative predicates (recall that only achievements are excluded as complement of *stop* in English). Our results show that this is indeed the case: *stop* combines with 16 SS and 13 BS (65c: ii) whereas *continue* combines with 14 SS and 16 BS (65c: iv), again exhibiting no significant differences. Interestingly, the phase verb *start* shows a slight variability with statives. Thus, 17 SS can be complements of *start* in contrast to 11 BS, indicating that standard statives are more prone to be selected by this verb (65c: i). However, the difference is not that significant. ***So far, we can conclude that statives behave quite uniformly across paradigms.***

Regarding prefixation data, the results can be interpreted as follows:

As a general rule, statives disallow inner prefixation (65d') where we have only 4 instantiations of pure perfectivizers with SS against 1 with BS; 2 instantiations of cumulative/saturative prefixes with SS against 3 with BS; 0 instantiations of excessive prefixes with SS against 1 with BS. Again, no significant differences can be highlighted. Interestingly, it should be noted that when inner prefixes attach to statives in both paradigms (SS and BS), the verb becomes telic. As previously mentioned, this has to do with the inherent [endpoint] feature of these aspectual prefixes which telicizes the event denoted by the verb. However, these are limited cases. Some examples are provided in (66).

(66) Inner prefixation with statives (see appendix 4.4.6 and 4.4.7 for further examples)

a. PO- <i>vjarvah</i>	b. U- <i>znah istina-ta</i>	c. NA- <i>ministerstvam se</i>
PF-believed	PF-knew truth-the	ENOUGH-be minister REFL
'I became a believer'	'I found out the truth'	'to have enough of working as a minister'

Finally, concerning outer prefixation, we can observe that statives are more prone to combine with durative prefixes (65d": v) and inceptives (65d": ii) than the rest of the outer prefixes. In this case the results show no significant difference either. Thus, for inceptive prefixes we find 9 BS instantiations (8 with the inceptive prefix ZA-, 1 with inceptive DO-) in contrast to 8 SS instantiations with inceptives (3 with the prefix DO-; 3 with ZA-, 2 with PRI-). As for durative prefixes, we find 5 BS instantiations *versus* 2 SS instantiations. The acceptability of these prefixes is not strange since statives are durative predicates which have temporal duration and can therefore be prefixed by durative prefixes. However, the acceptability of duratives is not that common with statives as it is with other verbs (e.g. activities). Again, we should bear in mind that these prefixes, since they are higher aspectual markers, telicize the event:

(67) Statives and outer prefixation (see Appendix 4.4.8 for further examples)

a. DO- <i>teža</i>	<i>mi</i>	inceptive DO-
START-weighted me		
‘I STARTED to feel tired; it started to weigh on me’		
b. ZA- <i>kmetuva</i>		inceptive ZA-
START-be a mayor		
‘He STARTED to work as a mayor’		
c. PO- <i>kvartiruva</i>		durative PO-
FOR A WHILE-live on renting		
‘He lived on renting FOR A WHILE’		

As for the rest of the outer prefixes, they are almost unattested, though we can find 1 instantiation of terminative DO- with SS but none with BS; 2 instantiations of attenuative PO- with SS but none with BS; and one instantiation of repetitive PRE- with BS but none with SS. Therefore, we can treat these instances as exceptional. Again, the resulting verb denotes a telic event (see Appendix 4.4.8 for more details).

TO RECAPITULATE, we have analyzed 36 stative verbs (18 from the standard paradigm and 18 from the biaspectual paradigm). In order to show that all these verbs preserve their

stative character across the two Bulgarian paradigms I have applied four tests: (i) unacceptability of these verbs as complements of perception verbs; (ii) unacceptability in the pseudo-cleft construction; (iii) unacceptability as complements of phase verbs, and (iv) unavailability of both inner and outer prefixation. As the results indicate, no significant differences with respect to these stativity tests could be detected since, as a general rule, the verbs investigated (i) do not enter the pseudo-cleft construction; (ii) cannot be complements of perception verbs; (iii) cannot be complements of phase verbs, and (iv) disallow inner and outer prefixation (see fn. 46; Appendix 4.4.9, or table 6 for the uniform behavior of the two types of statives regarding the start-give up construction). This state of affairs indicates that there is some feature which all these verbs share across the two paradigms (and arguably across languages, too) that explains this uniform behavior. Thus, though non-stative verbs are in principle capable of being telicized via prefixation in both paradigms (19), statives as a general rule are not. In a sense, it appears that there is something which blocks the mere presence of prefixes within such verbs (excluding the limited number of central-coincidence-relation prefixes, see (52a-c)). As I have proposed, this is due to the presence of the feature [state] which these verbs bear (55, 57). However, these prefixation cases (e.g. CCR prefix + stative V) are also limited. ***Hence, the feature [state] turns out to be immune to the morphological make-up of the verb in question, which confirms the claim that what finally prevails is the syntactic structure itself, else, the feature specification of the linguistic object that further builds into syntactic structure.***

TO SUM UP, we have seen that inner aspect is morphologically-driven in standard Bulgarian where the opposition IMPF1-PF is directly correlated with the opposition atelic-telic within the domain of inner aspect. This is not the case for biaspectual Bulgarian and English since the eventive verbs in these languages are insensitive to the morphological properties of the base inasmuch as grammatical aspect, i.e. morphological (im)perfectivity, is arguably inexistent within these languages. Hence, other properties of the structure such as those of the feature characteristics of the internal argument or the nature of an intervening preposition become relevant for the determination of inner aspect.

Interestingly, a biaspectual verb can switch paradigms via standard affixation and in cases like this the verb behaves in a native-like manner, i.e. subjected to the driving force of morphology dominating the standard paradigm. To exemplify, once a biaspectual base is being prefixed, it is reinterpreted as perfective and consequently behaves like the rest of the prefixed perfective verbs from the standard paradigm, i.e. in a telic-like manner, since prefixes, being formal markers of morphological perfectivity, are telicizers. As I have suggested, the affixation of biaspectuals is a reflex of a deeply embedded tendency on the part of the speakers to standardize conflicting principles and thus minimize existing differences across paradigms. However, when it comes to stative verbs, we can observe a quite uniform behavior across languages (e.g. English and Bulgarian) and paradigms (e.g. standard and biaspectual Bulgarian). Thus, we have seen that the two aspectually relevant properties (i.e. the object-to-event mapping property and the telicizing role of a goal P) do not hold for the stative verbs in all three languages. Furthermore, no substantial differences have been detected when it comes to other stativity tests (62), implying that statives form a unified class universally. As I have already suggested, this has to do with the universally available feature [state] which these verbs bear and which blocks all intervening effects from the nearby linguistic surroundings. Thus, it is the feature specification of the structure which drives interpretation.

In what follows I present my syntactic account of inner aspect.

CHAPTER 5: THE SYNTAX OF INNER ASPECT

ACROSS LANGUAGES

The goal of this chapter is to present a syntactic account of inner aspect across languages by first discussing some theories like Borer's (2005b) (§ 5.1) and MacDonald's (2008b) (§ 5.2), from which I adopt some assumptions, after which a modified account of the syntax of inner aspect is provided (§ 5.3). The chapter closes with some remarks on inter- and intra-linguistic variation with respect to inner aspect (§ 5.4).

5.1. Borer's (2005b) approach to inner aspect

This section presents Borer's (2005b) exo-skeletal approach to inner aspect. Since we have already dealt with Borer's theory in chapter 2, section 2.5, only those aspects relevant to inner aspect will be discussed here.

We have seen in chapter 2, section 2.5 that under Borer's (2005b) approach Aktionsart/lexical values are computed on the basis of functional structure, not lexical entries. This has to do with the fact that *aspectuality* is not a property of the verb but a property of the syntactic (functional) structure, which suggests that argument structure does not deterministically project from lexical entries (e.g. the arguments are interpreted as (non)agentive with respect to the Aktionsart of the entire event). Therefore, all direct arguments (internal and external) are related to the whole event, not to V, since V is a modifier of the event, not a determinant of its interpretation. With these considerations in mind, Borer concludes that Aktionsart is the building block for the syntax of arguments, where the structure for Aktionsart is the only structure relevant for the projection and interpretation of these arguments (see (57), chapter 2, § 2.5 and subsequent discussion).

Concerning inner aspect, Borer assumes, as also do I, that ***telicity is syntactically represented in contrast to atelicity which is what remains in the absence of telicity***. We have already commented on this in the previous chapter where we have seen that the only feature relevant for inner aspect is [endpoint]. In the absence of [endpoint], the result is an atelic event. As for Borer (2005b), she relates telicity to the presence of *quantity* structure. Syntactically, telic (i.e. quantity) interpretation emerges from the projection of a specific open value [_{AspQP} <e>_#] which must be assigned range (Borer 2005b: 122).¹ In other words, only when Asp_QP (Aspect quantity phrase) projects, we have telicity; else, the predicate is atelic.² I start the discussion with the syntactic representation of telicity as viewed in Borer.

5.1.1. Borer's (2005b) syntactic representation of telicity

Borer (2003, 2005b) assumes that functional heads constitute open values with category labels which must be assigned range by the appropriate functional operator (Borer 2005b: 18). As for the assigners for these values, they belong to the functional lexicon of the grammar and can be functional morphemes (f-morphs) or abstract head features. This is one mode of assigning range to the open value of the relevant functional head which is called ***direct range assignment*** (1a). Another way of assigning range is indirectly, i.e. ***indirect range assignment***, which can be achieved by the merger of some element from the functional lexicon which is not a head and which is not specified as a possible range assigner for a particular open value. Indirect range assignment can be accomplished by an adverb of quantification or some discourse Operator, or else via Spec-H^o Agreement (1b) (see also (51), chapter 2).

¹ Quantity associated with Asp_Q has the function of selecting a specific quantity reticule in relation to a given event, providing thus quantification to divisions of that event (Borer 2005b: 122).

² Similar behavior is attested with the Accusative-Partitive case distinction. To exemplify, Accusative case in Finnish marks telic (quantity) structures and Partitive is the elsewhere case which is assigned in the absence of quantity structure. Borer (2005b, 2007b) notes that such a state of affairs is also found in Slavic where primary imperfectives are the result of the absence of quantity structure and stand in complementary distribution with these structures.

(1) On range assignment ($\langle e \rangle$ = open value; # = categorial membership of $\langle e \rangle$)

a. **Assigning range to $\langle e \rangle_{\#}$** (the open value which heads Asp_QP)

(i) **Direct range assignment:**

1. **F-morph** merges with the open value $\langle e \rangle$ and assigns range to it (e.g. *three*, *most*, *all*)

e.g. $[_{\#P} \text{most}^3 \langle e^3 \rangle_{\#} [_{NP}]]$

2. **Head features:** In Hebrew range is assigned by a dual abstract head feature

e.g. $[_{\#P} \text{yom}^2 \langle \text{dual}^2 \rangle \langle e^2 \rangle_{\#} [_{NP} \text{yom}^2 (\text{day})]] = \text{yomayin}$ ‘two days’

(ii) **Indirect range assignment:** by the merger of an **adverb of quantification**

such as *twice*, *once* (also some discourse operator)

e.g. $\text{Adv}^4 [_{\#P} \langle e^4 \rangle_{\#} [_{NP}]]$

b. **Assigning range to $\langle e \rangle_d$** ($\langle e \rangle_d$ is the open value which heads DPs)

(i) **Direct range assignment:** by the merger of an **f-morph**: *the*, *this*, *that*

(ii) **Indirect range assignment: Spec-Head agreement:** e.g. by a possessive in Spec,DP which agrees with the open value $\langle e \rangle_d$ and assigns range to it.

Following this line of thought, Borer suggests that the different behavior of English and Slavic (here, Bulgarian) with respect to inner aspect is explained by the different means the two languages apply in order to assign range to $[_{\text{Asp}_Q} \langle e \rangle_{\#}]$ (2).

(2) Assigning range to Asp_Q in English and Slavic

a. **Indirect range assignment in English:** when Asp_QP projects, its head is assigned range by establishing a ***Spec-Head agreement relation*** between the internal argument located in Spec, Asp_QP which is marked as $[+q]$ (i.e. we have a quantity NP) and the open value $\langle e \rangle_{\#}$ of Asp_Q^0 . As a consequence, a subject-of-quantity interpretation is assigned to this $[+q]\text{NP}$ and its $[+q]$ feature is further copied into the Asp_Q^0 head, thus valuing it. This is an instantiation of the ***object-to-event mapping*** property.

b. **Direct range assignment in Slavic:** it is the head of Asp_QP itself, Asp_Q^0 , which is marked as $[+q]$ (e.g. by the merger of a telicizing prefix) and this further translates into a $[+q]$ marking on the internal argument. This is an instantiation of the ***event-to-object mapping***.

I will follow these range-assigning mechanisms when dealing with English and Bulgarian. As I have already mentioned, it is the [endpoint] feature of the prefix (for prefixed verbs) or the base (for primary perfectives) which marks the event as telic by directly valuing the aspectual head as in (2b) (see (18c) in chapter 4). As for English eventives and the Bulgarian eventive biaspectuals, no such feature is present on the verb, which obliges the language to opt for an indirect way of assigning range (2a), thus giving rise to the object-to-event mapping property.

Since event structure corresponds to syntactic structure, Borer (2005b) postulates an event node, EP, which hosts the event argument and is in turn predicated of Asp_QP in the case of telic structures (see (3b) below) or of F^sP (functional shell phrase) if the predicate is an atelic transitive (see (3a) below).³ Range assignment to the head of EP, <e>_E, establishes a mapping from predicates to events. Thus, when the predicate is Asp_QP, the event is interpreted as quantity, i.e. telic. In the absence of Asp_QP, on the other hand, we can have either atelic eventive or stative predicates.⁴ This is reflected in Table 1.

³ Recall that F^sP and Asp_QP stand in complementary distribution, the former being present in transitive atelic structures exclusively (see chapter 2, section 2.5). Thus, F^sP assigns Partitive case to the DP merged in its Specifier together with a default participant interpretation. Asp_QP, on the other hand, assigns Accusative case to the DP in its Spec and gives it a subject-of-quantity interpretation. In this way, Asp_QP is justified on both semantic (at LF) and phonological (at PF) basis: it has both semantic (e.g. gives quantity telic predicates) and case assigning properties. As for F^sP, it is semantically vacuous (shown by the default participant interpretation which a DP receives in its Spec) but phonologically contentful since it assigns Partitive case to the DP in its Spec; hence licensed at PF (though not at LF).

⁴ As already observed in Borer (2005b), treating statives and atelic eventives alike poses some problems since adjectival passives do occur in statives but not in atelic eventive predicates. Such a state of affairs implies that statives have some additional structure which preempts verbalization by T and allows the licensing of generic direct objects. Therefore, when Asp_QP is absent from the structure, we have an atelic eventive predicate as the default option.

Eventive predicates	Stative predicates
Asp_QP projects → telic EP	another type of EP denoting states (SP*) ⁵
no Asp_QP → atelic EP (F^SP, if transitive)	no Asp _Q P → atelic structure

Table 1: Event typology in Borer (2005b)

Note that under the approach advocated in Borer, all telic events share the property of incorporating Asp_QP within their structure. This implies that no distinction should be made between accomplishment and achievement predicates since both denote telic events, i.e. both have internally quantifiable divisions. Such a view, which is adopted in my study, is reinforced in Borer (2005b) where both achievements and accomplishments have the same event structure, i.e. a quantity one, realized through the projection and assignment of range to [Asp_QP <e>_#]. Thus, Borer (2005b: 326) concludes that “[...] *achievements are not a distinct event type, nor are they subparts in any sense of accomplishment events. Rather, they are quantity events*”. With these assumptions in mind, Borer (2005b) arrives at the following syntactic derivations for the available predicate types:

EVENTIVE PREDICATES	STATIVE PREDICATES
Activities: [EP <e> _E [TP [VP]]]	[EP <e> _E [TP [SP* [VP/AP]]]
Telic events: [EP <e> _E [TP [Asp _Q [VP]]]	SP*= functional stative event structure
Event roles	
Atelics: [EP DP <e> _E [TP DP [VP]]] <i>originator DP</i>	[EP DP <e> _E [TP [SP* DP...([Asp _Q /F ^S P) [VP/AP]]]] <i>subject-of-state</i>
Telic intransitives: [EP DP <e> _E [TP DP-[Asp _Q DP-[VP]]] <i>s-o-q</i>	
Telic transitives: [EP DP ₁ <e> _E [TP DP ₁ -[Asp _Q DP ₂ [VP]]] <i>originator</i> <i>s-o-q</i>	

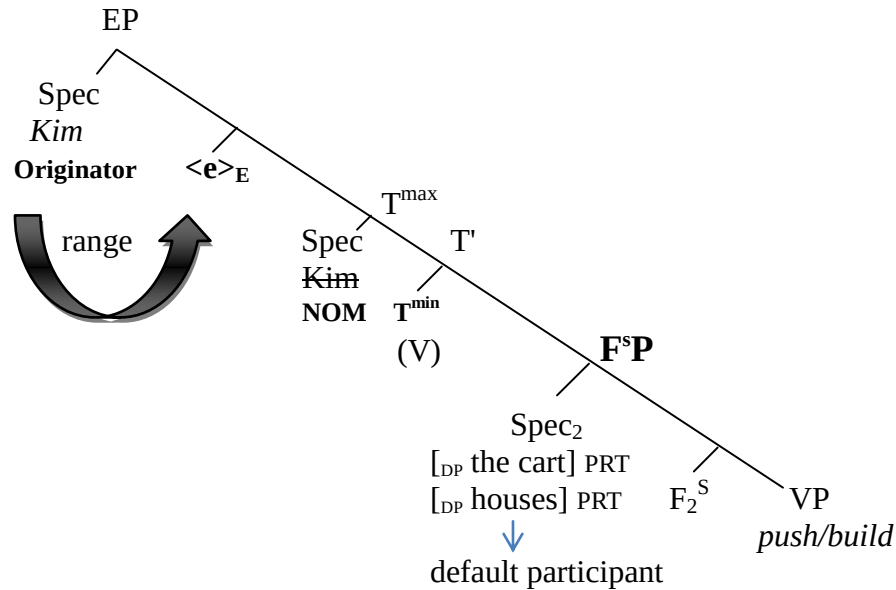
Table 2: Event types and their syntactic representation

⁵ SP* refers to functional stative event structure.

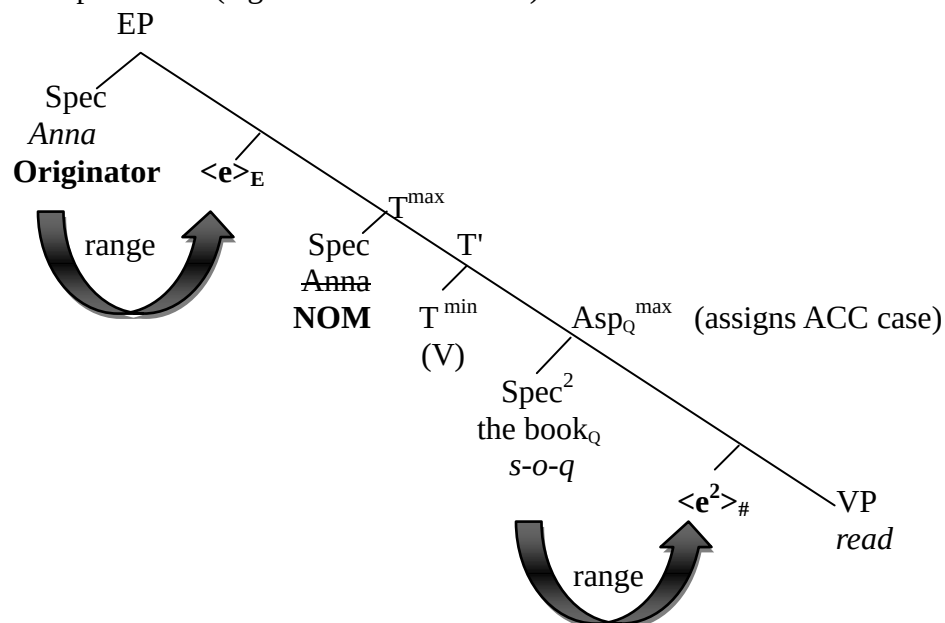
The syntactic representation of atelic transitive verbs is offered in (3a) whereas (3b) represents the derivation of a telic transitive predicate.

(3) Transitive eventive predicates (Borer 2005b)

a. Atelic transitive structure: *Kim pushed the cart; Kim built houses (for/*in an hour)*



b. Transitive predicates (e.g. *Anna read the book*)



Recall that there are only two universally available structural case positions under Borer's theory. Therefore, only two of the arguments can be structurally licensed, becoming thus

direct arguments. **Accusative case is structural case assigned in Spec,Asp_QP whereas Nominative case is structural case assigned in Spec,TP.**⁶ In order to become arguments and be assigned roles, *Kim* and *the cart* in (3a) and *Anna* and *the book* (3b) must merge into functional specifiers. Until merge takes place, they are devoid of any role and syntactic status.⁷ ***I will adopt a similar kind of analysis where all direct arguments must merge into some specifier position of a functional head*** (see § 5.3). In (3b), for example, *the book*, being a quantity NP (by virtue of the [+q] feature on the determiner), merges in Spec,Asp_QP in order to be assigned both a role (**subject-of-quantity**) and case (e.g. Accusative), and via Spec-Head agreement it values the open value heading Asp_QP (e.g. <e²>_#) as quantity/telic (else, assigns range to it by copying its [+q] feature onto the head). As for the second direct argument, *Anna*, it first merges in Spec,TP where it receives Nominative case and further moves to Spec,EP in order to receive a role, e.g. that of the Originator of the event. Since *Anna* c-commands the subject-of-quantity internal argument *the book* and at the same time assigns range to the open value heading EP (<e>_E), then the whole event (EP) is interpreted as quantity.

As for the atelic transitive derivation in (3a), we see that Asp_QP does not project. Hence, the result is an atelic event. Being a transitive structure, F^SP projects so that one of the two direct arguments could be assigned Partitive case in the specifier of F^SP (see fn. 3). The derivation is as follows: the nominal *houses* merges in Spec,F^SP where it receives Partitive case and a **default participant** interpretation whereas the other noun *Kim* is first merged in Spec,TP to be assigned Nominative case, after which it moves to Spec,EP to receive an Originator interpretation. Since *Kim* assigns range to the head of EP via Spec-Head Agreement, and since it c-commands *houses*, a [-q]NP, the resulting event is interpreted as atelic.

⁶ Cf. Belletti (1988) who considers Nominative inherent case assigned by a lexical head. The fact that Nominative is not an inherent case can be observed by the exceptional case marked constructions (e.g. *Anna considers Helsinki folk.PRT strange* (see Borer 2005b: 106).

⁷ Such an analysis contrasts with previous treatments of arguments according to which internal arguments merge in Spec,AgrO and external ones in Spec,AgrS (see Chomsky 1993).

TO SUM UP, both event structure and argument interpretation are based on syntactic structure. Thus, the semantics of event structure is read off the syntax of functional structure where all arguments are finally reduced to event participants (e.g. the external argument is the Originator; the internal argument is subject-of-quantity for telic predicates or a default participant with atelics).

When dealing with range assigners to the open value $[_{\text{AspQP}} \langle e \rangle_{\#}]$, which heads quantity structures, I assume, together with Borer, that, ***as a general rule, the functional lexicon of English has no aspectual functional morphemes (f-morphs), nor head features which could assign range to this value directly so it abides to the indirect range-assigning mode, via a quantity DP which merges in Spec,Asp_QP and copies its [+q] value onto the $\langle e \rangle_{\#}$ open value heading Asp_QP*** (this is the object-to-event mapping property). As for ***Bulgarian (also Slavic), it presents just the opposite pattern since it does have head features for direct range assignment to $[_{\text{AspQP}} \langle e \rangle_{\#}]$ (e.g. prefixes)***.⁸ However, I will also show that there is a limited number of cases that involve the presence of direct range assigner to $[_{\text{AspQP}} \langle e \rangle_{\#}]$, and in which cases English behaves just like Slavic.

In other words, both intra- and inter-linguistic variation emerges from ***“the mode in which one functional value is assigned range alongside the specific range of values associated with any given functional marker”*** (Borer 2005b: 126). Since the topic of Slavic prefixes is quite indicative for language variation inasmuch as it is an instantiation of a direct range assignment, some comments regarding Borer's assumptions on prefixation phenomena follow.

⁸ A similar opposition, though in the reverse way, holds for the nominal domain where English does have a direct way of assigning range to the open value $\langle e \rangle_d$ which heads DPs (e.g. via free f-morphs such as the determiner *the*, numerals *three*, etc.) in contrast to Slavic which has a limited inventory of head features and f-morphs for direct range assignment to $\langle e \rangle_d$. However, it should be noted that Bulgarian has both definite and indefinite determiners for direct range assignment to $\langle e \rangle_d$ in contrast to the majority of the Slavic languages.

5.1.2. Borer's (2005b) view on prefixation in Slavic

As we have already mentioned, Slavic languages assign range to the open value $\langle e \rangle_{\#}$ heading Asp_QP *directly*, i.e. by the merger of a telicizing prefix with the Asp_Q head. Put differently, Borer takes ***prefixes to be the overt phonological realization of a head feature which is capable of assigning range*** to [Asp_{QP} $\langle e \rangle_{\#}$]. Let us consider the case of the aspectual quantificational prefix NA- (4).

[illegible]

For Borer (2005b) a prefix such as NA- has a double function: (i) it telicizes the event, and (ii) it (quantificationally) binds a variable within the DP *pitsi* 'pizzas' where the interpretation we have is that 'a lot of pizzas have been baked'.

I adopt a similar analysis of prefixes though ***for me they are the overt (morpho-)phonological expression of a bound (e.g. prefixal) f-morph, not a head feature.***⁹ As Borer observes, perfective prefixes (and perfective marking in general) open up two possible ways of treatment: either as the phonological realization of a head feature devoid of any morphemic structure or else via morphological structure (e.g. f-morphs). In the latter case, the f-morphs project independently whereas in the former case the head feature requires the support of some head, thus triggering head movement. In analyzing prefixation in Slavic, Borer (2005b) opts for the head-movement analysis (5a). ***However, I will treat prefixes as a morphological means of assigning range to***

⁹ Recall that the functional lexicon of the grammar contains two kinds of elements and, hence, two possible ways of licensing functional structure (see chapter 2, § 2.5):

(i) **Functional morphemes** (e.g. free f-morphs: *the, will*; bound f-morphs: *-tion*): ranged is assigned via morphological structure in the form of category bearing morphemes (e.g. *-tion, -ize, -al, -full*, etc.). Since these are members of the functional lexicon, they provide the category label to L-D (The Lexical Domain).

(ii) **Phonologically abstract Head features** (e.g. <pst> for past tense): they require the support of some head which results in obligatory head movement.

the aspectual heads (e.g. as bound f-morphs projecting independently) since it has more descriptive and explanatory power in the case of stacking, i.e. in the case of multiple prefixation (5b).

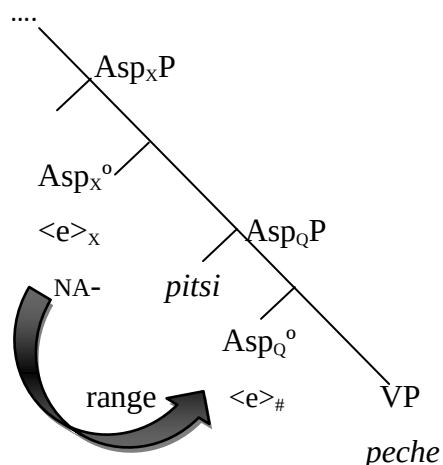
(5) The syntax of prefixation

a. The head feature option (Borer 2005b)

Petür [_{TP} *NA-peche* [_{AspQ} [_{DP} <e>_d [_{#P} <e^{na}>_# [*pitsi*]]] <na> *peche* <e>_# [_{VP} *peche*]]]

Peter NA-baked pizzas <na> baked baked

'Peter baked *a lot of* pizzas'

b. The bound f-morph option (see § 5.3)

Following the option in (5a), prefixes, being head features, merge directly in Asp_Q^0 triggering the incorporation of V.¹⁰ As for option (5b), the prefix, being a bound f-morph, projects independently, under its own functional aspectual projection, $\text{Asp}_X P$. The crucial difference here has to do with stacking, i.e. with cases where more than one prefix is merged in syntax. To exemplify, under a view such as (5a) where prefixes are the spell-out for a regular syntactic head feature $\langle \text{quant} \rangle$ that assigns range to $[\text{Asp}_Q \langle e \rangle_\#]$, it will follow

¹⁰ Another possibility suggested by Borer is to treat prefixes as P-like elements, originally merged in the Lexical-Domain (L-D) and incorporating into V, which then move to Asp_Q^0 and assign range to it through the merged P. Whether prefixes merge directly with Asp_Q and thus trigger the incorporation of V, or whether they are P-like elements merging originally in L-D and incorporating into V, is a morphological choice, not syntactic or semantic (Borer 2005b: 157, fn. 5).

that once range is assigned to this open value by this head feature, further prefixation by other similar head features would be blocked since it would be an instantiation of double marking, i.e. vacuous quantification (e.g. **the dog's the ear* is ungrammatical because there are two range assigners to the open value of D: the genitive phrase, which assigns range indirectly from the specifier position, and the free f-morph *the*, which is a direct range assigner).¹¹ However, multiple prefixation, which consists of assigning value to $[_{\text{AspQ}} \langle e \rangle_{\#}]$ more than once, is a common phenomenon in Slavic (e.g. *IZ-O-stavja* 'abandon', where both *IZ-* and *O-*, which are lexical prefixes, have a $\langle \text{quant} \rangle$ value to give to $[_{\text{AspQ}} \langle e \rangle_{\#}]$). To solve this problem, Borer hints at the following possibility:

(6) On double marking: Borer (2005b: 157, fn. 5):

“One prefix may be incorporated adverb or a preposition which is not associated with range assignment at all. Alternatively, functional structures may be considered more expansive with outer prefixes indicating the existence of some additional open value above Asp_Q in need of range assignment.”

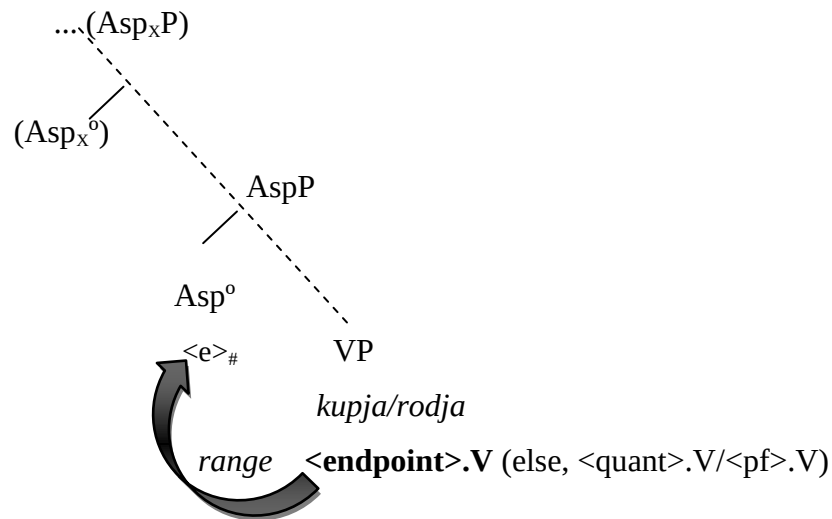
To overcome the undesired effect of double perfectivity, I assume that prefixes are best treated as bound f-morphs projecting independently as in (5b) (note that this possibility is already present in the second part of the quotation in (6)). In this case, more than one prefix can in principle be merged in syntax since it will head its own functional projection, Asp_xP and will assign range to the open value heading this projection (e.g. $[_{\text{Asp}_x} \langle e \rangle_x]$, see (5b)). However, since all prefixes in Bulgarian bear the feature [endpoint], they are in principle capable of assigning range to $[_{\text{AspQ}} \langle e \rangle_{\#}]$ as well. Thus, just one of the prefixes will suffice to value $[_{\text{AspQ}} \langle e \rangle_{\#}]$ (see § 5.3). In other words, ***the merger of a prefix x- under Asp_xP will be driven on independent grounds, that of assigning range to Asp_x° whereas assigning range to $[_{\text{AspQ}} \langle e \rangle_{\#}]$ by this prefix will be just a side-effect and a secondary function of the prefix (arguably,***

¹¹ In fact, the claim that vacuous quantification does not exist in natural languages is an advantage of the theory of Borer according to which the category labels for the open values indicate the possible range assigners to those values (Borer 2005b: vol.1, fn. 4).

only the pure perfectivizers have as a primary function assigning range to $[_{AspQ} <e>_{\#}]$, see § 5.3).

Interestingly, though, recall that there are cases in Bulgarian (and in Slavic) in which no prefix is being merged into syntactic structure but telicity still holds. This is exactly what happens with the primary perfective verbs (see (18b), chapter 4). We have explained this by suggesting that in such cases it is the perfectivity of the base which gives rise to telicity. Following Borer's line of analysis, ***I will suggest that primary perfectivity is an instantiation of direct range assignment via a perfective (else, quantity) head feature.*** In other words, there is some head feature $<quant>$ (else, $<pf>$ or $<endpoint>$) which incorporates into V^0 and then assigns range to $[_{AspQ} <e>_{\#}]$ (7). However, since this feature has become fully grammaticalized, it remains 'invisible'.¹²

(7) Primary perfectives (e.g. *kupja* 'buy', *rodja* 'give birth')



Treating primary perfectivity as direct range assignment to $[_{AspQ} <e>_{\#}]$ via a head feature is further supported by the fact that prefixes

¹² According to Borer (2005b), primary perfectivity involves an abstract covert totality operator (see Filip 1999) which is responsible for the quantity reading of the event. Exemplifications of other covert operators can be also found in the case of *put* $<pst>$ (the past tense of *put*), which assigns range to $[_{TP} <e>_T]$ (also the plural form of *fish*), or to semelfactives in Slavic which are lexically marked as perfective (hence, telicity is not compositional for them).

can stack onto primary perfective bases (e.g. *kupja* ‘buy’ (PF), *ot-kupja* ‘redeem’ (PF); *pre-kupja* ‘re-buy’ (PF), etc.). This additionally reinforces our claim that the primary function of the prefix is to assign range to the open value heading its own functional projection, but no assigning range to [_{AspQ} <e>#].

Regarding this issue, it has been extensively pointed out that Slavic prefixes are often quantificational in nature. Thus, apart from their perfectivizing <quant> value (i.e. my [endpoint] telicizing feature), the prefixes often bear an additional value: cumulative for NA-, distributive for PO-, etc. To exemplify, the outer prefix NA- in (5) contains a bundle of features <quant-cum> (else, [endpoint]+[cumulative]).¹³ In (8) I exemplify the way Borer analyzes the different prefix types since it will be adopted in my study.

(8) Prefix types (from Borer 2005b: 199)

a. **Super-lexical (outer) prefixes:** inflectional paradigm behavior

Meaning	FEED	
Stem	jad	→ acategorial context
+V	jad-a	→ in a V context
+V.quant	na-jada	→ in a V.quant context

¹³ Borer (2005b) assumes the perfectivizing <quant> function of all prefixes to be regular in that it always assigns range to [_{AspQ} <e>#], giving telic events, although their (morpho-)phonological realization depends on the choice of the stem, as in the English past tense, which explains the idiosyncrasy found with prefixation.

- b. **Lexical prefixes:** similarity with inflectional morphology where members of the paradigm are often missing (e.g. ‘quoth’ has only past tense realization).¹⁴

dam 'give' > *iz-dam* 'publish'

**publish* (as a bare unprefixated imperfective stem) is missing

Meaning	PUBLISH	→ no unstructured atelic <i>publish</i>
Stem	da	
+V	*	
+V.quant	iz-da	

In my account of inner and outer prefixation I follow the analysis in (8a) according to which some prefixes (e.g. the quantificational ones) are doubly specified. To exemplify, cumulative NA- in (5) represents a bundle of aspectual features, [endpoint]+[cumulative]. Taking such a stand will additionally support my claim that prefixes, instead of being head features as Borer suggests, are rather f-morphs projecting independently. ***Thus, it is precisely by virtue of its additional quantificational feature that the prefix projects independently in syntax (5b) whereas the other aspectual feature [endpoint], common to all prefixes, is the one that values [AspQ <e>#] (in case it has not been already valued by some other [endpoint] feature previously merged).***

Note, though, that there is not a general consensus to the claim that the function of Slavic prefixation is to telicize, i.e. to assign range to the open value heading Asp_QP. Filip (1992, 1993a, 1999, 1996a, 2005b), for example, claims that the function of Slavic verbal morphology is to provide certain nominal arguments with quantificational force. In *NA-peche pitsi* (na-baked pizzas) ‘S/he baked *a lot of* pizzas’ the cumulative prefix NA- binds a variable within the DP, which is interpreted as an incremental theme, where the binding of the argument results in the interpretation of ‘a lot’, ‘many’. As a consequence, telicity

¹⁴ Borer (2005b) correctly concludes that the lexical and purely perfectivizing prefixes are based on a defective paradigm like idioms (e.g. **scissor* vs. *scissors*; *arrive* [+LOC] vs. **arrive* [non-LOC]). The same holds for accidental paradigm gaps where some stems are missing: *AGGRESSIVE*, *AGGRESSION*, *AGGRESSOR*, **AGGRESS*.

arises.¹⁵ However, as correctly observed in Borer (2005b), telicity need not be associated with quantification over objects nor should the scope of NA- be restricted to V (e.g. we may do a lot of baking and still get few potatoes or atelicity) or to the direct object (e.g. quantity internal arguments do not necessarily trigger telicity; ***we have already arrived at the same conclusion for Bulgarian in the previous chapter; see also Appendix 4.2***). Hence, Borer concludes that the basic role of prefixation is assigning range to $[_{AspQ} \langle e \rangle_{\#}]$ which gives rise to a quantity (telic) event. ***Note that I have already suggested, contrary to Borer, that the basic role of inner and outer prefixation is assigning range to the additional aspectual/Aktionsart value carried by the prefix (i.e. to the open value $[_{Aspx} \langle e \rangle_x]$) whereas assigning range to $[_{AspQ} \langle e \rangle_{\#}]$ is a secondary result made available by the inherent [endpoint] feature of the prefix.*** I will return to this issue in § 5.3.

SOME COMMENTS ARE IN ORDER HERE as far as the relation between perfectivity and telicity is concerned. By now I have extensively claimed that morphological perfectivity equals telicity in Slavic. Filip (1996a, 1999, 2000, et seq.), however, insists that a semantic distinction should be made between prefixation and perfectivity/telicity. For her, prefixes are quantificational in nature which is semantically different from the semantics of perfectivity that consists of the presence of an abstract morphologically unrealized totality operator TOT associated with the verbal head that binds the internal argument making it TOT (e.g. totally consumed). Within the imperfective domain, on the other hand, there is a covert PART operator associated with the V head which binds the direct object and marks it PART. Thus, PART defines what is semantically imperfective whereas TOT defines what is semantically perfective, emphasizing the fact that prefixes are not semantically perfective. Evidence for such a claim comes from the fact that secondary imperfective verbs, which are morphologically imperfective, do contain prefixes implying that prefixation and perfectivity do not stand in semantic opposition. Therefore, Filip (1996a,

¹⁵ Filip (1996b) suggests that the prefix binds the DP internal argument because (i) the prefix itself is quantificational in nature, and (ii) a specifier-head relation is established between the prefix and the DP located in the specifier position of the projection which the prefix heads.

1999, 2000, 2005a, et seq.) concludes that there is no relationship between the presence of prefixation and perfective (i.e. total, telic) interpretation, which goes against my proposal that prefixation signals perfectivity, which in turn signals telicity.

Regarding this issue, Borer (2005b) correctly observes that in the presence of prefixation the PART operator is always excluded and the TOT operator is always forced, which is quite unexpected if Filip (1996b, 2000) is right in claiming that TOT is independent of the presence of prefixation:

“If TOT is distinct from quantificational affixation within the perfective paradigm, and if quantification is non-perfective, why do we not find, within the imperfective domain, an array of quantificational prefixes which agree with the DP object?” (Borer 2005b: 167).

The unavailability of [prefix + PART] combinations may then be indicative of the fact that prefixes and TOT (else, telicity) are interrelated.

Additional argument which Filip presents against treating prefixes as telicity markers comes from the fact that prefixation is derivational in contrast to the (secondary) imperfective marking which is inflectional. Thus, if prefixation were aspectual in nature, it should be inflectional. However, Borer (2005b) rightly observes that primary and secondary imperfectives do not form a unified semantic class, as defended in Filip (1996b, 2000). Since perfective verbs denote telic events in contrast to primary imperfectives which are atelic, then it is these two types of verbs that stand in logical opposition. This explains why, within the primary imperfective paradigm, prefixation is never found (excluding here the limited number of statives we discussed in the previous chapter). Therefore, **Borer correctly concludes that perfective marking is related to quantity marking in contrast to secondary imperfectivization which forms part of grammatical aspect, i.e. not related to Aktionsart/lexical aspect** (hence, treated in lines with progressive –ing in English).

It then follows that regarding imperfectivity, there are two different morphological paradigms to be distinguished: (i) primary imperfectives, which are bare verbal forms (9a), and (ii) secondary imperfectives, which involve suffixation on top of perfectivity (9b).

Under Borer's approach, the former are atelic since they lack the necessary quantity syntactic structure whereas the latter, which are related to outer aspect (see Verkuyl 1972), give rise to telic events. ***We have arrived at the same conclusion in the previous chapter (Asp_QP being substituted for [endpoint]; see (18c) in chapter 4).***

(9) a. **Primary imperfectives** (*spja* 'sleep', *peja* 'sing'): **no Asp_QP → atelicity**.

b. **Secondary imperfectives** (*[IZ-pja]^{PF}-vam*]^{IMPF} 'sing': the imperfective suffix stacks on top of perfectivity; since perfectivity **involves an Asp_QP → the predicate is telic**.

c. **Perfectives** (both primary *kupja* 'buy' (PF) and prefixed perfective verbs *IZ-peja* 'sing' (PF) **Asp_QP projects → telicity**.

Note that ***primary imperfectives, which denote atelic events, never embed a perfectivizing prefix confirming the view that atelicity is absence of a dedicated structure (i.e. Asp_QP)***. As for the secondary imperfective group (9b), it does not form a uniform semantic class with primary imperfectives (recall that the former is related outer aspect). As a consequence, perfectivity and secondary imperfectivity are not in complementary distribution in contrast to primary imperfectives (atelics) and perfectives (telics) which are (recall that this is reflected by the fact that there are no prefixes within the primary imperfective paradigm though there are prefixes within the secondary imperfective one). ***As we already saw, my analysis of primary and secondary imperfectives follows the same lines***. Hence, there is no reason to expect any morphological uniformity between the two paradigms where both are either derivational or inflectional.¹⁶

¹⁶ The distinction derivational-inflectional within the aspectual system of Slavic is considered unnecessary and irrelevant in Borer (2005b). According to Borer, there are no computational processes exclusively dedicated to inflectional or derivational morphology. Rather, the functional lexicon consists of two types of elements: (i) functional morphemes (f-morphs) and (ii) head features. While the former come in two varieties (e.g. (i) those assigning range to an open functional value such as *the*, *three*, *up*, *-ing*, and (ii) those which are categorial and project a category label such as [_N -tion], [_A -al], [_V -ize], etc., the latter are abstract range assigners and are spelled out phonologically with a host. The phonological spell-out of such a host is dependent on the existence of a paradigm and there is usually no correlation from function to form or vice

Another important observation to be mentioned is the way prefixes such as the delimitative PO- and cumulative NA- are treated since their behavior induces Filip to conclude that their function is not related to semantic perfectivity, i.e. telicity. This has to do with the semantic notion of quantization (see Krifka's 1992) and to the observation that PO- and NA- verbs fail to give quantized events. To exemplify, Filip notes that the events denoted by verbs such as *PO-igral* (po-played) 's/he played for a short time' or *NA-igral se* (na-played refl) 's/he had enough of playing' are neither quantized nor cumulative according to Krifka's definition. Regarding PO-, it functions as a measure of time ('for a short time') and if E is an event for walking for a short time, then its proper sub-event E' is also walking for a short time, hence not quantized. Interestingly, this event is not cumulative neither since two events of walking for a short time do not add up to one event of waking for a short time. As for *NA-igral se* 's/he had enough of playing', it is not quantized (e.g. a sub-event E" of playing for an hour is not playing for a long time/enough), but it is cumulative. Since these prefixes fail to give quantized events, Filip concludes that their function is not related to semantic perfectivity, i.e. telicity.

However, Borer (2005b) raises a serious objection to such a treatment of telicity as being dependent on semantic notions such as quantization and cumulativity as in Krifka (1992). For her, the notion relevant for the determination of telicity is *quantity*.¹⁷ Thus, both PO- and NA- verbs, though non-quantized, are quantities and will therefore denote telic events. Similar behavior show predicates such as *run to the store*, which are neither quantized nor

versa (e.g. *-ed* need not be past, nor does past need to be *-ed*). This leads Borer to make the following conclusion: "Hence, it is within the area of inflectional morphology (i.e. the domain of head-feature spell-out) that we find most morpho-phonological idiosyncrasy, as dependent on properties of a particular phonological index of the L-head under consideration. In contrast, within the area of functional f-morphs there is little divergence of form to function, and within the area of categorial f-morphs function is always predicted from form though not the converse" (Borer 2005b: 195).

¹⁷ Recall from chapter 2, fn. 47, that *quantity* is related to *divisiveness*. Telic events denote quantities since they involve quantification over divisions in contrast to atelic events which are homogeneous (see Krifka 1989), where homogeneity is understood in Borer (2005b) in a very specific structural sense—the failure to project Asp_QP (#P). For Borer a predicate P is homogeneous iff P is cumulative and divisive, and P is quantity iff P is not homogeneous (not cumulative and not divisive).

cumulative in the same way as PO-verbs, or *cook the eggs*, *write a sequence of numbers*, and *fill the room with smoke*, which are non-quantized but cumulative like NA-verbs, and yet describe telic events by virtue of their quantity nature. In dealing with cases like this, I will adopt Borer's line of analysis and assume that all prefixes give rise to telic events.

TO RECAP, we have seen that the presence of quantity structure (Asp_QP) is responsible for a telic event interpretation. We have also seen that there are two modes of assigning range to the open value which heads this quantity projection: via the insertion of a head feature on Asp_Q^0 or by an f-morph (direct range assignment) or via a specifier-head agreement between a DP located in $\text{Spec},\text{Asp}_Q\text{P}$ and this open value (indirect range assignment). In Bulgarian, prefixation is an instantiation of the former, whereas in English the object-to-event mapping represents the latter option. However, a question remains unanswered which has to do with whether or not there are any direct range assigners in English. I dedicate the following section to this issue.

5.1.3. Borer's (2005b) view on English prepositions and particles

English has in its lexicon linguistic objects closely related to prefixes, i.e. particles, prepositions and prefixes, all being P-like constituents. Hence, one would expect that these elements should, in principle, function in a similar way as prefixes in Slavic.¹⁸

According to Borer (2005b), both directional-locative prepositions (10a) and particles (10b) are capable of assigning range to the open value heading Asp_QP (see Borer 2005b, § 7.3).

- (10) a. *He ran **to the store** (in five minutes/*for five minutes)*
 b. *Pat climbed **down** (the mountain) (in an hour)*
 c. *Robin danced **once** in five hours*

¹⁸ Note that that prepositions and particles represent the first and the second evolutionary steps in the grammaticalization pattern for prefixes (e.g. we have free PPs → particles → prefixes).

Starting with free directional prepositions (e.g. *to the store*), Borer assumes that they can assign range to [$\text{Asp}_Q <e>_{\#}$] **indirectly** as adjuncts like *once* (10c). This is related to the fact that, as Borer claims, directional prepositions, in the same way as adverbs of quantification, may function to select a specific set of event reticules (i.e. division matrices) associated with a particular syntax (Borer 2005b: 208). Thus, the PP delimits the event by selecting these event reticules. Hence, in the presence of such a PP the event becomes telic (10a) (cf. *Pat ran for an hour/*in an hour*). However, the presence of this delimiter does not obligatorily require the projection of Asp_Q . In fact, we have already noted in chapter 4, § 4.3.1 (cf. (28) and (29) from chapter 4), that the nature of the internal argument is crucial for determining telicity even in the presence of a goal PP. As we saw, with a [+q] internal argument the predicate is telic (11a) whereas a [-q] internal argument gives rise to an atelic event (11b).

- (11) a. *Pat threw **the ball into the forest** (in an hour/*for an hour)*
 b. *Pat threw **balls into the forest** (*in an hour/for an hour)*

To account for this, Borer assumes that the PP in (11) is an **optional Asp_Q modifier** which allows, but not requires, the projection of Asp_Q . Some notes concerning Borer's distinction between range assigners and predicate modifiers are in order here. As we already noted, there are two kinds of range assigners: direct (12a: i) and indirect range assigners (12a: ii). Apart from them, some linguistic objects may also function as modifiers of predicates (12b), i.e. these elements do not assign range to the projection they modify but require its presence obligatorily.

(12) a. **Range assigners:**

(i) **Direct ranges assigners:** prefixes; separable particles (V+DP+prt): they merge with Asp_Q and assign range to it

(ii) **Indirect range assigners:** adjuncts like *twice*; **some PPs:** they can assign range to Asp_Q and change the fundamental properties of the event → a quantity reading arises in contexts which otherwise bar one

b. **Predicate modifiers of quantity:**¹⁹ time-measure phrases (e.g. *in X time*): require the projection of Asp_Q but do not assign range to it (thus, we need a quantity DP to assign range to Asp_Q). Quantity modifiers do not change the properties of the event.

Treating directional PPs in transitive contexts like (11) as *optional modifiers of quantity* (12b) explains the optionality of projecting quantity structure, i.e. Asp_Q.²⁰ However, in intransitive contexts these PPs are capable of assigning range to Asp_Q (10a), i.e. they *are range assigners* to Asp_Q instead (12a: ii). In cases like this, no [+q]DP is needed in Spec,Asp_QP in order to assign range to Asp_Q.

A similar situation holds for particles in English, where they are sometimes range assigners to Asp_Q (10b, 13a) and sometimes predicate modifiers of Asp_Q (13b).

(13) English particles: range assigners or predicate modifiers

a. **Direct range assigners** (like Slavic prefixes): **intransitive particles [V+prt]:**

Asp_QP projects, and the particle assigns range to it

(i) *The army **took over** (in two hours)*

(ii) *They **paired up** (in two minutes)* (from Borer 2005b: 203)

b. **Predicate modifiers of quantity: particles separated from the verb [V+ DP+ prt]:**

the particle is not a range assigner here but rather an **Asp_QP modifier** which forces Asp_QP to project. What assigns range to Asp_Q is the DP which should be specified as [+q] in order to value Asp_Q; else, ungrammaticality, rather than telicity, emerges (Borer 2005b: 210):

¹⁹ The status of functional modifiers is crucial for the analysis in Borer (2005b) where we can have either predicate modifiers of quantity (e.g. *in X time*) or non-quantity (e.g. the *for*-adverbial, nominalizing *-ing*), and originator modifiers (e.g. *deliberately, quickly, competently*; also, nominalizing *-ing*).

²⁰ Note that treating PPs in contexts like (11) as optional quantity modifiers resolves the undesired consequence of double quantity marking. To exemplify, in (11a) we have both a [+q]NP in the Spec,Asp_QP (e.g. *the balls*) which assigns range to the open value [Asp_Q <e>#] through Spec-head agreement and at the same time we also have a directional PP also assigning range to it. However, if the PP is considered an optional quantity modifier rather than range assigner to Asp_Q, then it is only the [+q]NP which will eventually assign range to [Asp_Q <e>#] but not the PP itself (see Borer 2005b: 211).

- (i) **Kim wrote letters up* (on a single-event interpretation)
- (ii) *Kim wrote **the letter** up* (*for several hours/in several hours)

c. Optional modifier of quantity: when the particle is adjacent to the verb

[[V+p_{rt}] + DP]: Asp_QP is optional and the internal argument may appear as [+q] or [-q] (Borer 2005b: 211): (on one-event interpretation)

- (i) *We ate up ?meal/sandwiches* (for hours/all afternoon/*in three hours)
- (ii) *Pat wrote up **letters*** (for hours/in three hours)
- (iii) *Pat wrote up **the letter*** (?for several hours/in several hours)

In other words, particles may be range assigners like Slavic prefixes (e.g. intransitive particles; see (10b, 13a)); quantity (e.g. Asp_Q) modifiers ((e.g. separable particles; see (13b)), or optional quantity modifiers (e.g. adjacent particles; see (13c)). When a particle is range assigner, no DP is needed in Spec,Asp_QP to assign range to Asp_Q (10b, 13a). If the particle is a predicate modifier of Asp_QP, then the presence of this projection is obligatory but we need a quantity DP in Spec, Asp_QP in order to assign range to it (13b). In this case, note that the [-q]NP *letters* is barred in V+DP+p_{rt} contexts (13b: i). Finally, if the particle is optional modifier, then Asp_Q may project or not (13c).

In syntactic terms, intransitive particles, i.e. particles which assign range, are treated as “idiomatic expressions in which partial functional structure is associated with a specific listeme” as in (14) (Borer 2005b: 207):

(14) a. *They paired up* (in two minutes)

a'. [Asp_Q up <e^{up}>_# [L-D pair ([up <e^{up}>])]]]

b. *Frank took up with Lucy* (in two weeks)

b'. [Asp_Q up <e^{up}>_# [L-D take ([up <e^{up}>])] [P <e^{with}>]]] (Borer 2005b: 203)

In (14) it is the particle *up* which merges with [Asp_Q <e>_#] and assigns range to it. As a result telicity emerges. This analysis is the one applied for obligatorily selected particles and PPs as well.

As for transitive contexts, Borer (2005b: 211) notes that there is speaker variation regarding the acceptability of (13b). However, natives agree that an atelic reading is obtained easier with [V + particle + NP] in contrast to [V + NP + particle] since the latter requires a [+q]NP internal argument. To explain this fact, Borer (2005b) suggests that the particle in the latter case is not range assigner to [_{AspQ} <e>#] but a predicate modifier of Asp_Q (13b). Thus, in the same way as other quantity modifier such as the measure phrase *in X time*, the particle forces the projection of Asp_QP though it does not assign range. This modificational role on behalf of the particle is suspended in V-prt-DP structures (13c) since in this latter case the particle has been previously merged with the verb at the level of the conceptual array (e.g. we have [[V+prt] + DP], which results in the optionality of the projection of Asp_QP (see Borer 2005b: 211) and on the possibility on part of the DP argument to appear as [-q] (13c: i, ii). I will follow Borer and assume that in [V + DP + prt] configurations it is the particle itself which assigns range to Asp_Q.

From the discussion above we can observe that particles and prepositions have a somewhat unclear status with regards to whether they assign range or not. Thus, Borer (2005b) is left with the open issue of when adjuncts (e.g. some PPs) are range assigners (hence no internal arguments should be needed) and when they are predicate modifiers (i.e. they force the projection of Asp_QP but cannot assign range to Asp_Q so we need a [+q]NP internal argument to assign range). The same holds for particles which can sometimes assign range, thus giving rise to telicity, and sometime not. In order to cope with this, ***I will assume, in contrast to Borer, that no distinction should be made between range assigners and predicate modifiers (at least when dealing with P-elements). As a consequence, my assumption will be that separable particles in English (13b) behave in the same way as the Bulgarian prefixes and the English intransitive particles (13a) and, consequently, turn out to be direct range assigners to the open value heading Asp_QP (see § 5.3). As for adjacent particles (13c), I will make no firm stands and leave the topic for further research.***

5.1.4. Some final observations regarding Borer's (2005b) approach

TO RECAP, we have seen that within Borer's system, functional structure is considered to be uniform across languages (i.e. **the functional projections and the open values heading them are universal**). Furthermore, it is on the basis of this structure that Aktiosart values are computed and interpretation is assigned to arguments. Therefore, **within the domain of inner aspect variation can only be explained by the way a given language assigns range to $[Asp_Q <e>#]$** , the open value responsible for quantity interpretation (i.e. telicity), but not to the presence or absence of a given structure or functional node. Thus, Bulgarian (and Slavic) has in its functional lexicon elements which serve as direct range assigners to Asp_Q (e.g. prefixes) in contrast to English which, as a general tendency, does not. Hence, Asp_Q is assigned range in English indirectly, via a specifier-head agreement relation established between a $[+q]DP$ in Spec, Asp_QP and the head of Asp_Q , the former copying its $[+q]$ features on the latter, thus valuing it. I will assume this to be exactly the case.

Following Borer (2005b) **I will also assume that prefixes involve the presence of functional structure, morphological or syntactic, which has verbalizing properties**. To exemplify, the verbs *remit*, *commit*, *submit*, *permit*, *omit*, *emit* are treated as a single listeme which consists of sound and meaning. As for their common subpart 'mit', it adds sound to the listeme but is devoid of any conceptual features, i.e. it is meaningless. Thus, such verbs turn out to be idioms where some grammatical formative, i.e. the prefix (RE-, CON-, SUB-, PER-, O-, E-) is specified to appear with a given phonological index ('mit') and meaning is assigned to the whole constituent.²¹ This is

²¹ Borer observes that in the case morphology is considered an independent operative component which produces hierarchical structure independent from the one put forth by syntax, then the above combinations of [prefix + V] should be idiomatic templates of the form $[\pi_1 + M]$, M= bound f-morph (Borer 2005b: 352):

- (i) $[\pi_{mit} + M^\alpha]$, alpha = prefix
- (ii) $[v \{re-, con-, e-\} \pi_{mit}] = commit, emit, etc.$

Furthermore, phrasal verbs like *depend on* would also be considered complementation idioms within the domain of morphology. Whether syntax is independent from morphology is not a primary concern here so I leave it for further investigation.

exactly the way cranberry roots (i.e. roots which cannot exist on their own but need the presence of a prefix) can be accounted for. However, the list of such roots is rather exhaustive in Bulgarian:

(15) Cranberry roots (see Georgiev 1999) (see Appendix 5.1 for more examples)

- a. $\sqrt{-PRA} \rightarrow$ O-*pra* ‘rest, lean; touch’, DO-*pra* ‘touch; rest, lean’, ZA-*pra* ‘stop, block; arrest’, VŮZ-*pra* ‘hold back, restrain, deter’
- b. $\sqrt{-EMA} \rightarrow$ PO-*ema* ‘take’, NA-*ema* ‘dare; rent’, ZA-*ema* ‘borrow, lend; occupy; engage; hold; take over’, PRI-*ema* ‘accept, take; receive’

As we will see, such an analysis is quite compatible with the way I deal with the Bulgarian lexical (idiosyncratic) prefixes (see § 5.3; also see (41) in chapter 3), the difference being that the base of a lexically prefixed verb can, in principle, exist on its own and has meaning (i.e. conceptual features). ***Following Borer (2005b) I will assume lexical prefixes to be bound f-morphs capable of assigning direct range to Asp₀, thus giving rise to telicity. As for primary perfective verbs, I assume that there is a quantity head feature (e.g. [endpoint]), which has been merged with the base (e.g. V.<endpoint>, which corresponds to Borer's <quant>.V combination) prior to syntax, else, at the conceptual array or in the Lexical Domain à la Borer. However, this feature is not spelled-out on a prefix (as is for lexical prefixes) or on a particle (in the case of the English intransitive particles (13a)), but is in a sense ‘invisible’ due to its highly grammaticalized nature.***

Regarding the outer and the inner prefixes in Bulgarian, I follow Borer and assume that apart from the <quant> feature associated with all prefixes (my feature [endpoint]), there is an additional quantificational value (e.g. cumulative for NA-) such that the combination <quant-cum> always spells out as NA-. This implies that outer (also inner) prefixation represents a regular piece of morphology where the function is regular and always associated with <quant> and range assignment to [_{AS PQ} <e>#] whereas

the form is unpredictable and depends on the choice of the stem. However, in contrast to Borer who assumes the prefix to be a head feature $\langle \text{quant}^\alpha \rangle$ (where α is a specific quantificational value, e.g. the one associated with NA-) that requires V^o to move in order to support it, ***I will treat inner and outer prefixes as bound f-morphs which project independently. We saw that in this way vacuous quantification could be prevented in the abundant cases of multiple prefixation since, under my analysis, the merger of a prefix x- under Asp_xP will be driven on independent grounds, that of assigning range to Asp_x^o whereas assigning range to $[\text{Asp}_Q \langle e \rangle_\#]$ by this prefix will be just a secondary function of the prefix made available by the [endpoint] feature common to all prefixes. Furthermore, I will go against a head-movement analysis for inner and outer prefixes since my assumption will be that the prefix, rather than forcing V^o to incorporate into it, stacks to V^o without movement*** (see § 5.3; see also the discussion in chapter 3, § 3.3.3). As for the combination $\langle \text{quant}^\alpha \rangle.V$, I follow Borer and assume that it is assigned a phonological value on the basis of the paradigmatic entry of the verb in question, by the phonological PF component, though this will not be of primary concern here.

When dealing with English, I assume, together with Borer, that some elements like PPs and particles are capable of assigning range to $[\text{Asp}_Q \langle e \rangle_\#]$. However, Borer's range assigner-predicate modifier distinction within the P-domain complicates the scenario since it leads to the conclusion that sometimes P-elements will assign range and sometimes they will not; sometimes they will give rise to telic structures and sometimes to atelic ones. Hence, I will prefer to treat English particles (at least the separable ones) in the same way as prefixes in Slavic (see § 5.3).

Finally, regarding the accomplishment-achievement distinction, I have already suggested in the previous chapter (§ 4.1.1), in line with Borer, that there is no reason to distinguish between these two aspectual classes. Rather, what finally matters is the presence or not of $\text{Asp}_Q P$. In the presence of this projection, we have telicity; when $\text{Asp}_Q P$ is absent, we have

atelicity. Put differently, atelicity is what emerges in the absence of telicity, a claim which I adopt as well.

However, there are some claims in Borer (2005b) which turn out to be problematic when dealing with Bulgarian (16).

(16) Against the following claims of Borer (2005b)

a. **On the DP internal argument in Slavic:** Since Slavic quantificational prefixes assign range to $[_{AspQ} <e>_{\#}]$, then they obligatorily copy the $[+q]$ value onto the DP in Spec,Asp_QP, thereby blocking mass nouns or bare plurals which are $[-q]$.²² This explains why, according to Borer, any conflict between the quantity properties of the DP and the quantity properties of the prefix within the perfective domain results in ungrammaticality (Borer 2005b: 167). Note though that whereas most of the Slavic languages lack a determiner system and allow for bare NP direct objects in perfective contexts, Bulgarian does have an overt realization of the article. Therefore, if Borer (2005b) is right in claiming that internal arguments agree in features with the prefix, then such arguments cannot appear bare in Bulgarian. However, we have already seen that even in telic (perfective) contexts mass NP internal arguments are fine in Bulgarian (see chapter 4, § 4.3.2, Appendix 4.2).²³

²² What enables such an agreement relation between the prefix and the DP is the fact that for Borer (2005b) prefixes are quantifiers co-indexed with this DP where through a specifier-head agreement relation such a co-indexation per force marks a variable binding relation.

²³ Related to (16a) is Borer's (2005b: 312) claim that quantified DPs in perfective contexts in Slavic receive weak interpretation in contrast to bare NP internal arguments which are interpreted as strong (Piñon 2001, Filip 1999, 2005a). According to Borer (2005b) a strong reading of the bare NP argument involves DP internal range assignment by the same f-morph (or H⁰ feature) to both $[_{DP} <e>_{\#}]$ and $<e>_d$. A weak reading, on the other hand, holds if there are distinct ranges assigners for $[_{DP} <e>_{\#}]$ and $<e>_d$ (i.e. if $<e>_d$ is assigned range external to the DP, e.g. by an existential operator, whereas $[_{DP} <e>_{\#}]$ is assigned range internally (e.g. if it projects). Thus, in (i) we can observe that it is the cardinal 'three' (else, another quantifier such as 'many') which is internal to DP, and not the prefix, which assigns range to $[_{DP} <e>_{\#}]$.

(i) *iz-pi tri/mnogo kafeta*
 iz-drunk three/many coffees
 'S/he drank three/many coffees'

To explain this ***I assume that once range is assigned to Asp_Q by the prefix, the event is immediately marked as telic, irrespective of the nature of the internal argument.*** In other words, not all event participants should agree in features with the prefix.

b. **On the determiner system in Slavic:** Recall that English marks telicity by marking the DP internal argument as quantity, a phenomenon also known as the object-to-event mapping property. We have also mentioned that according to Borer (2005b) Slavic is representative of just the opposite phenomenon, i.e. the event-to-object mapping, since it is the prefix which bears the quantity feature and copies it onto the DP internal argument. The fact that there is no indirect range assignment by a $[+q]DP$ in $Spec,Asp_QP$ to the open value $[_{ASPQ} <e>_{\#}]$ in the absence of prefixation in Slavic leads Borer to conclude that there is a non-symmetrical relation between Asp_Q^o and any DP in its specifier, such that only the latter may be bound by the former but not vice versa (Borer 2005b: 181). Though I do agree with this claim ***I disagree with the explanation it finds under Borer's theory, mainly that it is the structure of the determiner system of Slavic which is responsible for this unidirectional relationship between Asp_Q^o and the DP.*** The main objection which I provide is twofold: (i) biaspectual verbs are sensitive to the nature of their internal arguments, thus exhibiting the object-to-event mapping property (see chapter 4, § 4.3.3), and (ii) the fact that Bulgarian, in contrast to the rest of the Slavic languages, does have a fully developed determiner system in the same way as English. Thus, I tentatively suggest that the availability (e.g. Bulgarian biaspectual verbs) or not (e.g. Bulgarian standard verbs, see chapter 4, § 4.3.2) of the object-to-event mapping property is due not the determiner system of Bulgarian but rather to the (morphological) properties of the base verb (see § 5.3).

However, the prediction for (i) will then be that only a weak reading of the relevant quantifier or cardinal should arise since it is not the case that one and the same element assigns range to both $[_{DP} <e>_{\#}]$ and $<e>_d$ (e.g. we should have something like 'three portions of coffee' but not *'those three portions of coffee' were drunk) (Borer 2005b: 176). Yet, in Bulgarian a sentence like (ii) is perfectly fine:

- (ii) *iz-pi tri-te kafeta*
 iz-drunk three-the coffees
 'S/he drank **the** three coffees' (those three coffees)

Before presenting my syntactic account of prefixation, and since I adopt some of MacDonald's (2008b) claims, I will just briefly mention some of his assumptions regarding inner aspect.

5.2. MacDonald's (2008b) account of inner aspect

Immersed within a minimalist syntactic model, MacDonald (2008a,b) assumes the event structure of a predicate to be represented as interpretable features which express that the event has a beginning and/or an end. If the event has a beginning, the predicate will have an *<ie>* feature (initial event feature). If, on the other hand, the event has an end, then the feature *<fe>* (final event feature) will be present in the structure. The event features *<ie>* and *<fe>* are interpretable and form part of the lexicon of a given language in the same way as other interpretable features do (e.g. ϕ -features). Their interpretable nature additionally makes them visible for further syntactic operations and, as a consequence, allows them to contribute to interpretation.

Starting with this line of reasoning, MacDonald (2008b) proposes that both features enter syntax on heads and project to the XP level, i.e. to the label. If the predicate refers to an event which has a beginning, then the feature *<ie>* will be present in the structure; if, on the other hand, the event is interpreted as having an end, the feature *<fe>* will be present. It is via these event features that the structure of the event is grammaticalized.

Regarding Aktionsart/lexical aspect, MacDonald (2008b) claims that what finally determines the aspectual class of a predicate are the event features themselves. That is, the Aktionsart of a given predicate depends on its feature make-up and the relation established between these features. Following Vendler (1967) he assumes that there are four basic aspectual predicate types: *statives*, *activities*, *accomplishments* and *achievements*. Furthermore, there are two relevant distinctions which should be made: (i) stative *versus* eventive predicates, and (ii) telic *versus* atelic predicates. Under his approach, only the predicates with both event features are telic (i.e. events that have both a beginning and an

end), else, the predicate is atelic.²⁴ Table 3 summarizes the feature specification of each aspectual class.

Predicate type	Feature specification	
Accomplishment	<ie>	<fe>
Achievement	<ie>	<fe>
Activity	<ie>	...
Stative	...	...

Table 3: Aspectual predicate types and event features based on MacDonald (2008b)

What we can observe from Table 3 is that both accomplishments and achievements embed both features, i.e. they describe events with both a beginning and an end; activities, on the other hand, have only a beginning (i.e. the feature <ie>) whereas statives have neither the <ie> nor the <fe> feature (consequently, statives have no event structure).

In order to account for the **ACCOMPLISHMENT-ACHIEVEMENT DISTINCTION** and the fact that they are composed of the same kind of features, MacDonald (2008b) suggests that the difference between these two aspectual classes relates to whether a c-command relation is established between the features <ie> and <fe>. In case such a relation holds, then time is interpreted to elapse between the beginning (e.g. <ie>) and the end (<fe>) of the event, i.e. we have duration, meaning that the predicate is an accomplishment (17a). In case a c-command relation is not established (note that the two features are on the same head so no

²⁴ This way of accounting for inner aspect and event structure follows the general intuition behind Smith's (1991) claim that an event can be abstractly represented as in (i).

(i) The abstract temporal structure of an event

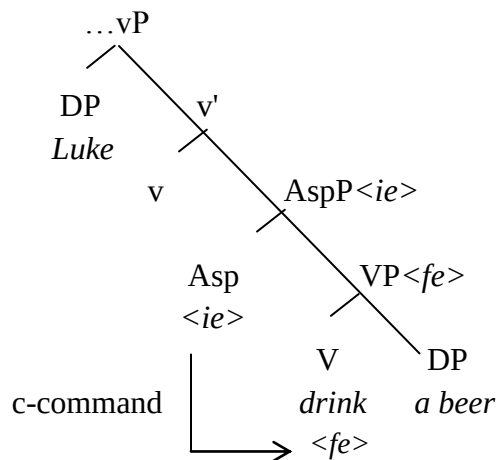
...I...F... (the dots refer to stages)

As for which parts of the event are gramamticalized, several proposals have been made throughout the literature on inner aspect. To exemplify, for Ramchand (2003) the initiation (I in (i)), the process (e.g. the dots between I and F in (i)) or the resultant state sub-events may be grammaticalized whereas Ritter and Rosen (1998) suggest that what can be grammaticalized is the originator (e.g. I in (i)) and the delimiter (e.g. F in (i)) of the event. Similarly, MacDonald (2008b) claims that what is grammaticalized are the beginning and the end of the event (I and F in (i)) in the form of interpretable features (<ie> and <fe>, respectively).

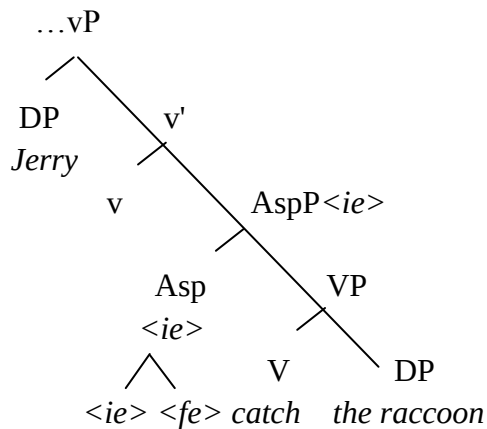
c-command relation holds), then no time elapses between both phases of the event and we have an achievement (17b) (i.e. we have a punctual event where the beginning and the end coincide).

(17) The syntactic representation of the accomplishment-achievement distinction

a. Standard accomplishments: *Luke drank a beer* (MacDonald 2008b: 75)



b. Achievements: *Jerry caught the raccoon* (MacDonald 2008b: 77)²⁵



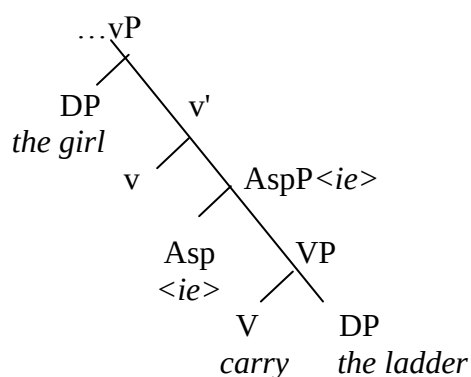
Additional evidence for the existence of the two features is provided by their interaction with event structure modifiers such as *almost* and *it takes x-time*. To exemplify, if there is an initial event feature $<ie>$ on some XP merged in the structure which *almost* c-commands, then this modifier can Agree with the XP that bears $<ie>$ and will consequently

²⁵ MacDonald (2008b) claims that for achievement predicates the event feature configuration on Asp^0 is a result of a lexical process in the lines of Hale and Keyser (1993) lexical derivational approach.

give rise to a counterfactual interpretation implying that the event *almost began*. When *almost* Agrees with an XP marked with <fe>, on the other hand, then we have an incomplete interpretation meaning that the event *almost finished*. Thus, achievements (17b) will give rise to a counterfactual interpretation with *almost* since the feature <ie> projects to Asp (e.g. *He almost caught the raccoon* implies that he did not catch it, i.e. we interpret that he *almost started* the event of catching the raccoon). As for accomplishments (17a), note that both features <ie> and <fe> are present in the structure and project to the XP level meaning that both the beginning and the end of the event can be in principle modified. Thus, accomplishments in English can elicit either an incomplete or a counterfactual interpretation (e.g. *He almost drank a bottle of beer* means that he *almost finished* drinking the totality of the bottle of beer (incomplete reading) or else that he *almost began* drinking it, i.e. he did not start the drinking event (counterfactual interpretation)). In a sense, the final interpretation is a result of the scope of *almost*.

REGARDING ACTIVITIES, the only feature present in the structure is the <ie> (18), so when *almost* modifies such verbs the interpretation we obtain is a counterfactual one (e.g. *He almost carried the ladder* means that he did not carry the ladder, i.e. he *almost started* the event of ladder-carrying).

(18) Transitive activities: *The girl carried the ladder* (MacDonald 2008b: 74)



AS FOR STATIVES, since they lack both features, then they have no event structure and event modifiers like *almost* give no relevant interpretation (e.g. **The pitcher almost contained beer*).

Thus, the two event features <ie> and <fe> are regarded as universal properties of inner aspect within MacDonald's (2008b) system whose configuration determines the aspectual class of a given predicate.

Apart from the features <ie> and <fe>, the nature of the internal argument in English also has an aspectual function, instantiated via the object-to-event mapping property, a phenomenon which we already discussed in chapter 4 (§ 4.3.1). Crucially, for MacDonald this property is dependent on the presence of a specific syntactic space between VP and vP called an "aspectual domain of interpretation" and instantiated by the syntactic projection of AspP. I deal with this issue in the following subsection.

5.2.1. On the aspectual domain of interpretation

The object-to-event mapping property is exemplified in (19).

- (19) a. *John drank a beer *for ten minutes/in ten minutes.* [+q]NP: telic
 a'. *John caught a bear *for ten minutes.*
 b. *John drank beer for ten minutes/*in ten minutes.* [-q]NP: atelic
 b'. *John caught wildlife for an hour*

To account for the data in (19), MacDonald (2008b) suggests that the object-to-event mapping property is syntactically instantiated via an Agree relation with an aspectual projection located between vP and VP, e.g. AspP.²⁶ Crucially, ***this aspectual projection determines a domain of aspectual interpretation, i.e. "a syntactic space in which an element must be merged so that it could be able to contribute to the aspectual interpretation of the predicate"***. Only elements which fall under the scope of Asp, i.e. which are c-commanded by Asp, will be able to contribute to the final interpretation of the event. Since

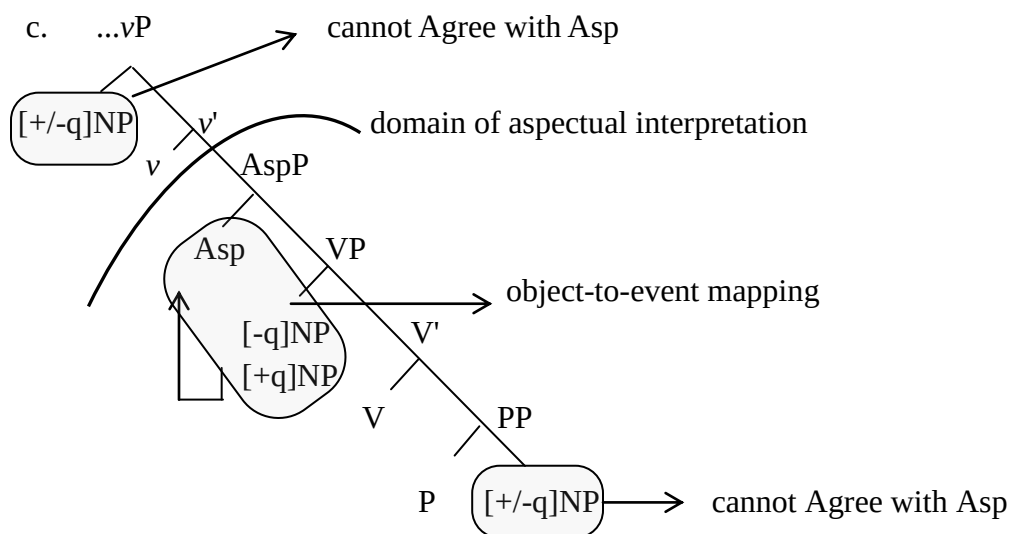
²⁶ Similar accounts of telicity which involve dedicated aspectual structure can be found in the works of Borer (1994, 1998, 2005b), Ritter and Rosen (1998, 2000), Travis (1991, 2000, in prep), among others. Note that for Travis, there is a syntactic position between vP and VP—AspP—which is responsible for the aspectual interpretation of a predicate, which she calls a computational domain of inner aspect.

internal arguments fall under the scope of Asp as they are structurally lower than it (18, 20c), then they will fall within the domain of aspectual interpretation and their feature specification may contribute to inner aspect. This is exemplified in English via the object-to-event mapping property: *if the internal argument is a [-q]NP (19b, b'), then it Agrees with Asp° and the predicate is atelic; if, on the other hand, a [+q]NP Agrees with Asp° (19a, a'), the predicate can be telic*. A syntactic account is provided in (20).

(20) A syntactic account of the object-to-event mapping property

a. [-q]NP → atelic: *John drank wine *in 10 minutes/for 10 minutes*.

b. [+q]NP → telic: *John drank a bottle of wine in 10 minutes/*for 10 minutes*.



From (20c) we can see that if a [-q]NP (e.g. a mass noun) values Asp, the event will be interpreted as atelic (20a). If, on the other hand, a [+q]NP values Asp, the event is telic (20b). This is due to the fact that the NP located in Spec,VP Agrees with Asp and values it (indicated by the arrow in (20c)). That is, **MacDonald (2008b) assumes that the Agree relation with Asp is the syntactic instantiation of the object-to-event mapping**. In other words, the object-to-event mapping is a property associated with the presence of AspP.²⁷ Given the nature of Agree, only the closest NP can Agree with

²⁷ MacDonald (2008b) suggests that there are three properties associated with the presence of AspP:

(i) Agree with Asp is the syntactic instantiation of the object-to-event mapping

Asp, i.e. only the internal argument is capable of valuing Asp. Thus, neither external arguments (21a)²⁸ nor complements of prepositions (21b) can do so (see the derivation in (20c)).

- (21) a. *Wildlife ate a bag of trash* *in ten minutes/*for ten minutes.*
 b. *John carried a bag onto pavement* *in ten minutes/*for ten minutes.*²⁹

Furthermore, MacDonald's claim that ***only elements structurally lower than AspP can contribute to the aspectual interpretation of a predicate*** explains why the English goal prepositions (22b), but not the locative ones (22a), can contribute to telicity.

- (22) a. *John drove the car (at the park) for an hour.* Single event reading → atelic
 b. *John drove the car to the park for an hour.* Iterative reading → telic

The predicate in (22a) is atelic irrespective of the addition of the locative PP *at the park*.

(ii) Bare plurals elicit an aspectually relevant multiple events interpretation by moving to Spec,AspP

(iii) The ability of a goal P to turn an atelic predicate into a telic one

Similarly, Travis (in prep) also assumes the object-to-event mapping property to be manifested via a syntactic relation with Asp. Bearing in mind that an element can contribute to aspect only if it is merged within the computational domain of inner aspect, then a theme can measure out a predicate only if it moves to Spec,AspP or if it enters into an Agree relation with Asp (Travis in prep: 142).

²⁸ This statement is in line with the general assumption that external arguments are outside the domain of aspectual interpretation, i.e. outside the scope of Asp. Related to this claim is Tenny's (1987) assumption that 'delimitedness' (i.e. telicity) is encoded within the VP where external arguments fall outside this domain. Similarly, CAUSE has also been claimed to fall outside this domain (Hay et al. 1999), shown by the causative-inchoative alternations where the inchoative form of some causative-inchoative verbs are aspectually ambiguous between a telic and an atelic interpretation (i). However, the addition of the causer is unable to change this aspectual ambiguity (ii).

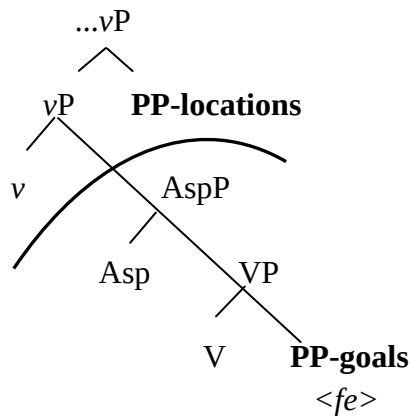
(i) *The soup cooled for an hour/ in an hour*

(ii) *He cooled the soup for an hour/ in an hour*

²⁹ Note that the *for*-adverbial is also grammatical here but on an iterative interpretation, indicating that the predicate is telic (Alsina 1999, Tenny 1987); see fn. 1, chapter 4.

However, if a goal PP is inserted, the predicate becomes telic, shown by the iterative interpretation of the for-adverbial (22b) (see fn. 29). According to MacDonald (2008b), it is a structural difference which is at play here: location PPs are syntactically higher than goal PPs. Thus, he suggests that location PPs are adjoined to vP, i.e. they fall outside the domain of aspectual interpretation, in contrast to goal PPs which are located below AspP and can therefore contribute to inner aspect. Since goal PPs bear an inherent *<fe>* feature, and since this feature falls within the domain of aspectual interpretation, the predicate becomes telic. A syntactic account is provided in (23).

(23) The syntax of PPs (see MacDonald 2008b: 59)

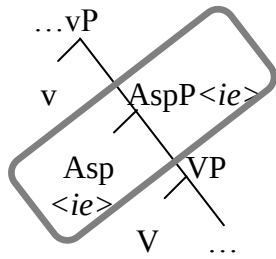


The fact that goal PPs merge within the domain of aspectual interpretation, i.e. below AspP, explains why they (i.e. their inherent *<fe>* feature) interact with the aspectual properties of the predicate. Location PPs, on the other hand, cannot affect the aspectual interpretation of the predicate due to their higher structural merge.

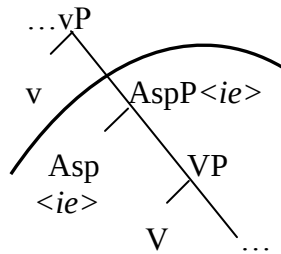
Finally, it should be noted that there are **TWO TYPES OF DOMAINS OF ASPECTUAL INTERPRETATION**, as proposed in MacDonald (2008b): a minimal (24a) and an extended (24b) domain.

(24) Domains of aspectual interpretation (MacDonald 2008b: 80)

a. Minimal domain = AspP alone



b. Extended domain = everything dominated by AspP

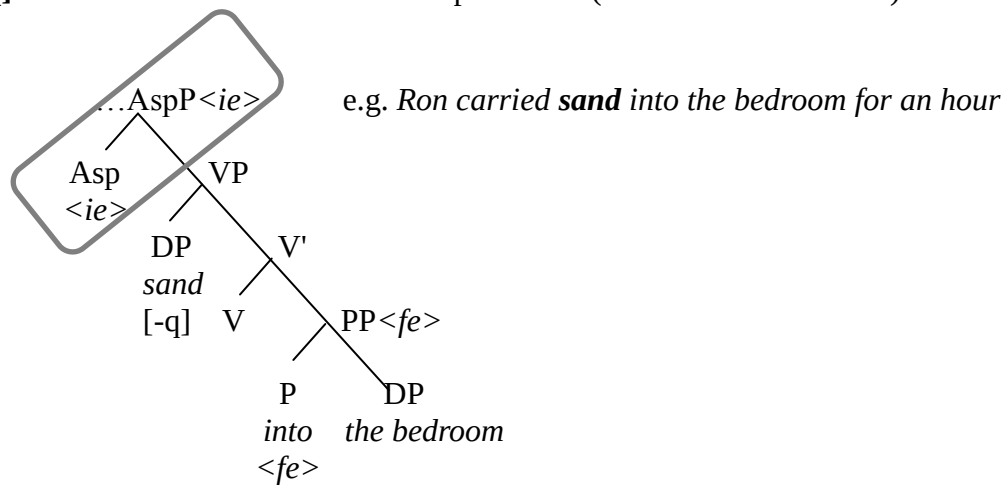


The domain remains minimal (24a), i.e. the interpretation assigned to the event is computed according to the feature specification of AspP alone, in case Asp is valued by a [-q]NP (e.g. *John drank **water** for an hour*), or if there is no NP to value Asp (e.g. *John screamed for an hour*). In the former case, the [-q]NP, which is under the scope of Asp, values Asp, marks it as atelic and the domain ‘closes’. Hence, the interpretation we assign to this event is an atelic one. **In the case when there is no internal argument to value Asp, then Asp receives a default [-q] value**, which ultimately does not affect the domain of aspectual interpretation (MacDonald 2008b: 81). Thus, both cases give an atelic predicate. The domain, on the other hand, extends to everything contained by AspP as in (24b), i.e. all of the features under the scope of Asp contribute sub-event structure, in case what values Asp is a [+q]NP, i.e. when the event can be interpreted as telic.

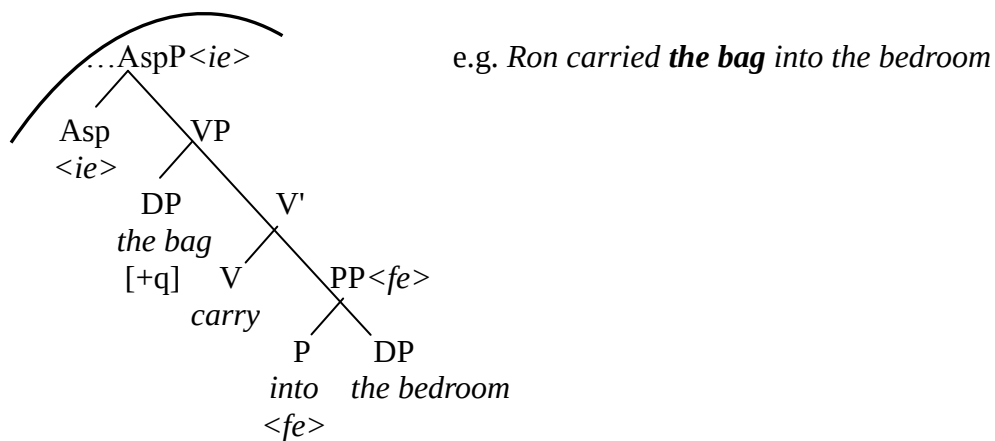
Crucially, the above claims make the prediction that whenever a [-q]NP values Asp in English then the domain will always remain minimal and the predicate atelic. This is, in fact, borne out in English. Thus, even though an <fe> feature may be inserted into the structure, e.g. on a goal P, which always enters syntax with such a feature, the predicate is unable to become telic if the internal argument is a [-q]NP (25a). However, since <fe> is an interpretable

feature merged in syntax, it contributes to semantics as an *event modifier* and is consequently interpreted as a directional P; however, it does not contribute sub-event structure, i.e. it does not imply that the event has an end. The same holds for achievements taking a [-q] internal argument (25c: ii). Thus, in the same way as transitive activities (25a), the event is interpreted as atelic. When the internal argument is a quantity NP (25b, b', c: i), on the other hand, then the domain extends to everything dominated by Asp and all the features under the scope of Asp contribute sub-event structure.

(25) a. [-q]NP → **minimal domain** → **atelic** predicates (MacDonald 2008b: 89).

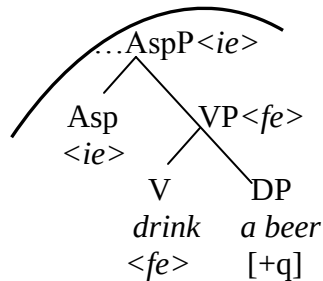


b. PP-accomplishments:³⁰ [+q]NP → **extended domain**; **<fe>** is within the domain so when transfer to CI takes place, the event is interpreted as having an end, i.e. telic (MacDonald 2008b: 89).



³⁰ A PP-accomplishment is a transitive activity verb to which a goal P is added.

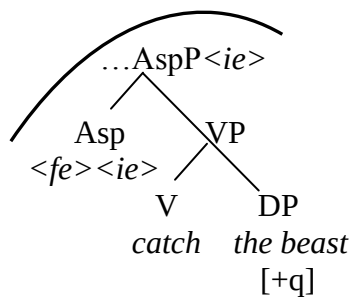
b'. Standard accomplishments: **[+q]NP → extended domain**; $\langle fe \rangle$ is within the domain so when transfer to CI takes place, the event is interpreted as having an end, i.e. telic. (MacDonald 2008b: 75):



e.g. *Luke drank **a beer***

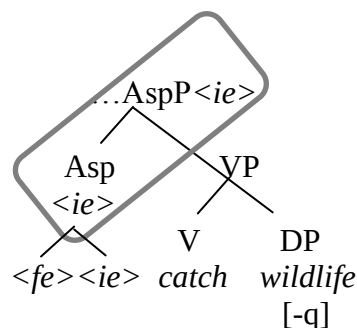
c. Achievements (MacDonald 2008b: 90-91)

(i) **[+q]NP → extended domain** and the $\langle fe \rangle$ feature on Asp will contribute sub-event structure, i.e. the event will be interpreted as having an end, i.e. telic.



e.g. *John caught **the beast***

(ii) **[-q]NP → minimal domain** and the $\langle fe \rangle$ feature on Asp will not contribute sub-event structure, i.e. the event will be interpreted as having only a beginning, i.e. atelic.



e.g. *John caught **wildlife***

From the data in (25) we can conclude that what finally counts for the determination of inner aspect is the nature of the internal argument. **When we have a [-q]NP the domain is minimal and the event is atelic; when the NP is [+q], the domain extends to everything contained by Asp and the event can be telic.**

Crucially, note that the example in (25c: ii) is problematic inasmuch as the domain is minimal but both features $\langle ie \rangle$ and $\langle fe \rangle$ form part of the Asp head (via some lexical process, see fn. 25). Following the assumption that the minimal domain of aspectual interpretation consists of the AspP projection alone, we may wonder why the feature $\langle fe \rangle$ is excluded from the domain of interpretation. To account for this, MacDonald (2008b) assumes that only the $\langle ie \rangle$ feature projects to the XP level but not the $\langle fe \rangle$ feature in the case of achievements. One possibility then is that the minimal domain is restricted to the XP level of Asp, i.e. to the label, which will exclude the feature $\langle fe \rangle$ unless, as MacDonald observes, the label contains all of the information that the head contains. Table 4 summarizes the feature make-up of the predicate types.

Predicate type	Feature configurations	
Telic predicates		
Standard accomplishments	<ie> on Asp,	<fe> on V (25b')
PP-accomplishments	<ie> on Asp,	<fe> on P (25b)
Achievements	<ie> on Asp,	<fe> on Asp (25c)
Atelic predicates		
Activities	<ie> on Asp,	no <fe>
Statives	no <ie> ,	no <fe>

Table 4: Aspectual predicate types and event feature configurations (MacDonald 2008b)

AN OBSERVATION IS IN ORDER HERE. In all of the derivations examined so far we can observe that Asp always merges with the feature $\langle ie \rangle$, implying that this feature will always enter the domain of aspectual interpretation, be it minimal or extended, and, as a consequence, the event will always be interpreted as having a beginning no matter how Asp has been valued. ***I will diverge from such an assumption in my analysis (see §5.3) since it finally turns out that the postulation of the feature $\langle ie \rangle$ does not contribute to event structure, i.e. it is incapable to distinguish between event types, inasmuch as all eventive predicates have it. In a sense, this feature, rather than explanative, turns out to be merely descriptive. Therefore, the postulation of the feature***

<ie> goes against Occam's Razor within the domain of eventives. In this respect, note from table 3 and 4 that all event types have the feature <ie> with the sole exception of statives. ***If we assume, however, that statives have their own aspectual structure which does not involve any of the features <ie> and <fe> but rather some totally different feature (e.g. <state>), we should then get rid of the omnipresent feature <ie> which may be considered a kind of a default option. Thus, I will do away with <ie> (or whatever feature related to the initial phase of the event) and assume that the only distinctive element used for the differentiation of event types is the endpoint feature, i.e. <fe> (else, the quantity feature of Borer 2005b or my [endpoint] feature).*** To a certain extent, such an intuition is already present in MacDonald (2008b) who claims that only the <fe> feature is affected by the domain of aspectual interpretation since the <ie> feature is always within the aspectual domain. Thus, the <fe> feature will only contribute sub-event structure if it falls within the domain of interpretation, i.e. if Asp is valued by a [+q]NP. If <fe> falls outside the aspectual domain, then it will not be able to affect the event structure of the predicate but will be interpreted as a modifier of the event.

An interesting case of investigation is the interaction between the features <fe> and [+q] and the contrast found between a [+q] and a [-q] feature on the internal argument in English. In contrast to a [-q]NP, which always closes the domain of interpretation and gives rise to atelic predicates, a [+q]NP may not always telicize the event. As we saw, this is the case for transitive activities (26a, a') (see also (18, 25a)). Thus, *a goat*, though a [+q]NP, is unable to value Asp in (26a) and the predicate remains atelic. It is only after the insertion of a goal P (26b) that the predicate becomes telic (i.e. we have a PP-accomplishment as in (25b)) since only then the [+q] value of the NP contributes sub-event structure.

(26) Transitive activities and PP-accomplishments

a. John carried a goat for ten minutes/*in ten minutes.	[+q]NP: atelic
a'. John carried livestock for ten minutes/*in ten minutes.	[-q]NP: atelic
b. John carried a goat <u>into the barn</u> *for ten minutes/in ten minutes.	[+q]NP: telic

b'. John carried **livestock** into the barn for ten minutes/*in ten minutes. [-q]NP: atelic

The data in (26) indicate that only in the presence of a goal P (26b, b') does the object-to-event mapping take place. Else, the predicate is atelic regardless of the features of the internal argument.

Some questions arise regarding the treatment of [+q]NPs. For example, what makes the [+q] feature on the internal argument insufficient to mark the event as telic in a transitive activity like (26a) and what makes it sufficient to mark it telic in a standard (25b') or a PP-accomplishment (25b)? The scenario is further complicated once we consider the <fe> feature. The assumption that goal Ps, in the same way as Slavic prefixes, bear such a feature seems unproblematic. In contrast to Slavic prefixed verbs, which give telic events regardless of their internal arguments, PP-accomplishments do not. Rather, PP-accomplishments do show the object-to-event mapping property (26b, b').

We find additional problems concerning intra-linguistic variation with respect to the feature <fe>. Note that we can establish a parallelism between my feature [endpoint], which merges on all prefixes and the final event feature <fe> of MacDonald (2008b), which merges on English goal Ps. Furthermore, in the same way as goal Ps in English, lexical and inner prefixes in Bulgarian fall within the domain of aspectual interpretation since they arguably fall under the scope of Asp (see § 5.3). Hence, they will contribute sub-event structure, giving rise to telic events. Outer prefixes, in the same way as location Ps, attach higher up in the structure, above AspP and are therefore outside the aspectual domain. Consequently, they should not contribute sub-event structure. However, this holds for English but not for Bulgarian where all prefixes, due to their [endpoint] feature, give rise to telic events, no matter their attachment site, as we already observed in chapter 4.

In order to respond to these questions, MacDonald assumes that Russian (also Slavic) lacks the aspectual projection of AspP and hence lacks the domain of aspectual interpretation that

AspP defines in contrast to English which has this projection.³¹ I dedicate the following subsection to his syntactic account of inner aspect in Slavic.

5.2.2. Inner aspect in the absence of AspP: the Slavic system

Recall that the object-to-event mapping property and the aspectual contribution of a goal P are properties related to AspP and therefore depend on the existence of this projection (see fn. 27). As a consequence, English eventive predicates, which show the object-to-event mapping and the rest of the properties associated with AspP, have this projection in their inventory of functional projections in contrast to the English statives which do not (recall that statives lack event structure and the features <ie> and <fe>). As for Slavic, a similar pattern can also be established. To exemplify, we saw that standard verbs in Bulgarian do not show the object-to-event mapping property, nor are prepositions able to give rise to telicity (see chapter 4, § 4.3.2) in contrast to the Bulgarian biaspectual verbs which show these properties (see chapter 4, § 4.3.3). If these properties were indeed dependent on the presence of AspP, then we are led to conclude, together with MacDonald (2008b), that standard verbs in Slavic do not project AspP. The Bulgarian biaspectual verbs, on the other hand, behave like English eventives as far as the two properties are concerned, and should therefore project AspP. This state of affairs makes **MacDonald (2008b) suggest that Slavic eventive standard verbs behave like English statives whereas Slavic eventive biaspectuals behave like English eventives, which is a direct consequence of the absence of AspP in the former and its presence in the latter.**

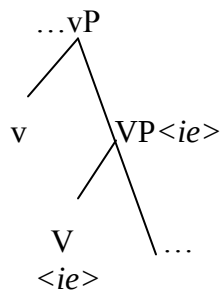
Note, though, that this latter claim is rather striking, bearing in mind that statives lack event structure in contrast to Bulgarian standard eventive verbs which do not (see Appendix 5.2). Furthermore, each language should be capable of marking Aktionsart/lexical aspect

³¹ Note here the difference between MacDonald's account according to which AspP may be absent in a given language (or paradigm) and the one advocated in Travis (in prep) where AspP is universal and present in any predicate (for Travis, AspP can be specified as either +telic (if we have telic events such as accomplishments and achievements), or –telic (in the case of atelic predicates such as activities and statives)).

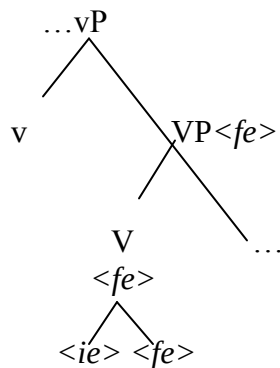
somehow since the event features $\langle ie \rangle$ and $\langle fe \rangle$ are universal properties of inner aspect in the system of MacDonald. In order to explain these *prima facie* contradictions, MacDonald (2008b: 149) observes that if a language (e.g. Russian in his study) lacks AspP, it is not to say that this language lacks inner aspectual properties. This is so because AspP and event features are independent from one another, the former being a variant property of inner aspect (e.g. present in English but not in Slavic) in contrast to the latter which are universal. Hence, even in the absence of AspP these event features should in principle be able to explain the aspectual properties of the language (e.g. Russian). The only consequence of the absence of AspP is that the properties associated with it will not be present (e.g. object-to-event mapping and the telicizing effect of a goal P).

To see how this may be so, consider the following derivations: (27a) refers to MacDonald's representation of Russian primary imperfective verbs; (27b) refers to both primary perfectives and verbs incorporating a lexical prefix (from MacDonald 2008b: 154), whereas (27c) refers to outer prefixes (from MacDonald 2008b: 164).

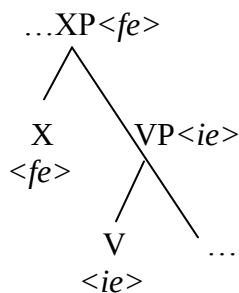
(27) a. Primary imperfective verbs



b. Perfective verbs; lexically prefixed verbs



c. Outer prefixes

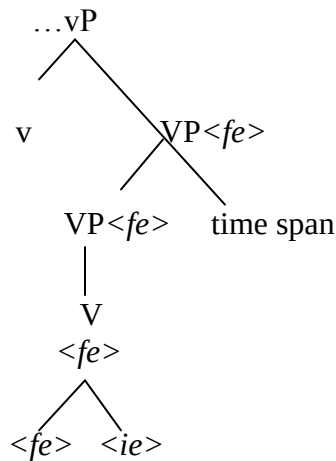


Primary imperfective verbs (27a) have the same aspectual structure as English activities (18) whereas the syntactic structure of primary and lexically prefixed perfectives (27b) corresponds to the one proposed for achievements in English (25c).³² Thus, in the absence of the $\langle fe \rangle$ feature in (27a), the predicates are atelic, whereas in (27b) the $\langle fe \rangle$ projects to the label (e.g. V) so we have telic predicates. As for the super-lexical (i.e. outer) prefixes (27c), they, in the same way as lexical prefixes (27b), introduce an $\langle fe \rangle$ feature. However, this feature is merged higher up in the structure and is hence unable to project to VP. As a consequence, we have an atelic predicate (note that the $\langle ie \rangle$ feature projects to VP).

According to MacDonald (2008b: 163), evidence in support of the syntactic derivations in (27) comes from the fact that the super-lexical prefixes (27c) reject the time-span adverbial and allow the for-adverbial in contrast to lexical prefixes (27b) which allow only the time-span adverbial. Consider the derivations below.

(28) The syntactic position of the *in*- and *for*-adverbials (see MacDonald 2008b: 166-167)

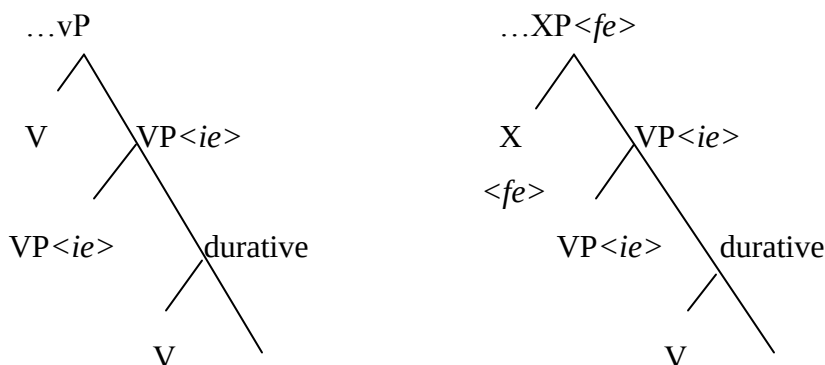
a. The time-span adverbial: with telics; allowed only by perfectives (see (27b))



³² Note here that in Slavic it is the feature $\langle fe \rangle$ which projects to the label in (27b), in contrast to $\langle ie \rangle$ in the case of achievements in English (25c). This explains why *almost* gives an incomplete interpretation with primary perfectives in Bulgarian but a counterfactual one with English achievements (see Appendix 5.2).

b. The durative adverbial: with atelics

- (i) Imperfectives (see (27a)) (ii) Super-lexicals (see (27c))



MacDonald assumes that the time-span and the durative adverbials adjoin to the VP in Russian (hence, Slavic).³³ The difference is that the former selects a VP with a <fe> feature (28a) whereas the latter a VP marked with <ie> (28b). Since only primary perfectives and lexical prefixes project an <fe> to the label of V (27b), only they will allow the time-span adverbial (28a). As for primary imperfectives (28b: i) and super-lexical prefixes (28c: ii), it is the <ie> feature which projects to the VP label so only the *for*-adverbials is allowed. In other words, although super-lexicals incorporate the feature <fe> (corresponding to my feature [endpoint]), they remain atelic since this feature, due to its high attachment site, cannot block the <ie> to project to the label.

Crucially, note that this claim goes against the data in Bulgarian since we saw that all prefixes give rise to telic predicates (see chapter 4, § 4.2). In fact, this apparent contradiction is due to the fact that the examples used in MacDonald (2008b: 163) in order to support the statement that super-lexicals are atelic are two: one containing the durative prefix PO-, whose apparently ‘anti-telic’ behavior we already discussed and explained in the previous chapter (see § 4.2.2; (19c²)), and another one containing the Russian prefix PRO-, known as the ‘perdurative’ prefix (meaning ‘for a long time’), which is absent from

³³ In his treatment of the time-span adverbial and the *for*-adverbial, MacDonald follows Demirdache and Uribe-Etxebarria’s (2004) assumption that temporal modifiers modify the relevant portion of temporal structure by adjoining directly to the corresponding portion of phrase structure.

Bulgarian, but which can be arguably related to PO- 'for a short time'. Hence, my hypothesis that prefixation is a telicizing device in Slavic is confirmed against all apparent counterexamples. If this is the case, then the analysis of super-lexical prefixes put forward in MacDonald (2008b) can no longer be sustained. In the following section I will propose an alternative.

TO RECAP, we have seen that under the system developed in MacDonald (2008b) there are two universal features, *<ie>* and *<fe>*, whose syntactic configuration determines the aspectual class of a given predicate. Furthermore, and related to the codification of inner aspect, is the postulation of an aspectual domain of interpretation, e.g. AspP, which is a syntactic space between vP and VP in which an element must move in order to contribute to the aspectual interpretation of a given predicate. English eventive verbs (and the Bulgarian biaspectual eventive verbs) make use of this domain. This is reflected by the presence of the object-to-event mapping property and the telicizing effect of a goal P with such verbs, both being properties associated with the presence of AspP. However, English stative verbs in the same way as Russian (i.e. Slavic) eventive verbs, do not show these properties, which leads MacDonald to conclude that AspP is absent for them. Yet, Russian eventives, in contrast to English statives, do have event structure. Hence, the features *<ie>* and *<fe>*, being universal, should be present within them even in the absence of AspP. Thus, it is the feature specification of the label of VP in Slavic (27) and of AspP in English (25) which accounts for the aspectual behavior of the eventive verbs in these languages.

Regarding the abovementioned claims, we have seen that statives behave uniformly across languages (chapter 4, § 4.4). Thus, in the spirit of Borer (2005b) I will assume that there is some other type of event structure, probably a kind of static structure which involves another type of feature (e.g. *<state>*), and which is exclusively dedicated to statives. Such a structure should be universal across languages inasmuch as all stative predicates show similar behavior both across paradigms (e.g. Bulgarian standard and biaspectual verbs) and languages (e.g. English and Bulgarian). Hence, the comparison between English statives and Bulgarian standard eventive verbs complicates a simplistic treatment of inner aspect

and is, in my opinion, unnecessary. For ease of exposition I list the claims I adopt from MacDonald (2008b) in (29) and his assumptions which I find problematic in (30).

(29) Assumptions adopted from MacDonald (2008b)

a. ***There is a domain of aspectual interpretation, AspP, where event structure is determined. However, I claim that such a domain is universal across languages and paradigms (30a).***

b. ***The object-to-event mapping and the telicizing effect of goal Ps are properties of the extended domain of inner aspect.*** In order to account for inter- and intra-linguistic variation, I will make use of MacDonald's distinction between minimal and maximal domain but in a very precise sense. Since the domain is arguably universal (30a), ***I will assume that English eventives and Bulgarian eventive biaspectuals will make use of both domains in contrast to Bulgarian standard eventive verbs which calculate aspect on the basis of its minimal domain of interpretation (understood here as 'closed upon first merge of an assigner', i.e. minimally extended). Crucially, under my analysis here, 'minimal' will equal atelic only in English and biaspectual Bulgarian but not in standard Bulgarian. As for statives, they have a completely different structure, making the domain distinction irrelevant.***

(30) Against the following MacDonald's (2008b) claims

a. Claim: <ie> and <fe> are universal features of inner aspect:

► **Objection**: The postulation of the feature <ie> is not illuminating since all eventive predicates have it. Hence, I will do away with a feature related to the beginning of an event. As a consequence, the only feature relevant to inner aspect is the <fe> feature which, when merged within the aspectual domain of interpretation, will add an end to the event and thus telicize it (<fe> will correspond to my feature [endpoint]). This confirms Borer's (2005b) claim that atelicity is what remains in the absence of telicity, i.e. the event is interpreted as having only a beginning (implied by the default <ie> feature), i.e. as being atelic, in case the telicizing feature <fe> is absent from the structure. Put differently,

atelicity is the default option in the same way as imperfective aspect is the default morphological aspect in Slavic.

b. Claim: AspP is a variant property of inner aspect:

► **Objection**: AspP cannot be considered to be structure-specific, or paradigm-specific (e.g. present in Bulgarian biaspectual verbs but not in Bulgarian standard verbs). If AspP determines a syntactic space where inner aspect is computed, it then should be a universal property of the structure since all languages possess their own way of computing Aktionsart. ***Thus, I claim that a computational domain of inner aspect is always present in the structure even in the case of atelic predicates.*** Observe that such a statement goes against Borer (2005b) who postulates a dedicated projection, Asp_QP, only in the case the predicate is telic but no dedicated projection in the case of atelics (but note that for atelic transitives Borer postulates a special projection, F^SP, so that case be assigned to the internal arguments located in its Specifier).

c. Claim: Super-lexical prefixes bear the feature <fe> which is merged above VP; hence, it does not contribute to inner aspect since it cannot prevent the <ie> feature from projecting to the label of VP. As a consequence, the predicate, although (super-lexically) prefixed and morphologically perfective, remains atelic:

► **Objection**: Empirical evidence shows that all prefixes in Bulgarian telicize the verb. This is due to the inherent feature [endpoint] which they bear, and which assigns value to the projection responsible for the aspectual interpretation of the predicates (AspP).

Having described Borer's (2005b) and MacDonald's (2008b) approaches to inner aspect, I now proceed to present my syntactic account of inner aspect across languages (e.g. English and Bulgarian) and paradigms (e.g. Bulgarian standard versus biaspectual verbs).

5.3. A modified syntactic account of inner aspect

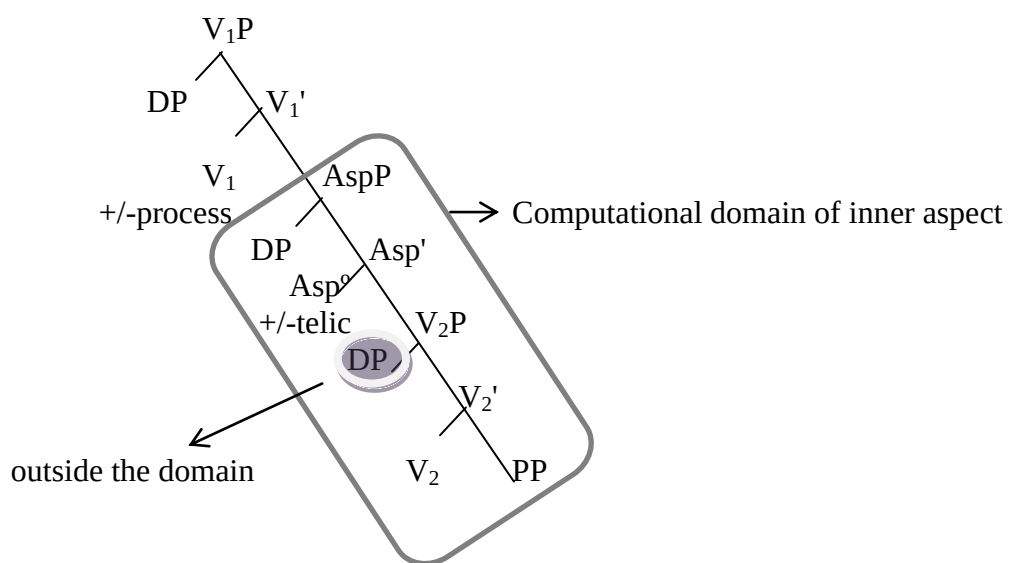
I adopt Krifka's (1992) assumption that, as a general rule, all verbs are inherently atelic, i.e. they do not make reference to the event's endpoint by default. That is why a quantized NP internal argument is needed in order to measure out the event and consequently give rise to culmination (i.e. telicity) in some languages. Other elements which may add an end to the

event and thus contribute sub-event structure are goal prepositions in English (also in biaspectual Bulgarian), perfectivizing prefixes in Slavic, or secondary resultative predicates (see Travis in prep), among others. ***In the absence of such elements, the event remains in its default value—atelic.***

Within an approach such as Borer's (2005b) this state of affairs is explained by the fact that items in the conceptual array have no grammatical properties. That is, ***verbs and nouns are 'unstructured stuff', which, in the absence of syntactic structuring, remain unstructured. Since we need additional structuring to get telicity (e.g. Asp_QP), then in the absence of the relevant quantity structure verbs are interpreted as atelic.***

In other approaches to inner aspect as the one put forward in MacDonald (2008b) and Travis (in prep), the aspectual interpretation of a predicate is defined with respect to a dedicated syntactic position between vP and VP, e.g. AspP, in which elements merge and thus become capable of affecting the final interpretation of the event. These approaches differ from the one advocated in Borer (2005b) inasmuch as the AspP projection is always present in the structure, event in the case of atelic predicates. It is then the properties of the elements that fall under the scope of Asp which finally determine the (a)telicity of the predicate. This explains why internal arguments can change the aspectual properties of the verbs, and why goal prepositions telicize the event, all being dominated by Asp. However, a crucial difference is also found even among such theories. To exemplify, whereas MacDonald (2008b) claims that AspP is a variant property of inner aspect, present in some languages and absent in others, Travis assumes that it is universal. Thus, ***in the absence of the feature definite within the aspectual domain (else, the feature [endpoint], <fe>, or [quantity]), the Asp head is assigned the default [-telic] value; if the feature definite is present, then we have telicity*** (31). ***I will also follow the assumption that AspP is universal.***

(31) The computational domain of inner aspect (Travis in prep)³⁴



Note that Travis' and MacDonald's postulation of a dedicated projection (e.g. AspP) for atelic predicates apparently goes against the general assumption that **atelicity is what remains in the absence of telicity**. In *Borer (2005b)* this intuition is **syntactically explained: in the absence of quantity structure, e.g. Asp_QP , the predicate remains atelic, where the absence of quantity structure is correlated with the absence of range assigners to the open value heading this structure, e.g. $[Asp_QP \langle e \rangle_\#]$** . Interestingly, **if we assume that Asp is also in need of valuation in (31), and if there is no element merged within the domain of inner aspect which is positively specified for the feature definite (for Travis) or $\langle fe \rangle/[+q]$**

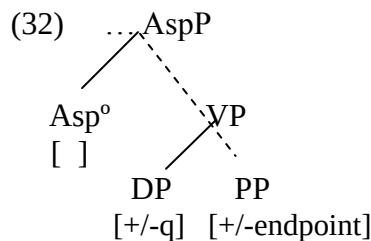
³⁴ Following Vendler (1967), Travis (in prep) assumes the aspectual classes to differ with respect to two features: *definite* (i.e. the telic feature) and *process*:

	-Process	+Process
-Definite	States	Activities
+Definite	Achievements	Accomplishments

The feature *definite* corresponds to my [endpoint] feature (also to MacDonald's (2008b) $\langle fe \rangle$ feature, or to Borer's [quantity] feature) and it is the feature which distinguishes between telic predicates (e.g. accomplishments and achievements) and atelic predicates (e.g. activities and states). Under the system of Travis, the feature *definite* appears on Asp. As for the feature *process*, it distinguishes states and achievements from activities and accomplishments and is a feature derived above AspP, on V₁.

(for MacDonald), then atelicity will arise as the default option. Furthermore, if telic features correspond to quantity range assigners, then both approaches lead to the same conclusion: in the absence of the relevant feature/range assigner, we are left with the default option, i.e. an atelic event. Hence, what distinguishes Borer's approach from those of Travis and MacDonald becomes insignificant bearing in mind that in both types of systems a failure of Asp^o valuation by a telic feature, or a quantity range assigner, is what is responsible for atelicity. That is to say, in the absence of telicity markers (i.e. telicizing features), we have atelicity.

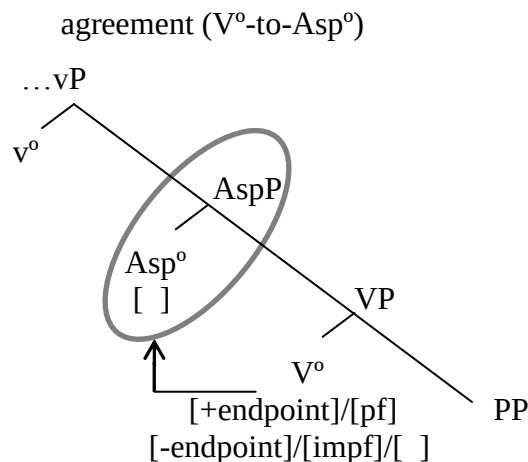
In this respect, we should bear in mind that Borer (2005b) postulates a dedicated projection for atelic transitives, F^sP, which is needed in order to assign partitive case to the internal argument located in its specifier (see (3a)). Thus, we have Asp_QP for all telic predicates (3b) but F^sP for atelic transitives (3a), and no dedicated projection for atelic intransitives in Borer, which finally turns out to be more anti-economic than having just one projection responsible for both telic and atelic structures, e.g. AspP. ***Therefore, in my analysis of inner aspect I opt for the MacDonald-Travis approach by postulating a dedicated projection, AspP, in relation to which the inner aspect of a predicate is computed. However, in line with Travis and contrary to MacDonald I will assume this projection to be universal, which constitutes a more economic, simplistic and minimalist way of explaining the inter- and intra-linguistic variation data. Thus, all eventive predicates, be they telic or atelic, will have AspP.***



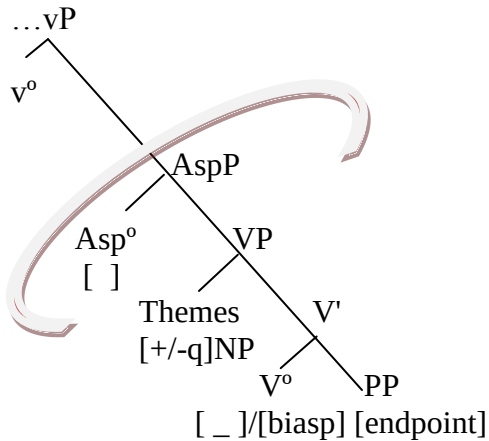
Following Borer (2005b), I will assume that the head of Asp, like the rest of the functional aspectual heads, bears an open value (e.g. []; else, $\langle e \rangle_{ASP}$) in need of range assignment (i.e. valuation). Once value is assigned to Asp^0 (e.g. $[_{AspP} []]$) by an element from the computational domain of inner aspect, via an Agree relation with it, the aspectual class of the verb is determined.

In order to account for the inter- and intra-linguistic variation data I suggest that languages (and paradigms) differ with respect to the way in which Asp^0 is assigned value. As a consequence, the domain of interpretation will significantly differ, too. Thus, I will tentatively suggest that Bulgarian standard eventive verbs calculate inner aspect via direct range assignment by an aspectually relevant head such as V^0 or Asx^0 (33a). English eventives and Bulgarian biaspectual predicates, on the other hand, calculate inner aspect compositionally, interpreted here as indirect range assignment, i.e. with respect to any feature from the aspectual domain of interpretation (33b). I leave statives aside for the time being.

(33) a. **Direct range assignment:** Bulgarian standard eventive verbs: head-to-head



b. Indirect range assignment: Bulgarian biaspectual eventive verbs and English eventives: determined by all the features under the scope of Asp°



IN FIRST PLACE, note a substantial difference between verbs in Bulgarian (33a) and English (also Bulgarian biaspectuals) (33b). Whereas standard verbs in Bulgarian are either [-endpoint] or [+endpoint], which corresponds to [impf] and [pf], verbs in English and biaspectual verbs in Bulgarian are devoid of any such features, i.e. they are underspecified for aspect (e.g. [_]; else, doubly specified by a [BIASP]/[+/-endpoint] feature on V°), which explains their aspectually ambiguous nature. ***I tentatively suggest that this difference at the VP level is due to the lack of morphological sensitivity to inner aspect in English and biaspectual Bulgarian.*** In this respect, recall that verbal bases in the latter are borrowings, i.e. items which do not share properties with the standard verbal bases.

Note here that we can get rid of the [-endpoint] feature on primary imperfective verbs (33a) and still have the same result, i.e. an atelic event, which will be due to the absence of any positively specified [endpoint] feature in the structure. That is, we may choose to ***have no feature on V°, e.g. [], which will be interpreted as the default unmarked option.*** As a consequence, ***the event will receive a default atelic value.***³⁵ I opt for this alternative in my analysis.

³⁵ Alternatively, in order to reflect the morphological relevance of (im)perfectivity in the standard paradigm of Bulgarian, we may also opt for the features [impf]-[pf] instead of the no-feature [] default option for imperfectives and the [endpoint] feature option for perfectives. This choice will additionally reflect the fact

Since primary imperfectives can be further perfectivized and hence telicized by the addition of a prefix, the default unmarked [] value on V° will not be able to block the addition of an [endpoint] feature into the structure on some higher aspectual head (e.g. prefixed perfectives, see (34c) below). Hence, although V° is the one to be first merged, Asp° will not Agree immediately with its [] value (33a), but will go on ‘looking’ for appropriate direct range assigners in its surroundings (i.e. for an [endpoint] feature on some aspectual head). In case no such features are present, ***Asp° will be assigned a default atelic value in relation to the unmarked [] value on V°, i.e. we will have atelicity***. As for eventives in English and the Bulgarian biaspectual paradigm, the V head is underspecified for aspect, e.g. [_], so once Asp° is merged, it remains underspecified, else, doubly specified, i.e. ambiguous with respect to (a)telicity. Hence, in the absence of direct range assigners to Asp°, other aspectually relevant features will be needed (e.g. [+q]/[-q] on NP internal arguments) so that the (a)telic status of Asp° could be finally determined. ***Therefore, a distinction should be made between (i) the unmarked default [] value on primary imperfective verbs in standard Bulgarian which corresponds to the default atelic interpretation (33a); (ii) the open value heading Asp (33) which is in need of range assignment (i.e. valuation) and in relation to which inner aspect is determined, and (iii) the doubly specified or underspecified [_] value of the English and Bulgarian biaspectual verbal bases which can, a priori, receive both telic and atelic interpretations depending on the context.***

I claim that the difference in feature specification at the VP level is what accounts for the inter- and intra-linguistic variation found

that standard verbs in Bulgarian are either perfective or imperfective. However, this will imply that the [impf] feature is merged with V° prior to syntax (e.g. V°.<impf>), arguably in the conceptual (lexical) array (else, at the morphological component or first phase syntax), which goes against the general consensus that imperfectivity (i.e., atelicity) is the default aspectual choice. That is why I choose the default, i.e. unmarked [] alternative.

between standard verbs in Bulgarian versus Bulgarian biaspectual verbs and English eventives. Note that this is further correlated with the presence of direct range assigners to Asp° in the former (e.g. perfective markers) and their absence, as a general rule, in the latter (particles being the exception). Put differently, when direct range assigners are available (e.g. prefixes), then the indirect way of assigning range to Asp° (e.g. Spec-Head Agreement) will be blocked. In the absence of direct range assigners, the language is left with just one option: assigning range compositionally, i.e. indirectly, by checking for other appropriate features in the linguistic environment which may value Asp°.

Bearing these considerations in mind, I tentatively suggest that Asp° is assigned range (else, value) within THE STANDARD PARADIGM OF BULGARIAN ***via head-to-head movement of features (else, feature-copying or feature-sharing), which relates to the presence of direct range assigners to Asp° in this language and to their status as heads.*** In this case, Asp° is valued by establishing an agreement relation with the feature on V° (33a) or some other aspectual head (e.g. AspCUMLTP headed by cumulative prefixes). Once the head-to-head feature sharing is accomplished, Asp° is assigned value, the domain of aspectual interpretation closes, and further features under the scope of Asp° become irrelevant. Put in MacDonald's terms, standard Bulgarian gives the impression of making use of the 'minimal' domain of inner aspect, where 'minimal' here refers to the fact that the domain immediately closes upon the first merger of the relevant direct range assigner to Asp° (e.g. an [endpoint] feature), which blocks any intervening features coming from the internal arguments or goal Ps. However, in contrast to MacDonald's minimal domain, which is always atelic due to the strong atelicizing effect of a [-q]NP argument in English, the minimal domain in Bulgarian can be either telic (upon the merger of [endpoint]) or atelic, in the absence of [endpoint]. This is arguably related to the mode of range assigning in this language instantiated by the head-to-head feature sharing mechanism.

AS FOR ENGLISH AND BULGARIAN BIASPECTUALS (33b), verbs are morphologically underspecified (e.g. [_]) and lack aspectually relevant syntactic features (e.g. [endpoint]). Hence, Asp^0 cannot be valued under V^0 -to- Asp^0 feature sharing. Furthermore, direct range assignment to Asp^0 is also absent so, as a general rule, ***the head-to-head feature mechanism will not work*** (I leave aside the exceptional case of the English particles and the Bulgarian prefixes for biaspectuals here, which merge as heads and can copy their [endpoint] features onto Asp^0 , thus valuing it via the head-to-head mechanism). Hence, these languages will ***opt for an indirect way of assigning range***, and other features within the domain of Asp^0 become crucial for its valuation, such as those of its internal argument (e.g. [+/-q]) or those on a goal P (e.g. [endpoint]) (33b). In other words, these languages will value Asp^0 indirectly. ***Following MacDonald (2008b), I assume that whenever a [-q]NP internal argument Agrees with Asp^0 and values it, the domain remains minimal and we have atelicity. If the internal argument is a [+q]NP, then the domain extends to all the features dominated by Asp^0 . This is the object-to-event mapping property.***

The privilege of this line of analysis is that it accounts for the fact that Bulgarian standard verbs are ‘blind’ to the nature of their internal arguments (i.e. the object-to-event mapping property does not hold for them) and do not care whether a goal P is present in the structure or not, without having to postulate the lack of $AspP$ for them as in MacDonald (2008b). As already explained, this is due to the fact that once all the heads are checked for the appropriate [endpoint] feature to value Asp^0 , the domain closes. If there is no [endpoint] feature on a head within the structure, the result is an atelic predicate since we will minimally have the default unmarked [_] value on V^0 (recall that all verbs in Bulgarian are either imperfective (e.g. [_]) or perfective (e.g. [endpoint])); if, on the other hand, there is some [endpoint] feature on a given aspectual or V head, then Asp^0 is valued, i.e. assigned range, upon agreement with this feature and the domain closes, giving rise to telic predicates. In either case, ***the domain remains 'minimal' in the very precise sense I have already explained: it closes once all head features have been checked*** (alternatively, instead of minimal we can use 'closed').

I start the discussion with my syntactic account of the standard Bulgarian eventive verbs.

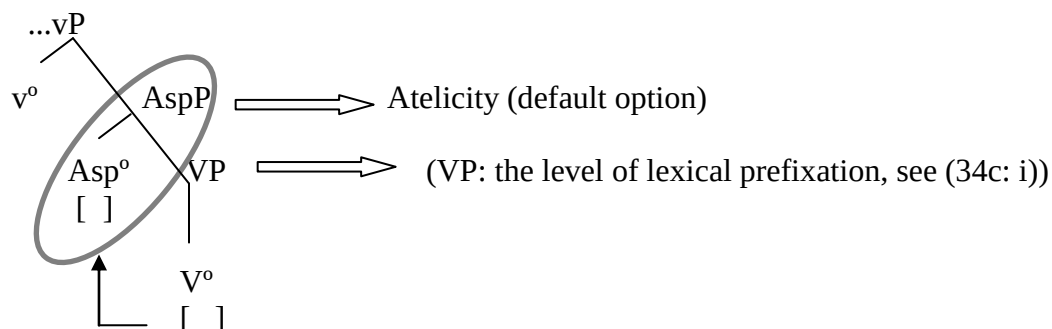
5.3.1. A syntactic account of the standard eventive verbs in Bulgarian

As I have already mentioned, standard verbs in Bulgarian value Asp^0 *directly*, via the head-to-head feature-sharing mechanism. The representations in (34) present the range of syntactic derivations for each type of verbs (excluding statives for the time being).

(34) The Bulgarian standard verbs: direct range assigning

A. PRIMARY IMPERFECTIVES: ATELIC BY DEFAULT VALUATION

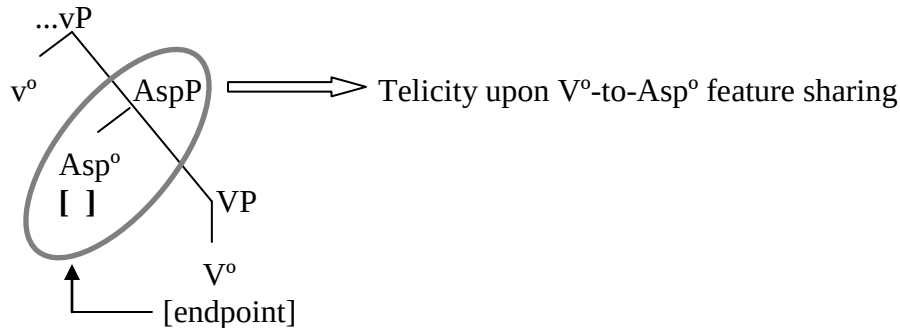
e.g. *peja* ‘sing’; *jam* ‘eat’



‘Ivan almost *started* singing’, i.e. he did not sing at all). This is the default option for all underived (i.e. primary imperfective) standard predicates in Bulgarian.

B. PRIMARY PERFECTIVES: TELIC PREDICATES

e.g. *rodja* ‘give birth’; *dam* ‘give’



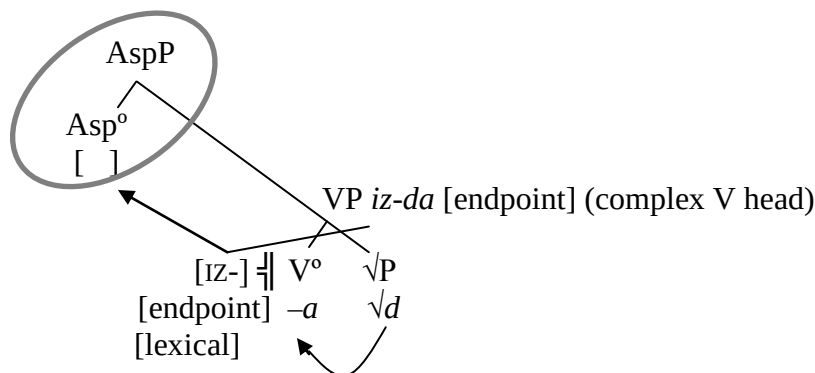
The mechanism here is the same as the one applied for primary imperfectives (34a), the difference being that the lexical verb, V^0 , enters the numeration specified for the feature [endpoint]. In other words, this feature has merged with V^0 prior to syntax (e.g. $V.<endpoint>$) but remains ‘invisible’ to the eye due to its highly grammaticalized nature. Adopting Borer’s terminology, primary perfectives will behave like range-assigning intransitive particles which are treated as “idiomatic expressions in which partial functional structure is associated with a specific listeme” (Borer 2005b: 207) (see (13a, 14)).³⁶ **Thus, I assume that primary perfectivity is an instantiation of a direct range assignment to the open value of Asp via a perfective, i.e. [endpoint] head feature on V^0** (see (7)). Once the open value of Asp^0 is assigned range (i.e. once V^0 has shared its features with Asp^0 , which is the first step in the Asp^0 valuation process), the domain is closed and the event is interpreted as telic. This represent the marked option since no prefix is involved in the derivation of these verbs but we still get telicity.³⁷

³⁶ The difference between Borer’s approach and mine is that for her the intransitive particle or the [endpoint] feature on V^0 will require the projection of Asp_P , thus giving rise to telicity, whereas for me their function will be to value Asp via head-to-head (particle-to- Asp^0 ; V^0 -to- Asp^0) feature sharing. The same treatment may be claimed to hold for idioms, ditransitive verbs, and achievements in English.

³⁷ Recall that the list of primary perfectives is limited (approximately 50, see Pashov 1999, or Appendix 3.1) so their telicizing function does not contradicts the general telicizing device in Slavic which is prefixation

C. PREFIXED PERFECTIVES: TELICITY DUE TO THE [ENDPOINT] FEATURE OF THE PREFIX

(i) Lexical (idiosyncratic) prefixes: *dam* ‘give’ → *iz-dam* ‘publish’



Note that a root $\sqrt{d}$ (‘give’) is selected from the numeration. Once the thematic vowel *-a* is merged, the root verbalizes due to the verbalizing nature of the vowel. Then, the lexical prefix *iz-*, which merges with its inherent [endpoint] feature, is left-adjoined to the V head, copying its feature onto it (see chapter 3, § 3.3.3.1, (41)). Hence, the feature [endpoint] percolates to V° (else, is inherited by V°), and Asp° is valued as telic immediately upon first intent (e.g. the first step needed for the valuation of Asp° is an Agree relation with V°). Once valued, the domain is closed. Thus, we get a telic event. An alternative would be to claim that the mere presence of an [endpoint] feature in the scope of $AspP$ is sufficient to value Asp° . However, I claim that it is the complex V head which incorporates the prefix and its [endpoint] feature, and not the prefix on its own, which values Asp° . This is due to the fact that the prefix here is not an independent syntactic element like a goal P in English and is unable therefore to relate independently to the Asp head. Therefore, the prefix first relates directly to the verb head alone, discharging its lexical role (e.g. assigning an idiosyncratic meaning to V°) and forming a complex verbal head. Since its [endpoint] feature is interpretable, it cannot be ignored and is copied onto the newly formed complex V head [prefix + V°]. As a consequence, it is via this prefixed V head that the feature [endpoint] values Asp° , giving rise to telicity. **Following Borer (2005b) I will assume lexical prefixes to be quantity head features which assign**

(e.g. $V.[]/[impf] + prefix.[endpoint]/[pf] = telicity$). The same holds for the existence of irregular verbs in English which does not pose doubts on the fact that the general pattern for past tense formation is the addition of the suffix *-ed*.

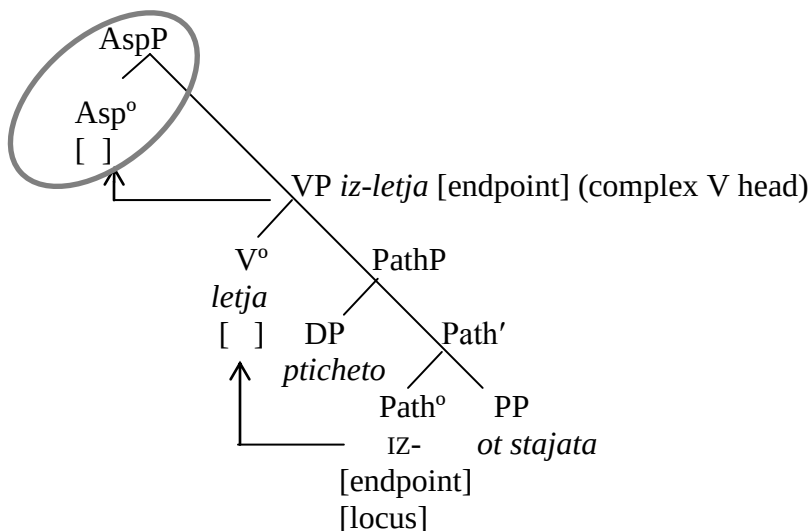
range to Asp by virtue of their incorporation into V°. However, in contrast to other head features in the system of Borer, lexical prefixes do not force head movement of V° to the prefix since for me the lexical prefixes adjoin to V° via lexical stacking, i.e. via left adjunction in situ (see chapter 3, § 3.3.3.1, (41) and subsequent discussion). *As for the second inherent feature on these prefixes, e.g. [lexical], it accounts for their lexical-derivational role.*

(ii) INNER PREFIXES

1. SPATIAL PREFIXES: PATH HEADS

pticheto iz-letja ot stajata

the bird out-flew out of the room ‘The bird flew out of the room’



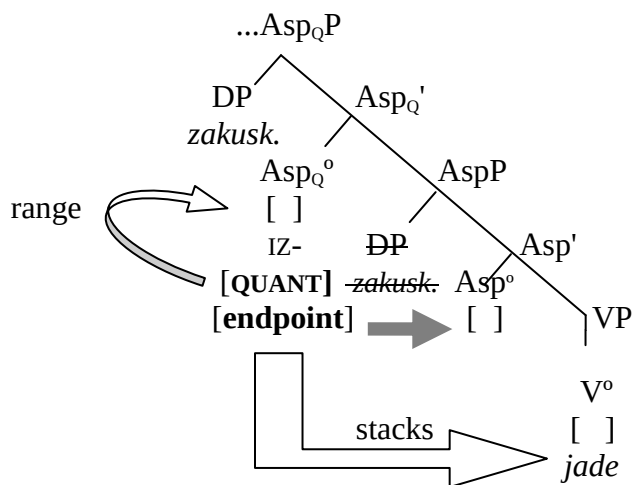
From the derivation above we can observe that the prefix *iz-* merges as a head of its own projection, PathP (see chapter 3, § 3.3.3.2, (52b)), bearing again its inherent feature [endpoint], together with its inherent locative feature [locus]. Once the V° merges, the prefix incorporates into it by head movement. Observe that the verb *letja* ‘fly’ is primary imperfective and merges with its default unmarked [] value (else, with its inherent feature [impf]). However, once the prefix copies its [endpoint] feature onto V°, the verb becomes perfective and telic. Again, we obtain a complex verbal (perfective) telic head (e.g. prefix.[endpoint] + V°.[]) which immediately values Asp° by assigning range to its open

value, the domain closes and the event is interpreted as telic. As for why in this case we have the prefix head-moving to V° instead of stacking, see chapter 3, section 3.3.3.2.

2. INNER QUANTIFICATIONAL PREFIXES

IZ-jade zakuska-ta

IZ-ate breakfast-the ‘S/he ate the breakfast’



Recall that the quantificational inner prefixes, in the same way as the outer prefixes, project as heads of their own functional projections according to the universally available hierarchy of functional features of Cinque (1999) (see Appendix 1.1). I have claimed that this is made possible by virtue of the additional inherent aspectual/Aktionsart feature on these prefixes. In my treatment of inner and outer prefixes I follow Borer and assume that apart from the [endpoint] feature associated with all prefixes, there is an additional quantificational value (e.g. quantity for *IZ-*) such that the combination <endpoint-quantity> would spell out as *IZ-*. Hence, the purely perfectivizing prefix *IZ-* merges with its two inherent features: [endpoint] and [quantity] and heads its own *Asp_QP* by virtue of its second quantificational feature.³⁸ ***As a consequence, this prefix has two aspectual functions: (i) assign range to the open value heading *Asp_QP* via direct merge in its head position, and (ii) assign value to *Asp°* via the head-to-head feature copying mechanism (*Asp_Q°-to-Asp°*), thus telicizing***

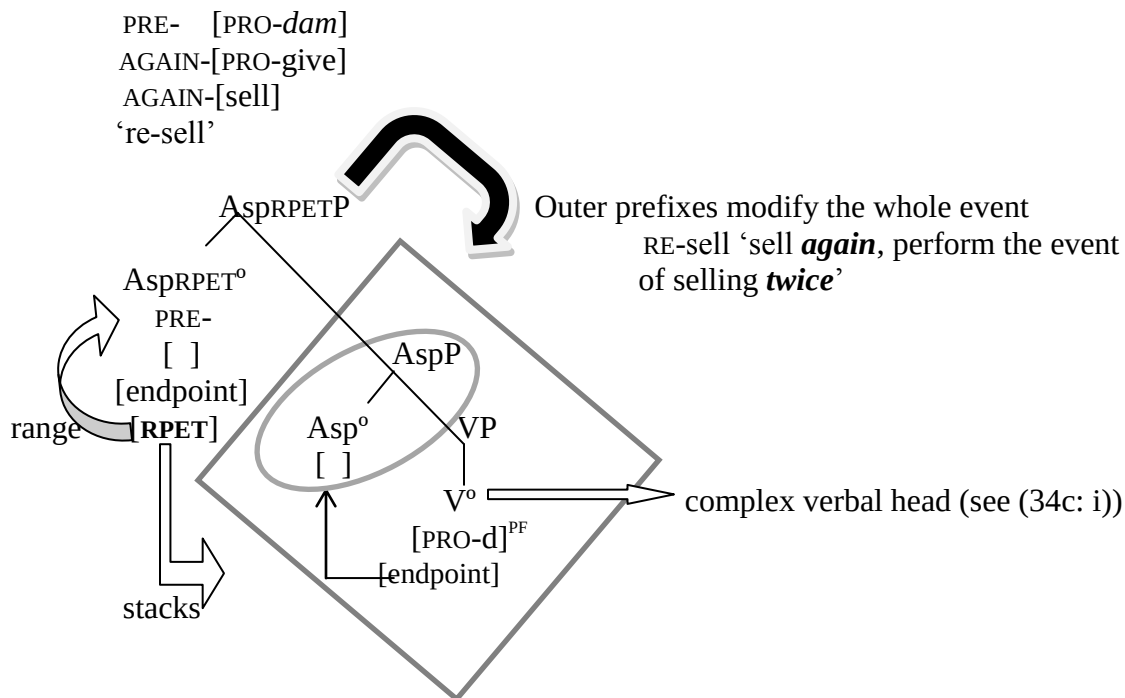
³⁸ *Asp_QP* is the projection headed by pure perfectivizers in my analysis. It should not be confused with Borer's *Asp_P* whose head may be valued by any prefix, or by particles in English. For me, the open value heading this projection may only be assigned range via a pure perfectivizer.

the whole event. However, the primary function of this prefix is to assign range to the open value heading its own functional projection, Asp_QP . This is accomplished upon direct merger of IZ- under Asp_Q° . Recall that it is due to this that vacuous quantification in the case of multiple prefixation is prevented. In this respect, recall that I have treated the valuation of Asp° as a secondary phenomenon, which is accomplished by virtue of the feature [endpoint] which the prefix bears, and which takes place only in case Asp° has not been previously valued as telic (e.g. by an [endpoint] feature on V°). To exemplify, when Asp° is merged in the structure and starts checking for direct range assigners in the environment of (34c: ii—2) above, the first possible candidate to be found is the [endpoint] feature on Asp_Q° (note that V° is marked as []). Consequently, the head-to-head feature sharing begins and Asp° is valued. Crucially, **one may object that the [endpoint] feature in the derivation above is not within the domain of aspectual interpretation, i.e. not within the scope of Asp° , so it should not be, in principle, able to value Asp° and consequently telicize the structure.** Regarding this issue I have already mentioned in chapter 2 that apart from Chomsky's (2001) Probe-Goal approach to feature agreement in which the features of the Probe (Asp°) are checked and hence valued against the features of the Goal (Asp_Q° , i.e. the prefix) which the Probe c-commands, one can also adopt a feature-sharing mode of valuation in which the features of the Goal (e.g. [endpoint]) are transferred to the Probe with the final result being the sharing of this feature by both the Probe and the Goal, which results in valuation. In such cases, the Probe may not obligatorily c-command the Goal (note that this is how CP transfers its features to TP, see Chomsky 2007, 2008). It is precisely this latter feature-transferring mode of valuation, which accounts for Asp° valuation in the case of the higher prefixes merged above the Probe Asp° .³⁹

³⁹ Alternatively, we can argue that once a prefix is merged into the structure, irrespective of its attachment site, it transfers its feature [endpoint] (else, [pf]) to V° since this feature is morphologically active (hence, V° -oriented since only verbs can be perfective or imperfective), thus perfectivizing the verb, and it is then the feature [endpoint] on the now perfective/telic V° that later enters into Agreement with Asp° , establishing the desired Probe-Goal relation within the c-command domain of Asp° . In such a case, Asp° will always be assigned range in Bulgarian via the V° -to- Asp° feature-sharing mechanism, else, via V° -to- Asp° valuation. Furthermore, this will also reflect the morphological relevance of the base (perfective or imperfective) to inner aspect (i.e. Asp° valuation). Whether we choose this option or not does not change our major claims.

Apart from valuing Asp° , the [endpoint] feature on Asp_Q° further enters into an Agree relation with V° , thus making it telic. In other words, we have feature sharing among all aspectually relevant heads in the domain (e.g. V° , Asp_Q° , Asp°).⁴⁰ Finally, the DP internal argument *zakuskata* ‘the breakfast’ first merges in Spec,AspP and later lands into Spec, Asp_QP in order to be quantificationally bound by the prefix. This explains why the primary imperfective version of the above derivation *jam zakuskata* ‘eat the breakfast’ (IMPF and atelic) denotes the process of breakfast-eating whereas its prefixed version *iz-jam zakuskata* ‘eat up the breakfast’ (PF and telic) denotes that the whole breakfast has been consumed (arguably, by establishing an Operator-variable relation between the prefix *iz-* and the DP in its specifier).

(iii) Outer prefixes



⁴⁰ An alternative would be to claim that the purely perfectivizing prefixes merge as heads of AspP itself and upon merger immediately value this head by virtue of their feature [endpoint], thus closing the domain of aspectual interpretation. However, this can only be possible in case pure perfectivizers were devoid of any additional quantificational feature such as [quantity], which is not the case in Bulgarian. Regarding this issue, Babko-Malaya (1999) considers these prefixes to be semantically empty and their function to be that of yielding an imperfective verb perfective and indicating that the process denoted by the verb is completed (cf. Filip 1999). If this were indeed the case, then the purely perfectivizing prefixes could head AspP.

From the derivation above we can observe that there are two [endpoint] features capable of assigning range to Asp^0 , one merged higher up (e.g. on the outer prefix PRE-) and another one merged under its scope (e.g. on the lexical prefix PRO-). I assume that what values Asp^0 in this case is not the outer prefix, but the lexical prefix PRO- , which has been previously left-adjoined to V^0 (see (34c: i)) (recall that the square brackets indicate the existence of a lexical prefix). On left-adjoining to V^0 , this prefix copies its inherent [endpoint] feature onto V^0 and forms a complex verbal head $[\text{PRO}+\text{V}^0]$ specified as [endpoint]. When Asp^0 merges in the structure, it starts checking for a possible direct range assigner to its open value [], and the first candidate it finds is precisely this complex head and its feature [endpoint]. Consequently, a V^0 -to- Asp^0 feature sharing takes place, Asp^0 is valued, and the domain closes, giving rise to a telic predicate. The derivation then proceeds by the merger of the outer prefix PRE- , which, by virtue of its inherent feature $[\text{RPET}]$, merges as a head of its own functional projection, AspRPETP , in order to assign range to the open value heading this projection. However, its second inherent feature [endpoint] does not play a role, since Asp^0 has already been valued by PRO- . It merely agrees in features with the rest of the heads (e.g. V^0 , Asp^0). Again, this does not present any double marking problem, i.e. no vacuous quantification takes place, since Asp^0 has been valued upon agreement with the complex verbal head and the primary function of the outer prefix is that of assigning range to the open value heading its own projection, AspRPETP .

Note that the outer prefix PRE- , in the same way as the rest of the prefixes (excluding the spatial ones (34c: ii—1)), stacks to the structure below it: $[\text{PRE-} [\text{PRO-} \textit{dam}]]$ ‘re-sell’, i.e. it does not incorporate into V^0 . Since the domain has already been closed, and since the repetitive prefix is structurally higher than AspP , i.e. it c-commands AspP and everything dominated by it, then this prefix takes the whole event (a telic one) under its scope. This further explains why outer prefixes are event modifiers and operate once the whole event is constructed. Thus, $\text{PRE-}[\text{PRO-} \textit{dam}]$ means ‘resell’, i.e. perform the event of selling in a repetitive manner (e.g. *again, twice*, etc.).

Regarding outer prefixation one may wonder whether there are cases where the inherent [endpoint] feature of the outer prefix is able to value Asp^0 . In fact, the high degree prefixes,

when attached to a primary imperfective verb, represent a case like this.

(35) Outer prefixes as direct range assigners to Asp^o

- a. *jadoh *za dve minuti/dve minuti* (unprefixed: atelic)
 ate *in two minutes/two minutes
 ‘I ate *in two minutes/for two minutes’
- b. *PRE-jadoh za dve minuti/*dve minuti* (outer prefixes: telic)
 EXCESSIVELY-ate in two minutes/*two minutes
 ‘I had a lot of/enough eating in two minutes/*for two minutes’

The fact that the outer degree prefix *PRE-* (meaning *excessively*) can contribute to inner aspect by valuing Asp^o is explained as follows: when Asp^o merges in the structure, it looks for possible direct range assigners under its scope, but there are none. Note that we have a primary imperfective verb, *jam* ‘eat’, which bears a default unmarked value []. Since this value on V^o does not block other higher aspectual [endpoint] features to value Asp^o, then Asp^o starts looking for direct range assigners higher up in the structure, where it finds a possible candidate, the [endpoint] feature on the excessive prefix *PRE-*. Again, a head-to-head feature sharing takes place (e.g. Asp^{EXCESS}^o-to-Asp^o), the [endpoint] feature on the outer prefix is transferred to Asp^o, Asp^o gets valued and the domain closes and is interpreted as telic. Hence, although the [endpoint] feature on outer prefixes merges above AspP, in the absence of lower [endpoint] features on some structurally lower direct range assigner, it is the one which finally values Asp^o, thus telicizing the event. Alternatively, the [endpoint] feature on the prefix is first transmitted to V^o, the base becomes perfective and telic, and then it is V^o and the feature it has inherited from the prefix which enters into an Agree relation with Asp^o and assigns range to it under a Probe-Goal relation (see fn. 39).

TO RECAP, we have seen that standard verbs in Bulgarian make use of the head-to-Asp^o valuation mechanism. The first possible direct range assigning candidate to the open value of Asp^o is the verbal head which falls under the scope of Asp^o. Thus, the first possible mechanism applied for determining the inner aspect of a predicate is **V^o-to-Asp^o feature sharing**. This is exemplified by the primary imperfective verbs (34a), the primary

perfective verbs (34b); the lexically prefixed verbs (34c: i) and the spatial prefixes (34c: ii—1). In the case of primary perfectives, we have seen that the verb enters the numeration with its unmarked [] value. Thus, when Asp^o is merged, it first checks this head; since the value [] does not block higher [endpoint] features from valuing Asp^o, then Asp^o starts looking for possible direct range assigner higher up in the structure. However, in the absence of such assigners, Asp^o receives its default value from the [] value on V^o and we obtain an atelic predicate. If V^o is lexically prefixed (34c: i), then, by virtue of having previously inherited the [endpoint] feature of the lexical prefix, Asp^o enters into an Agree relation with the newly formed complex head ([lexical prefix + V^o]) and is valued. As a consequence, the domain closes, giving rise to telicity. The same holds for spatial prefixes (34c: ii—1). As for primary perfective verbs, recall that they enter the numeration already specified for the feature [endpoint] (34b). Once Asp^o enters narrow syntax, it is valued by establishing an Agree relation with the [endpoint] feature on V^o, again giving rise to telicity.

We have also noted that there are cases when Asp^o Agrees with heads other than V^o, i.e. the mechanism applied for Asp^o valuation is *Aspx^o-to-Asp^o feature sharing*. This is exemplified by inner and outer prefixes which derive as heads of their own functional projections. By virtue of their inherent feature [endpoint], these prefixes become possible candidates for direct range assignment to the open value heading Asp^o. Thus, if there is no [endpoint] feature present on V^o or some lower aspectual head under the scope of Asp^o (see (34c: ii—2), (35)), then Asp^o is finally valued by the [endpoint] feature of these prefixes.

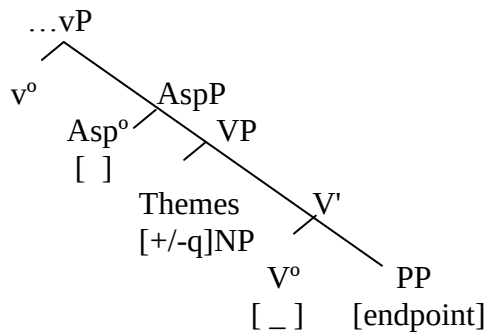
Let us now turn to the way in which inner aspect is determined for the eventive verbs in English and biaspectual Bulgarian.

5.3.2. A syntactic account of the English eventive verbs and the Bulgarian biaspectual eventive verbs

Recall that the eventive verbs in English and the eventive verbs from the Bulgarian biaspectual paradigm are morphologically underspecified, which implies that the V^o-to-Asp^o valuation mechanism will be blocked for them since V^o cannot be assigned a default [

] value (else, cannot be marked as [impf]) nor bear the feature [endpoint] (I leave idioms aside). As for the Asp^{X^0} -to- Asp^0 feature sharing, we will see that it can be applied only under prefixation (for Bulgarian biaspectuals) or in the presence of particles (for English). However, in the absence of prefixation and particles, the general rule will be to value Asp^0 *indirectly*, by looking at the feature specification of both internal arguments and goal Ps within the domain of Asp (36).

(36) The English eventives and the Bulgarian biaspectuals

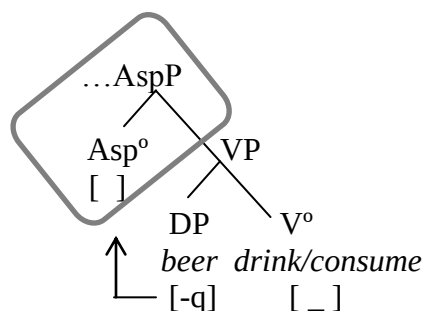


I propose that it is the aspectually ‘ambiguous’ nature of the verbs themselves in both languages, together with the lack of direct range assigners to Asp^0 , which makes them compute inner aspect compositionally, i.e. according to the surrounding linguistic environment. Following MacDonald (2008b) I assume that whenever a [-q]NP enters the derivation, the domain remains minimal and the event is interpreted as atelic (37a). If, on the other hand, the internal argument is an [+q]NP, then the aspectual domain extends to everything dominated by AspP. It is precisely in this latter case when goal PPs enter the calculation of inner aspect (37b).

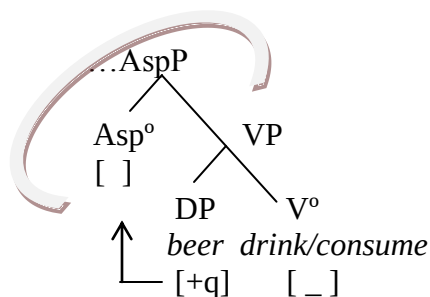
(37) Domains of aspectual interpretation: English and Bulgarian biaspectuals

a. Minimal domain of interpretation: [-q]NP → atelicity

- (i) Ron drank **beer** for an hour/*in an hour. English
- (ii) Ron konsumira **bira** edin chas/*za edin chas. Biaspectual Bulgarian⁴¹
- Ron consumed beer one hour/*in one hour
- ‘Ron consumed beer for an hour/*in an hour.’



b. Extended domain of interpretation: [+q]NP → telicity becomes available



We have already observed that there is a **difference between the [-q] feature on the internal argument and the [+q] feature on it**. This has to do with the aspectually deterministic nature of the former in contrast to the latter. Thus, in a similar way as the [endpoint] feature on Slavic prefixes which obligatorily values Asp° as telic, the [-q] feature on an NP internal argument in English and the Bulgarian biaspectual paradigm closes the domain of interpretation upon merger by immediately valuing Asp° as atelic. The difference between the [endpoint] feature on prefixes and the [-q] feature on the NP here relates not only to the telicizing function of the former and the atelicizing function of the latter, but also to their range-assigning status: prefixes are direct range assigners to Asp° in

⁴¹ See Appendix 4.3 for more examples.

contrast to internal arguments which value Asp^o indirectly, by entering into a Spec-Head agreement with Asp^o (see (37a)). However, this feature is deterministic enough to value Asp^o as atelic in the same way as the merger of [endpoint] always gives rise to telicity. Hence, it is by virtue of these features (e.g. the [endpoint] feature on Slavic prefixes and the [-q] feature on NPs in English and biaspectual Bulgarian) that the minimal domain of inner aspect becomes operative. This explains why in the presence of the [-q] feature we always have atelic events even with achievements (38b).

(38) The [-q] feature on NP internal arguments:

- a. Standard accomplishments: see (37a)
- b. Achievements ((i) and (ii) taken from MacDonald 2008b: 7)
 - (i) *John caught **wildlife** *in five minutes/for five minutes* English
 - (ii) *John had **meat** *in five minutes/for five minutes*
 - (iii) *toj diagnostira **bolest** dva chasa (veche)/*za dve minuti* Bulgarian
 he diagnosed illness two hours (now)/*in two minutes
 ‘He diagnosed/made a diagnostics of illness for two hours (now)/*in two minutes’

AS FOR THE [+Q] FEATURE ON AN INTERNAL ARGUMENT, I suggest that it behaves like the unmarked [] value on primary imperfective verbs in Bulgarian (else, like their [impf] feature) inasmuch as it cannot value Asp^o immediately.

(39) The [+q] feature on NP internal arguments: standard accomplishments

a. English

- (i) *Ron ate **a pizza** in an hour/(?)for an hour* [+q]: telic/?atelic⁴²
- (ii) *Ron read **the newspaper** in an hour/ for an hour* [+q]: telic/atelic

b. Biaspectual Bulgarian

- toj konsumira **bira-ta** dve minuti/za dve minuti.* [+q]: telic/atelic
 he consumed beer-the two minutes/in two minutes
 ‘He consumed the beer for two minutes/in two minutes.’

⁴² There are speakers of English who accept the *for*-adverbial in the presence of a [+q] internal argument.

First note that [+q] internal arguments give ambiguous results: the predicate can be both telic or atelic. According to MacDonald (2008b), when the internal argument is a [+q]NP, the domain extends to everything dominated by Asp^o (see (37b)). Since there is no direct range assigner to Asp^o (e.g. particle or prefix), or other [endpoint] feature (e.g. a goal P) within the domain then what will finally measure out the event is the [+q] feature on the NP internal argument. However, I assume that in contrast to a [-q] NP feature, a [+q] feature is not sufficient to determine the inner aspect of a predicate. Since the verb itself is also aspectually ambiguous, i.e. underspecified (e.g. [_]), the event remains ambiguous with respect to telicity. In cases like this I assume that Asp^o, being valued by the aspectually **ambiguous [+q] feature**, can be interpreted as both telic and atelic, i.e. **it remains, in a sense, underspecified, else, doubly specified for (a)telicity in the same way as its base verb.**⁴³ Thus, it is the context (and sometimes our world knowledge) which will finally determine which value on Asp^o will be chosen.⁴⁴

⁴³ Alternatively, verbs in both languages may enter as [+/-endpoint] at the same time. When the NP internal argument is marked as [-q], then the [-] value on V^o is selected, it values Asp^o and the predicate is marked as atelic. When a [+q] feature on the NP is present, then, due to its aspectually ‘weak’ character, it cannot prevent the [-] value on V^o to assign range to Asp^o. As a consequence, both values on V^o can, in principle, enter into Agree relation with Asp^o, the final result being an aspectually ambiguous predicate, i.e. telic and atelic at the same time. Thus, if the positively specified verbal feature [+endpoint] on V^o values Asp^o, we have a telic event; if, on the other hand, it is the feature [-endpoint] on V^o which Agrees with Asp^o, the event is interpreted as atelic. This is another way in which the aspectual ambiguity with Bulgarian biaspectuals could be explained, together with the ambiguity which arises when the internal argument in English bears the [+q] feature.

⁴⁴ Note a substantial difference here between my analysis and that of MacDonald (2008b). Recall that MacDonald (2008b) assumes that verbs like *eat* and *drink* enter the derivation specified for the feature <fe> (i.e. [endpoint]) in contrast to transitive activity verbs such as *carry* and *drag*, which are devoid of such a feature. This explains why the former can give rise to telicity in the presence of a [+q] internal argument (39a) but not the latter (e.g. *He dragged the log for an hour/*in an hour*; see also (40a: i). However, it does not become clear what is so special about *eat* and *drink* but not about *carry* and *drag* that allows them to enter narrow syntax with the feature <fe> and thus give rise to telicity. Hence, I do away with the postulation of the <fe> feature on verbs like those in (39) and assume that (almost) all eventive verbs in English as well as in the Bulgarian biaspectual paradigm lack any distinctive event feature (however, we will see that there is an exhaustive list of some achievement predicates which should, in principle, enter with an [endpoint] feature inasmuch as they are not *a priori* ambiguous).

If, on the other hand, the [+q] feature on an the internal argument is accompanied by some other telicizing feature, such as an [endpoint] feature on a goal P, then the result is a telic predicate. This is exemplified in English by PP-accomplishments (40).

(40) Goal PPs

a. English

(i) *Ron carried the bag *in an hour/for an hour* No P: atelic

(ii) *Ron carried the bag **into the bedroom** in an hour/*for an hour* P: telic

b. Biaspectual Bulgarian

(i) *Kormuva kola-ta edin chas/*za edin chas.* No P: atelic

drove car-the one hour/*in one hour

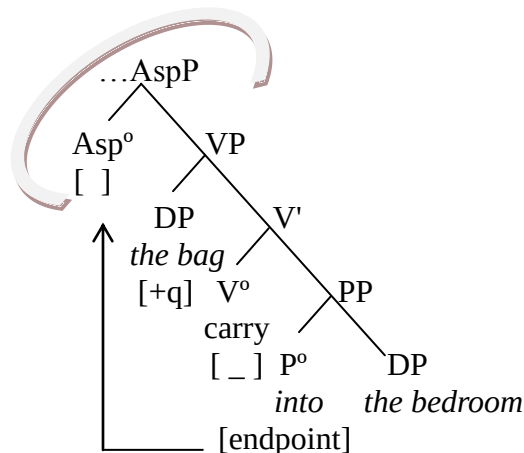
‘He drove the car for one hour/*in one hour.’

(ii) *Kormuva kola-ta v kletka-ta edin chas/za edin chas.* P: ambiguous

drove car-the in cell-the 1 hour/in 1 hour

‘He drove the car in(to) the parking space for/in one hour.’

c.



Observe that the verbs in (40) differ from the standard accomplishments in (39) in that in the presence of a [+q] internal argument the telic interpretation is blocked for them (40a: i, b: i). It is only after the insertion of a goal P that the telic reading becomes available (40a: ii, b: ii). I assume that this is due to a difference at the lexical level with these verbs, i.e. these verbs are verbs of motion which need a prepositional complement in order to be interpreted as bounded. In the absence of a PP complement, these verbs denote a manner of motion, rather than directed motion. I leave this issue for further investigation. Thus, the

only available reading in the absence of a PP is the manner atelic one (40a: i, b: i). Once a PP is inserted, its [endpoint] feature, being within the domain of aspectual interpretation, Agrees with Asp^o and values it, and we obtain a telic predicate (40a: ii, b: ii).

INTERESTINGLY, a slight difference between English (40a: ii) and Bulgarian (40b: ii) is detected. Whereas in English a goal P such as *into* telicizes the event, a similar P in Bulgarian still gives rise to ambiguity. I assume that it is due to a structural difference here between the English preposition *into*, which denotes unambiguously a goal, and its Bulgarian variant *v* ‘in, inside; into’, which can either denote a goal (e.g. *into*) or a location (e.g. *in*, *inside*). In this respect, I follow MacDonald (2008b) and assume that goal Ps (e.g. *into*) are structurally lower than locative Ps (e.g. *in*, *inside*), the former being under the scope of Asp^o in contrast to the latter which adjoin to vP (see (23)). As a consequence, the Bulgarian preposition *v*, being ambiguous between a goal and a location, can merge either as goal Ps in English, i.e. below Asp^o, or above it, adjoining to vP. In the former case it will be able to telicize the event by valuing Asp^o, but not in the latter since it is not under the scope of Asp^o. In this case, we will have an aspectually ambiguous event. This line of analysis is also supported by the behavior of ambiguous goal-location PPs in English (41b):

(41) a. <i>John drove the car for an hour/*in an hour.</i>	No P: atelic
b. <i>John drove the car under the bridge for an hour/in an hour.</i>	P: ambiguous

From (41) we can observe that in the absence of a PP, the motion predicate remains atelic (41a). When the PP *under the bridge* is inserted, then a telic interpretation becomes possible. Under its telic reading, this PP is interpreted as goal (e.g. He drove the car **to** under the bridge, i.e. he went under the bridge driving the car). Under an atelic reading, on the other hand, the PP receives a locative interpretation (e.g. He was **under** the bridge driving the car). Not surprisingly, the same holds for the Bulgarian example in (40b: ii) where the ambiguous P *v* ‘in, inside; into’ is interpreted as a goal in telic contexts (e.g. *he drove the car **into** the cell **in a minute***) but a locative one in atelic contexts (e.g. *he drove the car **inside** the cell **for a minute***), which implies that our analysis is on the right track.

FINALLY, LET US TURN TO THE DERIVATION OF ACHIEVEMENTS. First, recall that when achievements take a [-q] internal argument, the result is an atelic event (38b: i, ii), which was explained by the fact that the [-q] feature is sufficient to close the domain of aspectual interpretation upon Agreeing with Asp^o. However, the predicate becomes telic if the internal argument is marked as [+q] (42).

(42) Achievements with a [+q] internal argument: telicity (cf. 38b: i, ii)

- a. *John caught **the beast** in five minutes/*for five minutes*
- b. *John had **a sandwich** in five minutes/*for five minutes*

If we compare these examples with standard accomplishments taking [+q] internal arguments, which are ambiguous with respect to telicity (e.g. *John read the newspaper in/for an hour*), then one may wonder why the class of achievement predicates telicize in the presence of [+q] arguments but not the standard accomplishment verbs. In order to account for this, I tentatively suggest that it is the world knowledge associated with these verbs (else, listemes), which finally promotes a quantity (telic) reading in the presence of a [+q] internal argument. In such cases, the feature [+q] on the NP, in combination with the denotation of the verb, will be sufficient to value Asp^o and mark the event as telic.

SOME COMMENTS ARE IN ORDER HERE. First, we should note that we cannot adopt Borer's (2005b) account for *all* of the achievement predicates since for her achievements are viewed as idioms which incorporate a functional range assigner that forces the projection of quantity (telic) structure:

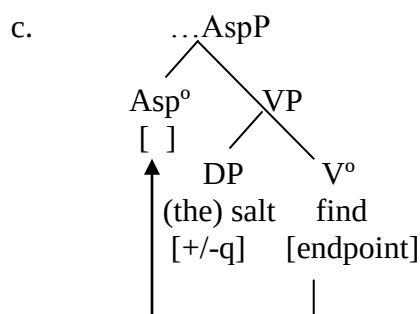
“What does single out achievements, so called, is the fact that the V-head typically found in so-called achievements is more specified than listemes typically are, in being part of an idiom which forces the projection, and hence the assignment of range to [AspQ <e>#], thereby making their insertion in non-quantity structures impossible” (Borer 2005b: 326).

In other words, achievements for Borer can only be inserted under telic structure, which explains the fact that they denote telic events exclusively. Arguably, ***I assume this to be the case for at least some achievement predicates which, even in the presence of a [-q] internal argument, will still give rise to telicity***

(43).⁴⁵

(43) Achievements as quantity idioms

- a. *He found (the) salt in a minute/*for two minutes* English
- b. *bomba-(ta) eksplodira za dve minuti/#dve minuti*⁴⁶ Bulgarian biaspectuals
 bomb-(the) exploded in two minutes/#two minutes
 ‘The bomb exploded in two minutes/#for two minutes’



If verbs like *find* and *explode* enter syntax already specified for some telicizing feature such as [endpoint], then this feature will be capable of valuing Asp° and thus mark the event as telic (43c) via the V°-to-Asp° valuation mechanism. Note that the same holds for primary perfective verbs in Bulgarian which enter the numeration previously specified for this feature (e.g. [V.<endpoint>]) (see (34b)). As a consequence, the domain closes and further possible candidates for valuing Asp° are blocked (e.g. the [-q] feature on an NP internal argument). Recall that this is so because, as Borer (2005b) suggests, in the presence of direct range assigners to Asp° (e.g. the [endpoint] (head) feature on V°), the indirect mode of Asp° valuation is blocked (e.g. Spec-Head agreement).

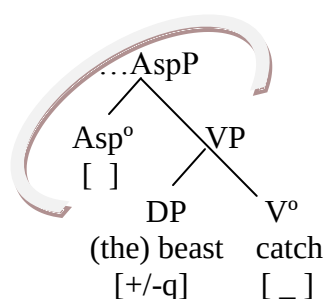
However, as we have just observed, there are other cases in which achievements do show object-to-event mapping property since it is the [-q] internal argument which values Asp° (38b: i, ii). The achievement predicate in cases like this cannot be idiom-like as the ones in (43) since the object-to-event mapping will be blocked in the presence of an [endpoint]

⁴⁵ Note that there is a limited number of such verbs, so this is not an anti-economic theoretical choice. Thus, the task of the learner will consist in acquiring this specific list of items and the properties related to them.

⁴⁶ The *for*-adverbial is allowed here but on a repetitive reading, implying that the predicate is telic (e.g. the same bomb has been exploding over and over again in the duration of two minutes).

feature on V^0 . In addition to this, note that the existence of atelic achievements (38b: i, ii) questions Borer's account as well, since achievements will deterministically require the presence of telicizing structure, e.g. Asp_QP . However, this projection always gives rise to telic events, contrary to fact (38b: i, ii). Hence, I assume that there are at least two types of achievements, those which are idioms in the same way as primary perfective verbs in Bulgarian (43) and those which behave like the rest of the eventive verbs in English (44), thus showing the object-to-event mapping property (38b: i, ii).

(44) **Non-idiomatic "achievements": the object-to-event mapping property**



TO RECAP, we have seen that eventive verbs in English and in the Bulgarian biaspectual paradigm differ from the Bulgarian standard eventive verbs in their way of assigning range to Asp^0 . Whereas the former make use of the indirect range-assigning mode, the latter opt for the H^0 -to- Asp^0 feature-sharing mechanism. This explains why in English and in the biaspectual paradigm of Bulgarian the object-to-event mapping property holds, and goal Ps are able to telicize the event. We have also noted that this state of affairs is partially due to the absence of direct range assigners such as prefixes in the former and their presence in the latter. However, we have also mentioned that this difference between the two languages arises as a direct consequence of a difference at the morphological level. Thus, standard ***Bulgarian verbs are sensitive to the morphological make-up of the structure in which (im)perfectivity plays a crucial role, in contrast to biaspectual verbs in Bulgarian and English eventives, which are morphologically underspecified.*** Thus, we can conclude with Borer (2005b) that almost all non-stative transitive verbs in these languages are aspectually ambiguous (recall the exceptional case for some achievement predicates, see (43)), where anomalies are due to conflicts with world knowledge, but not to grammatical factors.

However, although the general pattern for English and Bulgarian biaspectuals is the indirect mode of valuing Asp^0 (e.g. via a Spec-Head agreement between a DP and Asp^0), these languages do dispose of elements capable of assigning range *directly*, like the Bulgarian perfectivizing prefixes. These are particles in English ((45a); see also § 5.1.3) and prefixes in Bulgarian biaspectuals (45b). In the presence of direct range assigners, the indirect mode of valuation is blocked, thus making the languages behave like standard Bulgarian (45c).

(45) **Direct range assigners**

a. English particles

- (i) *The army **took over** (in two hours)*
- (ii) **Kim wrote letters **up** (on a single-event interpretation)*
- (iii) *Kim wrote **the letter up** (*for several hours/in several hours)*

b. Bulgarian prefixes: prefixed biaspectuals (see (48) in chapter 4)

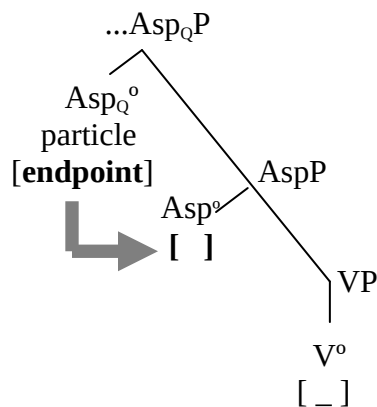
*toj ot-remontira kolata *dva chasa/za dva chasa*

he ot-repaired car-the *two hours/in two hours

‘He repaired the car *for two hours/in two hours’

→ ‘He had the car repaired *for two hours/in two hours’

c. A syntactic account



From (45a, b) above we can see that although verbs are aspectually ambiguous (i.e. [_]), once a particle or a prefix is present, the predicate becomes telic.

CRUCIALLY, NOTE HERE A SUBSTANTIAL DIFFERENCE BETWEEN PREFIXES IN BULGARIAN AND PARTICLES IN ENGLISH. What these elements have in common is their inherent feature

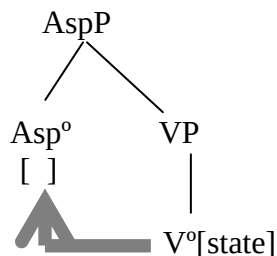
[endpoint] by virtue of which they become possible candidates for valuing Asp° . However, in contrast to English particles, which have just this feature exclusively, prefixes in Bulgarian have an additional aspectual/Aktionsart value (e.g. cumulative). Hence, ***the derivation of a prefixed biaspectual verb will be exactly the same as the one offered for prefixed standard verbs in Bulgarian, the difference being that the verbs in the former case will be aspectually underspecified (e.g. [_]), thus excluding the V° -to- Asp° feature sharing mechanism.*** As a consequence, the Asp° -to- Asp° valuation will take place depending on the nature of the prefix (see (34)). For the kind of prefixes available with biaspectuals, see chapter 3, sections 3.3.3.2, 3.3.3.3. As for English particles, I follow Borer (2005b) and assume that they merge as heads of Asp_QP by virtue of their [endpoint] (else, [quantity]) feature. Upon merge, the open value of Asp° is assigned range, and the predicate is interpreted as telic (45c). Again recall that Asp° gets valued in (45c) via the transmission of the [endpoint] feature from the particle or the prefix to Asp° (i.e. via the Asp_Q° -to- Asp° feature-sharing mechanism (see (34c: ii—2) and subsequent discussion).

Finally, some notes regarding the syntax of statives should be offered.

5.3.3. Some notes on the syntax of statives

I have already shown that stative verbs do not differ aspectually across languages (see chapter 4, § 4.4.4). I tentatively assume that stative predicates have a distinct, arguably universal, functional structure specifically dedicated to them (46).

(46) Statives: Asp° denotes a state



I assume stative verbs to enter narrow syntax already specified for the feature [state]. In a sense, they will be like primary perfective verbs in Bulgarian (34b) or idioms in English (43). The fact that stative predicates are atelic and denote states is due to the fact that in the same way as Bulgarian primary perfectives, such verbs make use of the V^0 -to- Asp^0 range-assigning mode by virtue of the [state] feature on V^0 . To exemplify, once Asp^0 is merged into the structure, it Agrees with the [state] feature on V^0 , and is immediately valued as stative (e.g. $Asp_{[]} \rightarrow Asp_{[S]}$). As a consequence, the domain closes and further intervening features are prevented from entering into an Agree relation with Asp^0 such as goal Ps (see chapter 4, (51)) and [+q]NP internal arguments (see chapter 4, (50)). In other words, the feature [state] on V^0 , in the same way as the feature [endpoint] on primary perfective verbal bases in Bulgarian, is deterministic enough to value Asp^0 upon first merge.

An interesting question arises as to whether these two features can combine, and what will be the final result of the combination [state] + [endpoint]. Regarding this issue, we have already seen that the Kimian states (i.e. the true abstract states) can be sometimes prefixed (see chapter 4, (52a-c; 53; 54)), but this has an exceptional character. When these verbs take a pure central-coincidence-relation prefix (47a), the result is an imperfective stative atelic predicate; when a non-locative prefix is involved, then we obtain a perfective (non-stative) telic predicate (47c). This should be contrasted with non-stative verbs, which always telicize under prefixation, be it locative (47b) or non-locative (47d).

(47) a. Pure locative (CCR) prefixes $\rightarrow$ stative (atelic) predicate (see chapter 4, (52a-c))

<i>PRED-stoja</i>	<i>IMPF + atelic</i>
in front of-stay	
'be imminent, be at hand; lie ahead/before'	

b. Pure locative prefix + eventive verb $\rightarrow$ telic non-stative predicate (see (52d), (54))

<i>PRED-pisha</i>	<i>PF + telic</i>
in front of-write	
'prescribe'	

c. Non-locative prefix + stative verb $\rightarrow$ telic non-stative predicate (see (53a: ii))

<i>NA-stoja</i> 'insist; urge, press'	<i>PF + telic</i>

d. Non-locative prefix + eventive verb → telic non-stative predicate

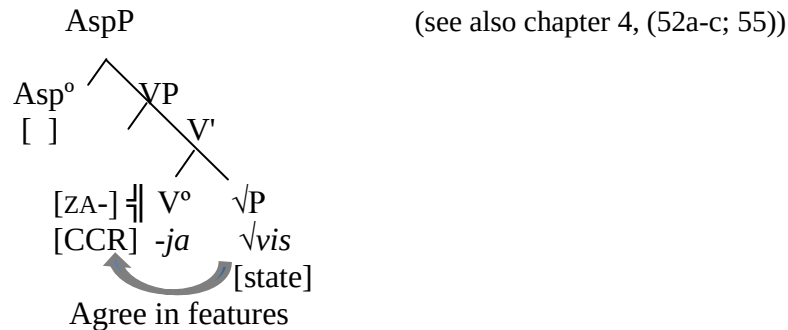
NA-*pisha* ‘write up’

PF + telic

I have suggested that **when statives take pure locative prefixes** (i.e. prefixes of central coincidence relations), **they retain their stative atelic character** since these prefixes, in combination with the non-motion [state] character of the stative verb, are interpreted as central coincidence relations exclusively. Hence, the complex verbal formation [pure locative prefix^[CCR] + static V^[STATE]] cannot denote a non-stative motion telic event (i.e. the prefix cannot be interpreted as a goal since this reading is presumably blocked by the bundle of features [state] + [CCR]) (47a). This is not the case for **eventive verbs taking locative prefixes** (47b) since these verbs lack the [state] feature and **the prefix can discharge its features and therefore take over various interpretations** such as a goal, location, quantification, etc., depending on the denotation of the verbal base. In other words, there is no feature on V^o capable of blocking these possible interpretations of the prefix. As a consequence, the complex formation [pure locative prefix^{[ENDPOINT]([LOC],[ASP])} + eventive V] gives rise to a telic non-stative event. Finally, **when a non-locative prefix attaches to both stative (47c) and non-stative verbs (47d), we always get telicity**. Arguably, this is due to the fact that these prefixes enter the derivation specified for the feature [endpoint]. Thus, it is this feature which finally prevails and values Asp^o, giving rise to a telic interpretation. As for Davidsonian statives, e.g. *chakam* ‘wait’ (IMPF), since they do not denote abstract states, they lack a [state] feature. As we have already seen, such verbs reject pure locative prefixes (see chapter 4, (56b)) although they do allow high attaching non-locative prefixes, e.g. *chakam* ‘wait’ (IMPF) → DO-*chakam* ‘FINISH-wait’ (‘wait till someone comes’: PF) (see chapter 4, (56b’)), giving rise to a telic non-stative event, as expected. In other words, **only the combination [state] + [CCR] can result in a non-motion atelic predicate**. A syntactic representation follows.

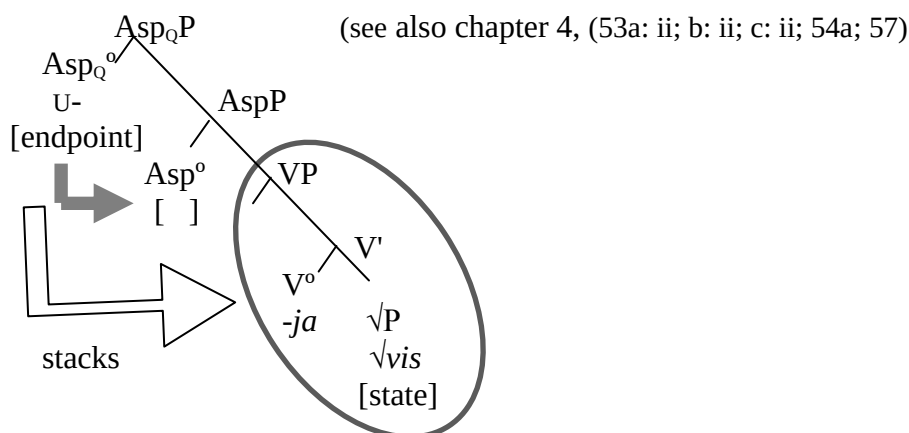
(48) a. **Kimian states:**

(i) pure locative prefix^[CCR] + static verb^[STATE] = stative atelic V (see 47a)



- The root $\sqrt{\text{vis}}$ 'hang' merges with the theme vowel $-ja$ which verbalizes it, after which the locative prefix $ZA-$ stacks. Note that the root enters the numeration provided with the feature $[\text{state}]$ due to its pure static denotation. Since the base itself lacks an endpoint feature and the prefix is a pure locative one, then once the prefix stacks to V° , its central coincidence relation feature $[\text{CCR}]$ is matched against the $[\text{state}]$ feature on V° , and the otherwise possible interpretations of the prefix are blocked (e.g. goal, etc.). Hence, the combination of the base and the prefix gives rise to a stative atelic predicate which is morphologically imperfective. This implies that the feature $[\text{CCR}]$ on the prefix does not telicize nor perfectivize. **I tentatively assume that only in the case of VP-internal stacking as in (48a: i), and only when the verb denotes a true (abstract) state, is a pure central-coincidence-relation prefix capable of conserving its feature $[\text{CCR}]$ and thus preserve the stative atelic properties of its base.** In other words, all pure locative prefixes arguably preserve their $[\text{CCR}]$ feature only under one necessary but sufficient condition, i.e. in the presence of a $[\text{state}]$ feature on V° .

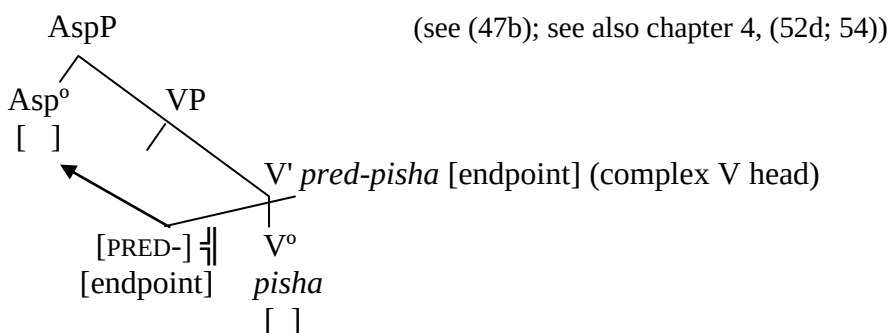
(ii) high-attaching prefix^[ENDPOINT] + static V^[STATE] = non-stative telic V (see 47c)



- The inner aspectual prefix *U-*, which is endowed with the features *[endpoint]* and *[quantity]*, merges as a head of its own functional aspectual projection *Asp_QP*. As a result, its *[quantity]* feature values *Asp_Q°* whereas its feature *[endpoint]* assigns range to *Asp°* via feature-sharing, thus marking the event as telic and hence, non-stative ($[U-[\sqrt{\text{vis}}\text{-ja}]^{\text{IMPF}}]^{\text{PF}}$ ‘hang, become hung’ (see chapter 4, (53b: ii)).

b. Eventive verbs (also Davidsonian statives)

(i) pure locative prefix^{[ENDPOINT]([LOC], [ASP], [LEX])} + eventive V] = eventive telic V



- In the absence of the feature *[state]* on *V°*, the predicate cannot remain atelic since the necessary conditions for preserving the *[CCR]* feature of the prefix are not met. As a consequence, the prefix merges with its *[endpoint]* feature and can acquire aspectual (see chapter 4, (52d')), spatial (see chapter 4, (52d'')) or idiosyncratic (see chapter 4, (52a)) values, which will finally determine its attachment site following the derivations in (34).

(ii) high-attaching prefix^[ENDPOINT] + eventive V^[] = eventive telic V

- *Depending on the nature of the prefix, these prefixed formations will be derived according to the derivations in (34).*

What becomes clear from the derivations in (48) is that when a direct range assigner to Asp^o is present such as an [endpoint] feature on a prefix, then even if the base is stative (48a: ii), the feature [state] cannot override the telicizing function of the feature [endpoint]. However, these are exceptional cases since ***pure statives, i.e. [state] verbs, do not allow prefixation as a general rule***, except for the purely locative [CCR] prefixes (47a, 48a: i). In this respect, recall that pure [state] verbs remain morphologically imperfective when combined with a [CCR] prefix, indicating that maybe ***it is at the morphological VP level that the fate of the prefixed combination is decided***. Either statives are idiosyncratically marked as absolute imperfectives, and hence atelic, blocking (non-CCR) prefixation as a general rule, or else it is their syntactic structure which accounts for their behavior. I leave this topic for further research.

TO SUM UP, throughout this chapter I have examined the behavior of the English and Bulgarian verbs (both standard and biaspectual) with respect to inner aspect. After presenting evidence for the telicizing function of perfectivity in standard Bulgarian, I have proposed that in the presence of the feature [endpoint] we obtain telic predicates. I have further shown that this feature is relevant not only in standard Bulgarian, but also in English and biaspectual Bulgarian, since it is precisely this feature which is responsible for the telicity of a predicate. Regarding Aktionsart/lexical aspect, I have claimed that there are only three relevant aspectual classes across languages and paradigms, e.g. (eventive) atelic, telic, and stative. I have provided evidence supporting the irrelevance of the accomplishment-achievement distinction across languages and claimed that telic events are of just one kind. As for statives, I have shown that their behavior is quite uniform cross-linguistically, indicating the existence of some feature, e.g. [state], which all these verbs share. Hence, in the absence of the feature [endpoint], i.e. in the absence of telicity, what we have is atelicity, i.e. either eventive atelics (activities, actions, etc.) or else statives.

IN SYNTACTIC TERMS, I have proposed that there is a universally available projection, AspP, in relation to which the inner aspect of a predicate is determined. Following Borer (2005b), I have assumed all functional heads to contain open values in need of range assignment. Hence, the way in which Asp^o is assigned range, i.e. is valued, determines the aspectual class of a predicate. ***Thus, if an [endpoint] feature values Asp^o, we have a telic event; if a [state] feature does so, the predicate is interpreted as stative; finally, in the absence of these features what we have is the default option, an atelic eventive predicate.*** However, as we have seen, languages differ as to how they assign value to Asp^o: directly, via ***the head-to-head feature sharing mechanism for standard Bulgarian, or indirectly, via Spec-H^o agreement between a [+q]/[-q] feature on an NP in Spec,AspP, or via an [endpoint] feature on a goal P in English and biaspectual Bulgarian.*** Following Borer (2005b), I assume this to be a direct consequence of the (un)availability of (in)direct range assigners in the functional lexicon of a given language, which is also supported by the fact that when direct range assigners to Asp^o are merged in syntactic structure in English and biaspectual Bulgarian (e.g. prefixes or particles), the indirect mode is blocked.

I tentatively assume that the direct-indirect range-assigning mode distinction is additionally correlated with the dominating character of morphology in standard Bulgarian where verbs are either perfective (telic) or primary imperfective (atelic) and to the morphological insensitivity in English and biaspectual Bulgarian whose verbs are underspecified, i.e. doubly specified for inner aspect. In other words, verbs in Bulgarian are direct range assigners to Asp^o but not, as a general rule, verbs in English. If we assume morphology to drive syntax in Bulgarian, then it will be at the VP level where the verb is determined as either perfective or imperfective depending on the morphemes which participate in its formation (e.g. perfectivizing affixes) that inner aspect will be determined, most probably via the V^o-to-Asp^o valuation (see fn. 39). This will not be the case for English and biaspectual Bulgarian since verbs cannot determine inner aspect on their own

(i.e. V^o-to-Asp^o valuation in these languages will lead to an aspectually ambiguous event, both telic and atelic since these verbs are underspecified for aspect). In morphologically insensitive languages it will be the functional environment (internal arguments and goal Ps) or the context (pragmatic factors) which will finally determine the value assigned to Asp^o. This is just another way of rephrasing our generalizations.

Since prefixation is the telicizing device *par excellence* in Bulgarian, and since it is the primary concern of this work, I have presented my syntactic account of it. I have treated prefixes as direct ranges assigners to the open valued heading Asp^o which can be of three types: lexical (idiosyncratic), inner and outer. What these elements have in common is the inherent feature [endpoint] which they bear. It is by virtue of this feature that they become possible candidates of Asp^o valuation. However, they differ with respect to their attachment site, which in turn depends on the additional features these linguistic objects have: lexical for the idiosyncratic prefixes; spatial or quantificational for the inner, and phasal, manner, temporal or degree for the outer. Only the former do not project independently in syntax, since their feature [lexical] has no dedicated place within the aspectual hierarchy of functional projections. As for the inner and the outer prefixes, due to their additional (aspectual/Aktionsart) value (e.g. [durative] for PO-), they merge as heads of their own functional projection. As I have observed, ***such a treatment resolves the problem of vacuous quantification, i.e. vacuous Asp^o valuation, since the primary role of these prefixes is to discharge their aspectual feature by assigning range to the open value heading their own functional projection, whereas assigning range to Asp^o by their common [endpoint] feature turns out to be a secondary phenomenon and only if necessary, i.e. in case Asp^o has not been previously valued.***

Finally, my treatment of prefixation gives some hints to the open discussion in Borer (2005b) as to whether the class of idioms can be narrowed down. In case it is, then there should be more articulated functional structure. I have in fact shown that some verbs treated as idioms in Borer (2005b) are further syntactically decomposable. To exemplify, *discover*

may be claimed to consist of a lexical (idiosyncratic) prefix together with a root, something which also holds for the Bulgarian representative of ‘find’ (*NA-merja*) which incorporates a lexical prefix as well (see (34c: i)). However, recall that there are some verbs in Bulgarian, the primary perfectives, which do not contain a prefix but are perfective and hence telic (34b). Therefore, the only way to analyze such verbs is to consider them a kind of idioms which, in the same way as some achievements in English (42, 43a) and in biaspectual Bulgarian (43b), will only appear within a quantity (telic) structure due to the presence of some inherent feature on them (e.g. [endpoint]). Finally, stative verbs also bear an inherent feature [state] (46), which makes them resemble idioms as well. Therefore, we cannot completely get rid of idioms cross-linguistically.

Before I close this chapter I will briefly comment on some implications my analysis has for both inter- and intra-linguistic variation.

5.4. Some notes on variation

I follow Borer (2005b) and assume that language variation is related to the morpho-phonological properties of grammatical formatives (i.e. of the functional elements), and not to syntactic structures or the semantics of those elements (Borer 2005b: 15).⁴⁷ If the grammatical computational operations are universal, together with the functional hierarchy associated with grammar (including functional category labels and their open values, i.e. their relevant heads), then variation within the functional domain is restricted to the mode in which open values (i.e. heads) are assigned range (else, valued).⁴⁸

⁴⁷ Similar claim is also found in Borer (1984) and Chomsky (1995) according to whom variation should be attributed to the formal properties of the functional elements.

⁴⁸ As Borer notes, such a treatment of variation simplifies the task of acquisition since the child has to acquire the (morpho-)phonological properties of the grammatical formatives which are otherwise language-specific and must be learnt on the basis of experience (Borer 2005b: 344). However, in doing so, the child also acquires the way in which the grammatical principles are applied in her language since their applicability is constrained by the (morpho-)phonology of the functional lexicon of the given language. Thus, languages vary with respect to how open values are assigned range (i.e. how heads are being valued).

Regarding this issue, we have seen that there is a universally available aspectual projection, AspP, in relation to which the inner aspect of a predicate is determined (see MacDonald 2008b, Travis in prep). Hence, languages vary with respect to the mode in which the open value of Asp^o is assigned range. Following Borer (2005b), I assume that there are two possible modes for calculating inner aspect in English and Bulgarian: via *direct* or *indirect* range assignment, the latter being blocked in the presence of the former. Since standard Bulgarian has in its functional lexicon elements which assign range directly, e.g. prefixes or [endpoint] features on V^o (e.g. in the case of primary perfectives), and since these elements occupy head positions, then this language will always opt for this mode of assigning range, adopting thus the V^o/AspX^o-to-Asp^o feature-sharing strategy. As a consequence, the domain of aspectual interpretation closes, i.e. Asp^o is assigned range, immediately upon the merger of such an element, and intervening features such as [+q] or [-q] values on NP internal arguments, or [endpoint] features on goal Ps, are blocked from entering in further syntactic relations with Asp^o. In English, on the other hand, the availability of direct range assigners is rather limited (e.g. particles), so the general mechanism adopted by this language for Asp^o valuation is the indirect range assignment: Spec-Asp^o Agreement by a [+q]/[-q] feature on the NP located in Spec,AspP (giving rise to the object-to-event mapping property), or an [endpoint] feature on goal PPs. However, in the presence of a direct range assigner, e.g. a particle, the indirect mode of Asp^o valuation is blocked, and the language behaves like standard Bulgarian.

Crucial for variation turn out to be the Bulgarian biaspectual predicates which dispose of all the available range assigners of standard Bulgarian (excluding, as a general rule, an [endpoint] feature on V^o) but still behave like English. Thus, in the absence of direct range assigners, these verbs do not remain atelic as standard verbs in Bulgarian but opt for the indirect mode of Asp^o valuation as English. As we have mentioned, this has to do with the morphological insensibility of this paradigm regarding the perfective-imperfective distinction according to which inner aspect is determined for standard verbs in Bulgarian. Hence, ***it is this deeply embedded morphological difference at the VP level which makes biaspectuals resemble English but not standard Bulgarian. It then follows that the choice a language (else a***

paradigm) makes when it comes to Asp^o valuation depends on the morpho-(phono)logy of range assigners. Thence, variation is not restricted to the mere availability of direct or indirect range assigners in the functional lexicon of a given language but may be more deeply embedded, e.g. obeying certain morphological distinctions which have to be reflected in syntax.

Due to the driving force of morphology within the domain of inner aspect in standard Bulgarian, I have proposed that perfectivity is syntactically instantiated via an interpretable telicizing [endpoint] feature which, when present in the structure, immediately values Asp^o upon merge, giving rise to telic events. This is the most economic option in standard Bulgarian, since it is morphologically driven and syntactically reflected. In other words, the head-to-head feature-sharing mechanism of Bulgarian (arguably V^o-to-Asp^o, see fn. 39) will be the first option a language will choose in order to assign range to Asp^o, presumably because it requires a minimal computational space. This explains why in the presence of particles in English or prefixes in biaspectual Bulgarian, the domain closes immediately upon the merger of these elements, giving rise to telicity.

As we have also seen, another feature deterministic for Asp^o valuation in both English and biaspectual Bulgarian is a [-q] value on an NP internal argument. In the same way as the [endpoint] feature on prefixes and particles, [-q] is sufficient enough to close the domain upon merger. Again, this is the most economic option within the indirect mode of Asp^o valuation. However, when a [+q]NP measures out the event, the domain extends and other features within the domain of inner aspect are checked. This implies a more ample computational space, so this is a marked option.

AN INTERESTING OBSERVATION IS IN ORDER HERE. Though biaspectual verbs in Bulgarian, being borrowings, are aspectually closer to English than to the Bulgarian standard verbs, they do form part of Bulgarian and do have access to all the functional elements to which standard verbs have access. Since the standard morphological way of marking aspect is deeply rooted within the Bulgarian conscience, we nowadays observe a transitory stage of

evolution within the biaspectual paradigm where from a totally compositional way of marking aspect, which relies on indirect range assigners as in English, such verbs tend to use prefixes and suffixes in the same way as standard verbs do. This shows a growing preference for the more simplistic way of marking inner aspect over the more costly one even in the absence of morphological distinctions at the VP level.

Having explained how the aspectual systems of English and Bulgarian work, we are now ready to see how these systems apply to the domain of nominalizations.

**PART 2.2: THE SYNTAX OF INNER
ASPECT: THE NOMINAL DOMAIN**

CHAPTER 6: ASPECT WITHIN

NOMINALIZATIONS

This chapter discusses the morphological types of nominalizations and their syntactic behavior in three languages: English, the Bulgarian standard paradigm and the Bulgarian biaspectual paradigm. In doing so, I focus on the way nominalizing suffixes and aspectual markers (e.g. prefixes, theme vowels, imperfectivizing suffixes) interact, from which I tentatively conclude that aspect is the driving force of argument structure building not only within the verbal domain, but within the nominal domain as well (see Borer 1999, 2003, 2005b).

I start with the assumption that word formation is syntax-driven where a categoriless root can be spelled out as a noun, adjective, or verb, depending on the functional layers that dominate it (Alexiadou 2001). However, contrary to Alexiadou (2001) and in accordance with Ferrari (2005), I will show, using data from the standard Bulgarian paradigm, that sometimes a stem and not a root must be inserted in syntax.

A crucial factor for the derivation of deverbal nominals in Bulgarian is **THE STATUS OF NOMINALIZERS INSIDE THE NOMINALIZING PROCESS**. Following Ferrari (2005) I will defend the obligatory presence of such nominalizing heads and claim that they can appear in the form of gender suffixes or various derivational suffixes marked for gender in Bulgarian. In other words, it is gender that assigns nominal category in Bulgarian. As I will claim, this is due to the fully developed gender system, where gender is syntactically active, together with the fact that gender is a classificatory category for nouns in the same way as morphological aspect is a classificatory category for verbs in this language (see § 6.3). This will hold for both paradigms of Bulgarian since both paradigms manifest overt gender morphology. As for English, due to its impoverished morphology and poor system of gender marking, the nominalizers will be claimed to first merge as particular aspectual

heads and further incorporate into the n^0 head in order to check their nominal features. Thus, I will suggest, in line with Ferrari (2005), that noun formation results from the merger of a nominalizing head n with an XP where XP can be a categorical stem such as a nominal, adjectival, or verbal stem; a VP, AspP, and VoiceP, or else, a categoriless $\sqrt{P}$ (root phrase).

Applying **MORPHOLOGICAL CRITERIA** I will propose that there are three nominalization types in standard Bulgarian (§ 6.3). The first type includes nouns derived from roots or stems via the merger with a gender morpheme (the gender-derived nominals) or a derivational suffix marked for gender. These nouns I label “other-suffix” nominals (Markova 2007). The second nominalization type is what I label Voice –IE nominals. These nominalizations have been previously analyzed as –NIE nouns (Dimitrova-Vulchanova & Mitkovska 2006, Popova 2006, Pashov 1999, Steinke 1999, and Bojadjiev *et al* 1999, among many others). However, contrary to previous analyses, I will show that there are syntactic and semantic reasons to consider such nouns past passive participial nominalizations. Finally, the third nominalization type is what has been traditionally known as process –NE nominals. Contrary to previous assumptions that such nouns are process-denoting only (Popova 2006, Dimitrova-Vulchanova & Mitkovska 2006, and Pashov 1999, among others), I will show that there is much diversity within this group.

In similar lines, I will show that there are also three morphological nominalization types in English: –ing nouns, –tion (and kin) nouns, and the zero-derived nominals (§ 6.4). In general lines, the –ing derivatives pattern with the Bulgarian –NE nouns; the –tion nouns pattern with the “other-suffix” nominals, whereas the zero derivatives with the gender-derived formations. As for the participial nominalizations, they are not found in English.

Finally, the Bulgarian biaspectual nominalizations are also divided into three morphological types: the process-denoting –NE nouns, the resultative –tsija nouns, and “other-suffix” nouns (§ 6.6). These nominalizations will become crucial for some of our major claims since they share properties with both standard Bulgarian and English.

The parallelisms between the three morphological nominalization types across the three languages are offered in Table 1.

English	Standard Bulgarian	Biaspectual Bulgarian
–ing	–NE	–NE
–tion	deverbal “other-suffix” Ns	deverbal “other-suffix” Ns; –tsija
zero-derived	root “other-suffix” nouns gender-derived nouns	root “other-suffix” nouns

Table 1: Nominalization types: similarities

I claim that the observed similarities between the nominalizations in Table 1 are due to the similar selectional restrictions and the similar aspectual properties of the particular nominalizers involved in the derivation of these nouns, which is further reflected in their similar syntactic structure. In other terms, it is syntax that drives interpretation.

Another topic examined in this chapter is **ARGUMENT STRUCTURE**. Following Grimshaw (1990) I will show that without event structure, there is no argument structure. However, event structure itself is not a primitive, but rather dependent on and licensed by the presence of verbal structure. Thus, in lines with Borer (1999) ***I will divide nominalizations into two major groups: argument-supporting (AS) nominals, and result-referential (R-R) nominals. The former are nouns which allow for the projection of internal arguments in contrast to the latter which do not. Within the argument-supporting group we can find nouns which require the presence of their internal arguments obligatorily and nouns with optional internal arguments. For expository reasons, I label the former true argument-structure nouns whereas the latter will be participant-structure (PS) nouns. Within the result-referential group, on the other hand, we can***

distinguish between referential (object-denoting) and result (outputs of events) nominals.

There is, though, no strict correspondence between morphological type and argument structure due to the fact that inside any morphological nominalization type in all three languages we may find result-referential and participant-structure nouns. ***However, only some transitive and prefixed process –NE nominals in both Bulgarian paradigms, together with only some –ing English nominals can be true argument-structure nouns that require their internal arguments obligatorily.*** As I will claim, the projection of arguments is related to the presence of higher aspectual layers within a nominal.

THE PRESENCE OF LOWER VERBALIZING STRUCTURE inside nominals can influence not only their interpretation by facilitating an event denotation, but also their syntactic behavior. Thus, all of the eventive nouns, inasmuch as they are morphologically derived from verbs, and include at least some lower verbal layers, allow for **MODIFIERS OF VERBAL STRUCTURE** such as time and manner modification as well as the adjective ‘frequent’, whereas the pure object-denoting nouns (i.e. referential nominals), since they bear no morphological relation to a verb, never do. As for result-denoting nominals, they can combine with manner adverbials and the adjective ‘frequent’. A possible explanation for this fact is that such modifiers relate not directly to the noun, i.e. the output of the event, but rather to the implicit event, licensed by the verbal structure, which has caused this output. As for agent-oriented adverbials, only the argument-structure nouns accept them. This suggests that such modification, apart from eventive semantics and lower verbalizing layers, involves argument structure as well, arguably related to the additional presence of higher aspectual layers. Thus state of affairs is uniform across languages.

However, English and Bulgarian differ when it comes to **MODIFIERS OF NOMINAL STRUCTURE**. To exemplify, whether eventive or not, all of the nominalization types in Bulgarian accept modifiers of nominal structure (e.g. Pluralization, Indefinites, Numerals and Demonstratives). This suggests that eventivity does not play a role here. Rather, it is

the syntactic category—a noun—that licenses such modification. As for English, only the participant-structure and result nouns do so, the true argument-structure nominals being incompatible with some nominal modifiers. A recap of the claims is offered in Table 2.

Structure	Denotation	Modifiers	Arguments	Nominal types
No verbal layers	Objects Results	Of N structure	NO	All types in ENG & BG
Lower verbal layers	Events	manner adverbials; ‘frequent’	Optional	All types in ENG & BG
Higher aspectual layers	Processes	Manner & agent-oriented adverbials; ‘frequent’	Obligatory	Some transitive and prefixed –NE Ns (BG) & some –ing Ns (ENG)

Table 2: Syntactic behavior of nominalizations

Another issue commented on in this chapter is the possibility of **ASPECTUAL INHERITANCE INSIDE THE NOMINALIZING PROCESS**. Bearing in mind that only –NE nominalizations in Bulgarian (from both paradigms) and the –ing nouns in English can denote processes, I will propose that aspectual inheritance takes place in such nominalizations, where inheritance refers to the capacity of a noun to inherit the aspectual properties and selectional restrictions of its underlying (verbal) base. ***I suggest that it is the presence of some process-related node inside these nominals (e.g. the one hosting the imperfective suffix for standard –NE nouns) which allows them to denote processes.*** This claim is further confirmed by the telicity difference between deverbal nouns where only the process nominals systematically allow for atelic modification. However, I will show that (a)telicity also depends on certain properties of the structure (the presence or absence of perfectivizing prefixes, the presence of goal PPs, etc.).

THE CHAPTER IS ORGANIZED AS FOLLOWS. In section 6.1 I comment on some previous proposals on nominalizations after which I discuss some previous accounts of the Bulgarian nominalizations (§ 6.2). Sections 6.3 and 6.4 then focus on the available nominalization types in standard Bulgarian and English respectively, whereas the following section 6.5 analyzes the behavior of deverbal nouns in both languages based on the following criteria: aspectual properties (§ 6.5.1), Aktionsart properties (§ 6.5.2), argument-structure properties

(§ 6.5.3), modification of nominal structure (§ 6.5.4), and modification of verbal structure (§ 6.5.5). Our findings will present evidence for a fine-grained functional structure within the n-domain. After seeing how nominals may resemble verbs in both properties and interpretation, I direct the reader's attention to the Bulgarian biaspectual nominalizations (§ 6.6), whose verbal bases share properties with both standard Bulgarian and English. This section will further support my previous claims on nominalizations, and will point to some interesting lines of analysis regarding inter- and intra-linguistic variation.

6.1. Previous proposals on nominalizations

Since the seminal work of Robert Lees (1960) the attempts to explain the nature of apparently category-changing derivational affixes have significantly increased. In doing so it has been observed that sentences and nominalizations appear to share many common properties at the interpretive level (Randall 1984, Sproat 1985, Zucchi 1989, among others). However, nominalizations were attributed either an exceptional treatment which increasingly seemed conceptually unjustifiable (Roeper 2004), or an abstraction was introduced, which made nominalizations seem just like sentences.

Since Lees (1960) and Chomsky (1970) it became clear that verbs and nouns share fundamental argument-taking properties. Apart from the failure of nouns to take prepositionless DPs, everything seems completely parallel:

(1) i. CP complement:

- a. with verbs: *The physicists claimed that the earth is round.*
- b. with nouns: *The physicist's claim that the earth is round.*

ii. Infinitival complement:

- a. with verbs: *They attempted to leave.*
- b. with nouns: *Their attempt to leave.*

iii. PP complement:

- a. with verbs: *The train arrived at the station.*
- b. with nouns: *The train's arrival at the station.* (from Grimshaw 1990: 46-47)

Since Lees' (1960) first study on English nominalizations, the various theoretical frameworks that have been developed over the evolutionary course of generative grammar have resulted in proposals that differ both in conception and in spirit. Within the framework set up by *Syntactic Structures*, Lees' work has generally been considered to be the first attempt in the history of generative grammar to give extensive rule motivations and derivations for a specific type of construction. In his work, Lees claimed that nominalizations of the types exemplified in the (b) constructions above are derived from the sentential constructions in (a) and thus inherit the verb's arguments by postulating a proper sentence inside the NP. This constitutes a syntactic approach to nominalizations which assumes that (rich) syntactic operations join the (full) phrasal syntactic projection of the stem within the structure of the derived word with the relevant affix. Crucially, such an approach relies on an enriched syntactic component and its spirit may arguably be said to continue in some current theories of nominalization (Hazout 1991, Valois 1991, Borer 1991, 1999, Fu 1994), which do not posit a whole sentence as part of the nominalization, but claim that there is a hidden VP in nominal structures that can be very abstractly represented as in (2), where irrelevant details are omitted.

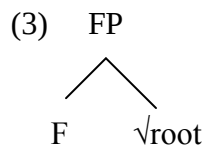
(2) [_{DP} ... [_{NP} ... [_{VP} ...]]]

A decade after Lees' pioneering study, Chomsky (1970) proposed that a common abstract syntactic notation, X-bar-theory, could represent the structure of the lexical categories that constitute the core elements of sentences and nominalizations. If a lexical element XP surfaces as VP, accusative case is assigned to the internal argument of the verb: [*the enemy* [*destroyed the city*_{ACC}] VP]. If the XP surfaces as an NP, accusative case assignment is blocked and a preposition must be inserted: [*the enemy's destruction of the city*]_{NP} vs. *[*the enemy's destruction the city*]_{NP}. Thus, Chomsky's (1970) treatment of nominalizations has been considered to fall within the lexicalist type of approaches according to which there is a lexical process mapping between roots, e.g. *destroy*, and their derived forms where such a mapping assigns to the latter some (or all) of the lexical-semantic properties of the root. Note that such a view relies on a formal enrichment of the lexicon and of lexical operations.

The spirit of such an approach was very popular in the 70s and the 80s and is found in various works as well (Sproat 1985, Randall 1988).

However, as Chomsky (1970) observes, there is no a priori reason to prefer an enriched lexicon over an enriched syntactic component since this is an empirical issue. The fact that derived words and their roots share the same (selectional) properties and even argument structure does not suffice to opt for one of these approaches. In fact, both lexicalist and syntactic approaches do explain this fact. Hence, the crucial factor for taking a firm stand as to what approach is the correct one should be empirical. As we will see, empirical evidence in support of syntactic approaches is indeed available (see Fu et al. 2001).¹

Although the bulk of Chomsky's work was devoted to arguing that nouns should directly enter the lexicon as such, and thus are not derived transformationally, this approach can be said to persist in some recent Distributed Morphology accounts (see Giannakidou & Rathert 2005 and references therein), where lexical categories like verbs and nouns are seen as a combination of category-neutral roots plus functional layers F, as in (3):

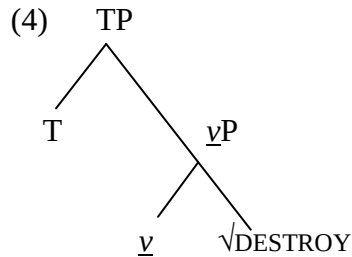


¹ Fu et al. (2001: 551) present the following empirical evidence in support of a syntactic approach to nominalizations:

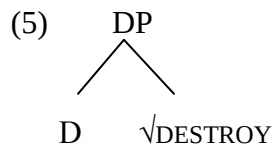
- (i) The presence of Accusative case and adverbial phrases in Arabic and Hebrew process nominals (Hazout 1991)
- (ii) Case assignment differences between French process nominals and ordinary NPs (Valois 1991)
- (iii) Difference in constituent structure between Chinese process nouns and ordinary NPs (Fu 1994)

Fu et al. (2001) consider category-sensitive and constituent-structure sensitive evidence as the strongest one in favor of (or against) VP structure, whereas 'the presence in process nominal of duration phrases in the sense of Grimshaw (1990) are merely consistent with VP structure, and could, in principle, be explained by a semantically-based approach as well'. Thus, they conclude that 'the discovery of explicit empirical data is a **decisive** ingredient in the argument, and [...] it renders the lexicalist approach untenable' (Fu et al. 2001: 551). See section 6.1.5 for evidence in support of a syntactic treatment of English nominalizations.

Much research has been done on the nature of F (Harley and Noyer 1997, 1998, 1999, 2000, Alexiadou 2001, Marantz 1997, etc.). Regarding this issue, there is agreement that in the verbal domain F corresponds to $\bar{v}$. To exemplify, [*the enemy* [$\bar{v}_P$ *destroyed the city*_{ACC}]] conforms to the following abstract architecture:



In the nominal domain, F is considered to be D, where [*the enemy's destruction of the city*]_{DP} has the following representation:



In (5), adjustment morphological rules will spell out *destroy*, directly or indirectly dominated by D, as *destruction*.

So there are two conceptual routes to follow when dealing with nominalizations. If we opt for Lees' (1960) trend, we shall assume that there is a verbal projection inside the nominalization that delivers its verbal traits. Following some of Chomsky's (1970) suggestions, on the other hand, we may analyze nouns and verbs as category-neutral where the difference between verbs and deverbal nouns comes from the (un)availability of a higher functional structure in abstract syntax.

I follow the latter stand. Following this line of analysis, my starting point will be the assumption that thematically-related lexical items share a set of category-neutral stems with a specific theta-grid (Picallo 1991: 279). I further follow Alexiadou (2001) who claims,

similarly to van Hout and Roeper (1998), that the behavior of nominals is linked to the properties of the features in the functional layers of the construction (e.g. T, D, Asp, v, etc.). Furthermore, it will be suggested that nominals differ depending on the functional layers they contain and on the feature specification of these layers, as suggested in Alexiadou (2001) (§ 6.1.2). However, contrary to Alexiadou (2001) and Marantz (1999), I will try to show that not only roots but also stems can be modified in syntax. A similar proposal is made in Ferrari (2005), although she considers only stems to be modifiable in syntax, and not roots (§ 6.1.3).

Before I present my analysis of nominalizations, I will just briefly mention some of the previous trends on this topic. I open the discussion with Grimshaw's (1990) lexicalist proposal.

6.1.1. Grimshaw (1990)

Grimshaw (1990) represents a lexicalist, semantically based account of nominalizations. She is the first who extensively defends the view that the argument-taking properties of nouns are directly dependent on their event properties. To exemplify, if a predicate lacks event properties it will consequently lack argument structure, too. Put differently, without event structure there is no argument structure. In line with this proposal, Grimshaw (1990) establishes two types of nouns, event (6.1) and result nominals (6b), based on argument structure.

(6) Nominalization types (Grimshaw 1990)

a. Event Nominals:

- (i) *The examination of the patient took a long time.*
- (ii) **The barbarians' destroying*
- (iii) *The barbarians' destroying of the city*
- (iv) *The examination of the dog in/for an hour*
- (v) *Bill's intentional examination of the weak candidate*

b. Result Nominals:

- (i) **The exam of the patient took a long time*
- (ii) *The exam is on the table*
- (iii) **The exam of the student in/for an hour*
- (iv) **Bill's intentional exam of the weak candidate.*

The nouns in (6a) denote events whose duration can be measured (6a: iv). Result nouns (6b), on the other hand, refer to the output of the event, so there is no possibility for measuring an event they cannot possibly denote (6b: iii).

There are further substantial differences between the two nominal types. To mention one, event nouns are theta-assigners, i.e. they have obligatory arguments (6a: ii, iii). It is precisely this possibility to have argument structure that makes them resemble verbs (see **the barbarians destroyed*).²

To account for this, Grimshaw (1990) proposes that though event and result nominals have an NP structure just like any other NP, unlike regular referential NPs, however, (process) event nominals have a semantic (external) event argument (Ev) whereas result nominals have an external referential argument (R). Since the Ev argument is associated in grammar

² Since Abney's (1987) seminal work there has been an extensive amount of literature dealing with the projection of arguments within a noun. To exemplify, Bernstein (2003) argues that arguments in the nominal domain are hierarchically arranged as they are in the clause. Discussion on the structural position of the arguments of N has also arose. Ritter (1988), for example, suggests that the subject argument of a DP (a possessive) is generated in Spec,NP and the object arguments are complements of N, following the VP-Internal Subject Hypothesis previously suggested by Koopman & Spotiche (1991) in their analysis of sentential structures, according to which the internal and external arguments in the clause are generated VP-internally (e.g. the subject is in Spec,VP and not in Spec,IP as had previously been assumed). Longobardi (2003), on the other hand, presents evidence involving the interpretation of possessives and binding in order to show that Possessors are higher than notional subjects such as Agents or Experiencers, and those in turn are higher than internal arguments. On argument structure in the nominal domain, see Grimshaw (1990), Picallo (1991), Valois (1991), Siloni (1991, 1994), Taraldsen (1990), and Giorgi & Longobardi (1991), Ritter (1991).

with verbs, it then follows that such nouns will have verbal properties. This is how the argument-taking properties of event nouns (6a) are accounted for.

Another verbal feature of event nominals is their capacity to combine with aspectual modifiers (6a: iv), an observation first made by Vendler (1967). Such modifiers, on the contrary, cannot combine with the result nominals (6b: iii). Moreover, whereas event nominals allow for agent-oriented adverbials (6a: v), result nominals do not (6b: iv).

Crucially, there are nominalizations that denote events but behave like result nominals since they are incompatible with aspectual modifiers and agent-oriented adverbials (7). Such nouns receive the label of ‘simple event’ nominals in Grimshaw (1990).

(7) Simple event nominals

- a. **The event in an hour*
- b. **Mary’s intentional trip to Asia*

In other words, it turns out that there are two types of event nouns for Grimshaw (1990): simple (7) and complex (6a) event nominals. Though both types refer to an event, they differ with respect to their argument-structure properties where only the latter, i.e. the complex event nominals, have true argument structure, similar to that of verbal predicates. Simple event nominals, on the other hand, do not. Rather, they have what Grimshaw labels *participants* which are not real arguments but which serve to restrict the denotation of the nominal in several ways.³

³ Grimshaw (1990) distinguishes between syntactic arguments, which stand in grammatically significant relation to predicates, and what she calls ‘participants’. She claims that, among other things, the lexical conceptual structure defines a set of participants involved in the meaning of the lexical item (p. 54). Whereas verbs and complex event nouns project participants in their argument structure and thus make their participants grammatical arguments, other nouns (i.e. result and simple event ones) have only participants but no grammatical arguments.

Table 3 offers the criteria to distinguish between true argument-structure (AS) nominals, i.e. complex event nominals (6a), from those that do not have argument structure, i.e. the simple event (7) and result nominals (6b).

Tests	AS nouns (6a)	non-AS nouns (6b), (7)
Adverbial modification		
by ‘frequent’, ⁴ ‘constant’	yes	no
Agent-oriented modifiers		
‘deliberate’, ‘intentional’	yes (6a: v)	no
Pluralization	no	yes
Take indefinite determiners	no	yes

Table 3: Argument vs. non-argument taking nouns

Following Grimshaw’s (1990) classification, I will propose the following nominalization typology for English and Bulgarian:

(8) Nominalization types

a. **Argument-supporting nouns (AS)**

(i) **Obligatory arguments:** true AS nouns: some process –NE nouns (standard and biaspectual Bulgarian paradigms); some –ing nouns (English)

(ii) **Optional arguments: participant-structure nouns (PS):**

- Standard Bulgarian: eventive –(N)IE; eventive “other-suffix”; some process –NE nouns
- Biaspectual Bulgarian: eventive –tsija and eventive “other-suffix” nouns
- English: some –ing and –tion nouns

b. **Referential-result nouns (R-R):** all nominalization types when used in the appropriate (result-referential) context

⁴ Grimshaw claims that if modifiers like ‘frequent’ and ‘repeated’ appear with result nouns, they must be in the plural (e.g. *the frequent exam*(s)*).

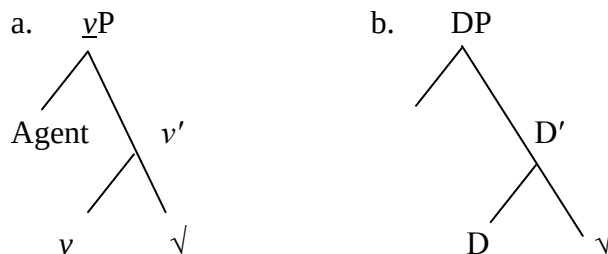
The reason for such a classification is based on the behavior of these nouns (see § 6.5 and 6.6). It will also become clear that their different behavior results from a difference in the syntactic structure (see chapter 7). In more general lines, type (8a: i) nominalizations correspond to Grimshaw's complex event nominals, type (8a: ii) to her simple event nominals and type (8b) to her result nominals.

In the following section I present some details on Alexiadou's (2001) analysis of nominals.

6.1.2. Alexiadou (2001)

Alexiadou's (2001 et seq.) treatment of nominalizations is embedded within the Distributed Morphology (DM) framework (Marantz 1997, 1999, Schoorlemmer 1995, van Hout and Roeper 1998) where it is suggested that all word formation is syntactic and functional and that the observed semantic and syntactic differences are due to a difference in functional structure. Basically, Alexiadou concentrates on the framework proposed in Marantz (1999) according to which lexical elements, unspecified for syntactic category, are introduced into variable syntactic environments. Depending on the functional layers that dominate these unspecified items, they are correspondingly spelled out as adjectives, verbs, or nouns (Alexiadou 2001: 7). That is, categories such as the verb *destroy* or the noun *destruction* are abstract roots devoid of categorial features. These abstract roots are introduced into syntactic structure unspecified for a syntactic category and relate to higher functional heads such as Number/D or $\bar{v}$, to turn into a noun or a verb respectively. Hence, when $\sqrt{\text{DESTROY}}$ is placed in a verbal environment, it yields a verb (9a), and if placed in a nominal environment, the result is a noun (9b).

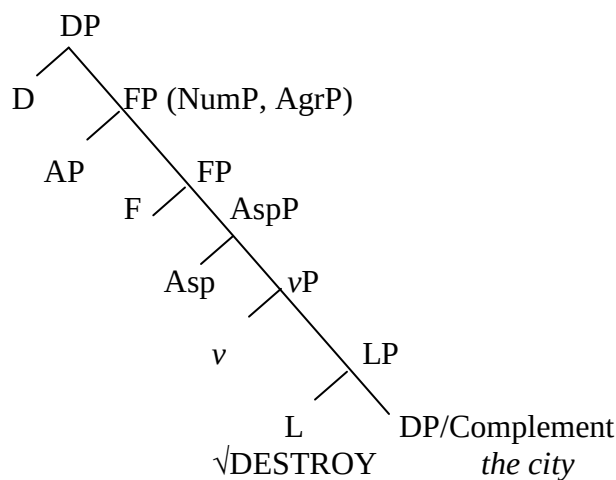
(9) $\sqrt{=}$ $\sqrt{\text{DESTROY}}$



In an approach like this, functional layers fully determine the category of the lexical head.⁵

Regarding nominalizations, Alexiadou distinguishes between argument-supporting nouns, which correspond to Grimshaw's (1990) complex event nominals, and non-argument-supporting result nouns.⁶ For her, the difference between argument-taking and result nominals is explained by the presence of additional functional layers inside the former but not the latter. To exemplify, she claims that only argument-taking nouns include Voice/ $\underline{v}$ ⁷ and Aspect projections (10a) whereas result nominals do not (19b).⁸

(10) a. Process/event (argument-supporting) nominals (from Alexiadou 2001: 19)



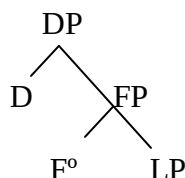
⁵ This, in fact, differs from Grimshaw's (1990) analysis, who claims just the opposite, i.e. that the category of lexical heads determines the functional layers, her notion of 'extended projection' of a major category.

⁶ For Alexiadou (2001) both *process* and *event* nouns are argument-supporting, the only difference between them being that the former are durative while the latter are terminative (Alexiadou 2001: 10).

⁷ According to Kratzer (1994a,b), Chomsky (1995), Harley (1995), Marantz (1997), and Arad (1999), $\underline{v}$ is (i) the locus for agentivity, i.e. external arguments; (ii) contains features related to agentivity; (iii) bears case features for the object; and (iv) comes in two types: **a.** introduces an external argument; **b.** does not introduce such arguments (see Alexiadou 2001: 17). As for property (iv: b), Alexiadou claims that exactly this type of $\underline{v}$, the 'deficient' one, is found in nominalizations, due to the fact that no accusative case is assigned to their DP arguments and that no agent is syntactically projected in Spec, $\underline{v}$ P.

⁸ In Alexiadou's analysis, the functional category *Aspect* contains features related to the semantic properties of the denoted event (for example, perfective for a completed event and imperfective for an ongoing one), while *Voice* is the locus of agentivity, decisive for features relevant to the licensing and interpretation of external arguments.

b. Result nouns



Note that in contrast to Marantz (1999), Alexiadou (2001) does not include a category-changing nominalizing head [n°] to derive a noun. Rather, she assumes that whenever a root is introduced under D/Number, we have a noun, and when introduced under Tense, the outcome is a verb. I will argue, however, that a nominalizer projection nP is necessary for a root (or stem) to be analyzed as a noun. As we will see, ***evidence in defense of n° comes from the properties of some nominalizing suffixes which are capable of determining the aspectual behavior of the derived noun.*** In a sense, nP represents a computational domain within nominal structure in the same way as AspP is the computational domain for verbs.

Crucial for my typology of the Bulgarian deverbal nouns is **THE STATUS AND FUNCTION OF VOICE AND ASPECT WITHIN A NOMINAL**. Regarding this issue, Alexiadou (2001) observes that there are languages that have overt morphological reflexes for Voice and Aspect. To exemplify, Greek is a language which shows Voice morphology on nominalizations (evidenced by the infix *-m-*), but this is not systematic. However, there are other languages like Turkish, Korean, West Greenlandic, the Bantu languages, and Maori which do it quite systematically. In Turkish, for example, the passive morpheme *-IL* shows the presence of Voice both for verbs and derived nouns (11).

(11) 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’

(from Alexiadou 2001: 50)

Similarly, I will show that Bulgarian also has an overt Voice morphology in some nominalizations (in the case of $-(N)IE$ nominals) which is manifested by the suffix $-N/T$ (see § 6.3.2). As for the second functional projection, AspP, I will show that it is also overtly manifested in Bulgarian. Thus, the formal aspectual opposition perfective-imperfective is present not only in verbs but also within nominals.⁹ Bulgarian is thus a language that has both overt morphological reflexes. Following Alexiadou (2001) then it will follow that the presence of both projections should result into a process/event argument-taking nominal. However, we will see that this is not necessarily so (see § 6.5).

Now let us turn to the way in which Ferrari (2005) deals with nominalization.

6.1.3. Ferrari (2005)

Ferrari (2005) adopts some of Alexiadou's (2001) ideas in order to account for Italian and Luganda nominalizations.¹⁰ However, contrary to Alexiadou (2001) and Marantz (1999), she claims that only stems can enter syntax to be further modified. For her, roots first need to acquire a categorial specification, i.e. they need to become stems, in order to be analyzable. Once this process has taken place, they can enter the syntactic component for further modification. Stem formation takes place in the Lexicon in Ferrari's analysis. An example is provided below:

(12) The Lexicon: $\sqrt{} + (c) = \text{stem } (c)$

From (12) we see that the categoriless root $\sqrt{}$ combines with a categorial feature (c) to yield a stem which is categorially marked (i.e. (c)). Stems thus always have a categorial feature (verbal, nominal, or adjectival).

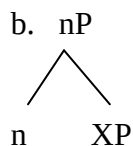
⁹ Similar patterns are found in Archi, Inuit, Buryat, Mongolian, Turkish, Tuva, and Tagalog (Alexiadou 2001: 51).

¹⁰ Luganda is a Northeastern Bantu language. It is the official language of the Baganda people, the largest Interlacustrine Bantu tribe in Uganda.

Following Ferrari's line, I will suggest that there are cases where a stem, and not a root, must enter the syntactic component as an indivisible unit. In other words, there are instances where only stems can enter the numeration as syntactic objects. This is the case of lexically prefixed nominalizations (see chapter 5, § 5.3.1 for verbs, and chapter 7, § 7.3 for nouns). Otherwise, it is the root that is directly inserted in syntax to be further modified there.

Another assumption which I adopt from Ferrari (2005) is her claim that the **Gender/Class morpheme** turns out to play a crucial role for the derivation of nouns in both Italian and Luganda. For her, these morphemes are **derivational heads marked for the lexical feature [n] that project in syntax by virtue of their inflectional nature.**¹¹ As a consequence, and due to the presence of this nominalizing [n] feature, such morphemes are used to derive nouns from non-nominal (i.e. verbal and adjectival) stems. In other words, Ferrari (2005), in contrast to Alexiadou (2001), defends the role of nominalizers such as [n] for the derivation of deverbal nouns where noun formation results from the Merger of [n] with an XP, where XP can be a nominal, adjectival, or verbal stem, or a VP, AspP, or VoiceP (13).

(13) a. [nP [n [XP]]]



Following this line of analysis, I will propose that some Bulgarian nominalizations are also derived by the merger with a gender morpheme which, in my analysis, is a nominalizer as well. This is the case of “gender-derived” nominals. As for all other Bulgarian nominalizations, the nominalizing head is a derivational suffix

¹¹ Root stems, affix stems (i.e. derivational morphemes) and inflectional morphemes are considered to be XPs in Ferrari's (2005) framework.

marked for gender. In either case, however, it is Gender which assigns a nominal category.

EVIDENCE FOR THE FUNCTIONAL PROPERTIES OF GENDER in Bulgarian comes from the fact that in the same way as verbal aspect is a classificatory category for verbs, inasmuch as without being morphologically marked for aspect, all basic verbs are classified as either perfective or imperfective (the great majority being imperfective), the category of gender is also a classificatory category for nouns and divides the lexicon into classes which trigger agreement in Bulgarian. Bearing in mind that Bulgarian is inflecting language, it expresses inflectional properties in various ways, which results in morphological organization based on inflectional classes, where inflectional class refers to Aronoff's (1994) definition of "a set of lexemes whose members each select the same set of inflectional realizations" (Manova 2005: 234). Thus, there are four productive classes within Bulgarian nominal inflection (see Appendix 1.4) based on the gender ending of the nouns, which makes the three-way gender distinctions in Bulgarian (e.g. feminine, masculine and neuter) classificatory for nouns.¹² Additional evidence for the functional nature of gender comes from the fact that gender suffixes, when added to adjectives or verbs, derive common gender nouns (e.g. *pijan* 'drunk' (A) → *pijan-its-a* 'drunkard' (N): feminine gender morphology belonging to class 2 in the language which refers to both female and male individuals; *bŭbrja* 'chatter, babble' (V) → *bŭbr-its-a* 'babbler': again female gender morphology to refer to both males and females; see Manova 2005: 244).¹³ In other words,

¹² Note that verbal aspect is not taken into consideration for inflection class assignment because, as Manova (2007: 23) observes, Bulgarian represents right-head headedness and the prototypical perfectivizers, being prefixes, do not influence the inflection class assignment. Furthermore, perfectives formed by the semelfactive suffix *-N* enter e-type (2) class whereas all IMPF2 verbs fall within the third conjugation a-type (see Appendix 1.2). Interestingly, however, the kind of the IMPF2 suffix may influence the inflectional paradigm of the verb, so like gender, imperfectivization organizes verbs into three major classes (see Appendix 1.3).

¹³ Bulgarian has inherited the most basic characteristics of formal gender inflection from Old Bulgarian with almost no changes and thus presents a three-way distinction in the forms of Feminine, Masculine and Neuter gender markers. As a general rule, grammatical gender depends mainly on the phonological ending of the noun (also called a gender ending, i.e. *rodovo okonchanie*) (the few exceptions being names to designate professions like *uchitel/uchitel-ka* 'he/she-teacher'; *doktor/doktor-ka* 'he/she-doctor', and in the case of nouns designating people like *bashta* 'father'). The nouns ending in a consonant (including *j* "й") belong to the unmarked

in the same way as thematic vowels which take a root (or other non-verbal base) and turn it into a verb, gender markers take a root (or other non-nominal bases) and turn it into a noun. Furthermore, in the same way that every verb belongs to a specific conjugation by virtue of its present tense thematic vowel (see Appendix 1.2), every noun falls within a given inflectional class by virtue of its grammatical gender (see Appendix 1.4). Thus, a parallelism can be established between thematic vowels, which are prototypical verbalizers since they exclusively appear within verbs and therefore signal verbal presence, and grammatical gender, the latter being a *bona fide* nominalizer.

In this respect, note another way in which nouns resemble verbs by virtue of their category-assigning properties: as we saw, verbs formed by the borrowed verbalizing suffix *–ira* are doubly marked for aspect, i.e. biaspectual, since they can appear in both perfective/telic and imperfective/atelic contexts without changing their morphological make-up. Crucially, the same holds for **loan nouns where loanwords denoting males (e.g. professor, director) are usually double gender nouns** (Manova 2005: 246). As I suggest, this has to do with the non-native character of the categorizer (e.g. $v^0 = -ira$ and $n^0 = -or$), which receives no relevant interpretation in Bulgarian due to the lack of aspectual distinctions on the borrowed v^0 and the lack of gender distinctions on the non-native n^0 . Notwithstanding, in colloquial style, this ambiguity is usually overcome by assigning interpretation via nativization strategies such as prefixation for telic interpretation or *–va* suffixation for durativized interpretation with verbs (see chapter 3, § 3.2), or female

Masculine grammatical gender, which is phonologically null in Bulgarian: *chovek* ‘man’, *vŭlk* ‘wolf’, *stol* ‘chair’. The Feminine formal gender is overtly realized by the morphemes *–a/-ja*: *rabotnichk-a* ‘female worker’, *smokin-ja* ‘fig’, *kražb-a* ‘theft’. Finally, the nouns that end in *–o* or *–e* are neuter in Bulgarian: *momch-e* ‘boy’, *momich-e* ‘girl’, *kuch-e* ‘dog’, *žit-o* ‘wheat’, *zel-e* ‘cabbage’, *del-o* ‘act’, *peen-e* ‘singing’. Another type of nouns included in the Neuter class are certain nouns of foreign origin that end in *–u*, *–ju*, *–i* where the final vowels form part of the root of the word: *kenguru* ‘a kangaroo’, *taksi* ‘a taxi’. It is important to note that the majority of the Bulgarian nominalizations examined in this paper belong to the Neuter gender as they end in *–e*. These are the deverbal nominals ending in *–NE* and *–NIE*. Yet, as will become clear, there are other nominalizations which have different suffixes and which are assigned their gender according to the type of ending they have.

gender marking via *-a* suffixation for nouns (e.g. *direktor-k-a* 'female director') where *-a* signals female gender morphology. ***These shared properties between gender markers on the one hand, and thematic vowels and aspect, on the other hand, indicate the categorizing, classificatory properties of such elements.***

Note that a similar proposal is made in Lowenstamm (2006) who claims that nouns result from the merger of a root ($\sqrt{\text{ }}$) with a functional nominalizing head (n^0) à la Marantz (2001), where n^0 corresponds to Gender in any language: i.e. in one-gender system languages like Turkish (also labeled genderless languages), in two-gender system languages like French (or Spanish), or in three-gender system languages like Yiddish (also Bulgarian). Evidence for the postulation of Gender as a nominalizer comes from the determiner system of French (e.g. the properties of the singular definite articles and singular possessives); from the properties of the determiner system of Yiddish where a three-way gender distinction between feminine, masculine and neuter is encoded in the singular definite article but is neutralized into a unique plural form *di*; from the characteristics of diminutives in Spanish versus Yiddish, etc. For Lowenstamm (2006), the core elements of a Gender system are Masculine and Feminine, which represents a cognitive capacity, '*perhaps a universal ability to distinguish between male and female*' (Lowenstamm 2006: 15). Crucially, ***in order for these distinctions to be grammatically operative, Gender has to be an 'active' category in the language, which receives an overt manifestation in the form of Concord in Spanish***, for example.

Adopting Lowenstamm's considerations, I will assume Gender to be either active or not in a language (e.g. +Gender or -Gender). However, contrary to Lowenstamm, I will claim that Gender is a nominalizer only when it is active, i.e. in languages like Spanish or Bulgarian, but not in languages like Turkish or English.

Whether Gender projects separately or is just a part of n^0 is irrelevant for the proposals made here. In this respect, there has been extensive debate as to whether Gender heads its own functional projection, GenderP (Alexiadou 2001, Bernstein 1993a, Picollo 1991,

2005, 2006, 2008, Ritter 1993, among others), or whether gender markers are word class markers or not (Harris 1991). Regarding this issue, I will not enter into discussion as to whether there is a universally available Gender/Classifier projection which will be responsible for providing a nominal category to the structure under its scope but just assume Gender to be a *bona fide* nominalizer if grammatically active within a language.¹⁴ If not, the language will apply other means for nominalization.

Going back to the previous discussion, ***I will also propose, in a similar way to Ferrari, that the base for deriving nominalizations can be either a VoiceP (in the case of $-(N)IE$ nominals), AspectP (in the case of $-NE$ nominals), or a VP (in the case of lexically prefixed nouns, i.e. when verbal stems enter the syntactic component). Otherwise, we have categoriless roots that enter syntax on top of which the nominalizing head $[n]$ attaches. As for English, on the other hand, due to its impoverished gender system, there are nominalizing suffixes which do not directly merge as n° heads, but first project as some aspectual head and further incorporate into the n° head to check $N(ominal)$ features. In either case, I will defend the obligatory presence of n° .***

¹⁴ Regarding the status of Gender Phrase inside nominals, Picallo (1991) claims that gender projects to a functional phrase within DP which she labels Gen(der)P. This functional projection is situated between NP and NumP reflecting the fact that gender is expressed directly on the noun stem and that number is expressed outside gender: e.g. *mes-a-s* (table-FEM-PL) ‘table’ (Spanish). Bernstein (1993a, 1993b) subsequently suggests that gender is expressed in the form of word markers (in the sense of Harris 1991) in Spanish and Italian-type languages. However, Ritter (1993) challenges the idea that gender, or word markers, should correspond to functional categories, claiming instead that gender is a feature and that there is a parametric variation in the location of this feature cross-linguistically. Thus, gender is found on the noun stem at all levels of syntactic representation in Hebrew while in Romance it is located together with the noun’s number specification on the functional head Num. Be it as it may, if there is indeed a universally available Gender/Class projection which assigns nominal category, in languages like English a default gender would be arguably assigned.

I now present some of Borer's (1999, 2002, 2003, 2005b, 2007a, 2009a,b,c) assumptions concerning nominalizations since I adopt them in this study.

6.1.4. Borer (1999, 2002, 2003, 2005b, 2007a)

Borer (1994, 1999, et seq.) is a representative of a syntactic account of nominalizations. For her nominalizations can be divided in two types, R(eferential) nominals and A(rgument) S(tructure) nominals, with the following characteristics.

	R-Nominals	AS nominals
a.	Non- θ assigner; no obligatory arguments	θ assigner; obligatory arguments
b.	No event reading	Event reading
c.	No agent-oriented modifiers	Agent-oriented modifiers
d.	Subjects as possessive	Subjects as arguments
e.	<i>by</i> phrases are non-arguments, in Spanish, selects <i>de</i>	<i>by</i> phrases are arguments, in Spanish, selects <i>por</i>
f.	No implicit argument control	Implicit argument control
g.	No aspectual modifiers	Aspectual modifiers
h.	<i>frequent, constant</i> , etc. only with plural	<i>frequent, constant</i> , etc. without plural
i.	Count nouns	Mass nouns

Table 4: Borer (2007a: 3): R-nominals vs. AS nominals (based on Grimshaw 1990)

Borer (2007a) observes that the three-way distinction of nouns established in Grimshaw (1990) (e.g. complex event, simple event and result nouns) meets some empirical problems, exemplified in (14).

(14) Problems to Grimshaw (1990) (see Borer 2007a: 4)

a. **Grimshaw's simple event nouns follow diagnostics of Borer's referential nouns:**

- (i) **the **constant** race to the mountains*
- (ii) **the event **in three hours***
- (iii) **John's **deliberate** trip to the mountains*
- (iv) **a race from the station **by Mary***

(v) **the trip to the desert in order to win a medal*

(vi) *the three different races from the stadium lasted a long time*

b. Borer's R-nominals (may) behave like Grimshaw's simple event nominals

(i) *the destruction lasted for hours*

(ii) *the examination lasted for hours*

c. AS nominals may not be events in the sense of Grimshaw (and thus may not correspond to her complex event nominals), but must have event structure (must be eventualities)

(i) *Sandra's awareness of the dangers*

(ii) *Gerry's closeness to his father*

From the data in (14) Borer (1999, 2007a, et seq.) concludes that a distinction should be established *only* between R(eferential) nouns, which lack argument structure properties, and argument-structure (AS) nouns, but not between simple and complex event nouns. This is due to the fact that the simple event nouns of Grimshaw, though able to denote events, behave syntactically like R-nouns (14a). As a consequence, ***Borer suggests that the crucial distinction in the nominal domain is based on whether nouns are able or not to inherit the argument-taking properties of their base with the final typology being two-fold: (i) AS nominals, which inherit the argument structure of the stem on which they are built, either adjective or verb, and (ii) R-nominals which do not.*** As for simple event nominals, though they denote events, they are unable to inherit any argument structure since they are not derived from any argument taker (i.e. adjective or verb) (14a).

Observe that the last statement crucially implies a strong relationship between morphology and meaning since, as Borer (1999: 2) observes, “*it excludes the possibility that a word like ‘journey’ has an abstract verb as part of its derivational history, although semantically it is quite close to a word like ‘travelling’, which does have a verb as part of its derivational history*”. Evidence supporting this claim comes from the fact that ***only nouns derived from verbs, or adjectives (14c), can be associated with argument structure.*** In order to account for the verbal (and argument-taking) properties of the

process-denoting (AS) nouns, Borer assumes that there is an underlying syntactic VP layer within them (else, an adjectival base).

However, some questions arise regarding the issue of inheritance and the projection of arguments. Borer (1999) considers that both R-nominals (15a) and AS nominals (15b) may be event-denoting and derived from verbs (Borer 1999, 2003, Alexiadou 2001) through incorporation, creating a V-N string adjacency (15).

- (15) a. R-nominals: $[_N \text{ [verb]} N \quad [_{L=V} \text{ verb}]$
- $[[\text{form}_{L=V}] \text{ -tion}_N]$: a possible single phonological word, possibly non-compositional
- b. AS nominals: $[_N \text{ [verb]} N \text{ } [_{FF1...[FF2... \quad [_{L=V} \text{ verb}]]}]$
- $[[\text{form}_{L=V}] \text{ }_{FF1} \text{ }_{FF2}] \text{ -tion}_N]$: a possible single phonological word; must be compositional

If this is so, then one may ask why only AS nouns, but not R-nominals, are able to inherit the argument-structure properties of their verbal base. Concerning this issue, Borer (1999) assumes that the key to its answer is the presence of additional functional (aspectual) structure. In other words, **only AS nominals** (or Grimshaw's 1990 complex event nominals) **are nominalizations of a specific functional event structure** (e.g. an Event Phrase node, or an Asp_Q node), marked as FF_1 and FF_2 in (15) (see also Hazout 1991, 1995; Borer 1993, 1999, 2003; Fu et al. 2001; Alexiadou 2001 et seq.; Harley 2005, 2006, among others). Since this functional structure is aspectual, it then has a verbalizing function implying that the head of all AS nouns in English (also in Hebrew, Greek, and Bulgarian for that matter) is morphologically and transparently derived from a verb (or an adjective).¹⁵ Crucially, **such a claim supports early root phonology, contrary to DM proposals, because if roots were devoid of (at least some) phonological information, then AS nouns without a verbal source should be possible**. But as the data below show, this is not the case:

¹⁵ As Borer (1999) observes, the noun 'aggression' is an exception.

- (16) a. *The lesson lasted several hours*
 b. *The lesson took place from 7am to 8am*
 c. **the lesson of geometry by an incompetent teacher* *AS nominal
 d. **the lesson of geometry for several hours* *AS nominal
 e. **the lesson of geometry in order to understand the most recent proof* *AS nominal
 (Borer 2009c: 2, ex. 19-20)

In other words, Borer (2009a,b,c) suggests that AS nominals are always morphologically transparent and compositional, which is related to the fact that only these nouns incorporate additional functional event structure, which verbalizes the base. Moreover, ***it is precisely this aspectual event structure which is responsible for the argument-taking properties of these nominalizations. I will assume this to be the case for all AS nouns.***

Interestingly, apart from argument structure, the incorporation of specific event structure may also affect the aspectual behavior of nominalizations, which is reflected by the process denotation of the English –ing nominals in contrast to the ambiguous –tion nouns. To account for this, Borer (2005b) suggests that these nominalizers have different aspectual properties: –tion is aspectually neutral (17a) in contrast to –ing which is atelic (17b).¹⁶ In this way the ability of –ing nominals to denote a process is accounted for.

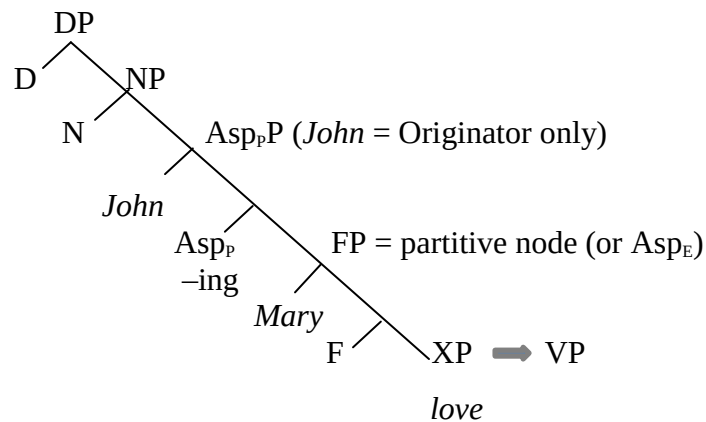
- (17) **Telicity: –ing and –tion** (from Borer 2009: 11-12; see also Appendix 6.1: (1))
 a. **–tion is aspectually neutral** (Borer 2007a): allows the ‘in X time’ expression
*Kim’s (gradual) **formulation** of several procedures twice/in two weeks/*for two hours*
 b. **–ing is atelic** (see also Snyder 1998, Alexiadou 2001, Borer 2005b): allows ‘for X time’ expression only (examples from Borer 2009c: 9)
*Kim’s (*gradual) **formulating** of several procedures {for the past few weeks/ *in few*

¹⁶ Recall that nominalizing –ing is related to inner aspect and has anti-telic effects since it blocks telic structures to project, e.g. Asp_QP (Borer 2005b: 239).

weeks/ ??twice¹⁷

Syntactically, Borer proposes that the nominalizing suffix –ing occupies the head of an Aspect Process Phrase (Asp_PP) as in (18).

(18) Process AS –ing nominals (Borer 1999: 10): *John's loving of Mary*



It should be noted that Asp_P does not entail the projection of the external argument with a particular role (vs. little *v*). Recall from chapter 5 (§ 5.1) that unlike *v*, it does not introduce an argument but a process which needs not originate with an argument (e.g. *it rained*). For Borer, when a DP is licensed in Spec,Asp_PP, it is interpreted as the originator of the process (e.g. *John* in (18)).

¹⁷ Borer (2005b: 232) observes that adverbials such as *once* and *twice* are adjunct phrases which are compatible with both telic and atelic structures. Since their function is to assign range to the open value of Asp_QP, then when combined with atelic structures, they give rise to a quantity reading as in *Kim loved Robin twice in three months*. In this respect, recall that the *in*-adverbial cannot combine with atelic structures (e.g. **Kim ran in three hours*) since it is a predicate modifier of quantity, i.e. it requires a well-formed telic predicate to be licit (e.g. *Kim ran to the store in two hours*). Finally, the *for*-adverbial, as Borer (2005b: 233) suggests, is an outer aspectual operator which, due to its anti-telicity effects, is excluded in the presence of Asp_QP and thus requires a homogeneous predicate under its scope (e.g. activities or statives). However, we have also observed in the previous chapters that the *for*-adverbial is related to outer aspect, so it can in principle take telic predicates under its scope as well (*He spotted the plane for hours*) but the interpretation we have is one of repeated telic events of spotting the same plane in the duration of (several) hours.

Apart from processes, events may also refer to results in the more abstract sense. Achievement predicates, for example, do not refer to a process. Rather, their interpretation requires a *subject-of-result* or an *endstate* which emerges only in the presence of telic structures, i.e. Asp_E for Borer (1999) (else, Asp_QP in Borer 2005b). This explains why –ing, which projects a process (i.e. Asp_PP), can nominalize unergatives (19a), which are also atelic, but not achievements (19b), which denote telic events (though note that there are some achievement predicates which can be interpreted as a process (19c). As for –tion nouns, there is nothing to prevent them (e.g. the anti-telic nominalizer –ing heading Asp_PP) from nominalizing an achievement predicate (19d).

(19) **Aktionsart: –ing and –tion** (from Borer 2009b: 11-12) (see also Appendix 6.1: (2))

a. –ing and unergatives: yes

- (i) *the jumping of the cows*
- (ii) *the dancing of the fairies*

b. –ing and achievements: not

- (i) **/#Kim's reaching of the summit*
- (ii) **/#Robin's finding of (the) oil*

c. –ing and achievements: some exceptions (from Borer 1999: 10)

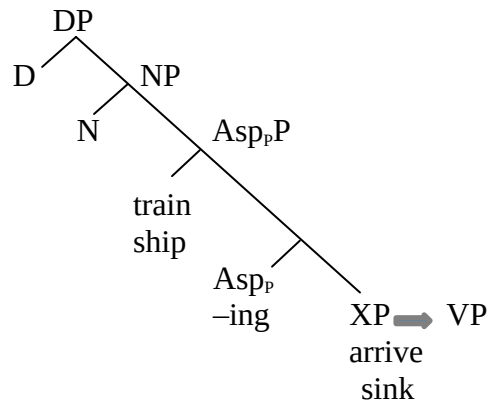
The sinking of the ship (intransitive reading)

d. –tion and achievements: yes

- (i) *Vesuvius' eruption*
- (ii) *the balloon's explosion*

Since –ing marks the presence of an atelic Asp_P node, then (19c), for example, when embedded within such an atelicizing structure, is interpreted as a process. A syntactic representation is offered in (20).

(20) Taken from Borer (1999: 10)



In contrast to -ing, which projects a process (Asp_P), and thus gives AS nouns, the nominalizer -tion projects an endstate/result which gives rise to a result reading of the relevant -tion nominal:

(21) -tion R-nominals

- a. *The formation was beautiful/symmetric/final/complete;*
- b. *The form was beautiful/symmetric/?final/?complete*

Further evidence in support of the claim that -ing nouns are AS nominals in contrast to -tion nouns which tend to give R-nominals comes from pluralization (22a) and the (in)compatibility of these nouns with indefinite determiners (22b). Thus, only the -tion R-nouns can pluralize and combine with such determiners.

(22) a. Pluralization: -tion nouns can pluralize versus -ing nouns, which cannot (see Appendix 6.1: (3))

- (i) *the (enthusiastic) formulations/*formulatings of many procedures (by newly appointed bureaucrats)*
- (ii) *the (occasional) salutations/*salutings of an officer (by his juniors)*

b. Indefinite determiners: -tion nouns can take indefinite determiners in contrast to -ing nominals

- (i) *a formulation/*formulating of many procedures (by newly appointed bureaucrats)*
- (ii) *a salutation/*saluting of an officer (by his juniors)*

The data above suggest that –tion nouns are compatible with a result reading which allows them to take the relevant modifiers in contrast to –ing nominals which denote processes and are incompatible with such modifiers. ***For Borer (1999), the result denotation of the –tion derivatives is due to the fact that these nouns incorporate the result/endstate in the form of an obligatory syntactic Asp_E node (corresponding to AspQuantityP in Borer 2005b).*** Thus, she assumes that –tion could be treated as having two types of projection possibilities: a lexical one, which will give an R-nominal, and a functional one (e.g. the syntactic Asp_EP).¹⁸

TO RECAPITULATE, ***the main difference between –ing and –tion nouns lies in their aspectual make-up: the former require an atelic functional event node, Asp_P, which is responsible for their process denotation whereas the latter embed a resultative Asp_E node, which explains their result interpretation.*** In fact, such a treatment of –ing nouns has been already hinted at in various works. In semantic approaches to nominalizations (e.g. Grimshaw 1990) it has been suggested that unlike –tion and the like, –ing only assigns Ev (i.e. gives complex event nominals) and hence cannot be an R-noun. Within syntactic approaches, on the other hand, –ing in derived nominals triggers the projection of specific functional structure such as v for Marantz (1997), or an active VoiceP for Alexiadou (2009). However, both types of approaches conclude that –ing cannot give an R-nominal, which is not the case. To exemplify, Borer (2009) observes that synthetic compounds with –ing (e.g. *crystal-gazing*) lack an event interpretation (23).

(23) On –ing R-nominals (they usually have an activity simple event interpretation; more examples are offered in Appendix 6.1: (4))) (examples from Borer (2009b: 11):
a good living, a strong craving, a reading, (good) standing, (one) sitting, a (leftist) leaning, etc.

¹⁸ The advantage of such a treatment is that it establishes a parallelism between adjectival passives, in the verbal domain, and result nominals, in the nominal domain (i.e. R-nominals have a result Asp_E in the n-domain and adjectival passives a result Asp_E in the v-domain).

From (23) it follows that since –ing nouns are possible on a result interpretation, then –ing does not obligatorily involve the projection of a little *v*, or an active VoiceP, contrary to Marantz (1997) and Alexiadou (2009). A recap of the difference between –ing and –tion nouns is presented in Table 5.

	–ing nouns	–tion nouns
Denotation	process (also event or result)	result/end state (also event)
Type	AS nouns (17b); R-nouns (23)	R-nouns (17a, 22); also AS
Pluralize	not (22a)	yes (21a)
Indefinite determiners	not (22b)	yes (22b)
Syntax	Asp_P (20)	Asp _E (else, Asp _Q in Borer 2005b)
Aspect	atelic (17b)	neutral (17a)
Passive	not	yes
Anti-passives	yes	not
Aktionsart	achievements: not (19b) unergatives: yes (19a)	achievements: yes (19d)

Table 5: Some differences between –ing and –tion nouns

ANOTHER IMPORTANT DIFFERENCE BETWEEN –ING AND –TION NOUNS CONCERNS THEIR BEHAVIOR WITH RESPECT TO STATIVITY. Though some stative predicates allow both eventive and stative-agentive readings (24), –ing nouns can only be eventive (25) (i.e. the subject is understood as the originator) whereas –tion nouns can have a stative interpretation (26).

(24) On the interpretation of statives (from Borer 2009b: 12; see also Appendix 6.1: (5))

- a. *Kim loved Pat* (stative reading (preferred); eventive-agentive reading)
- b. *Charles felt the coat* (stative reading; eventive-agentive reading)
- c. *Jenny smelled the stew* (stative reading; eventive-agentive reading)
- d. *Corrine touched Gil* (stative reading; eventive-agentive reading)
- e. *The wall touched the fence* (stative reading only, under normal circumstances)

(25) Stative verbs and –ing: eventive-agentive reading only (from Borer 2009b: 13; for more examples, see Appendix 6.1: (6))

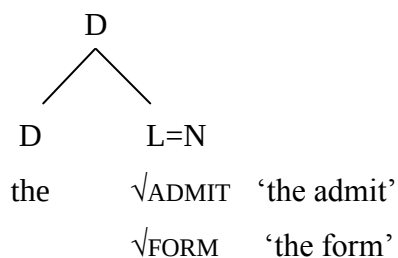
- a. *the loving of Pat by Kim* (eventive-agentive reading only)
- b. *the feeling of {#the cold/the coat on his shoulders}(by Charles)*
(eventive-agentive reading only)
- c. *the smelling of the stew (by Jenny)* (eventive-agentive reading only)
- d. *the touching of Gil (by Corrine)* (eventive-agentive reading only)
- e. *the touching of the fence (#by the wall)* (eventive-agentive, abnormal
under normal circumstances)

(26) Stative verbs and –tion: stative interpretation possible (from Borer 2009b: 13)

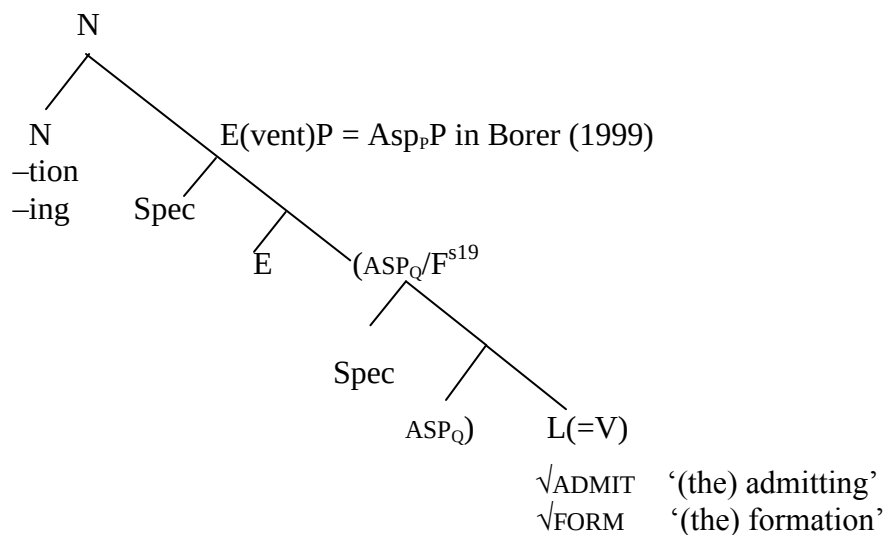
- a. *the wall's (persistent) adherence/*adhering to the fence*
- b. *Dennis' (tenacious) endurance/*enduring of the noise*
- c. *The stain's (sad) resistance/*resisting to cleaning*

In order to account for the above differences, Borer proposes **that –ing is the manifestation of the originator of the event**. Since the originator is interpreted in Spec,E(vent)P for Borer (2009a,c) (else, in Spec,Asp_PP for Borer 1999 as in (20)), then –ing should license such a projection as well. In other words, –ing AS nominals incorporate an Event node (27b) (else, Asp_P node as in (20)). Recall that the difference between little *v* and the Event node E (or Asp_P) is that the former introduces an argument whereas the latter introduces an event which may or may not originate with an argument as in *the tree fell*. Thus, if there is a DP in Spec,EP/Spec,Asp_PP which has no other role, then this DP will be interpreted as the originator. This is confirmed by the fact that the **nominalizer –ing rejects both telic (17b) and stative readings (24), and forces an activity (process) reading with an obligatory originator**. However, in the following chapter we will see that this is not the case. A syntactic representation of both nominal types (e.g. R and AS nouns) as proposed in Borer (2009) is offered in (27).

(27) a. R-nouns (from Borer 2009a: 8)



b. AS nouns:



As already mentioned, R-nominals (27a) are formed from a nominalizing structure directly above the root whereas AS nouns have nominalizing structure above a verbalizing argument structure (27b). Evidence for the existence of additional functional structure inside AS nouns comes from the fact that such nominalizations allow internal arguments, purpose phrases (e.g. ‘in order to’) and by-phrases expressing the agent (28a,b) whereas R-nouns do not (28c).

(28) a. *the **formation** of two special committees by the board of directors in order to oversee the elections*

b. *the **forming** of two special committees by the board of directors in order to oversee the elections*

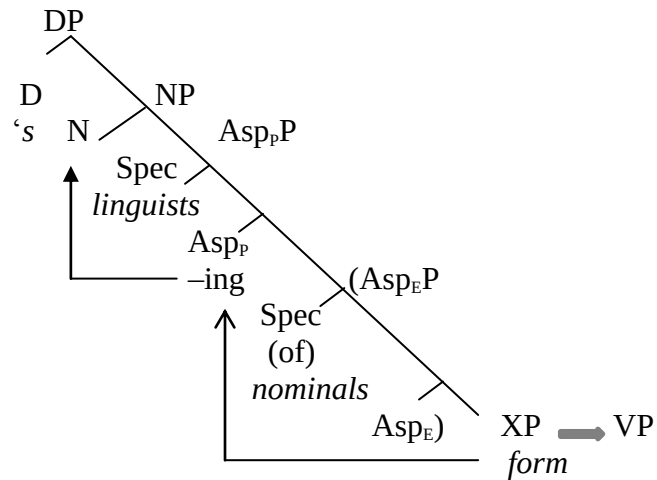
¹⁹ ASP_Q (Aspect quantity phrase) is telicizing structure which projects in the presence of telic predicates. When the predicate is atelic transitive, the complementary shell phrase, F^sP, projects (see Borer 2005b).

c. **the **form** of two special committees (by the board of directors) (in order to oversee the elections)*

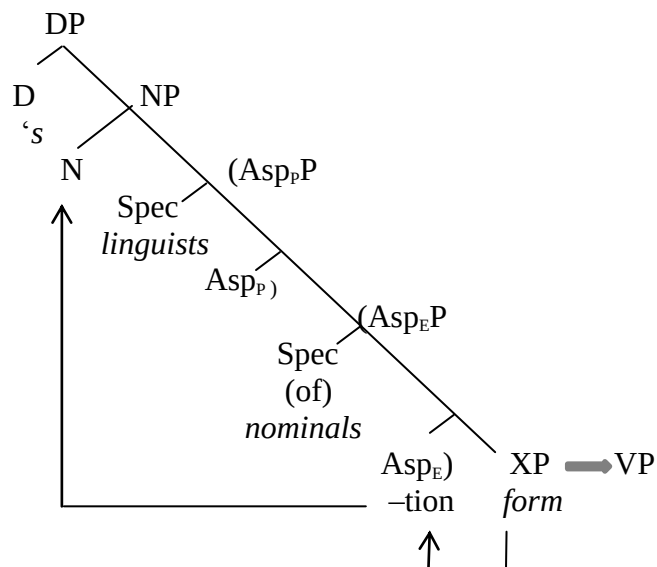
NOTE THAT we have by now analyzed –tion nouns as R-nominals (21) in contrast to –ing nouns which are AS nominals. Bearing in mind that internal arguments (*ergo* argument structure) are licensed by functional (verbalizing) structure, then the ability of –tion nouns to sometimes behave like AS nominals (28a) receives a structural explanation: **–tion either takes a previously verbalized structure (i.e. aspectual event structure) and gives thus an AS nominal or else attaches directly to the root to be consequently interpreted as an R-noun.** The same, though in the opposite direction, holds for –ing nouns: they are in principle interpreted as (process) AS nominals, since they incorporate the necessary functional event structure, but can at times denote results (23), too. This contrast between –ing and –tion nouns is explained as follows: **both nominalizing suffixes check N/D features the difference being that –ing , which gives rise to AS nouns, projects as Asp_P (29a) whereas –tion projects as Asp_E/Asp_Q (29b). When we have an R-nominal, however, no additional functional structure is present implying that the N/D features of –ing and –tion should force these suffixes to project directly as N.** Thus, the availability of Result –ing nouns and AS –tion nouns is accounted for. **As for zero-derived nouns, they can only give R-nominals (28c) due to the lack of the necessary aspectual functional event structure inside them (29c).**

(29) Aspectual differences: -ing vs. -tion (Borer 1999: 5)

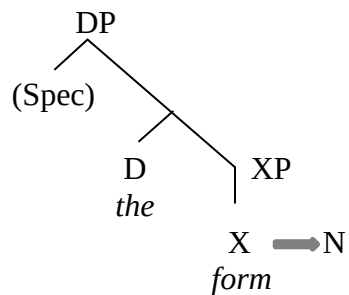
a. -ing nominals (accusative nominals) (e.g. *the linguists' forming of nominals*)



b. -tion nominals (ergative nominals) (e.g. *the linguists' formation of nominals*)



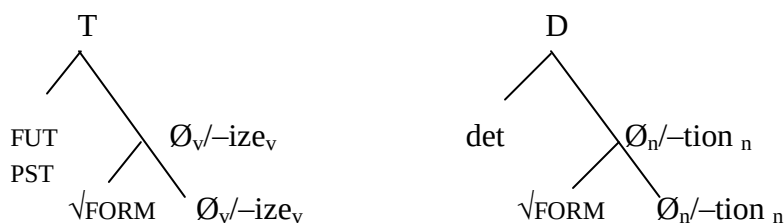
c. Ø-derived nominals: no functional event structure (e.g. *the form*)



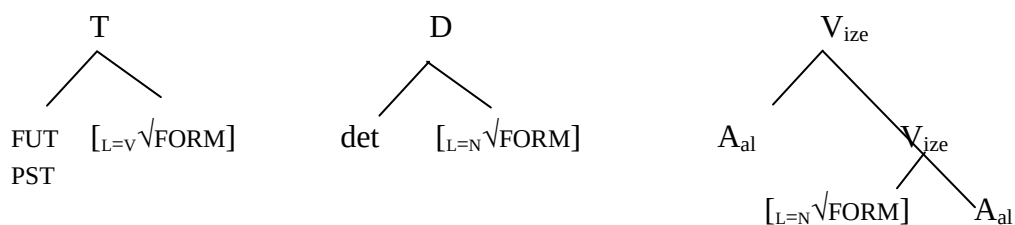
SOME COMMENTS ARE IN ORDER HERE. Borer (2009a,b,c) assumes that category is assigned by functional projections (Asp, T for verbs; D, Div(isive) for nouns). For her, functional nodes involved in event structure (E, Asp_Q) are verbalizers (30b). In Borer's view, it is redundant to postulate categorizing projections such as n, v (or a) as in DM (30a) since these projections agree with a higher functional projection (D, T, Asp) anyway. However, I will prefer to use such categorizers since they find an overt morphological manifestation in Bulgarian (e.g. theme vowels for v, derivational suffixes for n). For consistency reasons, and abiding to the Uniformity Hypothesis, the same should hold for English nominalizers, too, be they phonologically null or not, represented as N above.

(30) Categorizing the structure (from Borer 2009c: 12)

a. DM: affixation (overt or zero) is needed to categorize the root.



b. Borer (2009a): no categorizing heads²⁰



In other words, for Borer there are no zero categorizers in English since it is the functional structure itself which categorizes the root. Borer (2009c) goes further to propose that

²⁰ For Borer syntactic terminals are much more concrete than in DM since morphemes are phonologically abstract but reordering is not allowed. Only stem allomorphy determined by a given syntactic or morpho-phonological context (e.g. *destroy-destruct*, *prógress-progréss*, *grow-growth*) allows for certain, yet limited, degree of ‘unfaithfulness’ to the original phonological representation of the stem.

derived nominals in English represent evidence in favor of the claim that there is no need to postulate a category changing rule of zero affixation in this language (e.g. $N \rightarrow V$ or $V \rightarrow N$ as in $[_V \text{ kiss}] \rightarrow [_N \text{ kiss}]$ and $[_N \text{ table}] \rightarrow [_V \text{ table}]$). Borer (2007a: 3) suggests that **“ $\emptyset$ -alternations are syntactically, rather than morphologically determined, by inserting a category-neutral root into a functionally deterministic structure”**. In fact, $\emptyset$ categorizers, which attach to roots to convert them into nouns or verbs, are not productive in English. In the absence of zero categorizers, it then follows that overt affixation is needed to change category (e.g. $-\text{tion}$ for nouns or $-\text{ize}$ for verbs), which explains the ungrammaticality of the following examples:

(31) a. **a verbalize, *an instantiate, *a liquefy, *an encase, *a fatten*

a'. $*[_D [_V \text{ formalize}]]$, $*[_{DIV} [_V \text{ formalize}]]$

b. **to formation, *to salutation, *to arrival, *to friendship*

b'. $*[_T [_N \text{ formation}]]$

(from Borer 2009c: 13-14)

REGARDING THE ABOVE CLAIMS, I assume this to be the case for languages with impoverished morphology such as English, i.e. languages with ***poorly developed gender systems in which grammatical gender is not syntactically active***. In these languages the otherwise available strategy to use gender marking in order to mark nominal category as in Bulgarian is blocked, as is the use of theme vowels (i.e. overtly realized verbalizing elements) to mark a verbal category. In this respect, note that Bulgarian never shows zero-alternates such as $[_V \text{ kiss}]/[_N \text{ kiss}]$ and $[_N \text{ table}]/[_V \text{ table}]$ since category membership is always overtly manifested, i.e. morphologically determined. ***Thus, the language will always try to make use of the overt morphological material it has in its lexicon, and in the absence of enough morphological means to determine category label, it makes use of the functional structure and its properties to achieve the same goal.***²¹ Put differently, in the absence of overt gender morphology, English makes use of syntax to achieve the same goals.

²¹ This state of affairs reminds us of the sharp contrast between verbal bases in standard Bulgarian, which are either perfective-telic or imperfective-atelic in contrast to English and biaspectual bases, which are aspectually

As Borer correctly observes, if overt affixation (e.g. –tion, –ing, –ize) were not available in English, the embedding of a verb such as ‘formalize’ within a nominal environment will lead to a contradiction ((31a) vs. (31a')): the base is already a verb but is contextually interpreted as a noun (e.g. **a nominalize*). The same holds for ‘formation’ (31b) which is already a noun but is forced to be interpreted as a verb if merged within a verbal context (31b'). The only option is then that nouns like ‘formation’ and verbs like ‘formalize’, in the absence of overt categorizers, be inserted within a nominal (D, Div) or verbal (T, Asp) contexts: [_{D/DIV} [_N *formation*]] and [_{T/ASP} [_V *formalize*]], respectively. Evidence in support of this claim is found by coercion data where we can observe that in the absence of overt categorizers, and when overt nominalizers are present (32a: ii), such forms cannot be converted to verbs:

(32) a. Verbs:

- (i) *to salute, to form; to dance, to kiss*
- (ii) **to salutation, *to formation*
- (iii) *to blackboard, to wardrobe* (no overt categorizers so convertible)
- (iv) *to take off, to buy up, to sell out*

b. Nouns:

- (i) *a salute, a form, a dance, a kiss*
- (ii) *a salutation, a formation*
- (iii) *a blackboard, a wardrobe*
- (iv) *a take-off, a teach-in, a buy-up, a sell-out* (from Borer 2009c: 13-14)

ambiguous. Again, a lack of overt (morphological) ‘markers’ is at play here, where overt ‘markers’ in the verbal domain correspond to direct range assigners to Asp^o which mark inner aspect, whereas overt ‘markers’ (else, categorizers) in the nominal domain are gender nominalizers which provide roots with a nominal status. In the absence of overt markers/categorizers, it is the functional structure and its feature specification which determines inner aspect or category membership. Put differently, in the absence of morphological categorizers (e.g. theme vowels as verbalizers; gender as nominalizer, or PF-IMPF distinctions for marking inner aspect), a language makes use syntax in order to assign category or mark inner aspect. Arguably, the functional choice is the marked option, whereas the morphological choice involves less effort.

(33) a. [_{ASP} [_{L=V} [_{L...}] L-head...]] a'. [_{ASP} [_{L=V} L-head [P]...]]
 (to) black board (to) buy up
 b. [_D [_{L=N} [_{L...}] L-head...]] b'. [_D [_{L=N} L-head [P]...]]
 (a) black board (a) buy up

(34) English Ø-nominalizers: R-nouns

- (35) Ø-derived nouns (see Appendix 6.1: (7) for further examples):

- a. Alternate freely with verbal forms
 - (i) *a/to run, a/to stand, a/to sit in, a/to lie down, etc.* (from Borer 2009c: 12);
 - (ii) *a/to portion, a/to position, a/to condition, etc.*
- b. They may not function as AS nominals

the condition(ing) of certain responses by certain works of literature*

- (i) My *constant* change of mentors was, fortunately, not followed by others' *doing so*.
- (ii) His *frequent* release of the prisoners was not followed by the governor's *doing so*.
- (iii) His *frequent* use of sharp tools was followed by others' *doing so*.

Crucially, in the absence of zero categorizers, it will follow that not only all zero-derived nouns will lack argument-structure interpretation but also all mono-morphemic nouns such as *growth*. Thus, *the growth of tomatoes* is an R-noun, not an AS nominal, where *tomatoes* is a free-interpretation possessor. As Borer (2007a: 10) claims, pairs of stem allomorphy such as *grow/growth* should be compared to pairs such as *to break/the break*, *to drop/the drop*, *the shelf/to shelve*, but not to pairs such as *to break/the breaking*, *to drop/the dropping*. In fact, the list of such nouns is rather exhaustive (36).

(36) a. (*birth*), *breath*, *death*, *growth*, *stealth*, *health*, *dearth*

b. *width*, *length*, *strength*, *warmth*, *truth*, *breadth*, *depth*, (*wealth*)

c. *length/lengthen*, *strength/strengthen*, *height/heighten*: from the pairs *long/length*, *strong/strength*, *height/heighten* ('length', 'strength' and 'height' are stem allomorphs, but not nouns derived from an adjective with the nominalizer *-th*) (from Borer 2007a: 10)

A recapitulation of the nominalization data discussed so far is offered in Table 6.

	–ing nouns	–tion nouns	zero-derived nouns
Denotation			
Process	yes	no	no
Result	sometimes	yes	yes
Event	yes	sometimes	sometimes
Type			
AS nouns	yes (17b)	sometimes	no (but: 'exchange')
R-nouns	sometimes (21)	yes (17a, 22)	yes
Pluralization	not (23a)	yes (23a)	yes
Indefinite determiners	not (22b)	yes (22b)	yes
Syntax	Asp _P (20)	Asp _E (else, Asp _Q)	no event layers
Aspect	atelic (17b) accusative nouns	underspecified (17a) ergative nouns	no event structure
Statives			
eventive reading	yes (25)	no	
stative reading	no	yes (26)	

Table 6: Nominalization types in English

TO RECAPITULATE, Borer assumes that nouns can be divided in two types: argument-taking (AS) nominals and result (R) nominals. Such a distinction is syntax-driven inasmuch as the former are capable of taking internal arguments due to the presence of additional aspectual event structure inside them whereas the latter lack argument structure since there is no aspectual event structure to facilitate this. We have also seen that the aspectual character of a given suffix is crucial for the final interpretation of a nominal. Thus, ***the nominalizing suffix –ing is atelic and projects as Asp_P (Asp_{PROCESS}) node, which transitivizes the structure (29a) and explains the availability of argument structure with these nouns and their process denotation.*** Furthermore, the atelic nature of this suffix (and its anti-telic character) blocks the nominalization of achievement predicates. Finally, since the specifier position of Asp_P is associated with an originator interpretation, when stative verbs are nominalized by –ing, only an eventive-agentive reading is possible, but not the stative one. As for the suffix –tion, it has been claimed to be aspectually neutral because it allows a modification by the time-span adverbial. Syntactically, ***–tion projects as Asp_{EP} which spells out an endstate (or result) interpretation. This explains the fact that such nouns typically give R-nominals.*** When –tion nominalizes a stative predicate, then the stative interpretation becomes possible since there is no aspectual (and functional) incompatibility at stake. Finally, the ***zero-derived nominals are formed from a nominalizing layer directly upon the root so they do not embed any functional event structure. Hence, such nouns do not have internal arguments and can only be interpreted as result nominals.***

In the following section I comment on the basic assumptions found in Fu et al. (2001) since they elaborate further on some of Borer's ideas.

6.1.5. Fu et al. (2001): Evidence for VP within process nominals

Fu et al. (2001) present empirical evidence in support of a syntactic treatment of English nominalizations. They suggest that English process nouns involve a syntactic VP projection, a fact which has been previously claimed to be incorrect. To be more precise, Chomsky (1970), for example, concludes that adverbs, which are VP modifiers, are incompatible with process nouns, which leads him to conclude that there is no hidden VP within these nouns. However, Fu et al. (2001) present empirical evidence showing just the contrary, i.e. that (some) VP adverbs are allowed within process nouns. The evidence in defense of a VP layer within process nominal is listed in (37) and exemplified in (38, 39).

(37) VP within process nominal

- a. Adverbial modification: VP adverbs allowed (see (38))
- b. The VP anaphor *DO SO* can take a process noun as its antecedent (see (39))

(38) Adverbial modification (Fu et al. 2001: 554-555)²³

- a. *(While) the removal of evidence **purposefully** (is a crime), the removal of evidence **unintentionally** (is not)*
- b. *?Protection of children **completely** from bad influence (is unrealistic)*
- c. *Collaboration of the witnesses **voluntarily** (has greatly sped up the process)*

(39) The anaphor *DO SO*

- a. *Sue's exploration of Easter Island was impressive, then Amy's **doing so** was a real surprise* (Fu et al. 2001: 550)
- b. *Sam's destruction of his documents this morning was preceded by Bill's **doing so*** (Fu et al. 2001: 571)

²³ The occurrence of nominalizations with adverbs in non-subject position is limited in contrast to their occurrence in subject position:

- (i) *I missed his resignation so suddenly*
- (ii) *Jane's resignation so suddenly gives rise to wild speculation* (Fu et al. 2001: 554, fn. 5).

- c. *His removal of the garbage in the morning and Sam **doing so** in the afternoon were surprising* (Fu et al. 2001: 571)

Before I turn to adverbs within nominalizations, I will just briefly comment on the second test used to detect the presence of a VP layer within nouns, the distribution of *DO SO* (39).

The distribution of *DO SO* has been claimed to signal the presence of a non-terminal V constituent (Lakoff & Ross 1972, cited in Fu et al. 2001). I will not provide a detailed discussion on the *DO SO* test but just mention that according to Fu et al. (2001) process nouns (39), in contrast to underived result nouns (40), are allowed as antecedents of *DO SO*.

(40) Underived and result nouns: reject *DO SO*

- a. **Sam's version of the event and Bill's doing so were surprising*
b. **Kim's accident in the morning and Sue's doing so in the evening were not coincidences*

Hankamer & Sag (1976), as cited in Fu et al. (2001: 570), observe that *DO SO* requires an overt linguistic antecedent (41) vs. (42), which is bigger than V (43). Hence, the distribution of *DO SO* is taken by Fu et al. (2001) as a diagnostics to test the presence of an underlying verbal constituent inside process nouns.

(41) Linguistic antecedent:

Hankamer: *I am going to stuff this ball through a 6-inch hoop.*

Sag: *I don't believe that you can [do so].*

I don't believe that you can [do it].

(42) Pragmatic antecedent:

[Hankamer attempts to stuff the ball through a 6-inch hoop]

Sag: *#I don't believe that you can [do so].*

I don't believe that you can [do it].

(43) Antecedent bigger than V

He removed the garbage yesterday and I did so too

He removed the garbage yesterday and I did so today

**He moved the green container and I did so the black container*

(from Fu et al. 2001: 570-571)

The data above represent another piece of evidence in support of the presence of a syntactic VP layer within process nouns and its absence within underived or result nouns (see (40)), even when the latter may have an event reading (e.g. underived nouns like *version*, *accident*, *trip* as in (44)), or within the result readings of *destruction*, *collection* and the like, as in (45)).

(44) a. **His **accident** before the party and my **doing so** after are not a coincidence*

(Fu et al. 2001: 574)

b. **Sue's **trip** last May surprised us, Amy's **doing so** annoyed us*

(Fu et al. 2001: 550)

(45) a. **John's complete destruction and my **doing so***

b. **John's collection and my **doing so***

(Fu et al. 2001: 574)

Therefore, *DO SO* is claimed to be sensitive to the underlying structure of the events expressed by nouns and is allowed only with event nouns derived from verbs (e.g. process nouns, see (39)), but not from nouns, though event-denoting, which lack a syntactic VP layer (40). ***Crucially, such a state of affairs finds no explanation within semantic approaches to nominalizations which do not distinguish events embedding a VP from events which do not.***

LET US NOW TURN TO ADVERBIAL MODIFICATION. As already mentioned, process nouns allow adverbs inside them (see (38)). However, underived or result nouns strongly reject being modified by adverbs (46).

(46) Underived and result nouns: no adverbial modification (Fu et al. 2001: 555)

a. **His version of the accident **thoroughly** (did not help him)*

[cf: his **thorough** version of the accident]

vs. *His explanation of the accident **thoroughly*** (event noun)

b. ??*His metamorphosis into a werewolf so **rapidly** was unnerving*

vs. *His transformation into a werewolf so **rapidly** was unnerving* (event noun)

To explain the contrast between process and result nouns, Fu et al. (2001) suggest that derived process nouns (e.g. *explanation, exploration*) contain a syntactic VP projection whereas underived nouns (e.g. *version, trip*) do not. This also explains the fact that only process nouns (e.g. *explanation*) share with their verbal bases (e.g. *explain*) argument structure and selection properties (see also Grimshaw 1990).

On studying the types of adverbs that are allowed within process nominals and the relevant position such adverbs occupy, Fu et al. (2001) provide a more fine-grained structure of process nouns. Adverbs can be either sentential, i.e. adjoining to a sentence-level node (e.g. ‘certainly’, ‘evidently’, ‘possibly’, ‘fortunately’, ‘presumably’, etc.), or VP adverbs, i.e. adjoining to VP (e.g. ‘purposefully’, ‘unintentionally’, ‘completely’, ‘rapidly’, etc.) (based on Jackendoff 1972). The former are excluded from process nominals (47b) whereas the latter are not (38, 47a).

(47) **Adverbs within process nouns** (Fu et al. 2001: 556)

a. *His removal of the evidence **thoroughly** (promised a lengthy trial)* (VP adverb)

b. **His explanation of the problem **fortunately** (did not cause a riot)* (sentential adverb)

Furthermore, the fact that only the VP adverbs (48a), but not the sentential ones (48b) can be placed between the direct and the indirect object, additionally supports the VP status of the former.

(48) **On the placement of adverbs** (Fu et al. 2001: 556)

a. *She explained the problem **thoroughly** to the tenants* (VP adverb)

b. **She explained the problem **presumably** to the tenants* (sentential adverb)

The fact that sentential adverbs are disallowed within process nouns implies that these nominals lack a full sentential structure. Thus, the top projection they can include is arguably the one hosting the external argument.²⁴

Interestingly, regarding adverbial modification, process nouns show the same behavior as nominal gerunds (i.e. –ing nominalizations), which is an additional support in favor of a VP layer within process nouns.

(49) VP within –ing nominals

a. VP adverbs: allowed

*The shutting of the gates **regularly** at ten o'clock had rendered our residences very irksome to me* (from Jespersen 1940, cited in Fu et al. 2001: 554, fn. 4)

b. Sentential adverbs: disallowed

The giving of the books **fortunately to the library (made it possible for us to go on working)* (Fu et al. 2001: 557)

A recap on the adverbial modification data is offered in Table 7.

²⁴ Fu et al. (2001) show that TP is absent from nominalizations, confirmed by the following contrasting data (see Fu et al. 2001: 575-576):

(i) *The Airforce's destruction of the city with bombs and the Navy's **doing so** too made the headline*

(ii) **The Airforce's destruction of the city with bombs and the Navy's **doing** too made the headline*

It has been suggested that in contrast to *DO SO*, which seeks a VP as its antecedent, *DO* takes a TP (Déchaine 1993, cited in Fu et al. 2001). Thus, (ii) is fine if not nominalized (see (iii)), indicating that TP is absent from nominalizations:

(iii) *The Airforce destroyed the city with bombs and the Navy did too.*

Further evidence for the fact that *DO* is dominated by T comes from the fact that *DO* occurs above negation (iv) in contrast to *DO SO*, which, being a VP constituent, occurs below it (v) (see Fu et al. 2001: 576):

(iv) *He said he would change his socks, but he [_T **did**] not [_{VP} t_i]*

**He said he would change his socks, but he [_T did_i] not [_{VP} t_i so]*

(v) *He said he would change his socks, but he [_T did] not [_{VP} **do so**]*

	VP adverbs	Sentential adverbs
–ing nominals	YES	NO
process nouns	YES	NO
underived/result nouns	NO	NO

Table 7: Adverbs within nominalizations

The availability of VP (manner) adverbs within process nouns and their relative order leads Fu et al. (2001) to conclude that such nominalizations contain a VP projection inside them. This, however, does not hold for result nominals since they disallow adverbial modification. Thus, adverbs are barred pre-nominally (50a) because they are never licensed in this position but are allowed post-verbally (50c).

(50) On the position of adverbs within process nouns (the same holds for –ing nouns) (see Appendix 6.1: (8) for further examples) (from Fu et al. 2001: 560-561)

- a. *His **deliberately** removal of the evidence
- b. *His removal **deliberately** of the evidence
- c. [His removal of the evidence] **deliberately**
- d. The arrival of the trains **promptly** at the station

Note that the adjectival counterparts of the adverbs in (51) are allowed where the adverbs are barred (51a). On the other hand, adverbs occur where adjective cannot, at the right periphery of the nominal (50c vs. 51c), or between the complements (50d vs. 51d).

(51) On the position of adjectives within process nouns (see also Appendix 6.1: (9))

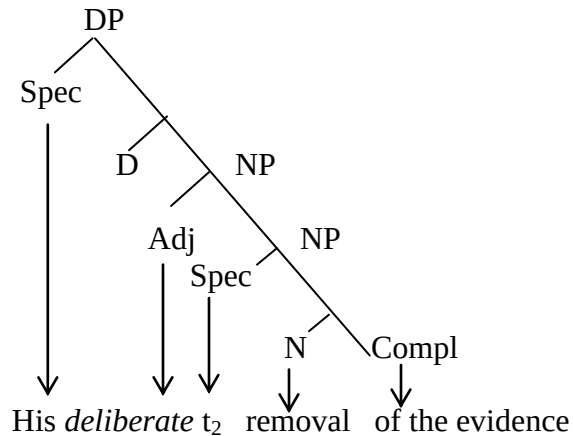
- a. His **deliberate** removal of the evidence
- b. *His removal **deliberate** of the evidence
- c. *[His removal of the evidence] **deliberate**
- d. *The arrival of the trains **prompt** at the station

Fu et al. (2001: 561)

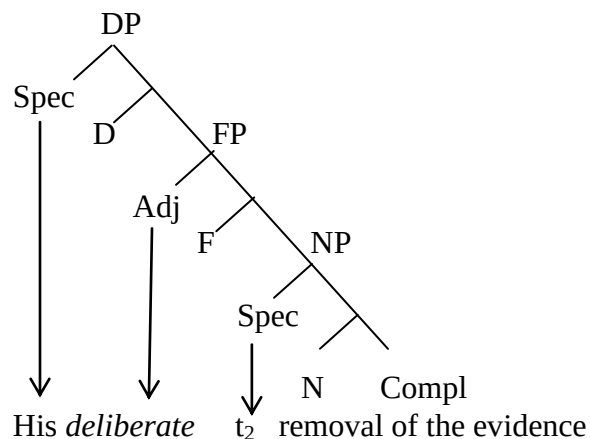
As far as the syntax of adjectives is concerned, it has been proposed that they are either adjuncts (52a) or occupy functional specifiers (52b) (Valois 1991).

(52) On the syntax of adjectives (Fu et al. 2001: 562)

a. Adjunction to NP



b. Functional specifiers



As for the syntactic derivation of adverbs, it has been suggested that they are also either adjoined or else occupy the specifier position of some functional projection (Cinque 1999). Therefore, the only way to explain the contrast between adverbial (50) and adjectival (51) modification within nominalizations is to assume that there is a syntactic VP layer within process nouns. Due to this, Fu et al. (2001: 563) conclude that “*if process nominals include a nominal projection dominating a verbal projection, the distribution of adjectives and adverbs receives an immediate and a natural explanation. Adverbs are barred pre-*

nominally [...] quite simply because adverbs are never licensed pre-nominally. Adjectives are barred in the right periphery and intervening between a head and a complement because, equally simply, post-nominal adjectival modification is generally impossible and in the case of nominalization, that would entail an adjectival modification of a VP structure, which is never possible. Nothing else needs to be said”.

By assuming adjectives and adverbs to adjoin to maximal projections, Fu et al (2001: 563) arrive at the following syntactic derivation of these constituents inside nominalizations:²⁵

(53) The derivation of adjectives and adverbs inside nominals

- a. [_{DP} the [_{NP} (observed) [_{NP} -al... [_{VP} promptly [_{VP} ...arrive at the station]]]]]
- b. [_{DP} the [_{NP} (observed) [_{NP} arrive-al... [_{VP} promptly [_{VP} ...t_v at the station]]]]]



It is also important to note that within a noun, only adverbs (54a), but not adjectives (54b), can modify the internal argument.

- (54) a. *The committee's destruction of these documents **individually** (cast doubt on the validity of the process)*
(individually interpreted as one by one)
- b. **The committee's **individual** destruction of these documents (cast doubt on the validity of the process)*
(individual is allowed but not on the intended reading of one by one)

Fu et al. (2001: 564)

The contrast in (54) where only adverbs, be they in a post-nominal or in a preverbal position, but not pre-nominal adjectives, can modify the object, receives a structural

²⁵ The same results will follow if we opt for analyzing adjectives and adverbs as occupying functional specifiers, the difference being that there will be two distinct functional projections dominating the VP and the NP which will consequently house the adverb and the adjective, respectively. I will not treat the position of adjectives in this work so whether adjectives adjoin to NP or occupy functional specifiers will not be discussed.

explanation reflected by the different structural positions these elements occupy (see (53)). Fu et al. (2001) account for this state of affairs as follows:

“A pre-nominal adjective in process nominals, unlike its adverbial counterpart in a post-nominal or in a preverbal position, cannot modify the object. Our verb raising structure offers a simple solution. Namely, with a maximal constituent boundary between the nominal head and the post-nominal positions in process nominals, a constituent which we argue is a VP, adverb and object are in the same maximal projection excluding pre-nominal adjectives. A rule can then be stated, an NP is modifiable by a modifier within their maximal projection, which includes post-nominal adverbs and preverbal adverbs but not pre-nominal adjectives” (Fu et al. 2001: 565).

In other words, the behavior of adjectives and adverbs represents a piece of evidence in defense of the presence of a VP layer inside process nominals.

Importantly, there is additional evidence in support of the presence of higher functional structure within process nouns (see also Borer 1999, Marantz 1999, among others). Such evidence comes from the fact that adverbs within a nominal cannot appear between the head noun and any direct argument (e.g. the external or the internal one).

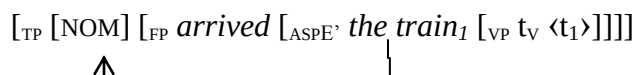
(55) a. **The collaboration **swiftly** of the witness (sped up the process)*

b. **John’s removal **immediately** of the garbage (made the investigation difficult)*

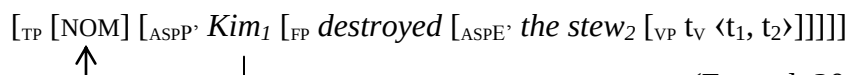
Fu et al. (2001: 565)

To account for this, Fu et al. (2001) assume that both internal and external arguments are positioned in higher functional projections of the extended domain of VP (Borer 1994, Kratzer 1994). Following Borer (1994, 1998) they further assume that the interpretation of both external and internal arguments is mediated through *aspectual* functional structure. To exemplify, external arguments are accommodated and interpreted in the specifier position of a process aspectual projection, Asp_PP (equal to light *v*) whereas internal arguments are interpreted in a (potentially) telic aspectual node above VP, Asp_E, as shown in (56):

(56) a. *The train arrived*



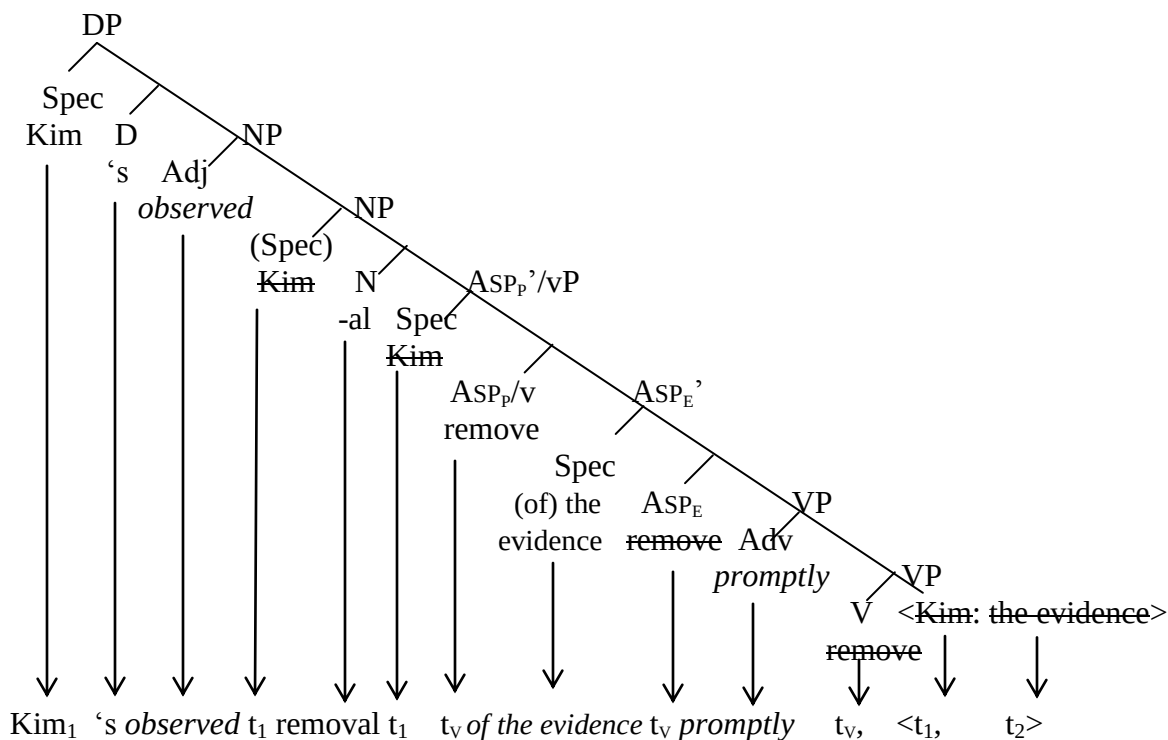
b. *Kim destroyed the stew*



(Fu et al. 2001: 566).

The syntactic representation in (56) is further extended to process nouns in Borer (1999) with the following derivation (from Fu et al. 2001: 567):

(57) Higher functional structure within process nominals (based on Borer 1999)



From (57) we can observe that within a process noun, in the same way as within a sentential VP, internal and external **arguments must move to the relevant aspectual specifiers in order to be interpreted**. This, according to Fu et al. (2001) follows from the fact that **process nouns have identical argument-structure properties as sentential VPs**. Thus, they claim that “whatever

structure licenses the projection of arguments within full sentences is expected to occur within process nominals, if the arguments are to receive the same interpretation” (Fu et al. 2001: 568).²⁶ ***I adopt this line of analysis in this work.***

TO RECAP, Fu et al. (2001) provide a syntactic account of nominalizations and offer syntactic evidence in defense of the presence of a VP layer inside process nouns and its absence inside underived and result nouns. Thus, only the former but not the latter can be taken as antecedents of *DO SO* and allow adverbial modification.

Furthermore, the authors show that adverbs which occur inside process nominalizations are distributed in a similar fashion as in sentential VPs, unifying in this way both verbal and nominal structure (see Appendix 6.1: (10)). As for ***the presence of both adjectives and adverbs within nominalizations, it is indicative of the fact that such nouns have both nominal and verbal structure at the same time.*** In fact, these nominals, according to Fu et al. (2001) include an extended VP projection embedded under N', evidenced by the possible adverb orderings inside nouns.

However, not the whole array of the extended VP projection is available within process nouns. Since sentential adverbs (e.g. speaker-oriented adverbs) are disallowed, then TP (or IP) (see fn. 24), or any other higher functional projection linked to the interpretation and the licensing of sentential adverbs should be excluded from such nominalization. On the other hand, both speaker-oriented and manner adjectives are accepted due to the fact that we are finally dealing with a nominal constituent which is, by principle, modifiable by an adjective of whatever type. This is once again a piece of evidence against semantic approaches to nominalizations since the only possible explanation for such a contrast is structural.

²⁶ Bearing in mind that adverbs adjoin to VP (else, occupy functional specifiers above VP), the movement of direct arguments to higher aspectual specifiers is supported by the word order facts inside nouns as shown in Appendix 6.1: (10).

Before I turn to my syntactic account of nominalizations, I will just briefly mention some problems to the previous proposals on the topic.

6.1.6. Problems with previous analyses of nominalizations

By now we have seen that there are two possible ways to approach nominalizations. If we adopt a lexicalist view as the one in Chomsky (1970) then we should assume that what accounts for some shared properties of a given root and its derivatives is a kind of a lexical process mapping. Such a trend crucially relies on the formal enrichment of the lexicon and lexical operations. Some insights of this approach may be found in the works of Sproat (1985), Randall (1988), among others.

The second route to follow is Lees' (1960) syntactic approach to deverbal nouns according to which the shared properties of verbs and their nominalized forms is accounted for by the presence of a full phrasal syntactic projection of the stem within the structure of the derived word. Further syntactic operations will then join the stem and the nominalizing affix to give the final nominalized derivative. Such a trend is followed by Hazout (1991), Valois (1991), Borer (1991, 1999), Fu (1994), among many others.

I will try to show that a syntactic treatment of nominalizations is empirically superior to a lexical one.

Semantic approaches fail to explain important facts concerning the behavior of nominalizations. As Fu et al. (2001) observe, such approaches are unable to account for the adverbial modification data. To be more concrete, Grimshaw's (1990) three-way division of nouns into complex events (e.g. 'destruction'), simple events (e.g. 'trip') and result nominals (e.g. 'destructions') is unmotivated and faces several problems. To exemplify, Grimshaw does not distinguish between event-denoting nouns with underlying verbal structure from those without such structure. Though both nouns may refer to and denote an event, only the former show VP characteristics (e.g. argument-structure properties, adverbial modification, antecedents of *DO SO*). Crucially, even underived nouns may denote

an event, as in *the trip lasted many hours*, but still lack argument structure and disallow adverbs. Thus, the postulation of an Ev argument as responsible for the behavior of nominalizations is problematic. Rather, it is the presence or absence of a syntactic VP projection (and additional aspectual structure) which accounts for the different properties of nominalizations.

Furthermore, Fu et al. (2001: 577) also observe that an additional piece of evidence against Grimshaw's semantic-based approach to nominalizations comes from nouns which take CP complements (e.g. 'announcement', 'claim', etc.). These nouns, though derived from verbs, do not give complex event nominals as expected, which is explained in Grimshaw (1990) by the claim that such nouns take adjoined modifiers (58a) rather than true syntactic arguments (58b).

(58) a. No event reading: CP as adjoined modifier

The announcement **that the results have been inaccurate in order to impress the public should not be condoned*

b. Event reading possible: Non-CP argument

*The announcement **of inaccurate results** in order to impress the public cannot be condoned* (Fu et al. 2001: 577)

Importantly, under the assumptions advocated in Fu et al. (2001), the noun in (58a) is derived from a verb so it should, as a general rule, exhibit VP characteristics, contrary to what we find in (58a). However, as Fu et al. (2001) observe, this is indeed the case since the example in (58a) can be improved as in (59).

(59) *The constant announcement **that valuable results will soon be achieved** (in order to impress the public) should not be condoned* (Fu et al. 2001: 557, fn. 27)

It then follows that the expectation that such nouns, since they are derived from verbs, and do not denote results, will have verbal behavior is supported. This in turn shows that a syntactically based approach to nominalizations has a greater explanatory power than a

semantically based one. Further evidence supporting this claim comes from the fact that these nouns also allow the durative phrase (60a), take the modifier *repeated* (60b), license VP adverbs (60c), and can function as antecedents of *DO SO* (60d), a phenomenon which is not expected under Grimshaw's analysis.

- (60) a. *The demonstration that the defendant was guilty **for five hours** exhausted the jury.*
 b. *The **repeated** announcement that the results have been falsified should not mislead you.*
 c. *The candidate's announcement **so quickly** that results have been falsified raised doubt on his credibility.*
 d. *The president's announcement that he is not running for reelection was surprising. But three other senators' **doing so** was astonishing.*

(Fu et al. 2001: 578)

Hence, it follows that only a system that takes into account whether or not a noun incorporates a syntactic VP projection inside it is capable of explaining the nominalization data. As we will see in the following section, such a claim is further supported by the nominalization data in Bulgarian, where only nouns which incorporate additional aspectual event structure (e.g. Asp_P, as in Borer 1999) can be true argument-structure nominals. Thus, ***in a similar fashion as the English nouns, the Bulgarian nouns are also sensitive to whether or not they incorporate a syntactic VP layer, or some higher aspectual layer inside them.*** In the same way as zero-derived nominals in English, which lack aspectual and verbal layers and give only result-referential nouns, the Bulgarian gender-derived nouns, which nominalize directly on top of the root, also behave like R-nouns. Once some verbal layer becomes available inside a noun, then we have the option of having an event-denoting nominal which may or may not take internal arguments. The former option is spelled out only in the presence of higher aspectual structure (e.g. the Bulgarian process –NE nouns which build on top of a process-related node) whereas the latter option is exemplified by nouns incorporating a Voice projection (e.g. the Bulgarian Voice –IE nominals).

Before I present the relevant details on the Bulgarian nominalization typology, I would like to present two more problems with the previous proposals on the English nominalizations. My objections refer to Borer's (2005b) claim that the –tion nouns are aspectually neutral since they allow for the time-span adverbial (17a) and that the –ing nouns are always atelic due to the anti-telic character of the nominalizing –ing (17b). My claim is that nominal –ing, although an anti-stative element as correctly noted by Borer (2005b) (25), is not an anti-telic one since it is compatible with verb-particle bases, in which case we obtain a telic interpretation (61a). As for the suffix –tion, it is a telicizing element (this will receive its syntactic explanation in the following chapter) and, consequently, the –tion nominals tend to give result (i.e. telic) nouns (61b), rather than atelic nouns (61c).

(61) a. On telic –ing nouns

*Kim's writing up of the letter in two hours/*for two hours*

b. On –tion nouns: the general trend: Result-Referential nominals

(i) *The explanation of the problem in two hours/*for two hours*

(ii) *The explosion of the balloon in two seconds/*for two seconds*

c. On some atelic –tion nouns

The exploration of the desert ?in two days/for three years

Note that to claim that the –tion nouns are prototypically telic is *prima facie* contradictory with Fu et al. (2001) claim that there are process –tion nominals (38, 39) if we take process nouns to denote atelic events. However, the term 'process' for them is applied differently from the notion of 'process' which I use. For them, the presence of a VP layer is only possible within process nouns, since they are derived from verbs, which is evidenced by adverbial modification data (38) and by the anaphor *DO SO* (39). In contrast to process nouns, underived nouns reject both criteria (40, 46) since there is no VP layer inside them. However, for me, the presence of verbal structure does not necessarily result in a process interpretation. As we are about to see, we have many eventive nouns which incorporate lower verbal structure and which do not denote processes. This is the case for the eventive “other-suffix” nouns (note that only the –NE nouns in Bulgarian can denote processes). I will comment more on this issue in the following sections.

Now we are ready to turn to the nominalizations in Bulgarian.

6.2. Previous proposals on nominalizations in Bulgarian

The literature on nominalizations in Bulgarian is scarce.²⁷ Dimitrova-Vulchanova & Mitkovska (2006), Popova (2006), Fowler & Dyer (1988) and Steinke (1999) are among the few who have analyzed deverbal nouns in Bulgarian. As for the semantics of nominalizations, Gradinarova (1999) is one of the very few to offer a detailed account of both Russian and Bulgarian deverbal nouns.²⁸

The semantic types of Slavic nominalizations in comparison with other languages such as English have been studied in Revzin (1973) and Fowler & Dyer (1988), who state that Slavic languages exhibit a smaller degree of variation among process nominals. Whereas (62a) is unknown in Slavic, the equivalent of (62b), a gerundive nominal (or a possessive – ing construction) in English, is found in Bulgarian and Macedonian.

(62) *I was surprised by*

- a. [*John immediately refusing the offer*]
- b. [*John's immediately refusing the offer*]

Syntactic analysis of Slavic nominalizations is provided in the works of Procházková (2006) for Czech, Schoorlemmer (1995, 1999) for Russian, and Rozwadowska (2000a, b) for Polish, among many others.

²⁷ The literature on the functional structure of the DP in Bulgarian is much richer. Thus, Wunderlich (2002), Schürcks and Wunderlich (2003), Tasseva-Kurktchieva (2005a, b), Dimitrova-Vulchanova & Guisti (1999) and Dimitrova-Vulchanova (2000) pay attention to the role and syntax of possessors in Bulgarian DPs. Tasseva-Kurktchieva (2006) further examines the categorical status of quantifiers in Bulgarian, claiming that they are not determiners and that demonstratives generate in their own DemP (something previously suggested by others such as Roca (1996)). Dimitrova-Vulchanova (2002) then analyzes the realization of Number in the Balkan languages whereas Dimitrova-Vulchanova (2003) and Arnaudova (1996) pay attention to possible N-A orders and A-to-N movement in the DP.

²⁸ In this respect, Dineva (1997, 1998) focuses more specifically on Bulgarian words of emotion.

Before I offer my syntactic analysis of nominalizations in Bulgarian, I will just briefly discuss some of the assumptions made in the literature on this topic. I first mention some proposals made in Dimitrova-Vulchanova & Mitkovska (2006) after which I will show the way in which Popova (2006) analyzes Bulgarian nominalizations.

6.2.1. A note on Dimitrova-Vulchanova & Mitkovska (2006)

Dimitrova-Vulchanova & Mitkovska (2006) (henceforth, DV&M (2006)) explore the nominalization types in Bulgarian and Macedonian. The authors claim that whereas Macedonian collapses event and result nominals in one and the same nominalization pattern (the –NJE nouns), Bulgarian distinguishes between productive event –NE and semi-productive result –NIE nominalization types. To illustrate this, they provide the following example (63), where from one and the same verb we obtain both nominalizations with the corresponding meanings. The examples refer to Bulgarian.

(63) a. <i>pis-a-NE</i>	b. <i>pis-a-NIE</i>
write-a-NE	write-a- NIE
‘the act of writing’	‘writings, the product of writing’
	(from DV&M 2006: 2)

From (63) we can observe that the –NE nominalization in (63a) yields an event reading, whereas the corresponding –NIE noun in (63b) has a result interpretation. In the usual case, a verbal root gives rise to both –NE and –NIE nominalizations. Sometimes, however, the –NIE noun may not be available. In this case, the –NE formation (64b), which is always available, is opposed to a ‘non-derived’ nominal (64a).²⁹

²⁹ Interestingly, not all verbs are capable of giving a –NE nominalization. Thus, DV&M (2006) observe that some verbs of the ‘fear’ class do not yield such nouns (i) so the only way to nominalize such forms is via a non-derived noun (ii).

- (i) **strahuva*-NE ‘fearing’
- (ii) *strah* ‘fear’

DV&M (2006) further suggest that another difference between the –NE and –NIE nominals concerns their syntactic behavior. Following Grimshaw (1990), the authors claim that event nominalizations (e.g. the –NE nominals) rarely take modifiers and almost never take demonstratives (67a), whereas result nominals (e.g. the –NIE nouns) can freely occur with demonstratives (67b).

- (67) a. **tova lae-NE*³⁰ b. *tozi laj*
 ‘this barking’ ‘this bark’

Concerning nominal modification, however, I will show that all standard Bulgarian nominalization types can freely accept any nominal modifier (see § 6.5.4).

Finally, I would like to briefly comment on the aspectual differences between event and result nouns in Bulgarian as discussed in DV&M (2006), as this is relevant for my syntactic analysis and further proposals on this topic.

According to DV&M (2006) the event –NE nouns inherit the event structure of the verb from which they derive while the result –NIE nouns have a ‘non-processual’ structure. To prove these claims, the authors apply the ‘lasted X time’ test (68).

- (68) a. *tǔrse-NE-to na izcheznalite prodǔlji dǔlgo* (–NE nominal)
The searching for the lost (ones) lasted long
b. **tǔrse-NIJA-ta na poeta prodǔljiha dǔlgo* (–NIE nominal)
*The search of the poet lasted long
(from DV&M (2006: 13))

A COMMENT IS IN ORDER HERE. The examples in (68) are problematic in various ways. First of all, the noun in (68a) is a –NE nominal in the singular whereas (68b) corresponds to its plural form. That is, (68b) does not correspond to a –NIE nominal so we cannot claim

³⁰ For me, this example is acceptable. DV&M (2006) claim that this example is typical of colloquial register, primarily in ironic contexts (see their fn. 8).

that durative modifiers (‘lasted X time’) are not available for such nouns. In other words, the examples in (68) do not serve to prove that aspectual inheritance takes place only within the –NE nominalization pattern. However, such an intuition is on the right track so I will provide data in defense of this claim (see § 6.5.1).

Finally, the authors claim that nouns behave differently with respect to aspectual prefixes. According to them, only –NE nominals (69a) but not any other type (69b) accept them.

(69) a. <i>IZ-/PRO-lajva-NE</i>	b. <i>*IZ-/PRO-laj</i>	
‘PF-barking’	*‘PF-bark’	(from DV&M 2006: 14)

Regarding this issue, however, I will show that some of the “other-suffix” nouns and some –(N)IE nouns do allow modification by aspectual prefixes.

From all of the examples presented above, DV&M (2006) conclude the –NE nominalizations are event-denoting whereas –NIE nominalizations denote results in the same way as the ‘non-derived’ nominals. I will show that such a claim meets empirical problems inasmuch as there are cases of –NIE and “other-suffix” nominals with event interpretation. As a consequence, certain aspectual prefixes will be also able to attach to both nominal types. Before I proceed to present my analysis of nominalizations, I would like to briefly mention some of the proposals on Bulgarian deverbal nouns presented in Popova (2006).

6.2.2. A note on Popova (2006)

Popova (2006) is also one of the few scholars who have devoted some thoughts to the topic of Bulgarian nominalizations. Adopting the Paradigm Function Morphology framework, she also claims that Bulgarian distinguishes between two types of nominalizations, –NE and –NIE nouns.³¹ For her, –NE nouns denote events and inherit the argument structure of the

³¹ Paradigm Function Morphology is a model of morphology which stems from the works of Matthews (1972), Anderson (1992) and Aronoff (1994), and is very thoroughly formalized in Stump (2001).

verb they derive from whereas –NIE nouns denote results. Recall, though, that I have already noted that this is not the exact situation in Bulgarian. First, there are many nominalizations, apart from the –NE ones, which denote events. Second, we will further see that certain –NE nominals can denote results or objects as well (see § 6.5.1).

By applying some of the tests already proposed in Grimshaw (1990), Popova tries to show that Bulgarian supports Grimshaw's distinction between argument and non-argument structure nominals. She shows that only –NE nouns (i) can be modified by phrasal verbs (70a), (ii) can take durative or completive adverbials (70b); (iii) allow for manner modification (70c); (iv) allow for modification by adjectives like 'frequent'³² or 'permanent' (70d); and (v) allow for event control (70e).

(70) –NE vs. –NIE nominals:

(i) **Modified by phrasal verbs:**

a. *izrazjava-NE-to na chuvstvata mu zapochna predi dva dni*
 expression-the of feelings his **started before two days**
 'His expressing his feelings started before two days'

a'. **izraže-NIE-to na litseto j prodūlži dva chasa*
 expression-the on face her **continued two hours**
 *The expression on her face lasted for two hours

(ii) **Durative and completive adverbials:**

b. *sreshta-NE-to s chuždentsi v prodūlženie na dva dni go iztoshti*
 meeting-the with foreigners **in duration of** two days him exhausted
 'Meeting with foreigners for two days exhausted him'

b'. **sreshta-ta s chuždentsi v prodūlženie na dva dni go iztoshti*
 meeting-the with foreigners **in duration of** two days him exhausted
 *Meeting with foreigners for two days exhausted him

³² Popova (2006) also claims, rather like Grimshaw (1990), that the adjective 'frequent' may appear with result nouns but requires that they be in the plural.

(iii) **Manner modification:**

- c. *spokojno-to i uvereno pisa-NE na pisma mu pomaga*
calm-the and confident writing of letters him help
‘The calm and confident writing of letters helps him’

(iv) **Modification by ‘frequent’:**

- d. *chesto-to chuka-NE go iznervi*
frequent-the knocking him nervous
‘The frequent knocking made him nervous’

- d'. *chest-i-te udar-i po vrata-ta go iznerviha*
frequent-PL-the knock-PL at door-the him nervous
‘The frequent knocks at the door made him nervous’

(v) **Event control:**

- e. *Nalaga se sŭbira-NE-to na sobstvenitsi-te za da se reshi problema s pokriva*
Demanded REFL gathering-the of owner-THE.PL *for to* REFL solve problem with roof
‘The gathering of the owners **in order to** solve the problem with the roof is mandatory’
- e'. **Nalaga se sŭbra-NIE-to na sobstvenitsite za da se reshi problema s pokriva*
Demanded REFL gathering-the of owner-THE.PL *for to* REFL solve problem with roof
‘The gathering of the owners **in order to** solve the problem with the roof is mandatory’

(from Popova 2006: 77-79)

From the data in (70) Popova concludes that only –NE nominals have eventive semantics while the rest (70a', b', d', e') do not. However, I will show that, as far as manner modification is concerned (see (70c)), all types of eventive nominals (–NE, –NIE and “other-suffix”) allow for it. My data further contradict Popova’s assumption that only –NE nouns are eventive (see § 6.5.1). As for durative adverbials (see (70b)), I will claim that their licensing is related to inner aspect, i.e. (a)telicity and an explanation will be offered in terms of the syntactic decomposition of the available nominalization types (see § 6.5).

Finally, a comment should be made as far as the relation between –NE nominals and aspect is envisioned in Popova (2006). The fact that –NE nominals derive only from imperfective verbal bases suggests that they may have inherited the aspectual properties of the verb. However, Popova finds such a claim problematic for Bulgarian and proposes that Bulgarian

–NE nominals do not have aspect. In order to prove this she shows that some –NE nominalizations can combine with both durative ‘for X time’ and terminative ‘in X time’ modifiers at the same time. Due to the fact that durative modifiers combine with imperfective eventualities whereas terminative modifiers combine with perfective ones, it then follows that if a nominal allows for both adverbials at the same time then such a noun will be devoid of any aspectual information inside it. Consider the examples below.

(71) a. *Pǔtuva-NE-to v prodǔlženie na dva dni ja umori*

travel-the **in duration** **of** two days her tired

‘Travelling for two days tired her’

b. *Pǔtuva-NE-to do Varna za shest chasa ja umori*

travel-the to Varna **in** six hours her tired

‘Travelling to Varna in six hours tired her’ (from Popova 2006: 84)

Though it seems reasonable to suggest that the example in (71b) questions the imperfective aspectual nature of –NE nominalizations, it is plausible to think that this is due to (i) the unergative nature of the verbal base *pǔtuva* ‘travel’, and (ii) to the presence of the telic prepositional phrase *do Varna* ‘to Varna’.³³ In other words, it is the prepositional phrase which brings an endpoint into the structure, and delimits in this way the event denoted by the noun. This state of affairs further facilitates the presence of the telic modifier *in six hours* in the nominalization in (71b) where such modifier refers to the endpoint introduced

³³ I have not been able to find any work on tests distinguishing between unergative and unaccusative verbs in Bulgarian. From the tests that have been applied in the literature for other languages, it seems that only the ‘**locative inversion**’ test could be applied successfully to Bulgarian. In the **locative inversion** construction, a locative phrase occurs sentence-initially while a surface subject DP follows an unaccusative verb, i.e. we get a [PP VP_{UNACCUSATIVE} DP_{SUBJECT}] structure. Unergative verbs are believed not to occur in this construction. Applying this test, the verb *pǔtuva* ‘travel’ is unergative (i: a), in contrast to a verb such as *rasta* ‘grow’, which is unaccusative (i: b):

(i) a. *#V avtobusa pǔtuvat detsata* (In the bus travel the children)

b. *V gradinata rastǔt tsvetja* (In the garden grow flowers)

See Harves (in progress) and references therein for further details on this diagnostic for Russian. As far as I can tell, the same holds for Bulgarian. However, further research is required on this topic.

by the PP. If the PP were not present as in (71a), then the verb, and hence the nominalization, would remain unergative and atelic and the telic modifier would not be accepted.³⁴

TO SUM UP, the literature on nominalizations in Bulgarian is scarce, with an additional complicating factor being that the adopted theoretical backgrounds and the analyses suggested under them are contradictory and incompatible. Furthermore, many Bulgarian linguists focus their attention on a restricted issue: either a particular projection in the DP (e.g. *NumberP*: Dimitrova-Vulchanova (2002); *DemP*: Tasseva-Kurktchieva (2006), Arnaudova (1998); *AP*: Arnaudova (1996), Dimitrova-Vulchanova (2003); *GenP*: Rappaport (2000), Tasseva-Kurktchieva (2005a, b)), or specific aspects of the nominalizing process itself (e.g. the role of the suffix: Steinke (1999), Georgiev (1999); argument structure: DV&M (2006); aspect: DV&M (2006) and Popova (2006); semantics: Gradinarova (1999); the role of passivization: Rappaport (2000) and Engelhardt & Trugman (1998, 2000)). Often, these authors do not consider particular details that are in many cases of great importance for the proposals they defend. Even the apparently uncontroversial status of the Determiner has been challenged among authors.^{35,36}

³⁴ Else, we may suggest that the PP transforms the unergative atelic verb *pǔtuva* (travel) from (71a) into the unaccusative telic verb *pǔtuva do Varna* (travel to Varna) in (71b) and explain thus the presence of the in-adverbial. A similar proposal has been made for Spanish in Miguel (1999) as well. Miguel (1999) claims that an atelic verb which denotes an activity such as *nadar* (swim) becomes delimited when a PP such as *hasta el puente* (to the bridge) is inserted. Thus, the verbal complex *nadar hasta el puente* (swim to the bridge) becomes an accomplishment and, similarly to Bulgarian (71b), allows for a telic modifier such as *en un minuto y medio* (in a minute and a half). If the PP is not present, then *nadar* (swim) remains atelic and rejects the telic modifier (???*Amaya nadó en un minuto y medio* ‘Amaya swam in one minute and a half’). See (Miguel 1999: 3032-3033) for further details on Spanish.

³⁵ To exemplify, Zlatić (1998) claims that article-less languages do not project to DP whereas in Bulgarian and Macedonian, (the only Slavic languages that have an overt article) the NP must be, in fact, a DP. Nevertheless, the majority of linguists adopt Abney’s (1987) DP hypothesis which claims that all NPs are DPs.

³⁶ Bulgarian is the only Slavic language (together with Macedonian) that appears to have developed a morpho-syntactic category corresponding to the determiner. It is phonologically overt for the definite forms which derive from the ancient Bulgarian demonstrative pronouns **Тѣ** (Masc), **ТА** (Fem) and **ТО** (Neut). It is an element without prosodic independence, since it must attach to a host and cannot appear in initial position.

Incompatibilities of various types also arise with respect to the nominalizing process itself. Whereas Rappaport (2000) claims that there is no passivization inside nominalizations due to the absence of T, v and Prt (participle) projections inside the DP, Engelhardt and Trugman (1998, 2000) and Townsend (1975) defend the role of passivization.

As for the classification of deverbal nominals, Rappaport (2000) divides them into three types (-N/-T nouns, action (result) nouns, and process nouns) while DV&M (2006) consider there to be only two types of them: event (-NE) and result (-NIE) nominals, claiming that what I will label “other-suffix” nouns are non-derived.

Disagreements also arise on the semantics of these nouns. DV&M (2006) claim that -NE nominals give rise to event interpretations while -NIE nouns are result nouns. Against such considerations, Popova (2006) and Rappaport (2000) claim that the status of -NIE nouns

However, even the status of the article in Bulgarian receives distinct labels in the literature. Thus, some consider it a suffix (B. Koneski 1967; H.G. Lunt 1952; F. Slawski 1954), others a particle (L. Andrejchin 1944) or a clitic (see Börjars 1998 and Giusti 2002), and others an ending (J. S. Maslov 1956; H.I. Aronson 1968; L. Beaulieux 1950) or morpheme (S. Stojanov 1965). Though historically the article was enclitic in Bulgarian (and Macedonian), its status is still not obvious. To exemplify, Eslon (1976) argues against the enclitic status of the article but also concludes that there are three reasons not to consider it a suffix either. The reasons he gives are (i) it is an inflected form, (ii) it is added to an already existing word, and (iii) its relative position is defined in terms of a syntactic constituent (pp. 276-277). On the one hand, there are indeed reasons to believe that it is a suffix which is further supported by the fact that it serves a grammatical function (for details supporting the suffixal character of the Bulgarian article, see Dost & Gribanova 2006, Wunderlich 2002, and Franks 2001). Additionally, Dost & Gribanova (2006) claim that there are phonological reasons to consider the article a suffix as it takes part in word-level phonological processes and can sometimes affect word-level stress placement (see p. 3). Yet, on the other hand, it also exhibits some characteristics of a clitic because, unlike a suffix, it is an inflected form which constitutes a single accentual unit with an already existing word. Additionally, it also appears to obey Wackernagel’s (1892) Law in the nominal domain because it surfaces as an enclitic element to the leftmost constituent of the noun phrase, be it a noun or an adjective. See Börjars (1998) who also claims that the position of the Balkan definite article (in Bulgarian and Macedonian) is the Wackernagel position within the NP (see p.67). For further details on the article, see Markova (2007: 15-23).

may be sometimes ambiguous between the two readings.³⁷ Further disagreement exists on the aspectual nature, and its analysis, of Bulgarian nominalizations. Rappaport (2000), for example, suggests that aspect and Voice do project inside DP when the event interpretation obtains. DV&M (2006) also defend the aspectual nature of the –NE nominals but deny the possibility for –NIE nominals to project an AspP. There are also linguists, like Popova (2006), who totally reject the syntactic presence of Aspect inside Bulgarian nominalizations of whatever kind.

Finally, and more relevant to the discussion that follows, there is also disagreement as far as the derivation of Bulgarian deverbal nominals is concerned. Steinke (1999) and Popova (2006) claim that the verbal base for deriving them is the Aorist. Georgiev (1999) suggests that they derive from the present verbal base.³⁸ Pashov (1999: 210) proposes that deverbal nouns in Bulgarian could be obtained either from the Aorist stem (from which they historically derive), or from the present verbal base, and sometimes even from the imperfect base. It must also be pointed out that the exact nature of the verbal base is almost never mentioned in the syntactic analyses of scholars working in this field. It is only briefly commented on in traditional descriptive grammars but never stated in syntactic terms. I mention this particular state of affairs because the aspectual nature of the verbal base plays a crucial role in the analysis proposed here, as we will now see.

This scenario of contradictory or mutually inconsistent analyses has led me to propose a more detailed and concrete view of the nominalizing process in Bulgarian. I start the discussion with the nominalization types in Bulgarian which belong to the standard paradigm.

³⁷ Although most linguists defend the view that the –NE nominals should be regarded as belonging to the verbal paradigm, in the manner of substantivized infinitives in other languages (Pashov 1999, Steinke 1999, Kaldieva-Zaharieva 1999, among many others), there are also linguists who claim that not only –NE but also –NIE type nominals should be included in the verbal paradigm (Kaldieva-Zaharieva 1999).

³⁸ In fact, Georgiev (1999) claims that –NE nominals derive from the present verbal base but does not specify whether –NIE ones do so, too. Nevertheless, we understand that they do.

6.3. Nominalization types in Bulgarian (Markova 2007, 2010)

Nominalizations are derived via suffixation in Bulgarian. Morphologically, we can distinguish between three types: –NE, Voice –IE and “other-suffix” nouns. I start the discussion with the first group.

6.3.1. –NE nominals

These nouns derive exclusively from imperfective verbal bases. According to the Bulgarian Academy Grammar (1983: 61-62), –NE nominals fall within the Ancient Bulgarian verbal nouns formed with the suffix –NIE/–NJE, and are derivationally related to the old infinitival bases, which are nowadays preserved in the aorist (recall that there are no infinitives in contemporary Bulgarian). They can be formed from both transitive and intransitive verbs. Since the present base and the imperfect base coincide for the verbs from the productive third conjugation, it is assumed that the –NE derivatives are formed from the present tense base: (i) *pisha* (write: PRES) — *pisah* (wrote: AOR) → *pisane* (writing); (ii) *cheta* (read: PRES) — *chet-oh* (read: AOR) → ***chetene*** (reading) (**the base vowel -o- is replaced by -e-**); (iii) *molja* (beg: PRES) — *mol-ih* (begged: AOR) → *molene* (begging) (**the base vowel -i- is replaced by -e-**); (iv) *bera* (gather: PRES) — *brah* (gathered: AOR) → *brane* (gathering); (v) *laja* (bark: PRES) — *lajah* (barked: AOR) — *laeh* (was/were barking: IMPF) → **LAJANE & LAENE (BARKING)**; (vi) *baja* (mutter: PRES) — *bajah* (muttered: AOR) — *baeh* (was/were muttering: IMPF) → **BAJANE & BAENE (MUTTERING)**, etc.

Based on the descriptions above, Manova (in progress) observes that the –NE nouns, like the passive participle, turn the aorist thematic marker *-i* into *-e*, whereas the aorist thematic marker *-ja* is changed to *-e* due to the addition of a syllable containing *-e* (e.g. –NE) (see Appendix 6.2: table 1 for the formation of –NE nominals). Crucially, the fact that aorist vowel *-i-* changes into *-e-* (e.g. *mislja* 'think' → *mislih* 'thought' → *mislene* 'thinking') makes some linguistics (Pashov 1989, 1999) assume that those nouns are formed from the imperfect stem of the verb (e.g. *misleh* 'was/were thinking' → *mislene* 'thinking') (see fn. 48

for more evidence in defense of such a view).³⁹ Very importantly, there are some verbs for which forms derived from aorist and the imperfect stem can compete: *placha* 'cry' — *plakah* 'cried' → *plakane* 'crying' (from the aorist) and *placha* 'cry' — *placheh* 'was/were crying' → *plachene* 'crying' (from the imperfect). Taking this into account, and given that the aorist precedes the –NE nominals in time, which in turn precede the imperfect (i.e. historically, we have aorist → –NE → imperfect), I assume, from a contemporary point of view like Pashov (1999), that the productive way of –NE formation is the one based on the imperfect base. Such a claim is further reinforced by the coexistence of doublets (e.g. *lajane* & *laene* 'barking', *bajane* & *baene* 'muttering') where one of the members is derivationally related to the aorist base and the other member to the imperfect base.⁴⁰

Bearing these considerations in mind, I follow Pashov (1999: 210) and assume that the suffix –NE attaches directly to the imperfect tense base of the verb, i.e. to the base used to form the (past) imperfect tense (72).⁴¹

³⁹ This observation also holds for verbs with zero thematic marker in the aorist: *pija* 'drink' — *pih* 'drank' — *pieh* 'was/were drinking' → *piene* 'drinking'.

⁴⁰ As for why there are some –NE nouns which preserve their derivational relation to the aorist base, I assume this to be historically explained: both the –NE suffix and the aorist base are much older than the imperfect base, so before the imperfect base entered Bulgarian, the suffix –NE attached to the aorist base which accounts for the existence of –NE nouns formed on aorist bases.

⁴¹ The term “imperfect” should not be confused with “imperfective”. The former refers to the past imperfect tense base whereas the latter refers to the morphologically imperfective *versus* perfective form of the verb. According to traditional descriptive grammars, the imperfect base is obtained by suppressing the 1st person singular ending –H of the (past) imperfect verbal form (see (72a'), (72b'), and (72c')) (see Pashov 1999).

(72) a. 1 st conjugation:	b. 2 nd conjugation:	c. 3 rd conjugation: ⁴²
<i>pe-e-NE</i>	<i>uch-e-NE</i>	<i>kritik-uva-NE</i>
sing-E.TH.VOW-NE	study-E.TH.VOW-NE	criticize-IMPF-NE
‘singing’	‘studying’	‘criticizing’
a'. base:	b'. base:	c'. base:
[<i>pe-E</i>]-H	[<i>uch-E</i>]-H	[<i>kritik-uva</i>]-H
[sing] ^{IMPF} -1PS.SG.	[study] ^{IMPF} -1PS.SG.	[criticize] ^{IMPF} -1PS.SG.
‘I was singing’	‘I was studying’	‘I was criticizing’

There is an agreement among Bulgarian linguists that –NE nouns are always process-denoting (Pashov 1999; Georgiev 1999). However, there is more diversity than is generally acknowledged in this type of nominalization. Hence, I propose that –NE nominals be divided in two major groups:

- (73) a. Gerundive constructions
 b. Derived nominal constructions

In Bulgarian, there is no such form as a “typical” gerund. Nevertheless, bare –NE forms can be used as gerundive-like constructions in this language. Like verbal gerunds, bare –NE constructions take a direct object without any preposition (74a). These constructions do not license a definite determiner and never allow for the article to be attached to them (74b).

- (74) a. [*o-chak*]-*va-ne velik-a-ta* *promjana* (not productive)
 wait-IMPF-NE great- FEM.SG-the.FEM.SG change.FEM.SG
 ‘awaiting the great change’
- b. *[*o-chak*]-*va-ne-to* *velik-a-ta* *promjana*
 *wait-IMPF-NE-the.NEUT.SG great-FEM.SG-the.FEM.SG change.FEM.SG
 ‘*the awaiting the great change’

⁴² Recall that there are three conjugations according to the present tense base of the verbs. For further details, see Pashov (1999: 140–144), or chapter 3, § 3.2.

The behavior of the nouns in (74) allows us to suggest that the –NE construction in (74a) behaves in the same way as verbal gerunds in languages like English. These types of constructions should now be compared to those of type (75) below, which are not verbal gerunds but rather true derived nominals. Not only do constructions of type (75) appear with the determiner, but the direct object must also be introduced by the preposition *na* ‘of’:

(75) [o-*chak*]-*va-ne-to* **(na) velik-a-ta* *promjana*
wait-IMP-NE-the.NEUT.SG **(of) great-FEM.SG-the.FEM.SG* change.FEM.SG
'the waiting for the great change'

Though the process reading is always available in each –NE nominal, there are cases when –NE nouns denote objects as well.⁴³

(76) a. <i>jad-e-ne</i>	b. <i>smjat-a-ne</i>	c. <i>sūm-vā-ne</i>
eat-E.TH.VOW-NE	calculate-A.TH.VOW-NE	dawn-vā.IMPF-NE
‘meal/eating’	‘arithmetic/calculating’	‘dawn/dawning’

Having briefly described the first nominalization type, I now proceed to offer some details on the second type, i.e. the Voice –IE nominals.

⁴³ We find this in English too where the noun *building* can be either a process or a result nominal. In the case of Bulgarian, the result denotation of –NE nouns can be explained historically. Gradinarova (1999) claims that the –NE suffix entered Bulgarian in the nineteenth century when the –(N)IE suffix was still very productive. In the twentieth century, however, the –(N)IE suffix ceased to be productive. Thus, when a new result noun was derived, the suffix that served this function was either –NE or some of the “other-suffix” nominalizers. However, –NE always preserved its traditional process denotation (marked in italics in (76)), though on occasion it could develop a secondary result meaning.

6.3.2. Voice –IE nominals

These nouns can be formed from both finite and non-finite forms of the verb. In contrast to the process –NE nominals, they denote some object or abstract concept (Pashov 1999: 213). To exemplify, whereas *sŭbira*-NE ‘collecting’ denotes an action (77a), *sŭbran*-IE ‘assembly’ denotes an abstract concept (77b):

(77) a. <i>sŭbir-a-NE</i>	b. <i>sŭbr-a-n-IE</i>
collect-A.IMPF-NE	collect-A.TH.VOW-N.PASS.PRT-IE
‘collecting’	‘meeting, assembly’

Traditionally, these nouns are known as –NIE nominals where it is believed that the nominalizing suffix –NIE of *sŭbra*-NIE ‘assembly’ in (77b) attaches directly to the Aorist base of the verb.⁴⁴ However, I claim that these nominalizations are formed from past passive participial verbal bases. In my analysis, the nominalizer is the –IE suffix whereas the –N consonant is the passive participial morpheme (i.e. we have *sŭbra*-N-IE ‘assembly’ and not *sŭbra*-NIE) as in (77b). Regarding such nouns as past passive participial derivatives further explains the fact that these nominalizations can be formed from both perfective and imperfective verbal bases.^{45,46}

⁴⁴ The Aorist base and present tense base are the two basic temporal verbal bases in Bulgarian. The Aorist base participates in the formation of the Aorist verbal forms (e.g. Aorist base: *pisa* → *pisa-H* ‘I wrote’), and is used to derive the Aorist participle and past passive participle.

⁴⁵ Passive participles can be formed from both perfective (i) and imperfective (ii) verbal bases in Bulgarian: (i) *prodade-n* (PF) ‘sold, which is sold’ vs. (ii) *prod-ava-n* (IMPF) ‘sold, which is being sold’.

⁴⁶ Such a claim is diachronically sound. Svedova & Vinogradov (1964) state that, diachronically, –NIE nominals in Russian are byproducts of passive verbal formation, with the suffix –NIE having been added to the passive participle in an unrestricted way. If the passive participle was non-existent, a dummy passive morpheme was added to the verbal stem in order to keep the nominalization pattern consistent. Concerning this fact, there is a **small group of –NIE nominals in Bulgarian that cannot be analyzed as being derived from past passive participial bases due to the fact that the corresponding verb has no such participle**. Additionally, they cannot be instantiations of neuter ‘other-suffix’ –IE nouns in the same way as *deistv*-IE (action) is (see 81c). Bearing in mind that the –NIE suffix entered Bulgarian through Russian, then we can assume that these nouns have entered Bulgarian directly through Russian. In fact, all of these nominalizations do exist in Russian (e.g. *padenie*

Past passive participles in Bulgarian are formed by adding either a –T suffix (78) or an –N (79) one to the Aorist base of the verb.

- (78) a. *pija* > *pi-h* > *pi* > *pi-t*
 drink > drink-1PS.SG.AOR > drink.AOR > drink-T.PASS.PRT
 ‘drink’ > ‘(I) drank’ > Aorist base > ‘drunk’
 b. *pi* -*t* -*ie*
 drink-T.PASS.PRT-IE.NEUT.SG
 ‘a drink’

- (79) a. *pisha* > *pisa-h* > *pisa* > *pisa-n*
 write > write-1PS.SG.AOR > write.AOR > write-N.PASS.PRT
 ‘write’ > ‘(I) wrote’ > Aorist base > ‘written’
 b. *pis* -*a* -*n* -*ie*
 write-A.TH.VOW-N.PASS.PRT-IE
 ‘a writing/a written thing’

When a nominal is derived from a –T participial base, we observe that the –T suffix is preserved, as in (78b). If the participle is formed by an –N suffix then the nominalization takes –N, as in (79b), which again supports the claim that these nouns do in fact derive from participial verbal bases.⁴⁷

‘fall/disgrace’, *priznanie* ‘confession’, *kolebanie* ‘hesitation’, *bdenie* ‘watch over’, *sъzdanie* ‘creation’, *napreženie* ‘tension’, *mълчанie* ‘silence’, *съвпадение* ‘coincidence’, *съмнение* ‘suspicion’, *състояние* ‘state/status’, *търпение* ‘patience’, etc.).

⁴⁷ Some authors claim that –NE and –(N)IE nouns were derivationally related. Pashov (1999: 210), for example, states that at previous stages of their development –NE nominals, like –(N)IE nouns, were derived from the aorist base of the verb. From a contemporary perspective, however, he considers –NE nouns to be derived from the imperfect verbal base. A close relationship between –NE nominals and the past passive participle is also suggested by Nandris (1959) and Stoyanov (1966). Yet, to claim that these nouns derive from the past passive participial base, like their ancestor, the –(N)IE nominals, would wrongly predict that intransitives will not nominalize, and that the participial morpheme, be it –T or –N, would be preserved in the nominalization. Neither of the two predictions holds: Bulgarian –NE nominals can be formed from any verb, whether transitive (see 75) or intransitive (see 76c), and the –T suffix never appears, as shown in (i):

Additional support for such a claim is provided by the interpretation of these nouns. The past passive participle is used to express the result that the action has on the object (Pashov 1999: 205). In the nominalization process this idea is preserved in that a participial –IE nominalization such as *pis-a-n-ie* (79b) means ‘writing, the thing that has been written’.⁴⁸

Finally, the following section offers my analysis of the third nominalization type, i.e. the “other-suffix” nominals.

6.3.3. “other-suffix” nominals

Under this label I include gender-derived nominalizations (80) and deverbal nouns derived by various suffixes (–(Ž)BA, –ITBA, –KA, –EŽ, etc.) as in (81).

(80) a. Masculine	b. Feminine	c. Neuter
[RAZ-kaz]-Ø	[ZA-shtit]-a	<i>tegl-o</i>
narrate- Ø.MASC.SG	defend-A.FEM.SG	weigh-O.NEUT.SG
‘narration, story’	‘defense’	‘weight’
(81) a. Feminine	b. Masculine	c. Neuter
<i>kraž-BA</i>	<i>plam-ŬK</i>	<i>dejstv-IE</i>
steal-BA.FEM.SG	flame-ŬK. MASC.SG	act-IE.NEUT.SG
‘theft’	‘flame’	‘action’

(i) *brŭsna* ‘shave’ → *brŭsn-a-T* ‘shaven’ → *brŭsn-e-NE* ‘shaving’

pija ‘drink’ → *pi-T* ‘drunk’ → *pi-e-NE* ‘drinking’ (vs. *pi-T-IE* ‘a drink’: Voice –IE noun).

Additionally, such a claim would also wrongly predict that –NE nouns, if derived from participles, could be formed on both perfective and imperfective bases. However, these nouns can be never formed on perfective bases. Thus, –NE nouns cannot be participial nominalizations, unlike –IE nouns, which can.

⁴⁸ There is a small group of event-denoting –IE nouns (e.g. *gonenie* ‘persecution’), but they have an exceptional character. We can account for this fact historically. The process denoting –NE suffix appears in Bulgarian later than –(N)IE (see fn. 43). This leads us to suspect that at former stages, when only –(N)IE nominals existed, both processes and results could be denoted by them, as the unambiguously process –NE nouns were still lacking. In fact, this situation holds for Macedonian, where there are only –(N)IE nouns, which can denote both results and processes. That is, eventive –IE nouns are those which have preserved their double interpretation from previous stages of development before the –NE nouns entered the language.

Like all nouns, nominalizations are marked for gender. In fact, from the examples in (80) we see that gender nominalizations result from the merger of a gender marker (overt ‘a’ for feminine, overt ‘-o/-e’ for neuter, and covert ‘Ø’ for masculine) with a root (80c) or a verbal stem as in (80a) and (80b). As for the “other-suffix” nominals (81), the gender, being an inherent property of all derivational suffixes, is carried by the suffix itself.⁴⁹

A COMMENT IS IN ORDER HERE. I claim that nominalizations can be formed from either a root $\sqrt{\text{ }}$ or a verbal stem (indicated by square brackets in (80)). In cases where there is a (lexical) prefix, we have a stem as in (80a) and (80b). Otherwise, we have a root (80c). The reason for this is the common claim among Bulgarian linguists that prefixation is a verb-formation device whereby the presence of a prefix signals the underlying presence of a verbal stem. As Georgiev (1999: 204) suggests, a prefix in the verbal base is an indicator for its derivational relation to another verb. I use the label $\sqrt{\text{P}}$ for roots and VP for verbal stems in the representations that follow.

Among “other-suffix” nominalizations there are some whose suffix absorbs a semantic participant of the verb or an adjunct of the verbal base, a phenomenon which also occurs with the Catalan suffixes -(D)OR/-ER/-AIRE. In (82a) and (82b) we have the Bulgarian examples of such suffixes whereas (82a’) and (82b’) present the analogous Catalan forms (Markova 2007: 32):⁵⁰

(82) a. <i>pisa-tel</i>	a’. <i>escript-or</i>	(Agentive value)
write-TEL.AGENT	write-OR.AGENT	
‘writer’	‘writer’	

⁴⁹ The suffixes that end in -A are feminine, those that end in a consonant are masculine, and those that end in -E are neuter.

⁵⁰ As far as the semantics of these nouns is concerned, they may be divided in Agents (e.g. *bor-ETS* ‘fight-er’), Patients (e.g. *plenn-IK* ‘captive’), Instruments (e.g. *brŭsn-ACH* ‘razor’), Objects (e.g. *hran-A* ‘food’), Substances (e.g. *gor-IVO* ‘fuel’), Actions (e.g. *proda-ŽBA* ‘sale’), Places (e.g. *chak-ALNJA* ‘waiting room’), etc. (see Markova 2007: 30–32). Importantly, all of the above concepts classified with thematic labels are objects from the point of view of the cross-classifying ontological categorization.

b. <i>zakupva-lnja</i>	b'. <i>abeura-dor</i>	(Locative value)
breakfast-LNJA	drink-DOR	
'place where one breakfasts'	'place where one drinks'	

Table 8 offers a brief summary of the three nominalization types in Bulgarian.

Details	–NE nouns	–IE nouns	“other-suffix” nouns
Base	Imperfect tense	Aorist, passive PRT	root or verbal stem/VP
General denotation	process	result (abstract)	objects (results)
Aspectual forms	IMPF only	both PF/IMPF	both PF/IMPF

Table 8: Characteristics of Bulgarian nominalizations

Having briefly commented on the general characteristics of deverbal nominals in Bulgarian, I now devote the following section to describe the nominalization types in English.

6.4. Nominalization types in English

In discussing the English nominal typology, I will basically follow Borer (1999) et seq. (see § 6.1.4) and the description therein. Thus, we can tentatively suggest that in the same way as the Bulgarian nouns, the English nominals can be morphologically divided into three types, depending on the nominalizing suffix and its aspectual character: (i) –ing nouns, which will be claimed to correspond to the Bulgarian –NE nominals; (ii) –tion nouns (and the like), which will roughly correspond to the Bulgarian “other-suffix” nominals, and (iii) zero-derived nouns, which do not have an exact pairing in Bulgarian but can be presumably related to the Bulgarian *root* “other-suffix” nouns (i.e. nouns without a verbal derivational history as in (80c) above). Regarding the latter type (iii), recall that Borer (1999) rejects the existence of zero-nominalizers in English. However, the ***fact that I take zero-derived nouns as a basis of comparison between English and Bulgarian does not imply that I will defend the presence of a zero morpheme in English. Rather, I will just compare these nominals to the Bulgarian root nouns in order to show that the absence of the***

necessary functional structure is what accounts for the shared syntactic and semantic properties of such nominalizations in the two languages. Finally, the Bulgarian Voice –IE nouns will be the only nominal type without a direct correlation in English (though they do have a corresponding derivative in languages like Spanish and Catalan such as *un escrito* (SP) and *un escrit* (CAT) meaning ‘one written (thing)’).

I start the discussion with the English –ing nominals.

6.4.1. On –ing nouns

In the same way as the Bulgarian suffix –NE, the English –ing nominalizer can give rise to two kinds of constructions: a gerundive construction (83a, a’), and a nominal formation (83b, b’).

(83) a. *Awaiting the great change* (see (74a))

a’. *Writing letters [is boring]*

b. ***The waiting for the great change*** (see (75))

b’. *The writing *(of) the letters [is boring]*

When used in the gerundive construction, –ing derivatives take direct arguments without a preposition which is not possible in the case of the nominal –ing construction.

In the usual case, and in the same way as the –NE nouns in Bulgarian, –ing nouns make reference to a process (e.g. ‘building’ refers to the process of building something), though at occasions they may also denote results (e.g. ‘building(s)’ can be interpreted as the result of the process of building, too). Furthermore, both –NE and –ing nouns are argument-taking as we will see. This is yet another way in which –ing nominalizations resemble the Bulgarian –NE nouns.

As I will suggest in the following chapter, the systematic similarities found between –NE and –ing nouns are syntax-driven, and tightly related to the aspectual and structural similarity between the two nominalizers. As a consequence, whatever behavior is characteristic for one of these nominals will be expected to hold for the other one as well, since the driving force for both argument structure and semantics is syntax, with minor variation being a result of some language-internal reasons.

Let us now briefly describe the –tion nominalization type.

6.4.2. On –tion nominals (and kin)

We have already seen that the majority of –tion nouns (and the like, e.g. –ance, –ion, –ity, –ment, etc.) denote results (e.g. *instruction(s)*), which relates them to the Bulgarian “other-suffix” nouns (see § 6.3.3), though they may also refer to events (e.g. *the formation of the nominal by the linguist*; *kraž-BA* (BG) ‘theft’). Further similarities between the two nominalization types are presented in (84).

(84) a. English –tion (and kin) nouns

- (i) *ignorant* (A) → *ignorance*
- (ii) *construct* (V) → *construction(s)*
- (iii) *machine* (N) → *machinery*

b. Bulgarian “other-suffix” nouns

- (i) *nevež* ‘ignorant’ (A) → *nevež-estvo* ‘ignorance’
- (ii) *postroja* ‘construct’ (V) → *postroj-ka(-ki)* ‘construction(s)’
- (iii) *mashina* ‘machine’ (N) → *mashina-rija* ‘machinery’

From (84) we can observe that in the same way as the Bulgarian “other-suffix” nouns (84b), the English –tion and the like nouns (84a) can build on top of an adjectival base (i), a verbal base (ii), or a nominal one (iii). Crucially, this is not the case neither for the –ing nominalizer, nor for its Bulgarian –NE counterpart, which select for verbal bases

exclusively (e.g. **clever-ing*, **machine-ing*; **umen-NE* ‘clever-ing’, **mashin(a)-NE* ‘machin-ing’).

It should be noted, however, that ***the suffix –tion, in cases it attaches to a derived form, should be previously verbalized***, an observation already made in Borer (1999: 6).

(85) a. **verbalation* b. *verbalization* c. *formation*

To explain this, Borer (1999) assumes that either morphological selection is negative according to which –tion may not attach to a non-V element, or else, in the absence of zero categorizers, we should consider *form* in *formation* (85c) as verbalized by the morphological structure.

See the following section 6.5 for more on the properties which –tion nouns (and kin) and the Bulgarian “other-suffix” nouns have in common. Finally, some brief comments should be made on the topic of the English zero-derived nominals.

6.4.3. On zero-derived nouns

The most prominent property of the zero-derived nouns in English is their inability to take internal arguments (e.g. **the form* of two special committees; see also Table 6). Thus, as a general rule they can only denote results (but see fn. 22 for some event-denoting Ø-nouns). Since Bulgarian is a language which lacks zero nominalizers, as already mentioned, the zero-derived nominals in English find their corresponding pair in the face of the Bulgarian root “other-suffix” nouns, i.e. nouns which are morphologically decomposable into a root and a nominalizer only, without any intervening verbal structure. In other words, neither the English zero-derived nouns, nor the Bulgarian root “other-suffix” nouns, incorporate at any level a verbal layer. Because of this, such nouns lack verbal properties and can never be argument-taking. An example is provided in (86).

- (86) a. English zero-derived nouns: *love, condition, cry, walk*
b. Bulgarian root “other-suffix” nouns: *plam-ŭK* ‘flame’, *dar* ‘gift’

Having now described the general properties of the nominalization types in English and Bulgarian (the standard paradigm), I now turn to the behavior of these nominals regarding various tests.

6.5. The behavior of nominalization types in English and standard Bulgarian

So far we have seen that on morphological grounds we can distinguish between three nominalization types in both English and Bulgarian: (i) English –ing and Bulgarian –NE nouns; (ii) English –tion and Bulgarian “other-suffix” nouns (including here the root nominals), and (iii) English zero-derived and Bulgarian Voice –IE nouns.

As far as the nominalizations within type (i) and (ii) are concerned, I have already suggested that these nouns, apart from being morphologically similar, share some other properties as well. Taking into account the “Mirror principle” of Baker (1985), which states that morphological derivations reflect syntactic derivations and vice versa, it is then not unexpected that morphologically similar structures (or constructions) will behave in a syntactically similar way, too.

In a syntax-driven approach to grammar as I advocate here, according to which syntax determines both semantics and argument structure, such a state of affairs implies that what facilitates types (i) and (ii) nominals to share further syntactic, morphological and semantic properties is their structural similarity. ***More precisely, we will see that it is the aspectual nature of the nominalizing suffix and that of the base, together with the whole structural characteristics of the final derivative, which makes some nouns behave in a syntactically similar way (e.g. take internal arguments, allow for modifiers of verbal structure, etc.) and have the same denotation (e.g. result, eventive, or process).***

As for nominal type (iii), we cannot establish a clear correspondence between English and Bulgarian due to a more deeply-rooted difference between the two languages, namely, the different morphological means both languages dispose of to mark category. To exemplify, ***Bulgarian, in contrast to English, has in its lexicon a nominalizer, e.g. -IE, which selects for a participial base (e.g. VoiceP) and gives thus rise to a nominalization which incorporates this base, with all the syntactic and semantic consequences such an option implies.*** The same holds for languages like Catalan and Spanish which possess nominalizers that select a participial base (e.g. *un escrit* (CAT) ‘one written (thing)’/‘a writing’; *una comida* ‘one eaten (thing)’/‘a meal; food’ (SP)). ***As for zero nominalizers, Bulgarian, in contrast to English, does not dispose of such morphemes (if they exist), which prevents it from having one and the same overt form (e.g. ‘love’) that may be categorically ambiguous between a verb and a noun. I suggest that this is due to the fact that Bulgarian is a language with a much more rich overt morphology than English, since it disposes of a great number of overt categorizers such as verbalizing theme vowels, gender nominalizers (be they bare gender markers or the vast majority of nominalizing suffixes marked for gender), aspectual prefixes, etc. (Not surprisingly, the same holds for Catalan and Spanish, which are also overtly morphologically ‘richer’ than English.) If, on the other hand, Bulgarian lacked these overt morphological means, then it would have been quite expected that a word such as ‘love’ could in principle be categorically ambiguous, whose category membership will be totally dependent on the functional environment as in English (see fn. 21).***

If we take the above claims seriously, we may then conclude, together with Borer (2005b), that language variation is related to the morpho-phonological properties of grammatical formatives (e.g. categorizing suffixes), not to the syntactic structures or the semantics of these grammatical formatives (Borer 2005b: 15). Before I

elaborate on this claim by presenting my syntactic analysis of the three nominalization types in each language, I will show further ways in which such morphological and hence structural similarity may be responsible for the observed properties that these nouns share cross-linguistically. The relevant points to be considered are listed in (87).

(87) Factors for distinguishing between nominal types

- a. **Aspectual properties:** (i) denotation: processes *versus* results; (ii) (a)telicity
- b. **Aktionsart properties:** nominalizing (i) achievements, (ii) activities and (iii) statives.
- c. **Argument-structure properties:** (i) take obligatory arguments ((true) argument-structure nouns); (ii) take optional arguments (participant-structure nouns), and (iii) unable to take arguments (result-referential nouns)
- d. **(In)ability to take modifiers of nominal structure:** pluralization, indefinite determiners, demonstratives and numerals
- e. **(In)ability to take modifiers of verbal structure:** temporal and manner adverbs, agent-oriented modifiers, the adjective ‘frequent’

Let us start with the first diagnostic.

6.5.1. Aspectual properties of nominalizations in English and Bulgarian

Regarding this factor, we are going to pay attention to two issues: the denotation of a given noun and its (a)telicity (i.e. inner aspect). I start with the first criterion.

6.5.1.1. On the denotation of nominalizations

Concerning the denotation of nouns, we have already mentioned that in both English and Bulgarian nominalizations can be semantically divided into three types: process-denoting, eventive (action but non-processual), and result-denoting (including here the object-denoting referential nouns). The first type will roughly correspond to Grimshaw’s (1990) complex event nominals; the second type to her simple event nominals, and the third type to her result nominals. I claim that such a distinction is aspectual in nature, and that it is the

aspectual-functional make-up of each nominal type which accounts for its final denotation. The final classification of the nominalization types in English and Bulgarian is schematized in Table 9 and exemplified in (88).

	Process (complex events)	Eventive (actions, simple events)	Result-Referential (output of events, objects)
English	–ing	–tion, few Ø-derived	Ø-derived, –tion, few –ing
Bulgarian	–NE	“other-suffix”, few –IE	“other-suffix”, –IE, few –NE

Table 9: Semantic classification of nominalizations

(88) a. **Process nouns:**

(i) English –ing nouns: *the formulating of several procedures*

(ii) Bulgarian –NE nouns:

pe-e-NE-to *na njakolko pesn-i*
sing-TH.VOW-NE-the.NEUT.SG of several song-PL
‘the singing of several songs’

b. **Eventive (action) nouns:**

(i) English –tion: *persecution*

(ii) Bulgarian:

–some “other-suffix” nouns: *kraž-BA* ‘theft’
–few unergative –IE nouns: *gonen-IE* ‘persecution’

c. **Result-Referential nouns:** all types of nouns

(i) English:

–zero-derived nouns: *a step*
–tion nouns: *imagination, destruction*
–few –ing nouns: *a building* (also ‘the process of building something’)

(ii) Bulgarian:

–root “other-suffix” nouns: *govor* ‘a speech’, *objava* ‘announcement’
–derived “other-suffix” nouns: [*PRI-*]-*kaz-KA* ‘tale’, [*PO-*]-*stroj-KA* ‘construction’
–Voice –IE nouns: *pit-IE* ‘a drink’
–few –NE nouns: *jade-NE* ‘a meal’ (also ‘the process of eating’)

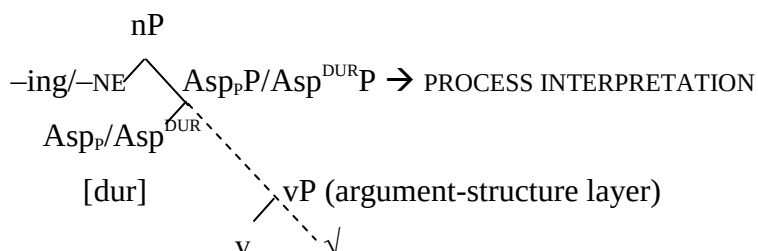
From the data in Table 9 and (88) we can observe that ALL TYPES OF NOUNS CAN BE RESULT-DENOTING, though some are more prone to it (e.g. the English zero-derived and –tion nouns and the Bulgarian “other-suffix” and Voice –IE nouns) than others (e.g. the English –ing and the Bulgarian –NE nouns). I tentatively assume that the availability of a result denotation with all nominal types is due to the nominal character of the final derivative which denotes an entity by default, sometimes abstract (the output of an event) and sometimes concrete (in the case of object-denoting referential nouns such as *a painting* (ENG), *pisan-IE* (BG)/*escrit-T* (CAT) ‘a writing’, etc.). Put differently, ***it is some inherent property which all nouns share, be they de-verbal or non-derived, which allows them to refer to results in the broadest sense. As for the exact manifestation of this property, we may formally represent it as some interpretable nominal feature (-_{NOM}) which the nominalizer bears (e.g. –ing_{NOM}, –NE_{NOM}, etc.) and which, in the absence of functional aspectual structure, forces it to project as N*** (see the following chapter). Thus, in the absence of event-licensing verbalizing structure, such formations will be interpreted in the same way as the zero-derivations in English, i.e. as Result-Referential nominals.

However, what is really important is the observation that NOT ALL NOMINALIZATIONS CAN DENOTE PROCESSES since this kind of denotation is not typical of nouns in general but rather of verbs. Thus, only the –ing nouns in English (88a: i) and the –NE nouns in Bulgarian (88a: ii) can do so. Hence, one may expect that there is something special about these nouns, which facilitates their process reading, which is always available, though, at occasions, due to their nominal nature (i.e. their feature –_{NOM}), such nouns can be result-denoting (88c) as well. I suggest that such a fact can be arguably explained by the aspectual make-up of both –ing and –NE nominals where it is precisely the incorporation of a dedicated aspectual functional layer which accounts for the verbal behavior of these nouns and explains their ability to denote processes. More precisely, ***I argue that the aspectual layer involved in the derivation of both –ing and –NE nouns is spelled-out as a process-denoting functional aspectual projection*** (Asp^IP (Aspect Imperfective Phrase) for Markova 2007, 2010, or Asp_pP (Aspect Process

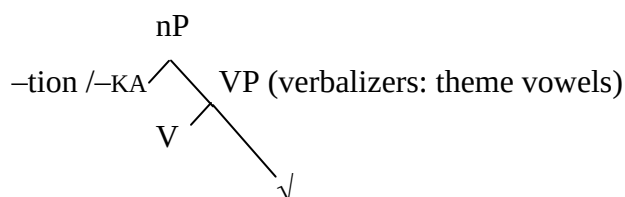
Phrase) for Borer 1999), or $\text{Asp}^{\text{DUR}}\text{P}$ as in (89a). To be more precise, I claim that $-\text{ing}$ heads Asp_pP whereas $-\text{NE}$ selects for $\text{Asp}^{\text{DUR}}\text{P}$ (I will elaborate on the difference between Asp_pP and $\text{Asp}^{\text{DUR}}\text{P}$ in the following chapter). Consider the following derivations.

(89) Syntactic (abstract) representation of nominalizations across languages

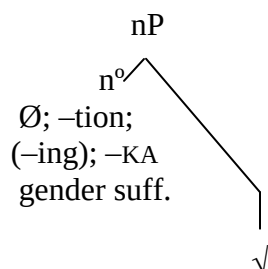
a. Process-denoting nominals: argument-taking ($-\text{ing}$ and $-\text{NE}$ nouns)



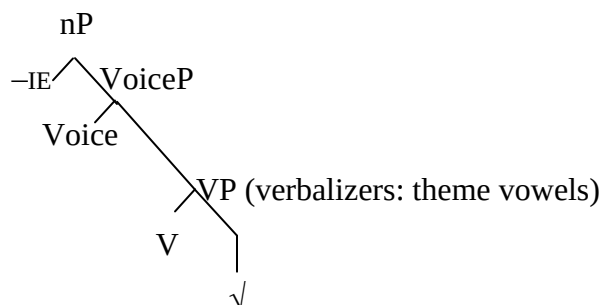
b. Eventive nominals: action-denoting ($-\text{tion}$, “other-suffix” nouns)



c. Root nominals: result/object-denoting (zero-derived, root “other-suffix”)



d. Participial nominals: result-denoting (Voice $-\text{IE}$ nouns)



Finally, the majority of the nominalizations investigated here can also refer to events (or actions) in the more general sense, i.e. to actions (88b). I claim that this is due to the fact that such nouns are derived from verbs, thus preserving some lower verbalizing, though non-aspectual, layer in their derivational history (89b). This can further explain the fact that although deverbal, such nouns cannot denote processes since they lack the necessary higher aspectual projection inside them.

From the derivations in (89) we can conclude, together with Borer (2005b), that it is the structure which is responsible for the observed behavior of the final derivative. ***My claim is that a given nominalizer, e.g. –ing, may occupy a specific position within the hierarchy of functional projections, e.g. Asp[°] (89a), which will have its corresponding consequences on both interpretation and syntactic behavior. If –ing, on the other hand, is forced to project directly as n (89c), which is made possible by virtue of its nominal feature, then this will again influence the final interpretation and formal properties of the derivative.***

TO RECAP, I adopt a syntactic approach to nominalizations and propose that the –ing and –NE nominalizing suffixes select for some higher processual projection (be it Asp¹P (Markova 2007, 2010), Asp_PP (Borer 1999)), or Asp^{DUR}P (89a), and that it is the presence of this process-related aspectual layer which accounts for the process reading of the derived nominal. Due to the higher position of this aspectual projection, it follows that the –ing and –NE nominalizers, since they select this projection, also occupy a higher place in the aspectual hierarchy of Cinque (1999). Thus, only these nominalizers, but not others, can give a process-denoting nominal inasmuch as the process denotation is associated with a higher dedicated aspectual structure.

As for the nominalizer –tion (and kin) and the Bulgarian “other-suffix” nominalizers (e.g. –KA, –BA, –EŽ, –ŮK, etc.), they have various attachment site possibilities: on top of the root, giving R-R nouns (89c), or incorporating some lower verbal layer (89b), resulting thus in eventive nominals. The Bulgarian Voice –IE nominalizer, on the other hand, always selects

for the participial VoiceP (89d), giving rise to an R-R noun due to the resultative semantics of the underlying participle.⁵¹

Finally, the English zero nominalizers (if zero affixation exists) select for roots (89c), implying that the final derivative will be a result-referential nominal due to the absence of any (eventive) verbal or higher aspectual (process) layers inside them. Alternatively, the root just merges in the context of some nominalizing structure N/D and is assigned category and interpretation on the basis of this structure. The same observation which applies to the zero-derived nouns in English holds for the nominalizing suffixes participating in the formation of the Bulgarian root “other-suffix” nominals, the difference being that in Bulgarian the nominalizer is overtly realized by a suffix. ***Since Bulgarian disposes of an overt means to assign category (e.g. n°), then the second option, i.e. nominalization by a mere merge within the structure, which can arguably apply to the English zero nominalizations, is blocked in Bulgarian. Thus, in the presence of some marked option, i.e. the use of an overt nominalizing suffix to mark category membership, we cannot opt for an alternative, but rather use this option. As I have suggested, it is the fully developed (overt) gender system in Bulgarian which preempts this marked option. Hence, all derivational suffixes in Bulgarian, being inherently marked for gender, will derive as n° heads by virtue of their nominal feature and overt morpho-phonological realization, and will consequently nominalize the structure within their scope.*** However, in both cases, e.g. the English zero nominalizations and the Bulgarian root “other-suffix” nouns, the structure nominalizes directly upon the root, disallowing any verbal layers to intervene in the derivation of such nouns. As a consequence, we have R-R nominals.

⁵¹ Participial suffixes are treated as Voice heads (see Cinque 1999: 101–103; Ferrari 2005) and have the effect of turning a verbal stem into a participle, thereby assigning a resultative meaning to the derived nominal. As Cinque (1999: 102) observes, the primary function of the passive participle is to check the marked value “passive” on Voice° by overtly raising to this head.

The fact that such nouns may at times refer to an event may be due to extra-linguistic factors such as the ENCYCLOPEDIAIC KNOWLEDGE ASSOCIATED WITH THE ROOT. To exemplify, the zero-derived noun *visit* from *the visit took place at 3 o'clock* is interpreted as event-denoting. I suggest that such an interpretation is made available not by some eventive syntactic layer involved in the derivation of the noun *visit*, since arguably there are no such layers, but rather by the knowledge the speaker possesses about the meaning of the root. To put an example, we know that *visit* makes reference to an event which involves a visitor (or some visitors) and a place, probably some reason for visiting as well (among other things), where such an event can be also located in time (e.g. *at 3 o'clock*). Note that such an observation does not hold for other zero-derived nouns such as *place*, *step*, *smell*, *result*, *form*, etc., which are unable to denote events. **However, assigning meaning (in this case, eventive interpretation) via encyclopedic knowledge to a given derivative is idiosyncratic and language specific.** This can be seen, for example, by the denotation of the Catalan noun *visita* which is morphologically identical to the English *visit*. However, in Catalan this noun refers to objects or entities (e.g. the person who visits), as in *Les visites es van comportar malament* ‘The visits behaved badly’ (Picallo, p.c.).

TO SUM UP, it is syntax, and the incorporation of certain functional layers, which drives aspectual interpretation (process vs. event vs. result). This confirms Borer's (2005b) claim that aspect itself is a property of the structure. Further evidence in support of a syntactic approach to nominalizations based on their aspectual behavior comes from the inner aspect of these nouns, which I discuss in what follows.

6.5.1.2. On the (a)telicity of nominalizations

As we are about to see, the (a)telicity of a given derivative is dependent on the syntactic structure incorporated within this derivative. This is yet another way of emphasizing the importance of syntax in the domain of inner aspect. I start the discussion with the –ing and –NE nominals.

6.5.1.2.1. On the (a)telicity of –ing and –NE nouns

We have already seen that English –ing nouns are usually atelic, since they do not accept the time-span adverbial (90a), but when a particle enters the structure, the result is a telic event (90b). When it comes to the Bulgarian –NE nouns, what we observe is that the nominalization preserves the inner aspect of the underlying predicate, too. Thus, if the predicate on which the nominalizer attaches is atelic, then the nominalization is atelic as well (90c), and if it is telic, then the noun refers to a telic event (90d).

(90) Process nouns in English and Bulgarian⁵²

a. *Kim's formulating of the government's policy for/*in 2 weeks/???twice*⁵³

b. *Kim's writing up of the letter twice/in two hours/*for two hours*

b'. **Kim's writing of the letter up twice/in two hours/for two hours*

c. –NE nouns: atelic primary imperfectives → atelic nouns

but-a-NE-to *na kolichka-ta* *dva chasa/*za dve minuti*

push-TH.VOW-NE-the.NEUT.SG of cart-the.FEM.SG two hours/*in two minutes

‘The pushing of the cart for two hours/*in two hours’

d. –NE nouns: achievement predicates (telic prefixed perfectives) → telic nouns

PO-stro-java-NE-to *na kŭshŭta-ta* **dve godini/za dve godini*

PO-build-IMPF-NE-the.NEUT.SG of house-the.FEM.SG *two years/in two years

‘The building (up) of the house *for two years/in two years’

From (90) we can observe that non-particle incorporating –ing nouns refer to atelic events (90a) in the same way as the Bulgarian –NE nouns derived from primary imperfective (i.e. non-achievement) predicates (90c). Once the particle (90b) or the prefix (90d) enter the structure, we obtain a telic interpretation. ***This state of affairs implies that both the –ing and the –NE nominals preserve the inner aspect of their underlying bases, though the former are more restrictive than the latter, as we will see in the following section.***

⁵² See Appendix 6.2: (1) for further examples.

⁵³ Taken from Borer (2005b: 239).

Interestingly, observe that the construction is out when the particle is separated from the verb (90b'). According to Borer (2005b) this is so because of the anti-telic effects of the –ing nominalizer. To exemplify, Borer (2005b: 241) observes that when the particle (*up*) is separated from the verb (e.g. *write the letter up*) then telicity emerges. This is due to the fact that particles in this construction (e.g. V + DP + P) are predicate modifiers of Asp_QP, giving thus rise to telicity (91b). When, on the other hand, the particle appears next to the verb (e.g. V + P + DP ‘write up the letter’), then the projection of is not obligatory (91a) (see the previous chapter, § 5.1.3).

- (91) a. *We ate up sandwiches (for hours/all afternoon/*in three hours)*
 b. ??*We ate sandwiches up (for hours/in three hours)*

However, the fact that the particle facilitates modification by the time-span adverbial (90b) where it is otherwise banned (90a) implies that it has a telicizing effect, ***so nominal –ing cannot be treated as an anti-telic element.*** This will also go against Alexiadou's (2001) claim that –ing nouns are always atelic as well. I will comment on this issue in depth in the following chapter.

TO SUM UP, both prefixes and particles telicize the verbal base and, as a consequence, the –ing or –NE noun which incorporates this base. In Bulgarian this is morphologically reflected where (im)perfectivity equals (a)telicity (see chapter 4, § 4.1). However, we have already noted that a distinction should be made between primary imperfectivity, which equals atelicity, and secondary imperfectivity, which does not. Recall that primary imperfectives, which are unprefixes, denote atelic events in contrast to prefixed perfectives which denote telic events.⁵⁴ Furthermore, we have also noted that the nominalizer –NE attaches to imperfective bases only (§ 6.3.1). Hence, if the base is prefixed (e.g. *NA-pisa* ‘write’ PF) we should additionally imperfectivize it by the addition of the secondary imperfectivizing suffix –*va*, thus enabling –NE to attach (e.g. [*NA-pisa*]–*va* ‘write’ IMPF2). Nevertheless, the fact that we have a morphologically imperfective base (e.g. [[*NA-pisa*]–*va*] ‘write’ IMPF2)

⁵⁴ In this respect, recall that there is an exhaustive list of few primary perfective verbs (at about fifty) which, though unprefixes, denote telic events due to their morphological perfectivity.

does not mean that we have an atelic event, as we already observed in the previous chapter for verbs. **Rather, we have a telic event signaled by the presence of the prefix, on top of which we additionally build outer imperfective aspect via the secondary imperfective morpheme –va.** Therefore, it shall follow that prefixed –NE nouns (90d), in contrast to their unprefixed counterparts (90c), should behave in a telic-like manner (as they do within the verbal domain), which is exactly the case.⁵⁵ (See Appendix 6.2: (4) which shows that the presence of any kind of prefix gives rise to a telic nominalization.) Interestingly, the same holds for –ing nouns which, in the absence of telicizing structure such as a particle, will remain atelic (90a) whereas if such an element is present, the interpretation we get is one of a telic event (90b).

In other words, both the –NE and the –ing suffix, in contrast to the rest of the suffixes (–KA, –BA, Voice –IE, –tion, etc.), are unable to change the (a)telicity of the underlying verb, which will indicate that not only the –NE nouns, but also the –ing nominals, will inherit the properties of their verbal bases. However, I agree with Borer (2005b) that the suffix –ing, being an inner aspectual element, rejects stative bases, which is not the case for the –NE nominalizer as we will see.

Regarding prefixed –NE nouns in Bulgarian, we should note that when the prefixed nominal takes a [-q] internal argument, the result is not always a telic event-denoting noun, as we expect, given the telicizing nature of the prefix. In other words, the prefix can sometimes turn out to be unable to give rise to telicity within a nominal (though not within a verb), shown by the fact that the resulting noun denotes an atelic event as it allows the for-adverbial (92b).⁵⁶

⁵⁵ The same holds for the rest of the prefixed perfective (achievement) verbs which lack a corresponding imperfective non-prefixed pair, see Appendix 6.2: (2).

⁵⁶ This can be also the case for some lexical prefixes (see Appendix 6.2: 4a: ii); inner spatial prefixes (Appendix 6.2: 4c: ii); outer temporal repetitive prefixes (Appendix 6.2: 4g: ii), and the outer manner reversive prefixes (Appendix 6.2: 4j: ii).

(92) a. [+q]NP= telic

[PRO-d]-ava-ne-to na kafe-to *dva chasa/za dva chasa
[sell]-IMPF-NE-the.NEUT.SG of coffee-the.NEUT.SG *two hours/in two hours
'The selling of the coffee *for two hours/in two hours'

b. [-q]NP= ?atelic (extended duration)

[PRO-d]-ava-ne-to na zahar dva chasa/*za dva chasa
[sell]-IMPF-NE-the.NEUT.SG of sugar two hours/*in two hours
'The selling of sugar for two hours/*in two hours'

Such a state of affairs leads us to conclude that the telicity of the prefixed verbs (*PRO-dam* 'sell' (PF)) is not always transferred from the verbal domain to the nominal domain under nominalization by *-NE*. ***To account for this apparently unexpected behavior, I claim that it is the aspectual function of the secondary imperfective suffix -va, which brings duration into the structure (see chapter 4). Since the for-adverbial measures the duration of the event, we can then tentatively assume that it is precisely the feature [duration] which -va bears that is finally modified by 'for X time', implying thus that the event denoted by the noun need not be atelic.*** Recall that a similar proposal was offered for the outer durative prefix *PO-*, which is the only prefix in Bulgarian that allows modification by the *for*-adverbial. As I have proposed, the acceptability of 'for X time' with *PO*-verbs is related to the inherent feature [duration] which the prefix has, and it is this feature which facilitates a modification by the *for*-adverbial, preserving meanwhile the telicity of the *PO*-predicate (see chapter 4, § 4.2.1). In other words, what 'for X time' modifies is the (extended) duration of the event encoded in the *-va* suffix, and has nothing to do with the inner structure of the event denoted by the noun. Crucially, modification by the *for*-adverbial in prefixed nouns is made possible only in a limited number of cases, with few prefix types, and when the internal argument is a non-quantity one ([*-q*]), implying that other factors may be facilitating the extended duration reading in those cases (see Appendix 6.2, fn. 17). I leave this topic for further research.

Alternatively, one may suggest that it is the presence of the secondary imperfective suffix *-va* which makes it possible for the internal argument to determine inner aspect, a phenomenon which has been already labeled as the object-to-event mapping property and has been claimed to be characteristic of the English eventive predicates (see chapter 4, § 4.3.1). Recall that the Bulgarian biaspectual verbs (e.g. the *-ira/-izira* verbs) behave in the same way as the English verbs since they both calculate inner aspect via some aspectually relevant feature on the internal argument (e.g. $[+/-q]$), a feature totally irrelevant for the determination of inner aspect within the standard verbal paradigm in Bulgarian (see chapter 4, § 4.3.2). Thus, one may assume that what happens within the biaspectual paradigm in Bulgarian is similar to what happens within a prefixed $[-va+NE]$ nominal. Such a claim may be further reinforced by the fact that the suffix *-va* has often been considered a biaspectual marker (Chakyrova 1998). If this is indeed the case, it will then follow that the feature specification of the internal argument will be deterministic for the (a)telicity of the *-NE* derivative in the same way as it is for English eventives and the Bulgarian eventive *-ira* verbs. However, there are some problems to such an analysis.

On the one hand, such a treatment will erroneously predict that the suffix *-ira* and *-va*, since they are both markers of biaspectuality, will never co-appear within a *-NE* nominal because they will compete for the same position, call it $X^{BISAP}P$. From (93) we can see that this is not so, and that the two suffixes can co-occur both within the verbal (93a) and within the nominal (93b) domain, implying that they occupy two distinct positions (for example, $X^{BISAP}P$ for *-ira*, since it marks biaspectuality, and $Asp_P P$ for *-va*, since it introduces duration into the structure).

(93) The suffixes *-va* and *-ira*

a. Verbal domain

(i) $[prefix + [V + -ira]^{BISAP}]^{PF}$ (the prefix perfectivizes and telicizes the *-ira* verb)

*Ivan IZ-konsum-ira butilka-ta s bira *edin čas /za edin čas.*

Ivan IZ-consumed-ira.BIASP bottle-the with beer *one hour/in one hour

‘Ivan consumed the bottle of beer *for one hour/in one hour.’

(ii) [prefix + [V + –ira]^{BIASP}]^{PF} + –va]^{IMPF} (–va imperfectivizes the –ira verb)

Ivan IZ-konsum-ir–va-she *bira-ta, kogato go vidjah*

Ivan IZ-consume–ira.BIASP–VA.IMPF-she.PST.IMPF beer-the, when him saw

‘Ivan was consuming the beer when I saw him.’

b. –NE nouns (see Appendix 6.2: (3) for more examples on outer prefixes)

IZ-vibr-ir–va-ne-to

IZ-vibrate–ira.BIASP-IMPF-NE-the.NEUT.SG

‘the giving of a sudden vibration’

Since the two suffixes (–ira and –va) co-appear both within a predicate and within a nominal, they cannot compete for the same structural position, ruling out the second hypothesis. Further evidence for such a claim comes from the unavailability of the outer durative prefix PO- within –NE nominals (94b).

(94) a. Verbal domain

**PO-pja–va-m*

PO-sing-IMPF-1.PS.SG

*‘I (am) sing(ing) for a while’

b. Nominal domain

**PO-pja–va-ne-to* *na pesen-ta*

PO-sing-IMPF-NE-the.NEUT.SG of song-the.FEM.SG

*‘The singing of the song for a while’

Recall that I have previously mentioned that the properties which –ing and –NE nouns have in common can be explained syntactically, i.e. by postulating that only these nouns incorporate some higher aspectual projection inside them, which will consequently account for their process denotation, argument-taking properties, etc. I have also suggested that this aspectual layer be labeled Asp_PP for –ing /Asp^{DUR}P for –NE (I will turn to the distinction between Asp^{DUR}P/ Asp_PP in the following chapter), implying that both –ing and –NE will select for this projection. Since –NE selects for imperfective bases in Bulgarian, it then follows that when there is a prefix, then the secondary imperfective suffix –va is added into

the structure in order to imperfectivize the prefixed perfective base ([prefix + V]^{PF} + –va]^{IMPF}). In chapter 4 (§ 4.2) I have proposed that –va bears the feature [duration], which additionally justifies its derivation as a head of Asp^{DUR}P. But what is of crucial significance is the fact that the outer durative prefix PO-, which bears the same feature [dur] and competes for the same position as –va, is excluded from –va formations, both in the verbal (94a) and in the nominal (94b) domains (see also chapter 3, § 3.4.2: (66c') for verbs). Thus, the incompatibility of PO- within a –va derivative arises from the fact that both affixes compete for the same position, Asp^{DUR}P. A brief summary of the prefixation data inside –NE nominals is offered in Table 10.

Prefix type	[+q]NP theme	[-q]NP theme
Lexical prefixes	telic	<u>atelic</u>
Inner prefixes		
Locative	telic	<u>atelic</u> , telic
Causative	telic	telic
Cumulative	telic	telic
Pure perfectivizers	telic	telic
Outer prefixes		
Phasal: inceptives	telic	telic
Temporal: repetitives	telic	<u>atelic</u>
!! * <u>Durative PO-</u>		
High degree	telic	...
Manner reversive	telic	<u>atelic</u>

Table 10: Prefixes and telicity within –NE nouns (see also Appendix 6.2: (4))

TO RECAP, we can conclude that both the –ing and the –NE nominalizers preserve the inner aspect of their underlying base verbs. Thus, when primary imperfective, –NE nominals refer to atelic events (recall that there is a list of some fifty unprefixed but perfective verbs, which are telic and will therefore give telic –NE nominalizations). As for prefixed –NE nouns, they tend to denote telic events, though at occasions, when the internal argument is specified as [-q], and the prefix is lexical, locative, repetitive or reversive (see Table 10), an

atelic interpretation becomes available, shown by the acceptability of the *for*-adverbial in such cases.⁵⁷ I have tentatively assumed that such an atelic reading arises due to the aspectual function of the secondary imperfective morpheme *-va*, which is endowed with the inherent feature [duration]. It is precisely this feature which the *for*-adverbial targets, which has been already claimed to hold for the PO-verbs as well. As for the *-ing* nominals, in the absence of telicizing elements such as particles, we have atelicity; if, on the other hand, these elements are present, the result is a telic event.

Before I proceed to the rest of the nominalization types, some brief details should be mentioned regarding the suffix *-ing* in English, so that the comparison between the English *-ing* and the Bulgarian *-NE* nominalizations becomes clearer.

6.5.1.2.2. Some notes on the *-ing* and *-va* suffixes

There are three kinds of *-ing* suffixes: (i) one which participates in verbal gerunds, i.e. gerundive *-ing* (95b); (ii) one which forms part of a deverbal nominal, i.e. nominal(izing) *-ing* (95c), and (iii) another one which participates in the progressive, i.e. progressive *-ing* (95a). However, only the nominalizing *-ing* directly relates to the inner aspectual properties of the event denoted by the noun inasmuch as it blocks achievements (95c: i).

(95) On *-ing* typology (Borer 2005b: 240)

a. Progressive *-ing*: progressive operator (related to an outer aspect)

(i) *Kim is reaching the summit*

(ii) ?*Kim was writing the letter [up]*⁵⁸

b. *-ing* in verbal gerunds: aspectually neutral

(i) *Kim reaching the summit*

⁵⁷ The fact that reversive prefixes (*OT-vŭrŭža* ‘untie’) and the locative ones (*OT-lepja* ‘unstick’) share many properties and behave identically in many occasions implies that probably the former are a subtype of the latter. However, I will not pay much attention to this issue and leave it for further investigation.

⁵⁸ Recall that for Borer (2005b) Asp_QP projects obligatorily in [V + DP + Particle] constructions whereas Asp_QP is optional when the particle appears next to the verb (see the previous subsection; (91)).

(ii) *Kim writing the letter up*

c. Nominalizing –ing: an anti-achievement and anti-stative element (related to inner aspect)

(i) **Kim's reaching of the summit*

(ii) **Kim's writing of the letter up*

(iii) *Kim's writing up of the letter*

From (95) we can observe that although nominal –ing tends to block telicity (95c: i, ii), not all telic structures are excluded from the –ing nouns (95c: iii). Hence, we cannot assume that this nominalizer is an anti-telic element as proposed in Borer (2005b) if we take particles to be telicizers in the same way as prefixes. In this respect, note that within verbal gerunds we can have –ing in combination with achievements (95b).

Interestingly, the *prima facie* anti-telic behavior of nominal –ing has been claimed to consist in blocking culmination, which has led many to propose that –ing is a progressive marker inside a nominalization since the progressive –ing also blocks culmination (Pustejovsky 1995). However, Borer (2005b) observes that such a claim is problematic because the latter does not prevent telic structures (95a). Thus, though progressive –ing blocks a culmination reading in (95a), the sentence is not ungrammatical as is the case for nominalizing –ing (95c: i, ii).

To explain this I follow Borer (2005b) and assume that progressive –ing, like the Bulgarian secondary imperfective suffix –va, pertains to the domain of outer aspect and, like negation, it is an operator-like element which scopes over the event denoted by the verb, be it telic or atelic. The difference between progressive –ing and nominal –ing, however, is that when progressive –ing co-appears with telic predicates, i.e. with a well-formed Asp_QP, culmination is negated (e.g. ‘Kim was writing the letter up’ implies that the letter has not been finished, i.e. the event of ‘writing the letter up’ has not culminated). However, this is not what happens with nominalizing –ing since its function is to block most structure containing Asp_QP (95c: i, ii), though not all (95c: iii).

Such a state of affairs leads Borer (2005b) to conclude that the two suffixes have different scope properties and operate at different levels: nominalizing –ing, in contrast to progressive –ing, pertains to the domain of inner aspect, where (a)telicity is calculated. The fact that nominalizing –ing is related to inner aspect is also confirmed by its anti-stativity effects. To exemplify, in contrast to gerund –ing (96a), the nominalizer –ing does not nominalize stative predicates, shown by (96b).

(96) Statives and –ing (from Borer 2005b: 244)⁵⁹

- a. *Kim loving Pat; Kim feeling the cold/the coat on his shoulders*
- b. *Kim's loving of Pat; Kim's feeling of the #cold/coat on his shoulders*

The anti-stative behavior of nominal –ing leads Borer (2005b) to conclude that the subject of these nouns should be an originator,⁶⁰ not a subject-of-state (as in statives) or a subject-of-quantity (e.g. as in achievements). Consequently, Borer (2005b) concludes that –ing is both an activity (non-stative and non-achievement) and an originator (not subject-of-state and not subject-of-quantity) inner aspectual modifier.⁶¹

However, if we take nominal –ing to pertain to the domain of inner aspect whereas the Bulgarian secondary imperfective –*va* to be related to progressive –ing, i.e. outer aspect, and bearing in mind that both suffixes are the overt expression of a process (duration) feature (89a), then we have two instantiations of the same linguistic phenomenon (e.g. a process node) pertaining to two distinct aspectual domains, inner and outer aspect, respectively. To solve this, ***I propose that there are two process-related nodes, one pertaining to the domain of inner aspect, Asp_P, and one***

⁵⁹ Note that when *feel* combines with weather (*feel the cold*) or when *touch* combines with stationary objects such as ‘wall’, the salient reading is stative, which is excluded from –ing nouns.

⁶⁰ Recall that within the constructionist approach adopted in Borer (2005b) it is the structure which assigns interpretation, whereas the listemes are modifiers of structure, not its determinants. In this respect, and what is relevant here, is to notice that the originator modifiers such as –ing are those that force EP to project.

⁶¹ Activity predicates may or may not involve an originator. The former can be nominalized by –ing, but the latter, which are exemplified by activity weather predicates, cannot:

(i) **the constant raining for several hours yesterday* (Borer 2005b: 245)

to the higher outer aspectual domain, Asp^{DURP}. The former will be headed by nominal –ing whereas the latter will be headed by the secondary imperfective suffix –va, which will be in turn selected by –NE (recall that –NE nouns incorporate this process layer (89a)). What facilitates the derivation of these suffixes as heads of a process-related node is their inherent feature [duration] which, when merged within higher aspectual layers, is interpreted as process. In other words, although the two suffixes have different attachment-site realizations, their incorporation in a given derivative will account for the process interpretation of this derivative due to their high attachment site. This will consequently imply that we need more space within the hierarchy of aspectual features in order to accommodate to the necessity of having a process phrase within the inner aspectual domain for hosting –ing, apart from the already existing AspectDurativePhrase, which will be headed by –va. I leave the exact relation between these two projections for further investigation though I will elaborate on this claim in the following chapter. A summary of the main characteristics of the –ing and –NE nouns is offered in Table 11.

	Telicity	telic: ‘in X time’	atelic: ‘for X time’
–ing nouns	usually atelic	sometimes	yes
–NE nouns	preserve the (a)telicity of the base verb		
Primary IMPF	atelic	not	yes
Primary PF	telic	yes	not
–va (prefixed) derivatives	telic + extended duration	yes	yes (durativized)

Table 11: Aspectual properties of the –ing and –NE nominals

Now let us briefly refresh the main characteristics of the rest of the nominalization types in English and Bulgarian.

6.5.1.3. Aspectual properties of English –tion and root nouns, and the Bulgarian Voice –IE and “other-suffix” nominals

As I have already proposed, the rest of the nominalization types in both languages do not nominalize higher aspectual layers so they cannot be process-denoting as those in (89a). This explains why the majority of these nouns refer to results of events or objects (89c) though at times they may also refer to events (89b). In order to explain the fact that one and the same nominalizer (e.g. –TION, –KA) can give rise to different nominal types (e.g. eventive or result-referential nouns), I have already proposed that this is due to the fact each nominalizing suffix attaches at a particular level within the hierarchy of aspectual features of Cinque (1999) (see Appendix 1.1). In this respect, I have argued that the nominalizer –tion (and kin) and the Bulgarian “other-suffix” nominalizers (e.g. –KA, –BA, –EŽ, –ŮK, etc.) have various attachment site possibilities: on top of the root, giving an R-R noun (89c), or incorporating some lower verbal layers, resulting thus in an eventive nominal (89b). Therefore, what is deterministic for the final denotation of the nominal, together with its semantic and syntactic properties are the properties of the layers involved in its derivation. As for the Bulgarian Voice –IE nouns, since they are built on a participial base (i.e. VoiceP), they denote results because of the resultative semantics of the underlying participle (89d).

What concerns us here is the aspectual behavior of nominalizations, i.e. whether they refer to telic or atelic events. This implies that only the eventive nouns will be testable on aspectual grounds since (a)telicity is a property of events, not objects (*ergo*, referential nouns cannot be tested for (a)telicity). As for result nominals, they can never be atelic, since resultative semantics has been always associated with (semantic) boundedness, i.e. telicity.⁶² Consequently, we are left with exploring the behavior of the eventive nouns only. Regarding this issue, Borer (1999) observes that in contrast to the process-denoting atelic –ing nouns, the –tion and kin nominals are aspectually neutral since they are compatible with

⁶² Resultative semantics, due to their relation to semantic boundedness, i.e. telicity, is often considered to be structurally represented (e.g. R(result)P in Svenonius 2004c, Asp_qP in Borer 2005b, etc.).

both telic and atelic bases. Hence, English –tion nouns can sometimes refer to telic (97a) or atelic events (97b).

- (97) a. *Kim's (gradual) **formulation** of several procedures twice/in two weeks/*for two hours*⁶³
 b. *Pat's **exploration** of the desert for three years/?in three years*

However, I have already proposed that the atelic (process) reading of the –tion noun in (97b) is not syntactically driven, but rather it is our encyclopedic knowledge of the world which facilitates a process interpretation. Therefore, as a general rule, the –tion nominalizations are not aspectually neutral but telic. See the following chapter for more details on this issue.

TO RECAPITULATE, we have seen that English –ing nouns tend to be atelic in contrast to the –tion nouns, which refer to telic events in the majority of the cases, though at times they may also refer to processes. In other words, –ing preserves the inner aspect of its underlying base in contrast to –tion which tends to telicize this base.

In order to explain this I have suggested that it is the presence of the higher aspectual Asp_P which facilitates the process interpretation of the –ing nouns and its absence in the –tion nominalizations which tend to denote telic events.

As for the Bulgarian eventive nouns (98), they refer to telic events in most cases, even when they are built on a primary imperfective (atelic) base (98a). I tentatively suggest that this is due to the fact that such nouns do not involve higher aspectual layers like the –NE nominals that can assure the preservation of the fundamental aspectual properties of the base. Thus, even in those cases when the base is atelic (98a), these nouns, since they belong

⁶³ Recall that for Borer (2005b) both ‘twice’ and ‘in X time’ refer to telic structures (i.e. Asp_QP), the difference being that the former gives rise to a quantity reading which is otherwise disallowed, through range assignment to [Asp_{QP}⟨e⟩#], whereas the latter, being a measure phrase, cannot change the properties of the event but rather seeks a well-formed telic predicate to modify it (i.e. [Asp_{QP}⟨e⟩#]). Hence, the time-span adverbial is considered a predicate modifier of quantity and a reliable diagnostics of quantity predicates (Borer 2005b: 232-233).

to the nominal domain, are interpreted as results, i.e. telic, or are often incompatible with any aspectual modifiers, i.e. they seem to be aspectless. As for the nouns derived from perfective (i.e. telic) bases, they refer to telic events, as expected (98b, c).

(98) Bulgarian eventive “other-suffix” nouns

a. Primary imperfectives: aspectless/?telic (see Appendix 6.2: (5) for more examples)

stro-EŽ-ūt *na hotel-a* **devet mesetsa/?za devet mesetsa*

build-EŽ-the.MASC.SG of hotel-the.MASC.SG *nine months/?in nine months

‘The construction of the hotel *for nine months/?in nine months’

b. Primary perfectives: telic

obikol-ka-ta *na Papa-ta iz* *Pravoslavni-ja svjat* **dva mesetsa/?za dve sedmitsi*

travel-the.FEM.SG of Pope-the throughout Orthodox-the world */two weeks/?in two weeks

‘The tour/trip of the Pope around the Orthodox world *for two weeks/?in two weeks’

c. Prefixed perfectives: telic

[*PRO-d*]-*a-ŽBA-ta* *na kafe(-to)* *na edro* **dva mesetsa/za dve sedmitsi*

[sell]-TH.VOW-ŽBA-the.FEM.SG of coffee-(the) wholesale *two months/in two weeks

‘The wholesale of (the) coffee *for two months/in two weeks’

Note that in contrast to the –NE nouns, which inherit the properties of the base verb, the rest of the nominals, though event-denoting, turn out to be apparently aspectless. Thus, the nouns built from atelic (primary imperfective) bases (98a) reject both telic (‘in X time’) and atelic (‘for X time’) modifiers and are preferably used in prototypically nominal contexts as in (99a). The same is true of the nouns derived from perfective (telic) bases (99b, c), though they are apparently more prone to inherit the telic character of the base verb and accept thus quantity modifiers (e.g. ‘in X time’). However, in cases like these, ***we are not dealing with ‘inheritance’ in its literal sense; rather, the telic nature of a nominal is simply reinforced by the inherent semantics of nouns in general which tend to denote objects and results (i.e. telic count entities), but not processes, the latter being a property of verbs.***

(99) The ‘prototypical’ contextual environment for the “other-suffix” nominals

a. Primary imperfectives (atelic bases)

zamrazjavat stro-EŽ-a na hotel-a
freeze-3PS.PL build-EŽ-the.MASC.SG of hotel-the.MASC.SG
‘The construction of the hotel is frozen’

b. Primary perfectives (telic bases)

god-EŽ-ūt im beshe publichno objaven
engage-EŽ-the.MASC.SG them was publically announced
‘Their engagement was publically announced’

c. Prefixed perfectives (telic bases)

Bojko prie PO-kana-ta na Slavi da gostuva v shou-to mu
Bojko accepted PO-invite-the.FEM.SG of Slavi to visit in show-the.NEUT.SG him
‘Bojko accepted Slavi’s invitation to visit his show’

Finally, the Voice –IE nominals can always refer to results (100), due to the incorporation of a participial syntactic layer inside them, i.e. VoiceP. Thus, the participial nouns derived from perfective (telic) bases denote results in most cases (100a, b: i), though at occasions, and on par with the result reading, we can also have an event interpretation. However, the event to which the noun refers cannot be atelic (100b: ii). As for the Voice –IE nouns built from primary imperfective (atelic) bases, we can observe that in the majority of the cases they still denote results or objects (100c), sometimes with a possible telic event interpretation on par with the result one. ***But what is really important to note is that when the base is primary imperfective (i.e. atelic), these nouns can also refer to atelic events, thus preserving the aspectual properties of the base (100c).*** However, the result interpretation is always present even in those cases when it is accompanied by an eventive reading. In this respect, see *dviženie* in (100d: ii) which, according to the context in which it appears, can be either eventive and therefore translated as ‘moving’ or else resultative and translated as ‘movement/traffic’. This fact suggests that ***when higher aspectual levels are involved in the derivation of a nominal (e.g. VoiceP), then morphological and, consequently, syntactic (and semantic)***

inheritance may be a factor for determining the properties of the final derivative.

(100) Aspectual properties of the Voice –IE nouns

a. Primary perfective (telic) bases: results⁶⁴

osnov-a-n-IE

base-TH.VOW-N.PASS.PRT-IE

‘basis; grounds; reason; foundation’

b. Prefixed perfective (telic) bases:

(i) Results: the vast majority⁶⁵

[O-pis]-a-n-IE-to

na stsena-ta

**prodūlži tri chasa*

*[O-write]-TH.VOW-N.PASS.PRT-IE-the.NEUT.SG of scene-the.FEM.SG *lasted three hours*

‘The description of the scene *lasted three hours’

(ii) Telic events:⁶⁶

[O-pustosh]-e-n-IE-to

na stolitsa-ta

**tri*

dni/za tri dni/zapochna v tri chasa

*[O-desolation]-TH.VOW-N.PASS.PRT-IE-the.NEUT.SG of capital-the.FEM.SG *three*

days/in three days/started at three o'clock

‘The devastation of the capital *for three days/in three days/started at three o'clock’

⁶⁴ Other nouns with a similar behavior are: *darenie* ‘donation’, *izobretenie* ‘invention’, *lishenie* ‘deprivation’, *reshenie* ‘decision’, *spasenie* ‘rescue, salvation’, *udarenie* ‘stress (syllabic), accent’, *užasenie* ‘horror(ification)’, *videnie* ‘vision; phantasm’.

⁶⁵ Also: *pokritie* ‘cover’, *izvestie* ‘notification’, *povishenie* ‘(up)rise’, among many others.

⁶⁶ Note that it is precisely our encyclopedic knowledge of the root, and not any aspectual syntactic layer, which allows underived nouns such as *praznik* ‘celebration’ (Bulgarian), or *lesson* (English) to refer to events:

- (i) *praznik-ūt prodūlži s kontsert*
celebration-the continued with concert
‘The celebration continued with a concert’
- (ii) *The lesson lasted several hours*

However, though in the absence of aspectual functional structure such nouns can be still interpreted as eventive, they cannot take internal arguments.

(i) Results or objects; sometimes telic events

'The writing is on the table/*started at three o'clock'

at move-TH.VOW-N.PASS.PRT-IE more-long time behind slow freight automobiles
and intensive counter *move-TH.VOW-N.PASS.PRT-IE* not lose *endure-TH.VOW-N.PASS.PRT-IE*
'When driving^{EVENT} for a longer time behind slow trucks and intensive *counter-*
movement^{RESULT} do not lose *patience*^{ABSTRACT},

⁶⁸ Taken from <http://rdvr.sliven.net/index.php?id=20363>.

inheritance from the base verb, opt for a default denotation, i.e. that of a result, which is pre-empted by their (formally) nominal character. The Voice –IE nominals, on the other hand, do seem to have the possibility to transfer the aspectual properties of their bases to the derived nominal, but this has an exceptional character. Thus, only in few cases, and only when the base is unergative, i.e. primary imperfective and atelic, are these nouns capable of referring to an atelic event. However, in the majority of the cases, and even when the base is atelic, ***the Voice –IE nouns, since they are built on participles, refer to results and behave in a telic-like manner.*** Finally, the object-denoting nouns are excluded from the discussion since they do not denote events and cannot be consequently tested on aspectual grounds.

A brief summary of the aspectual characteristics of the nominalization types in English and Bulgarian is offered in Table 12.

Type	denotation			inheritance	telic	atelic
	Results	Events	Processes			
–ing nouns	exc! ⁶⁹	yes	yes	yes (anti-stative)	yes + prtcl	yes
–NE nouns						
Primary IMPF	exc!	yes	yes	yes: atelic	not	yes
Primary PF	yes	not	no	yes: telic	yes	not
–va (prefixed) derivatives	yes	yes	no	yes: telic extended duration: –va: [DUR]	yes	yes
–tion nouns	yes	yes	not	not: usually telic	yes	sometimes
“other-suffix” nouns						
Primary IMPF	yes	some	no	no: eventive Ns: aspectless or telic	yes	yes
Primary PF	yes	some	no	event Ns: telic	yes	not
Prefixed PF	yes	some	no	event Ns: telic	yes	not
Voice –IE Ns						
Primary IMPF	yes	exc!	no	exc!	yes	exc!
Primary PF	yes	no	no	irrl.	yes	not
Prefixed PF	yes	some	no	event Ns: telic	yes	not
Ø-nouns	yes	exc!	no	no	irrl/yes	not
Root nouns	yes	no/exc!	no	no	irrl/yes	not

Table 12: Aspectual properties of the English and the Bulgarian nominalization types

Having seen the basic aspectual characteristics of the nominalization types in the two languages, I will just briefly mention some details on their Aktionsart properties, i.e. whether or not they are compatible with activity, achievement and state bases.

⁶⁹ ‘exc!’ means ‘allowed as an exception’; ‘irrl’ means ‘irrelevant’ and is applicable in cases where the noun is unable to denote events and is therefore not aspectually testable.

6.5.2. Aktionsart properties

Since we have been commenting on this issue throughout the chapter, I will proceed to summarizing the main findings in (101) through (103).

(101) Nominalizing activity (i.e. atelic) predicates: all nominalization types

a. English nominalizations

- (i) **–ing nouns:** *the sinking of the ship* (under intransitive reading); *the falling of stock prices*; *the slipping of standards*; *the laughing of the boys*; *the jumping of the cows*; *the dancing of the fairies*
- (ii) **–tion (and kin) nouns:** *laughter*, *hibernation*, *conversation*, etc.
- (iii) **zero-derived nouns:** *smile*, *laugh*, *dance*, *walk*, *ride*, *chase*, *smoke*, *roll*, *rock*, *climb*, *run*, etc.

b. Bulgarian nominalization types (all primary imperfective bases)

- (i) **–NE nouns:** *peene* ‘singing’, *hodene* ‘walking’, *tantsuvane* ‘dancing’, *govorene* ‘talking’, *jadene* ‘eating’, *piene* ‘drinking’, *pūtuvane* ‘travelling’, *spane* ‘sleeping’, etc.
- (ii) **“other-suffix” nouns:** *pisŭk* ‘a scream’, *krjasŭk* ‘a screan’, *vik* ‘a shout’ (root noun), *gledka* ‘view’, etc.
- (iii) **Voice –IE nouns:** *pitie* ‘a drink’, *pisanie* ‘a writing’, *gonenie* ‘persecution’, *roptanie* ‘murmuring(s)’, *dviženie* ‘moving; traffic, movement’, etc.

From (101) we can observe that all nominalizers in both languages can take activity bases as their input and nominalize them. However, this does not hold for achievement predicates (102), the difference being that the English nominal suffix –ing is *a priori* incompatible with such bases (102a: i). The same holds for stative bases (103) which are not allowed only within an –ing nominal (103a: i), presumably because of the anti-stative character of the nominalizing suffix, though such bases are accepted by all other nominalization types in both languages. The data are exemplified below.

(102) Nominalizing achievement predicates

a. English nominalizations

(i) **–ing nouns: not:** */#*Kim's reaching of the summit*; */#*Pat's ending of the flood*; */#*Robin's finding of (the) oil*; */#*The bulldozer's hitting of (the) bedrock*; */#*The balloon's noisy exploding*; */#*The rabbit's mysterious appearing (cf. with appearance)*; */#*The erupting of Vesuvius*; */#*The exploding of the balloon*; */#*Vesuvius' sudden erupting*; */#*The balloon's noisy exploding* (Borer 2009: 11-12)

► **Some exceptions:** *The sinking of the ship* (intransitive reading); *The falling of the leaves*; *The arriving of the guests* (iterative) (from Borer 1999: 10)

(ii) **–tion (and kin) nouns: yes:** *the arrival of the train*; *Vesuvius' eruption*; *the balloon's explosion*; *the rabbit's appearance*; *retirement*; *demission*; *foundation*; *aspiration*, etc.

(iii) **zero-derived nouns:** *turn*; *arrest*; *lift*; *export*; *ruin*; *import*; *descent*; *kill*; *drop*; *step*; *change*; *use*; *release* (eventive), *fall*, *rise*, etc.

b. Bulgarian nominalization types

(i) **–NE nouns:** *raždane* 'giving birth', *namiraneto na sŭkrovishteto* 'the finding of the treasure', *pristiganeto na gostite/na vlaka* 'the arriving of the guests/the train', *padaneto na listata* 'the falling of the leaves', etc.

(ii) **"other-suffix" nouns:** *upadŭk* 'a decline', *razruha* 'ruin, ruination', *postrojka* 'construction', *postavka* 'stand; base; support', *ostavka* 'resignation; retirement'

(iii) **Voice –IE nouns:** *vŭznamerenie* 'intention', *zakljuchenie* 'conclusion', *razrushenie* 'destruction', *prikliuchenie* 'adventure', *opustoshenie* 'devastation, desolation', etc.

(103) Nominalizing stative predicates

a. English nominalizations

(i) **–ing nouns: not:** *Kim's feeling of the #cold/coat on his shoulders*; *#the wall's touching of the fence*; *BUT!! meaning*; *understanding*;

(ii) **–tion (and kin) nouns:** *possession*; *resemblance*; *existence*; *hatred*; *adoration*; *involvement*; *knowledge*; *preference*, etc.

(iii) **zero-derived nouns:** *stand; hold; love; hate; concern; doubt; need; measure; want; must; taste; smell; look; lack; sound*, etc.

b. Bulgarian nominalization types

(i) **–NE nouns:** *obichane* ‘loving’, *mrazene* ‘hating’, *pritežavane* ‘possessing’, *vjarvane* ‘believing’, *stoene* ‘standing’, *sūshtestvuvane* ‘existing’, *mislene* ‘thinking’, *haresvaneto* ‘the liking’, *imaneto* ‘the having’, *viždaneto* ‘the seeing’, *znaeneto* ‘the knowing’, *obožavaneto* ‘the adoring’, *lipsvaneto* ‘the lacking’, *ostavaneto* ‘the remaining’, etc.

► **Few exceptions:** (few psych-verbs): **strahuvaneto* ‘the fearing’ (vs. root *strah* ‘fear’), *?obožavaneto* ‘the adoring’,

(ii) **“other-suffix” nouns:** *prinadležnost* ‘pertaining’; *vjara* ‘belief’ (root nouns), *sūmnenie* ‘doubt’, *chuvstvo* ‘feeling’ (root nouns), *otsūstvie* ‘absence’, *prisūstvie* ‘presence’, etc.

(iii) **Voice –IE nouns:** *obožanie* ‘adoration’; *sūdūržanie* ‘content’ (from *sūdūržam* ‘contain’), etc.

TO SUM UP, only the English –ing nominals are ‘special’ with respect to the Aktionsart properties of the base verb since only these nouns are incompatible with both achievement and stative predicates. The rest of the English nominalizations, and all of the Bulgarian nouns, are in principle able to incorporate any kind of base. The explanation for this observation has already been offered in Borer (2005b) who suggests that –ing interacts directly with the event structure of the base verb and has both anti-telic and anti-stative effects, the former blocking telic structures (i.e. achievement verbs) and the latter, stative ones. Recall, though, that ***I prefer to treat –ing as an element favoring atelic bases over telic ones, but not as an anti-telic element per se, since***, as we already saw and as we will see, ***we have instances of telic –ing nominals (e.g. the particle-incorporating ones)***. Furthermore, –ing is also an originator modifier, implying that although the structure is atelic (i.e. an activity verbal base), its subject should be interpreted as the originator. Evidence for this comes from weather verbs which are also excluded from –ing nominal (104a), though allowed in –NE nouns in Bulgarian (104b).

(104) **Weather verbs (non-originators)**

a. English –ing nouns

**the constant raining for several hours yesterday*

b. Bulgarian –NE nouns

obilno-to i zachešteno val-e-NE posledn-i-te niakolko dni

heavy-the.NEUT.SG and frequent rain-TH.VOW-NE last-PL-the.PL some days

‘The heavy and frequent rain(ing) for the last few days’

In this respect, note that the zero-derived nouns in English allow nominalization of weather predicates (e.g. *rain*, *snow*) since there is no syntactic restriction (e.g. in the form of –ing) imposed on the base verb.

I dedicate the following subsection to the argument-taking properties of the nominalization types in the two languages.

6.5.3. Argument-structure properties

I have already proposed that nominalizations can be divided into two types: argument-taking and non-argument-taking nouns (8). For expository reasons, the typology is repeated in (105).

(105) Nominalization types

a. **Argument-supporting nouns (AS)**

(i) **Obligatory arguments:** true AS nouns: some process –NE nouns (standard and biaspectual Bulgarian paradigms) and some –ing nouns (English)

(ii) **Optional arguments: participant-structure nouns (PS):**

- Standard Bulgarian: eventive –(N)IE; eventive “other-suffix”; some process –NE nouns
- Biaspectual Bulgarian: eventive –tsija and eventive “other-suffix” nouns
- English: some –ing and –tion nouns

- b. **Referential-Result nouns (R-R):** all nominalization types when used in the appropriate (referential-result) context

I start the discussion with the result-referential nouns.

6.5.3.1. Result-Referential nouns

I follow Grimshaw (1990) and assume that argument structure depends on event structure which, under a syntax-driven approach like the one advocated here, is further dependent on functional aspectual structure. Thus, non-eventive nouns, since they lack the relevant aspectual structure needed for event interpretation (and, consequently, for argument structure), can never project internal arguments and therefore fall under the group of result-referential nominals (105c). As previously mentioned, ***all nominals types can denote results, arguably due to their 'nouny' nature, i.e. to the fact that nouns prototypically refer to objects or results, together with the world knowledge that the speaker possesses about the root.***

First, let us consider the **BULGARIAN RESULT-REFERENTIAL NOMINALS**, i.e. result and object-denoting “other-suffix” (106a, a’), Voice –IE (106b) and –NE nominals in (106c).

(106) Result-Referential nominals in Bulgarian: all nominalizers

- a. [RAZ-kaz]-Ø
[narrate]-Ø.MASC.SG
‘narration, story’
- a'. [PO-stroj]-ka-ta (*na nov-a-ta sgrada) ot Ivan
construct-KA-the.FEM.SG (*of new-FEM.SG-the.FEM.SG building) by Ivan
*‘the construction of the new building by Ivan’
- b. *pis-a-n-IE-to (*na kniga-ta) ot Ivan
write-TH.VOW-N.PASS.PRT-IE-the.NEUT.SG (*of book-the.FEM.SG) by Ivan
*‘the written (thing) of the book by Ivan’

c. *jad-e-NE-to* *ot/na* *Ivan e na masa-ta*
 eat-TH.VOW-NE-the.NEUT.SG *by/from/of Ivan is on table-the.FEM.SG
 ‘The meal *by/from/of Ivan is on the table’

From the examples in (106) we observe that object-denoting nouns cannot have an eventive interpretation and hence do not allow for the projection of internal arguments. In the case of the “other-suffix” nouns, this is due to the fact that such nouns are either built on roots without embedding any eventive functional projections (106a) or, alternatively, on perfective verbal bases, indicated by presence of the prefix in (106a’). In the latter case such nouns are usually interpreted as the complement of this perfective base, i.e. *PO-strojka* ‘a construction’ in (106a’) means ‘something which has been constructed’.⁷⁰ A similar behavior can be detected for the participial Voice –IE nominals (106b) as well where it is often the case that the derived nominal corresponds to the complement of the base verb (e.g. *pisanieto* ‘the writing’ in (106b) means ‘the thing that has been written’). As it will become clear it is the Aorist thematic vowel (e.g. –a in (106b)) which, together with the participial suffix –N/–T, brings about a resultative meaning to the derived noun. Finally, the resultative denotation of some –NE nominals (106c) is due to their nouny character (or else, can be explained historically (see fn. 43)).

As for **THE ENGLISH RESULT-REFERENTIAL AND OBJECT-DENOTING NOUNS**, we have already seen that all types of nominalizers, i.e. –ing (107a), –tion (and kin) (107b), and the zero suffixes (if they exist) (107c), can participate in the formation of such nouns. As I have

⁷⁰ According to Radeva (2007: 60-61) prefixed nouns such as *raz-kaz* ‘tale’ (106a), *po-stroj-ka* ‘construction’ (106a’), etc. are representatives of paradigmatic derivation, which is not typical for Bulgarian. Within this group, we can have instances of V → N conversion (i) or derivatives which are formed by the elimination of the derivational suffix of the base and the addition of a zero suffix (ii).

(i) *pobedja* ‘win’ → *pobeda* ‘victory’; *probudja* ‘awake’ → *probuda* ‘awakening; revival’; *napravja* ‘do; make’ → *naprava* ‘make; structure; style’

(ii) *otvor* ‘opening; hole; neck (of a bottle)’ (from *otvorja* ‘open’), *otdel* ‘department’ (from *otdelja* ‘separate’), *otkaz* ‘refusal’ (from *otkaža* ‘refuse’), *razkaz* ‘tale’ (from *razkaža* ‘narrate’).

In other word, what such a line of analysis indicates is the underlying presence of a verbal base within such derivatives, as previously defended here.

already mentioned on various occasions, this may be due to the nouny character of the derived words combined with our encyclopedic knowledge of the base.

(107) Result-Referential nominals in English (see (88c: i))

- a. –ing nouns: (*this is*)⁷¹ *a building, a painting, a drawing*, etc.
- b. –tion nouns: (*this is*) *a construction, a formation, an examination*, etc.
- c. zero-derived nouns: (*this is*) *a form, an exam*, etc.

Thus, we can conclude that none of the English and Bulgarian nominalizers excludes the result-referential nominal type as their output.

Now let us turn to the eventive nominals.

REGARDING THE EVENT-DENOTING NOMINALIZATIONS, I assume that there are two possibilities (see Markova 2007, 2010). If the internal argument is obligatorily required, we have true argument-structure nouns (105a). If, on the other hand, the internal arguments are optional, the noun is a participant-structure one (105b). The external argument, however, is always optional in both cases. Let's first consider the participant-structure group (105b).

6.5.3.2. Participant-structure nouns

In both Bulgarian and English, all kinds of nominalizers can give rise to PS nouns when eventive (see (88b)). I start with the Bulgarian data.

IN BULGARIAN, the eventive “other-suffix” nouns (108a), the eventive Voice –IE (108b) and the eventive intransitive (108c) or unprefixal (108d) –NE nominals are participant-

⁷¹ It has been proposed that only R-R nominals can appear in the predicative position: **This is the examination of the students by the teacher* vs. *This is the examination/the exam/the picture* (Grimshaw 1990).

structure nominals. Thus, they allow for internal and external arguments to be projected, but this is only optional.

(108) Bulgarian participant-structure nominals

- a. [PRO-d]-a-žBA-ta (na stok-i) (ot Ivan)
 [sell]-TH.VOW-žBA-the.FEM.SG (of goods-PL) (by/from Ivan)
 ‘the sale of goods by/from Ivan’
- b. sŭbr-a-n-IE-to (na deputat-i-te)
 meet-TH.VOW-N.PASS.PRT-IE-the.NEUT.SG (of deputy-PL-the.PL)
 ‘the meeting of the deputies’
- c. tich-a-ne-to e zdravoslovno
 run-TH.VOW-NE-the.NEUT.SG is healthy
 ‘Running is healthy’
- d. pe-e-ne-to (na pesen-ta) e korektno
 sing-TH.VOW-NE-the.NEUT.SG (of song-the.FEM.SG) is correct
 ‘the singing of the song is correct’

From the examples above we can observe that participant-structure nouns allow for internal and external arguments to be projected. However, in neither case is their presence obligatorily required. Additionally, though the external argument allows for an Agent interpretation, it is not the only reading available since the Source (108a) and a free interpretation of the Genitive (e.g. Possessor, Agents, Experiences, Themes) (108b) readings are also possible. Thus, in (108a), the *ot*-NP (‘by-NP’) can denote (i) that Ivan sells the goods (i.e. Ivan is the Agent), or (ii) that we have taken the goods we sell *from* Ivan (i.e. Ivan is the Source). These facts may further suggest that these nouns do not have true argument structure as they allow for various interpretations of the external argument and do not require their internal arguments obligatorily. We may conclude that, when they appear, the arguments of such nouns simply modify the event denoted by the noun. **That is, they are modifiers of events rather than true obligatory arguments required by the verb.** The above observations suggest that instead of

argument structure, these nouns have a “participant” structure where the external and the internal arguments are participants in Grimshaw’s (1990) terms (see fn. 3).

AS FOR THE ENGLISH PARTICIPANT-STRUCTURE NOUNS, if we follow Grimshaw (1990) we shall expect that her simple event nouns will fall within this group since these nouns are (i) eventive, and (ii) do not require the projection of their internal arguments obligatorily. However, as Borer (1999) observes, the simple event nouns follow diagnostics of R(eferential)-nominals (see (14a)), which implies that the status of such nouns as an autonomous group should be abandoned. Some examples are provided in (109).

(109) Possible candidates for English participant-structure nouns (simple event nominals)

- a. **The constant race to the mountains*
- b. **The event in three hours*
- c. **John’s deliberate trip to the mountains*
- d. **A race from the station by Mary*

From (109) we can observe that modifiers like ‘constant’ cannot appear with the noun ‘race’ in the singular (vs. *the constant races*), implying that this noun is a result nominal. This is additionally confirmed by the inability of the temporal measure phrase ‘in X time’ (109b) and agent-oriented modifiers like ‘deliberate’ (109c) to combine with such nouns. Hence, such nouns should be better treated as R-R nominals according to Borer.

HOWEVER, the crucial factor for distinguishing between nominal types which I adopt in this work is the semantic distinction of eventive (e.g. AS and PS nouns) versus non-eventive (R-R) nouns, on the one hand, and the syntactic criterion of optional (PS nouns) versus obligatory (AS nouns) versus impossible (R-R nouns) projection of direct arguments (e.g. internal and external arguments). Since –tion (and kin) nouns, and some of the zero-derived nouns (e.g. *change*, *release*, etc.) are eventive, and do have the possibility to project internal arguments (e.g. *the change of standards*) in contrast to result-referential (else, object-denoting) nouns such as ‘form’, ‘drop’,

‘condition’, ‘construction’, etc. (e.g. *this is my construction (*of the city)*),⁷² then such nouns should be treated differently (see the following chapter for a syntactic explanation of this fact).

CRUCIALLY, note that the criterion of the obligatoriness/optionality/impossibility of the projection of the internal argument directly either excludes or else **marks as R-R nominals all nominalizations derived from intransitives since they would lack internal arguments anyway** (e.g. *crying, sleeping, shouting, shout, sleep, cry*, etc.). However, what is relevant when talking about unergative and unaccusative verbal bases is whether the restrictions found in the verbal domain are preserved within the nominals. Thus, a noun such as ‘sleeping’ will fall within the PS-nominal type (105b) since it denotes an event and its sole argument (e.g. *John*) may be realized nP-internally; however, being the external argument, its realization is optional. Furthermore, the external argument, when present, has various interpretation possibilities: the Agent, implying that John is the one who sleeps (*John’s sleeping, the sleeping of John^{AGENT}*), or a free-interpretation Possessor, making reference to the way in which John sleeps.⁷³ This additionally confirms the PS status of these nominals.

Hence, on solving the dilemma of whether there are participant-structure nouns in English in the same way as there are in Bulgarian we can tentatively assume that the answer is

⁷² Interestingly, observe that *reconstruction* is fine as a PS noun:

(i) *the reconstruction of the city*

In this case, however, instead of being true obligatory argument, *of the city* receives free interpretation of the genitive inasmuch as *reconstruction* is not a process-denoting true AS noun (ii) but rather an entity-denoting R-R noun

(ii) *(*this is) the reconstructing *(of the nation)*

(iii) *this is my reconstruction of the city*

⁷³ Note that *John* is interpreted as the agent in the vP (else, TP) domain but in a possessor-like manner within the DP domain (*John^{agent} slept* vs. *the sleeping of/*by John*, meaning ‘the manner in which John sleeps’). The same observation holds for Bulgarian intransitive nominals (e.g. *Ivanovoto spane* ‘Ivan’s (manner of) sleeping’ and *spaneto na/*ot Ivan* ‘the (manner of) sleeping of/*by Ivan’ vs. *razrushavaneto na grada ot/*na vraga* ‘the destruction of the city by/*of the enemy’).

affirmative. Some examples on PS –tion (110), –ing (111) and zero-derived (112) nouns follow.

(110) PS –tion nouns in English: ambiguous between an PS and R-R reading

a. PS reading (allows the by-phrase)

- (i) *The destruction (of the city) (by the enemy) lasted for days.*
- (ii) *The invention (of the Cyrillic alphabet) (by Saints Cyril and Methodius' disciples) in the 9th century*
- (iii) *The (re)construction (of the spa hotel) (by a Japanese company) lasted for days*
- (iv) *The examination (of the students) (by the teacher) lasted for three hours*

b. R-R reading (also production, reproduction, etc.)

- (i) *His invention gained a prize medal* (vs. **his inventing gained a prize medal*)
- (ii) *This (re)construction (there) was abandoned for a period of time* (vs. **the (re)constructing was abandoned*)
- (iii) *This is the examination (*of the students) (*by the teacher)* (vs. **This is the examining*)

(111) PS –ing nouns in English

a. Unergatives: eventive but no internal argument

The irritable crying (of the baby) ^{EXT.ARG} lasted several hours a day

b. Cognate object verbs:

- (i) *the singing (of the song)*
- (ii) *the dancing (of polka)*
- (iii) *the eating (of the breakfast)*

(112) PS zero-derived nouns in English

- a. *the change (of standards)*
- b. *the release (of radioactive materials/prisoners)*

TO RECAP, we can observe that both English and Bulgarian instantiate the PS nominal type, i.e. nouns which refer to events (measured by the availability of 'lasted X time'), but whose

projection of the internal argument is optional (recall that the external argument is always optional). Furthermore, all kinds of nominalizers can give rise to this nominal type in both languages.

Now, let us consider the true argument-structure nouns.

6.5.3.3. True Argument-structure nouns

The argument-structure nouns are those which have true obligatory argument structure and must therefore satisfy the Projection Principle, i.e. they require their internal arguments obligatorily. I start the discussion with Bulgarian.

In Bulgarian, only some of the transitive (113a, b) and prefixed (113c) process –NE nominals can be true AS nominals.

- (113) a. *resh-ava-ne-to* **(na zadach-i-te)* (ot Ivan)
 solve-ava.IMPF-NE-the.NEUT.SG **(of exercise-PL-the.PL)* (by Ivan)
 ‘the solving *of* the exercises *by* Ivan’
- b. *chup-e-ne-to* **(na chash-i)* (ot Ivan)
 break-TH.VOW-NE-the.NEUT.SG **(of glass-PL)* (by Ivan)
 ‘the breaking *of* glasses *by* Ivan’
- c. [IZ-*p(e)*]-*java-ne-to* **(na pesen-ta)* (ot Maria)
 [IZ sing]-java.IMPF-NE-the.NEUT.SG **(of song-the.FEM.SG)* (by Mary)
 ‘the singing *of* the *entire* song *on behalf of/by* of Mary’

In the case of true argument-structure nominals (113), not only is the internal argument obligatorily required, but the external one, when projected, is always interpreted as the Agent (Causer). This further suggests that it is the transitive (causative) nature of the verbal base that calls for the projection of its internal argument. In the case of prefixed nominalizations (113c), we could suggest that prefixes, which are usually regarded as transitivity devices (Filip 1999: 198), set certain requirements so that the internal

arguments are obligatorily projected. Thus, if the verbal base *peja* ‘sing’ remains unprefixes (108d, 114a), the internal argument is optional.

- (114) a. *pe-e-ne-to* (na *pesen-ta*) *e korektno*
sing-TH.VOW-NE-the.NEUT.SG (of song-the.FEM.SG) is correct
‘the singing of the song is correct’
b. *tich-a-ne-to* *e zdravoslovno*
run-TH.VOW-NE-the.NEUT.SG is healthy
‘Running is healthy’

It can be seen that in the absence of prefixation (114a), that is, when the base is primary imperfective (i.e. atelic), or in cases where the verbal base is unergative⁷⁴ (114b) (again primary imperfective and atelic), process –NE nominals behave in the same way as participant-structure “other-suffix” and Voice –IE nominals (108a, b) in that the projection of their internal arguments is optional.⁷⁵ ***A generalization then holds that only when the base is primary imperfective (i.e. atelic) are the prototypically AS –NE nominals regarded as PS nouns. Otherwise, with perfective bases (primary perfective as in (113a), or prefixed perfective as in (113c)) such nouns become AS nominals and should appear with their internal arguments obligatorily. This once more confirms the importance of morphological aspect to event structure in Bulgarian and, as a consequence, to argument structure, too.***

In this respect, however, note that though built on perfective bases, the rest of the nominalizers, e.g. the “other-suffix” (115a) or the Voice –IE (115b), do not behave as the –

⁷⁴ Regarding intransitive bases, unaccusatives in Bulgarian usually fall within the perfective (telic) paradigm (i), so they will behave differently than the unergative primary imperfective (atelic) bases (ii):

- (i) *pristiganeto* *(na *vlaka*) ‘the arrival *(of the train) (perfective → telic, unaccusative)
(ii) *hodeneto iz parka* ‘the walking in the park’ (imperfective → atelic, unergative)

⁷⁵ Very few exceptions to this rule can be attested such as the base in (113b) which is primary imperfective (i.e. atelic) but due to its causative character gives an AS nominal.

NE suffix (115a', b'), implying that only under the scope of –NE does this generalization hold. As will see, such a generalization is syntax-driven, as is the mere three-way distinction of nominals as AS, PS, and R types (see the following chapter).

- (115) a. *tova e moja-ta* [PO-stav]-KA
 this is my-the.FEM.SG [place]-KA
 'This is my stand'
- a'. (**tova e*) [PO-stav]-ja-NE-to (**na visoki celi*)
 (*this is) [place/put]-IMPF-NE-the.NEUT.SG (*of high goals)
 '(*this is) the setting (*of high goals)'
- b. *RAZ-resh-e-n-IE-to* (*na problem-a*) *e samo edno*
 RAZ-solve-TH.VOW-PASS-PRT-IE-the.NEUT.SG (of problem-the) is only one
 'The solution (to/of the problem) is only one'
- b'. *RAZ-resh-ava-NE-to* *(*na problem-a*)
 RAZ-solve-ava.TH.VOW-IMPF-NE-the.NEUT.SG (of problem-the)
 'The solving *(of the problem)'

As for the English AS nominals, I assume that only the –ing morphological type can be systematically and unambiguously regarded as true argument-supporting nouns, since, as we already saw, the –tion nouns, though eventive, are always ambiguous between PS and R-R nouns. See the following contrasts:

(116) –tion nominalizations: optional internal arguments → PS nouns

- a. *the destruction (of the city)/the construction (of the bridge)*
 b. *the examination (of the students)*

(117) –ing nominalizations: obligatory internal arguments → AS nouns

- a. *the felling *(of the trees)* (cf. *the fell *(of timber)*: (i) in lumbering: the amount of timber cut down in one season; (ii) in sewing: a seam finished by felling → R-R N)
 b. *the destroying *(of the city)/the constructing *(of the bridge)*
 c. *the examining *(of the students)*

d. the writing up *(of the letter)

TO SUM UP, we have seen that argument structure depends on eventivity. Thus, non-eventive nouns never project internal arguments, which suggests that they have no argument structure at all. All nominalizers are capable of giving R-R nouns as their output. As for the eventive nominalizations, there are two possibilities. On the one hand, there are nouns which allow for internal and external arguments to be projected, but this is only optional. Additionally, the external argument, when present, has various interpretations. Hence, these nouns are not true argument-structure nouns but rather participant-structure nominals. Again, any nominalizer can give rise to a PS noun in both English and Bulgarian. On the other hand, we also have **true argument-structure nouns. This set is rather restricted and consists of certain transitive (causative) –NE (113a, b) or –ing (117a-c) nouns, or of prefixed –NE (113c) or particle-incorporating –ing (117d) nominals. These nouns project their internal arguments obligatorily.** The external argument, though, is always optional. However, when present, it always denotes the Agent (Causer).

Before I proceed to a syntactic explanation of all of the above observations and claims, I will just test nominalization on two more criteria: modifiers of nominal and verbal structure, since this will further strengthen my syntactically-based approach to the nominal typology defended here.

6.5.4. Modifiers of nominal structure

Since Abney's (1987) seminal work on the structure of the noun phrase it is believed that nouns are projections of a D head which in turn selects for an NP complement. Research following Abney's DP-hypothesis has shown that there are various DP-internal functional projections which modify the noun such as Number Phrase (for plurals), Demonstrative Phrase (for demonstratives), Numeral Phrase (for numerals), etc. In this section I will investigate the behavior of the English and Bulgarian nominalizations regarding modification by these high functional projections.

Concerning modification of nominal structure, we can observe that all of the nominalization types in Bulgarian, be they eventive (i) or not (ii) can pluralize (118), accept indefinite determiners (119), demonstratives (120) and numerals (121).⁷⁶ I assume that this is so because nominalizers in Bulgarian, in contrast to English, project as n-heads due to the rich overt gender system in this language in which gender is syntactically active. Thus, it is the topmost nominalizing (nP) layer which such modifiers target, and not some other layer.

(118) Pluralization

a. –NE nouns⁷⁷

(i) Result (non-AS) nouns

chest-i-te [ZA-bol]-java-n(e)-ija na Vasil me plashat
frequent-PL-the.PL [become ill]-java.IMPF-NE-PL of Vasil me frighten
‘The frequent illnesses of Vasil frighten me’

(ii) AS nouns

[sŭ-bir]-a-n(e)-ija-ta na dokazatelstv-a ot advokat-a mu otne tseli
pet mesets-a
gather-A.IMPF-NE-PL-the.PL of proof-PL by lawyer-the.MASC.SG his took whole
five month-PL
‘The “gatherings” of proofs by his lawyer took five whole months’

b. Voice –IE nouns

(i) Result nouns

pis-a-n-ija-ta na Ivan sa na masa-ta
write-a.TH.VOW-N.PASS.PRT-IE.PL-the.PL of Ivan are on table-the.FEM.SG
‘Ivan’s writings are on the table’

⁷⁶ Such facts are also attested by Sleeman & Brito (2007) and the references therein.

⁷⁷ Recall that some intransitive –NE nominals do not usually have a plural form (e.g. *mechtane* ‘dreaming’, *mislene* ‘thinking’, etc.). Instead, we have “other-suffix” derivatives like *mechtite* ‘the dreams’, *mislite* ‘the thoughts’.

(ii) Eventive nouns

sŭbr-a-n-ija-ta *na aktsioner-i-te* *stavaha tajno*
meet-a.TH.VOW-N.PASS.PRT-IE.PL-the.PL of shareholder-PL-the.PL occurred secretly
'The meetings of the shareholders took place secretly'

c. “other-suffix” nouns

(i) Root result nouns:

sresht-i-te *s* *prijatel-i mi* *dostavjat udovolstvie*
meet-PL-THE.PL with friend-PL me give pleasure
'The meetings with friends give me pleasure'

(ii) derived result nouns

[ZA-pis]-k-i-te po istorija sa na masa-ta
[note]-KA-PL-the.PL on history are on table-the.FEM.SG
'The notes on history are on the table'

(iii) derived eventive nouns (denoting plurality of events)

kraž-b-i-te *na diamant-i* *sa chesto* *javlenie* *tuk*
steal-BA-PL-the.PL of diamond-PL are frequent phenomenon here
'The thefts of diamonds are a frequent phenomenon here'

(119) Indefinite determiners

a. –NE nouns

(i) Result (non-AS) nouns

včera stana edn-o goljam-o [ZA-drůst]–va-ne na kol-i
pred dom-a mi
 yesterday happened **one**-NEUT.SG big-NEUT.SG [jam]–va.IMPV-NE of car-PL
 in front of home-the.MASC.SG my
 ‘Yesterday a/one big traffic jam took place in front of my home’

(ii) AS nouns

edn-o [PO-vish]-ava-ne na zaplat-i-te se ochakva ot vsichk-i
one-NEUT.SG [raise]-ava.IMPF-NE of salary-PL-the.PL se.REFL await by all.PL
 ‘A/one raising (= raise) in the salaries is awaited by everyone’

b. Voice –IE nouns

(i) Result nouns

edno *zavesht-a-n-ie* *beshe namereno* *vchera*
one-NEUT.SG will-a.TH.VOW-N.PASS.PRT-IE was found- NEUT.SG yesterday
‘A/one will was found yesterday’

(ii) Eventive nouns

vseki zatvornik poluchi po edno *[NA-kaz]-a-n-ie*
every prisoner received by *one*-NEUT.SG [punish]-a.TH.VOW-N.PASS.PRT-IE
‘Every prisoner received one punishment each’

c. “other-suffix” nouns

(i) Result nouns

ima edin *[RAZ-kaz] za životn-i v kutija-ta*
there is *one*- MASC.SG [story] about animal-PL in box-the. FEM.SG
‘There is one story about animals in the box’

(ii) Eventive nouns

vchera stana edn-a *kraž-ba v tsentŭr-a* *na grad-a*
yesterday happened *one*-FEM.SG steal-BA in center-the.MASC.SG of town-the.
MASC.SG
‘A/one theft took place yesterday in the center of the town’

(120) Demonstratives

a. –NE nouns

(i) Result nouns

tov-a *tvo-e* *[s-hvasht]-a-ne* *ne e praviln-o*
this-NEUT.SG your-NEUT.SG [understand]-A.IMPV-NE not is correct-NEUT.SG
‘This understanding of yours is not correct’

(ii) AS nouns

tez-i tvo-i chest-i pis-a-n(e)-ija *na stati-i* *po tsjala nosht me plashat*
this-PL your-PL frequent-PL write-A.TH.VOW-NE-PL of article-PL at all night me frighten-PL
‘These frequent writings of yours of articles all night frighten me’

b. Voice –IE nouns

(i) Result nouns

stignah do tez-i chetiri zakljuch-e-n-ija
arrived-AOR.1PS.SG at **this**-PL four conclude-e.TH.VOW-N.PASS.PRT-IE.PL
‘I arrived at these four conclusions’

(ii) Eventive nouns

tez-i gon-e-n-ija i iztez-a-n-ija
na ezichnits-i-te ot hristijan-i-te bjaha postojann-i
this-PL persecute-e.TH.VOW-N.PASS.PRT-IE.PL and torture-a.TH.VOW-N.PASS.PRT-IE.PL of pagan-PL-the.PL by Christian-PL-the.PL were constant-PL
‘These persecutions and tortures of the pagans by the Christians were constant’

c. “other-suffix” nouns

(i) Result nouns

tozi izbor e okonchatelen
this.MASC.SG choose-Ø is definitive
‘This choice is definitive’

(ii) Eventive nouns

tozi god-e-ž vchera mi napomni za star-i-te vremena
this engage-e.TH.VOW.Ž yesterday me reminded for old-PL-THE.PL times
‘This engagement yesterday reminded me of the old times’

(121) Numerals

a. –NE nouns

(i) Result nouns

ima samo tri vižd-a-n(e)-ija po vŭrpos-a
there are only **three** see-A.IMPf-NE-PL on question-the.MASC.SG
‘There are only three points of view on the question’

(ii) AS nouns

posledn-i-te tri mo-i [IZ-liz]-a-n(e)-ija na kino bjaha mnogo zabavn-i
last-PL-the.PL **three** my-PL [OUT-go]-A.IMPf-NE-PL to cinema were very fun-PL
‘My last three going-outs (= sorties) to the cinema were very fun’

b. Voice –IE nouns

(i) Result nouns

tri-te *Ivan-ov-i* *tvor-e-n-ija* *specheliha pŭrva nagrada*

three-the.PL Ivan-ov.GEN-PL create-e.TH.VOW-N.PASS.PRT-IE.PL won first prize

‘Ivan’s three creations/works won first prize’

(ii) Eventive nouns

tri-te *Ivan-ov-i* *nakaz-a-n-ija* *v ramkite na edin*

mesets dovedoha do negov-o-to *uvoln-e-n-ie*

three-the. PL Ivan-ov.GEN-PL punish-a.TH.VOW-N.PASS.PRT-IE.PL in period of one

month led to his-NEUT.SG-the.NEUT.SG dismiss-e.TH.VOW-N.PASS.PRT-IE

‘Ivan’s three punishments in the period of one month led to his dismissal’

c. “other-suffix” nouns

(i) Result nouns

tri-te *glob-i sa mo-i*

three-the.PL tax-PL are my-PL

‘The three taxes are mine’

(ii) Eventive nouns

chetiri-te *kraž-b-i* *na diamant-i* *v ramkite na edin mesets razoriha sobstvenik-a*

four-the.PL steal-BA.PL of diamond-PL in period of one month ruined owner-

the.MASC.SG

‘The four thefts of diamonds in the period of one month ruined the owner’

From the data above we see that whether eventive (ii) or not (i), **all types of nominals in Bulgarian accept high functional projections** headed by indefinite determiners, plural markers, demonstratives and numerals (with the few exceptions of some unergative eventive –NE nouns).

AS FOR ENGLISH, only the true argument-structure –ing nouns behave differently since they neither pluralize (122a: i), nor take any indefinite determiners (123a: i), demonstratives (124a: i) and numerals (125a: i) in contrast to the result –ing (a: ii) and –tion (b: ii) nouns, eventive –tion nouns (b: i), and the zero-derived nominals (c).

(122) Pluralization

a. –ing nouns

(i) AS nouns

**the (enthusiastic) formulatings of many procedures (by newly appointed bureaucrats)*

**the (frequent) replacings of many humans with few machines in thirty years*

(ii) Result-Referential nouns

many buildings/sayings/drawings

b. –tion nouns

(i) PS nouns

the (enthusiastic) formulations of many procedures (by newly appointed bureaucrats)

the (frequent) replacements of many humans with few machines in thirty years

(ii) Result-Referential nouns

many different {formulations} of the same question

{speculations}, {conclusions} and {observations} about the past

c. Zero-derived nouns

many {forms/drops/steps/views/changes/⁷⁸walks/conditions}

(123) Indefinite determiners

a. –ing nouns

(i) AS nouns

**a formulating of many procedures (by newly appointed bureaucrats)*

**a promoting of an incompetent functionary (by his superior)*

**an appointing of a musician to a permanent position (by the management)*

(ii) Result-Referential nouns

a building/saying/drawing

⁷⁸ Recall that ‘change’ is one of the few exceptions of a zero-derived noun which takes internal arguments.

b. –tion nouns

(i) PS nouns

a formulation of many procedures (by newly appointed bureaucrats

a promotion of an incompetent functionary (by his superior)

an appointment of a musician to a permanent position (by the management)

(ii) Result-Referential nouns

a different formulation of the same question

{a speculation}, {a conclusion} and {an observation} about the past

c. Zero-derived nouns

a {form/drop/step/view/change/walk}

(124) Demonstratives

a. –ing nouns

(i) AS nouns

**this (enthusiastic) formulating of many procedures (by newly appointed bureaucrats)*

**this replacing of many humans with few machines in thirty years*

(ii) Result-Referential nouns

this building/saying/drawing

b. –tion nouns

(i) AS nouns

this (enthusiastic) formulation of many procedures (by newly appointed bureaucrats)

this replacement of many humans with few machines in thirty years

(ii) Result-Referential nouns

these different {formulations} of the same question

these {speculations}, {conclusions} and {observations} about the past

c. Zero-derived nouns

these {forms/drops/steps/views/changes/walks/conditions}

(125) Numerals

a. –ing nouns

(i) AS nouns

**three (enthusiastic) formulatings of many procedures (by newly appointed bureaucrats)*

**three replacings of many humans with few machines in thirty years*

(ii) Result-Referential nouns

three buildings/sayings/drawings

b. –tion nouns

(i) PS nouns

three (enthusiastic) formulations of many procedures (by newly appointed bureaucrats)

three (frequent) replacements of many humans with few machines in thirty years

(ii) Result-Referential nouns

three different {formulations} of the same question

three {speculations}, {conclusions} and {observations} about the past

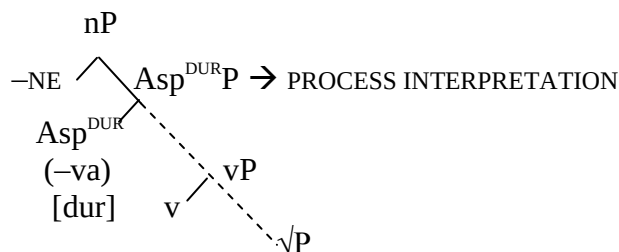
c. Zero-derived nouns

three {forms/drops/steps/views/changes/conditions}

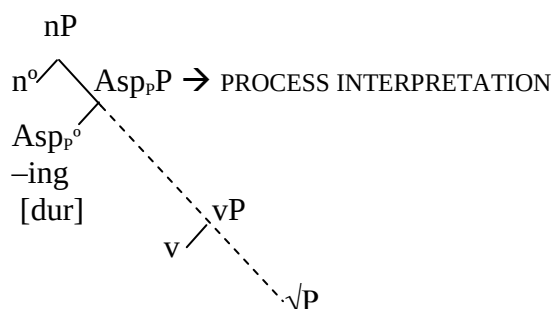
TO RECAP, whereas all of the Bulgarian nominalization types accept any kind of high functional projections modifying nominal structure (118-121), English nominalizations are, *prima facie*, sensitive to whether a noun is AS or not. Thus, all but the process –ing AS nouns (a: i) allow for these projections (122-125). ***Note that having true argument structure cannot be the reason why these projections are blocked within true AS –ing nouns since true AS –NE nouns in Bulgarian accept them. Rather, the crucial difference between both types of AS nouns is the fact that whereas –NE derives as an n-head by virtue of its overt gender morphology (e.g. neuter, since it ends in –e, as in (126a)), the –ing nominalizer merges as head of Asp_PP by virtue of its inherent [duration] feature (126b).***

(126) The syntax of true AS nominals

a. Process-denoting AS –NE nominals



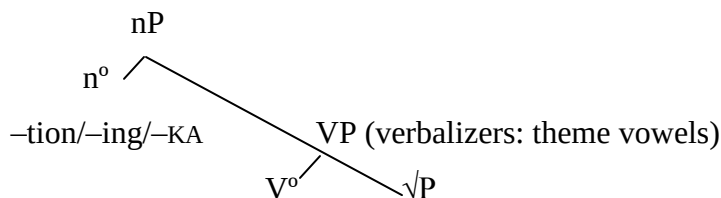
b. Process-denoting AS –ing nominals



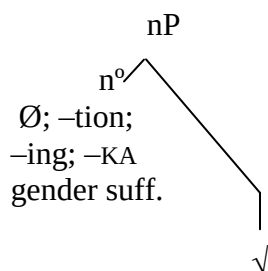
I assume that this is the main reason why these n-oriented high functional projections are disallowed within an AS –ing noun. In other words, these functional projections turn out to be incompatible with –ing because the latter represents an aspectual process head within a true AS –ing noun, but not a nominal head as –NE always is. Importantly, note that this is not the case for the PS (127a) or R-R –ing nouns (127b) because in these cases there is no additional aspectual structure (e.g. Asp_PP), so the nominalizer –ing projects as an n-head by virtue of its nominal feature (see also (89b, c)).

(127) The syntax of PS and R-R nominals

a. PS nouns (–ing, –tion, “other-suffix”)



b. R-R nouns (–ing, –tion, zero-derived and root “other-suffix”)



I assume that what is relevant for the facilitation of high nominal modifiers is the status of the nominalizer in question, i.e. whether it is an n-head or some other aspectual head. Since –ing in AS nouns derives as a process node, but not as an n-head, then such modifiers are blocked due to a twofold incompatibility: a syntactic one, where such modifiers target n-heads, and a semantic one, where these modifiers reject, a priori, atelic-process heads like Asp_P^o (observe that mass nouns, which are considered to correspond to atelic events within the verbal domain (Borer 2005b), also reject numerals, indefinite determiners and plural markers). A recapitulation of the data is offered in Table 13.

Modifiers	ENGL & BULG AS nouns	ENGL & BULG PS nouns	ENGL & BULG R-R nouns
Pluralization	yes; *–ing	yes	yes
Indefinites	yes; *–ing	yes	yes
Demonstratives	yes; *–ing	yes	yes
Numerals	yes; *–ing	yes	yes

Table 13: Nominalization types and nominal modifiers

Finally, let us mention some notes on the availability of some modifiers of verbal structure within nominalizations. As we will see, this will be crucial for several reasons. First, if verbal modification is possible then this will confirm the existence of a VP layer within the nominal, and vice versa. In second place, the availability of certain aspectual modifiers

within the VP-incorporating nouns will further confirm their eventive, process or telic character. As a result, this will additionally demonstrate that the only way of treating nominalizations is within a syntactic approach to both syntax and semantics (i.e. denotation) and will support our distinction between eventive vs. non-eventive nouns, on the one hand, and AS *versus* PS eventive nouns, on the other hand.

6.5.5. Modifiers of verbal structure

This section examines the behavior of the nominalization types with respect to verbal and aspectual modifiers. As we will see, verbal modifiers such as temporal and manner adverbs are compatible only with the eventive nouns, be they argument-structure or participant-structure, which implies that such modification is sensitive to the presence of a VP layer inside a noun (see Fu et al. 2001). R-R nominals, on the other hand, are devoid of the necessary functional verbal(-aspectual) structure, which prevents them from licensing such modifiers. As for agent-oriented modifiers, Grimshaw's (1990) claims are supported, i.e. these modifiers are compatible only with argument-structure nominals, suggesting that only these nouns incorporate higher aspectual layers responsible for the agentive reading of the external argument. Finally, with respect to aspectual modifiers such as *in/for*-adverbials, or some aspectual adjectives like 'frequent', again only eventive nominals combine with them.⁷⁹ A brief overview of the tests applied here is offered in (128).

(128) Nominalization types and verbal-aspectual modification

a. Eventive (AS and PS) vs. non-eventive (R-R) nouns

- (i) Only eventive nouns allow temporal and manner adverbs
- (ii) Only eventive nouns allow aspectual modifiers like 'for an hour', 'in an hour'
- (iii) Only eventive nouns may appear in the singular when modified by aspectual adjectives like 'frequent', 'repeated'; R-R nominals should appear in the plural (e.g. 'frequent exam*(s)' vs. 'frequent examination(*s)').

⁷⁹ As Grimshaw (1990) observes, the adjective 'frequent' can also occur with result nominals but then they must appear in the plural. We shall see that the same situation holds for Bulgarian as well.

b. AS vs. PS nouns:

- (i) **Semantically:** Only AS nouns have exclusively agentive reading of a prenominal possessive phrase or of a postnominal by-phrase. The subject-like DP in PS nouns receives a more abstract possessor-like interpretation.
- (ii) **Syntactically:** Only AS nouns allow agent-oriented modifiers like ‘intentional’, ‘deliberate’ since only these nouns incorporate higher aspectual structure related to the projection of the external argument.

I start the discussion with the tests for distinguishing between eventive and non-eventive nominals (128a) examining both languages simultaneously. The first criterion (128a: i) is presented in (129), the second one, (128a: ii), is exemplified in Appendix 6.3: (1) (also § 6.5.2.1), and the third one, (128a: iii), in (130, 131). Finally, the test distinguishing between AS and PS nouns (128a: iv), is illustrated in (132, 133). After each example section there is a summary table which captures the main findings.

(129) Temporal and manner adverbs

a. English nominalizations

(i) AS nouns: YES

The shutting of the gates regularly at ten o'clock had rendered our residences very irksome to me (from Jespersen 1940, cited in Fu et al. 2001: 554, fn. 4)

(ii) PS nouns: marginally (from Fu et al. 2001: 555)

?Protection of children completely from bad influence (is unrealistic)

(iii) R-R nouns: NOT (from Fu et al. 2001: 555)

**His version of the accident thoroughly (did not help him)*

[cf: his thorough version of the accident]

??His metamorphosis into a werewolf so rapidly was unnerving

[cf. His transformation into a werewolf so rapidly was unnerving (event noun)]

b. Bulgarian nominalizations

(i) AS nouns: YES

1. Telic (perfective bases):

s-chup–va-ne-to *na chash-i-te* *mignovenno*
s-break-IMPF-NE-the.NEUT.SG of glass-PL-the.PL instantaneously
‘the breaking of glasses *instantaneously*’

2. Atelic (primary imperfective bases):

chup-e-ne-to *na chash-i-te* *jarostno*
break-TH.VOW-NE-the.NEUT.SG of glass-PL-the.PL furiously
‘the breaking of glasses *furiously*’

(ii) PS nouns: MARGINALLY; allow only some temporal adverbs

1. Telic (perfective bases):

[*PRO-d*]-*a-ŽBA-ta* *na nezakonni stok-i* ??*potajno/*bŭrzo/vchera*
[sell]-TH.VOW-ŽBA-the.FEM.SG of illegal goods-PL ??secretely/*rapidly/yesterday
‘the sale of illegal goods ??secretely/*rapidly/yesterday’
[cf. *bŭrzata prodažba* ‘the rapid.ADJ sale’]

2. Atelic (primary imperfective bases):

kra(ð)-Ž-BA-ta *na diamant-i* **potajno/*bŭrzo/rano* *tazi sutrin*
steal-TH.VOW-BA-the.FEM.SG of diamond-PL *secretely/*rapidly/early this morning
‘the theft of illegal goods *secretely/*rapidly/early this morning’
[cf. *bŭrzata kražba* ‘the rapid.ADJ theft’]

(iii) R-R nouns: NOT

1. Telic (perfective bases):

chup-KA-ta *na pŭtja* **neochakvano/*rano* *tazi sutrin*
break-KA-the.FEM.SG on road-the *unexpectedly/*early this morning
‘the bend on the road *suddenly/*early this morning’
[cf. *neochakvanata chupka na pŭtja* ‘the unexpected.ADJ bend on the road’]

2. Atelic (primary imperfective bases):

belež-KA-ta **losho*
mark-KA-the.FEM.SG *poorly/*badly
‘the note *poorly/*badly’ [cf. *loshata beležka* ‘the poor/bad.ADJ note’]

From (129) we can observe that only the true AS nominals accept temporal and manner adverbs in both languages (129a: i; b: i). As for the PS nominals, since they are event-denoting they may sometimes allow such modification, but it has a marginal status (129a: ii; b: ii). Thus, Bulgarian PS nominals allow only temporal but not manner adverbial modification whereas in English the former is sometimes marginally accepted as well. Finally, the R-R nouns, inasmuch as they are incapable of denoting events, disallow adverbial modification (129a: iii; b: iii). A recap follows in Table 14.

	AS nouns		PS nouns		R-R nouns	
	ENGL	BULG	ENGL	BULG	ENGL	BULG
Manner ADV	YES	YES	SOME	FEW	NOT	NOT
Temporal ADV	YES	YES	SOME	SOME	NOT	NOT

Table 14: Adverbial modification inside nominals

Now let us proceed to THE ASPECTUAL MODIFIERS SUCH AS THE TEMPORAL MEASURE PHRASES ‘IN/FOR X TIME’. Regarding this test, we have already observed that the English AS –ing nouns and the Bulgarian AS –NE nouns preserve the properties of their verbal bases (see § 6.5.1.2). As for the English –tion and Bulgarian “other-suffix” PS nouns, they tend to denote telic events, and are thus incompatible with the *for*-adverbial. Finally, the R-R nouns are incompatible with neither the *in*-adverbial, nor the *for*-adverbial, since they lack any event structure. A recap is offered in Table 15 (see also Appendix 6.3: (1)).

	AS nouns			PS nouns			R-R nouns		
	ENGL	BULG		ENGL	BULG		ENGL	BULG	
		PF	IMPF		PF	IMPF		PF	IMPF
In-advl	sometimes	YES	NOT	YES	??	NOT	NOT	NOT	NOT
For-advl	YES	NOT	YES	YES (–ing) NOT (*–tion)	NOT	NOT	NOT	NOT	NOT

Table 15: ‘in/for X time’ inside nominals

From Table 15 (also, Appendix 6.3: (1), and § 6.5.2.1), we can observe that there is a sharp contrast between AS nouns, situated on end of the line, and R-R nouns, located just on the opposite end of the line, with PS nominals having a slightly intermediate aspectual behavior. Thus, the most aspectually sensitive are the AS nominals with the English –ing nouns tending to give rise to atelic events whereas the Bulgarian –NE nouns preserve the aspectual nature of their bases (e.g. perfective bases block the for-adverbial whereas imperfective bases block the in-adverbial). As for the PS nouns, they tend to be telic in English whereas in Bulgarian such adverbials are allowed but only marginally. Finally, the R-R nouns in both languages are aspectless since they reject both adverbials in both languages (see Appendix 6.3: 1a: iii; b: iii). What these data indicate is that only nouns incorporating high aspectual layers such as the AS nominals systematically allow aspectual modification whereas nouns which lack such a structure (e.g. R-R nouns) disallow it. This is one more piece of evidence in defense of the three-way distinction of nominalizations between AS, PS and R-R nominals.

I now examine the behavior of the English (130) and the Bulgarian (131) nominalization types with respect to ASPECT-SENSITIVE ADJECTIVES LIKE ‘FREQUENT’ AND ‘REPEATED’. The importance of this test resides in its ability to test the (a)telic character of the given nominal. Following the general assumption that the mass/count distinction from the nominal domain can be mapped to the verbal domain, giving thus rise to the atelic/telic opposition (Alexiadou 2001, Borer 2005b, among many others), we shall then expect that (nominals denoting) atelic events, since they are not countable, will combine with such adjectives in their singular form in contrast to the (nominals denoting) telic events which, being countable in nature, will not be able to combine in their singular form with these adjectives and will therefore require the obligatory presence of plural nominal morphology.

First, pay attention to the examples from English (130).

(130) Aspectual adjectives ‘frequent’, ‘repeated’, ‘regular’ within English nominalizations

a. AS nouns: noun in the singular → process node (atelic, like mass nouns)

*John’s constant examining(*s) of the students*

b. PS nouns: noun in the plural → telic (like count nouns)

(i) *The frequent destruction*(s) of the capital took their toll (Borer 1999: 1)*

(ii) *More frequent examinations of registered investment advisers are needed*

(iii) *The constant examinations of the accused witches in Salem, 1692.*

(iv) *The constant examination of conscience*

(but! **the constant race to the mountains, His frequent use of sharp tools*

c. R-R nouns: disallow these adjectives, hence, aspectless (no VP or Asp layer)

**Mary’s frequent collection*

**Mary’s frequent exam*

From (130) we can observe that the process-incorporating –ing nouns (130a) behave like mass nouns in rejecting plurality. This is quite expected bearing in mind that –ing derives as head of a process node (Asp_p^o), and that processes do not *a priori* pluralize. As for PS nouns (130b), when they combine with these modifiers they tend to appear in the plural, indicating their countable, telic character. However, recall that some –tion nouns can also denote atelic events; hence, there are some cases in which these nouns can appear in the singular with the modifiers in question (130b: iv). Finally, the R-R nouns reject modification by ‘frequent’ and the like, which indicates the absence of verbal-aspectual structure within them.

Now let us proceed to the data in Bulgarian (131).

(131) Aspectual adjectives within Bulgarian nominalizations

a. AS nouns⁸⁰

(i) Telic (perfective bases): both PL and SG nouns are allowed

PL: *chest-i-te* *RAZ-rush-ava-N(E)-ija na grad-a ot vrag-ove-te* *go*
promeniha napŭlno
 frequent-PL-the.PL destroy-IMPf-NE-PL of city- the by enemy-PL-the.PL it
 changed completely

‘The frequent destroyings of the city by the enemies changed it completely’

SG: *chest-o-to* *RAZ-rush-ava-NE* *na grad-a* *ot*
vrag-ove-te *go promeni napŭlno*
 frequent-NEUT.SG-the.NEUT.SG destroy-IMPf-NE-PL of city- the by
 enemy-PL-the.PL it changed completely

‘The frequent destroying of the city by the enemies changed it completely’

(ii) Atelic (primary imperfective bases): PL is marginal; SG is allowed⁸¹

PL: ??(*)*chest-i-te* *nabljud-a-va-N(E)-ija* *na zvezd-i-te*⁸²
 frequent-PL-the.PL observe-TH.VOW-NE-PL of star-PL-the.PL
 ‘The frequent observings/watchings of the stars’

SG: *chest-o-to* *nabljud-a-va-NE* *na zvezd-i-te*
 frequent-NEUT.SG-the.NEUT.SG observe-TH.VOW-NE of star-PL-the.PL
 ‘The frequent observing/watching of the stars’

⁸⁰ I have claimed that only some –NE nouns can be true AS nominals always requiring the overt realization of their internal arguments. In this respect, however, I should note some exceptions represented by some “other-suffix” nouns such as *upotreba* ‘use’. Interestingly, Borer (1999) notes that the same holds for some English zero-derived nominals which are not expected to give rise to argument structure but can (*change, release, use*). However, the noun *upotreba* ‘use’, though an AS nominal, should always appear in the singular when modified by ‘frequent’:

(i) *chestata upotreba na kokain* ‘the frequent **use** of cocaine’ (SG)

(ii) **chestite upotrebi na kokain* *‘the frequent.PL **uses** of cocaine’ (PL)

I leave this contrast for further investigation.

⁸¹ Recall that there are just very few cases of morphologically primary imperfective (i.e. atelic) predicates which give an AS –NE nominal (e.g. *chupja* ‘break’, *nabljudavam* ‘observe’).

⁸² See Appendix 6.3: (2a).

b. PS nouns: telic: *SG; PL is OK with both PF/IMPF bases; [but! –NE: SG/PL]

(i) Telic (perfective bases): *(??)SG; PL is OK

1. “other-suffix” nouns

PL: *chest-i-te* [PRO-*d*]-*a-žB(ǂ)-i* (*na aktsii*)
frequent-PL-the.PL [sell]-TH.VOW-žBA-PL (*of* shares)
‘the frequent sales (of shares)’
SG: ??(*)*chest-a-ta* [PRO-*d*]-*a-žBA* (*na aktsii*)
frequent-FEM.SG-the.FEM.SG [sell]-TH.VOW-žBA (*of* shares)
??(*)‘the frequent sale (of shares)’

2. Voice –IE nouns

PL: *chest-i-te* [NA-*kaz*]-*a-n-I(ǂ)-ja* (*na zatvornitsi-te*)
frequent-PL-the.PL [punish]-TH.VOW-N.PASS.PRT-IE-PL (*of* prisoners-the)
‘the frequent punishments (of the prisoners)’
SG: **chest-o-to* [NA-*kaz*]-*a-n-IE*
(*na zatvornitsi-te*)
frequent-NEUT.SG-the.NEUT.SG [punish]-TH.VOW-N.PASS.PRT-IE
(*of* prisoners-the)
*‘the frequent punishment (of the prisoners)’

3. –NE nouns: PL/SG are OK

PL: *chest-i-te* *obažd-a-N(ǂ)-ija*
frequent-PL-the.PL call-TH.VOW-NE-PL
‘The frequent calls/callings’
SG: *chest-o-to* *obažd-a-NE* ?(*do Madrid*)
frequent-NEUT.SG-the.NEUT.SG call-TH.VOW-NE ?(*to Madrid*)
‘The frequent call/calling ?(*to Madrid*)’

(ii) Atelic (primary imperfective bases): *SG; PL is OK [but –NE nouns: SG/*PL]

1. “other-suffix” nouns: telic: *SG/PL

PL: *chest-i-te* *kra(ǝ)-ž-B(A)-i* (*na diamanti*)

frequent-PL-the.PL steal-TH.VOW-BA-PL (*of diamonds*)

‘the frequent thefts (*of diamonds*)’

SG: **chest-a-ta* *kra(ǝ)-ž-BA* (*na diamanti*)

frequent-FEM.SG-the.FEM.SG steal-TH.VOW-BA (*of diamonds*)

*‘the frequent theft (*of diamonds*)’

2. Voice –IE nouns: telic: *SG/PL

PL: *chest-i-te* *gon-e-n-I(E)-ja* (*na ezichnitsi-te*)

frequent-PL-the.PL persecute-TH.VOW-N.PASS.PRT-IE-PL (*of pagans-the*)

‘the frequent persecutions (*of the pagans*)’

SG: **chest-o-to* *gon-e-n-IE*

(*na ezichnitsi-te*)

frequent-NEUT.SG-the.NEUT.SG persecute-TH.VOW-N.PASS.PRT-IE

(*of pagans-the*)

*‘the frequent persecution (*of the pagans*)’

3. –NE nouns: atelic: *PL; SG is OK

PL: **chest-i-te* *jad-e-N(E)-ija/* *rabot-e-N(E)-ija*

frequent-PL-the.PL eat-TH.VOW-NE-PL/work-TH.VOW-NE-PL

*‘The frequent eatings/workings’

SG: *chest-o-to* *jad-e-NE/* *rabot-e-NE*

frequent-NEUT.SG-the.NEUT.SG eat-TH.VOW-NE/work-TH.VOW-NE

‘The frequent eating/working’

c. R-R nouns: disallow such adjectives

(i) Telic (perfective bases): *SG; */??PL

1. “other-suffix” nouns (see Appendix 6.3: 2b)

PL: **chest-i-te* [*PRI-kaz*]-K(A)-i

frequent-PL-the.PL [talk]-K(A)-PL

*‘the frequent tales’

SG: **chest-a-ta* [*PRI-kaz*]-KA

frequent-FEM.SG-the.FEM.SG [talk]-KA

*‘the frequent tale’

2. Voice –IE nouns (also *zaveshtanie* ‘a will’)

PL: **chest-i-te* *zakljuch-e-n-I(£)-ja*

frequent-PL-the.PL conclude-TH.VOW-N.PASS.PRT-IE-PL

*‘the frequent conclusions’

SG: **chest-o-to* *zakljuch-e-n-IE*

frequent-NEUT.SG-the.NEUT.SG conclude-TH.VOW-N.PASS.PRT-IE

*‘the frequent conclusion’

(ii) Atelic (primary imperfective) bases

1. “other-suffix” nouns: *SG; *PL

PL: **chest-i-te* *belež- K(A)-i po matematika*

frequent-PL-the.PL mark-K(A)-PL on Mathematics

*‘the frequent Math notes’

SG: **chest-a-ta* *belež-KA*

frequent-FEM.SG-the.FEM.SG mark-KA

*‘the frequent note’

2. Voice –IE nouns: *SG; *PL (see Appendix 6.3: 2c)

PL: **chest-i-te* *pis-a-n-I(£)-ja*

frequent-PL-the.PL write-TH.VOW-N.PASS.PRT-IE-PL

*‘the frequent scripts/writings’

SG: **chest-o-to* *pis-a-n-IE*

frequent-NEUT.SG-the.NEUT.SG write-TH.VOW-N.PASS.PRT-IE

*‘the frequent script/writing’

3. –NE nouns: *PL; *SG

PL: **chest-i-te* (*Kitajsk-i*) *jad-e-N(£)-ija*

frequent-PL-the.PL (Chinese-PL) eat-TH.VOW-NE-PL

*‘The frequent eatings/workings’ [intended reading: ‘Chinese meals’]

SG: *chest-o-to

(Kitajsko) jad-e-NE

frequent-NEUT.SG-the.NEUT.SG (Chinese) eat-TH.VOW-NE

*‘The frequent (Chinese) eating/food’ [intended reading: ‘Chienese food’]

From (131) we can observe that in contrast to the English AS –ing nouns (130a) which appear in the singular when modified by ‘frequent’, the Bulgarian AS –NE nouns can appear both in the singular and in the plural (131a). I assume that this is due to the different derivation of the two nominalizers where **–ing heads an aspectual process projection in contrast to –NE which is an n-head. Thus, since plural markers are compatible with n-heads but not with Asp_{PROCESS} heads, the former blocks pluralization in contrast to the latter.**

AN OBSERVATION regarding the AS –NE nouns in Bulgarian (131a) is in order here. First, in contrast to the English AS –ing nouns which reject plural morphology, the Bulgarian AS –NE nouns allow pluralization. As I have previously mentioned, this is due to a syntactic difference between the two nominalizers: –ing, being a process head (Asp_p^o) and –NE, which is a nominalizing (n^o) head. However, plural marking is allowed in Bulgarian only under certain circumstances, i.e. when the base is perfective. In this respect, recall that –NE nouns preserve the (a)telicity of their verbal bases which is in turn dependent on the morphological aspect (PF/IMPF) of the base. Thus, AS –NE nouns derived from perfective (telic) bases can appear in either the plural or the singular (131a: i). **As for the AS –NE nouns built on primary imperfective (atelic) bases (131a: ii) what we can observe is that they reject the plural and allow only for the singular.** In order to account for this I tentatively assume that **it is the atelic process character of the primary imperfective base which prevents plural marking in contrast to the perfectivity-incorporating nouns (i.e. nouns built on perfective bases), which accept both plural and singular morphology given the n^o status of the –NE nominalizer.** In other words, there is a semantic clash between a process interpretation and plurality in the former case and a syntactic explanation in the latter, provided the status of –NE as an n^o head. Else, we can assume that in the case of telic nouns it is the perfectivity of the base

which allows for the plural, on the one hand, and the secondary imperfective suffix *-va*, with its feature [duration], which allows for the singular. As for the atelic nouns, there is no feature to which the plural marker can relate such as the [endpoint] of perfective stems. This will once more confirm our previous observation that the prevailing factor for the behavior of the Bulgarian *-NE* nouns is morphological (im)perfectivity.

Regarding the Bulgarian PS nouns (131b), we should note that in the same as in English, and irrespective of the (im)perfectivity of the base verb, such nouns behave in a telic-like manner inasmuch as they reject the singular. However, an exception to this rule is represented by the PS *-NE* nouns. Thus, the *-NE* nominals built on perfective bases (131b: i: 3) allow for both the singular and the plural whereas the *-NE* nouns derived from imperfective bases can only appear in the singular (131b: ii: 3). This is exactly what happens with the AS *-NE* nouns. Such a state of affairs can be explained by the fact that the *-NE* nominals always allow for a process interpretation. Thus, if the base is perfective, then we always have the possibility of having both the plural marker (since it will arguably relate to the [endpoint] feature of the perfective (telic) base), and the singular (which arguably relates to the [durative] feature of *-va*). As for the PS *-NE* nouns derived from imperfective (atelic) bases, they cannot appear in the plural for the same reasons that an AS primary imperfective *-NE* noun cannot (e.g. since there is no possible feature candidate to which the plural marker can relate). Hence, such nouns appear in the singular, indicating that we have an atelic event as already expected.

Finally, the R-R nouns in Bulgarian (131c), in the same way as in English (130c), reject modification by ‘frequent’ since they lack any aspectual-verbal structure. A summary of the finding is illustrated in Table 16.

'frequent'	AS nouns			PS nouns			R-R nouns		
	ENGL	BULG		ENGL	BULG		ENGL	BULG	
		PF	IMPF		PF	IMPF		PF	IMPF
SG	yes	yes	yes	not but -tion	not but -NE	not but -NE	not	not	not
PL	not	yes	not	yes	yes	yes but -NE	not	not	not

Table 16: Adjective like 'frequent', 'constant', etc. inside nominalizations

Finally, **I PRESENT THE SEMANTIC AND SYNTACTIC EVIDENCE SUPPORTING THE DISTINCTION BETWEEN AS VS. PS NOUNS.** I first present the syntactic justification for such a distinction since the semantic one is syntax-driven, as expected. Thus, I start examining the behavior of the nominalization types with respect to agent-oriented adverbials in (132).

(132) Agent-oriented adverbials

a. English nominalizations

(i) AS nouns: OK

His removing of the evidence intentionally (was severely criticized)⁸³

(ii) PS nouns: SOME

Collaboration of the witnesses voluntarily (has greatly sped up the process⁸⁴)

**John's examination of the students voluntarily*

**John's exploration of the desert voluntarily/intentionally*

*[but! *John's trip to the mountains deliberately]*

(iii) R-R nouns: NOT

**His three formulations deliberately*

**His examination intentionally*

⁸³ Note that *removal* also behaves like an AS noun with respect to this test:

(i) *(While) the removal of evidence purposefully (is a crime), the removal of evidence unintentionally (is not)* (Fu et al. 2001: 554)

I assume that this has an exceptional character and is rather idiosyncratic.

⁸⁴ Taken from Fu et al. (2001: 554-555).

b. Bulgarian nominalizations

(i) AS nouns: YES

1. Telic (perfective bases):

s-chup–va-ne-to *na chash-i-te* *umishleno* *s* *cel da me jadosa*
S-break-IMPF-NE-the.NEUT.SG of glass-PL-the.PL deliberately with aim to me angry
‘the breaking of glasses *deliberately in order to make me angry*’

2. Atelic (primary imperfective bases):

chup-e-ne-to *na chash-i-te* *umishleno* *s* *cel da me jadosa*
break-TH.VOW-NE-the.NEUT.SG of glass-PL-the.PL deliberately with aim to me angry
‘the breaking of glasses *deliberately in order to make me angry*’

(ii) PS nouns: NOT

1. Telic (perfective bases):

[*PRO-d*]-*a-žBA-ta* *na narkotits-i-te* **umishleno/*dobrovolno*
[sell]-TH.VOW-žBA-the.FEM.SG of drug-PL-the.PL **intentionally/*voluntarily*
‘the sale of the drugs **intentionally/*voluntarily*’
[cf. *umishlenata prodazba na narkotici* ‘the intentional.ADJ sale of drugs’]

2. Atelic (primary imperfective bases):

kra(đ)-ž-BA-ta *na alkohol* **umishleno*
steal-TH.VOW-BA-the.FEM.SG of alcohol **intentionally*
‘the theft of alcohol **intentionally*’
[cf. *umishlenata kražba na alkohol* ‘the intentional.ADJ theft of alcohol’]

(iii) R-R nouns: NOT

1. Telic (perfective bases):

chup-KA-ta **umishleno*
break-KA-the.FEM.SG **intentionally*
‘the bend/twist/crease/angle/corner **intentionally*’

2. Atelic (primary imperfective bases):

belež-KA-ta **dobrovolno*
mark-KA-the.FEM.SG **voluntarily*
‘the note/message **voluntarily*’

From (132) we can observe that the English AS –ing (132a: i) and some PS (132a: ii) nominalizations allow for agent-oriented adverbials whereas in Bulgarian only the –NE AS nouns do so (132b: i), the PS nominals disallowing such modifiers (132b: ii). ***I suggest that the AS nouns in both languages allow agent-oriented adverbials due to a syntactic reason: the incorporation of higher aspectual layer which is responsible for the agentive reading of the external argument (e.g. Asp_PP).*** However, some PS nouns in English also allow such modification in contrast to PS nouns in Bulgarian which do not. To account for this, I assume that the agentive modification with some PS nouns in English represents a limited number of cases and is therefore related to our encyclopedic knowledge of the root itself, and not to the presence of a dedicated syntactic layer related to the presence of the agent. Finally, the R-R nouns are incapable to combine with agentive adverbials in both languages, indicating that they lack the necessary functional structure which licenses agentive interpretation of the subject-like DP (132a: iii, b: iii). A recap is offered in Table 17.

	AS nouns		PS nouns		R-R nouns	
	English	Bulgarian	English	Bulgarian	English	Bulgarian
Agentive ADVL	YES	YES	SOME	NOT	NOT	NOT

Table 17: Agent-oriented adverbials

Now we are ready to proceed to the semantic justification for the distinction between AS and PS nouns.

Bearing in mind that only the AS nouns incorporate higher aspectual layers related to process semantics, on the one hand, and agentivity, on the other hand, the prediction will be that only AS nominals will have exclusively agentive reading of a prenominal possessive phrase (133a) or of a postnominal by-phrase (133b) since only these nouns will be capable of locating their subject-like DP argument into the specifier of the relevant projection (e.g. VoiceP for Kratzer 1996; vP for Chomsky 1995). The subject-like DP in PS nouns receives a more abstract possessor-like interpretation since it is unable to merge in the specifier of

the relevant projection due to the absence of this layer inside such nominals. In fact, we have already seen that this observation holds for the Bulgarian nouns (see (108) and subsequent discussion), and it was precisely this which made the opposition AS vs. PS nouns in Bulgarian more significant. Hence, to avoid repetitiveness, I will just exemplify the English data in (133).

(133) On the interpretation of the external argument in English nominalizations

a. AS nouns: ‘agent/originator’ interpretation; by-phrases are argumental, translated as ‘por’ in Spanish (iii)

(i) *Kim’s formulating of several procedures*

Pat’s removing of the evidence

(ii) *The formulating of several procedures by Kim*

The removing of the evidence by Pat

(iii) *La formulación de varios procedimientos **por**/*de Kim* (Spanish)

*La eliminación de la pruebas **por**/*de Pat*

b. PS –tion nouns: subject = free-interpretation genitive: i.e. possessor-like or an agent-like interpretation

(i) *Kim’s formation of many committees → ambiguous*

Pat’s removal of the evidence → agent-like

The witnesses’ collaboration → free-interpretation possessor

(ii) *The formation of many committees by Kim → agent-like*

The removal of the evidence by Pat → agent-like

The collaboration of the witnesses → free-interpretation possessor

(iii) *La formación de muchos comités ?de/por Kim* (Spanish)

*!!La eliminación de la pruebas **por**/*de Pat*

La colaboración de los testigos

c. R-R nouns: ‘possessor’ interpretation in the broad sense; by-phrases are always non-argumental, translated as ‘de’ in Spanish

(i) *Mary’s gift/construction/steps/appointments*

(ii) *a gift/construction/??step/*appointment by Mary*

(iii) *regalo/construcción/paso/cita **de**/*por María* (Spanish)

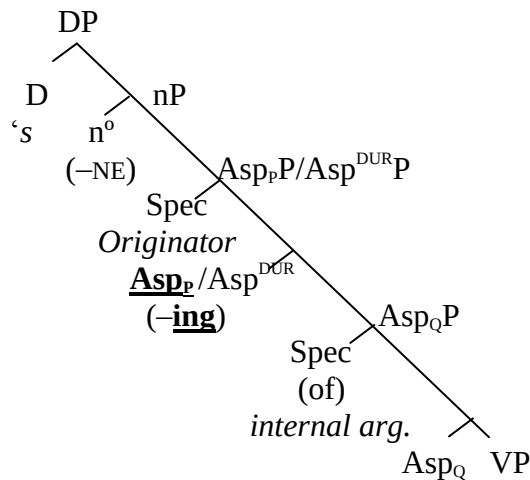
From (133) we can observe that the possessive phrase has a general possessor reading with R-R nominals, but never an agentive one. Interestingly, some R-R nouns accept the by phrase ('a gift by Mary'), but this does not imply that such nouns have argument structure. It is well documented in the literature that even underived nouns such as 'book', 'picture', etc. may accept the by-phrase, which is basically influenced by our linguistic knowledge about the normal course of events. Thus, the by-phrase in cases like these may arguably relate to some possible hidden (implicit) verb which participates in the event (a gift *given by* Mary/a book *written by* John'). However, this does not indicate the presence of any verbal structure inside the nominal itself (*book*, *gift*). A syntactic solution to this state of affairs is to claim that since there is no VP structure to license arguments within R-R nouns (also undervied nouns) (29c, 89c, 134c), we can assume that the nP syntax will provide the necessary space for such participants to occur (e.g. **Spec,nP may be the landing site for free interpretations of the genitive within the nominal domain, in the same way as Spec,vP in the verbal domain**). (Alternatively, optional arguments may be adjoined in the relevant specifier positions.) However, such DPs are not syntactic arguments, as they are always optional, but rather semantic participants. Regarding this, Grismhaw (1990) proposes that though the by-phrase may be available in some R-R nominals (133c: ii), it is always translated as 'de' (of) in Spanish (133c: iii), indicating its non-argumental status. This, however, is not the case for the by-phrases in the true AS nominals (133a: ii) which are translated as the Spanish 'por' (see (133a: iii vs. 133c: iii)). Hence, only the AS nouns (133a) have true syntactic agents facilitated by the presence of the necessary functional structure which they embed (Asp_P) and which prevents a truly possessive interpretation of the subject-like DP (29a, 134a). This implies that these DPs, before they land in Spec,nP to receive genitive case, pass through the relevant Spec,XP (X=Asp_{PROCESS}) where the agentive-originator reading is obtained (29a, 134a). See the following chapter for more discussion on this issue (see (134)).

As for the participant structure nouns (133b), they are represented in their great majority by the -tion nominal morphological type. Recall, though, that -tion nouns are often ambiguous between a PS and an R-R reading. Thus, we can observe that they allow for all kinds of readings of their subject-like DPs (e.g. a free interpretation of the genitive for 'formation').

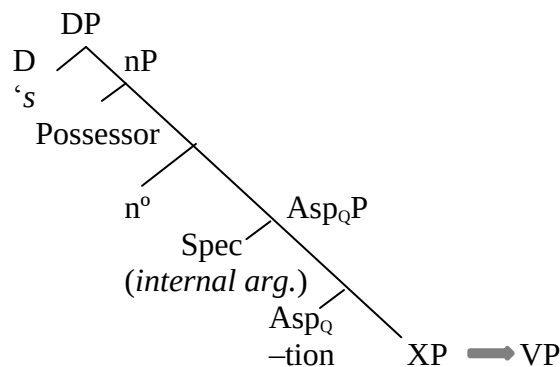
Note also that sometimes the by-phrase is not allowed within a noun so the of-phrase is chosen in its place (e.g. ‘collaboration *by/of’). As for nouns like ‘removal’, they behave like AS nouns inasmuch as the by-phrase is allowed, and is additionally translated as ‘por’ in Spanish, indicating its syntactic status. However, I assume that this is quite idiosyncratic and related to our encyclopedic knowledge, rather than the syntactic structure of the noun itself. Thus, the abstract syntactic representation of AS, PS and R-R nouns at which we arrive in both languages is as follows.

(134) The syntax of nominals

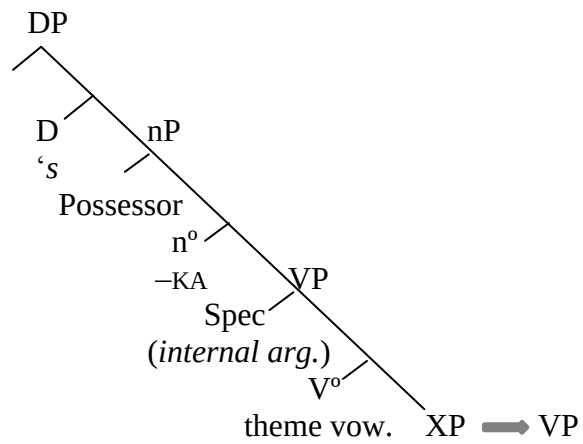
a. AS nouns (–ing and –NE nominals)



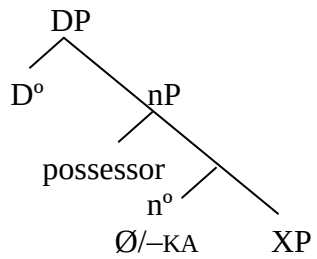
b. English PS –tion nouns



b'. Bulgarian PS (eventive) “other-suffix” nouns



c. R-R nominals: no functional event structure



A recap of the main findings is offered in Table 18.

T14	AS nouns			PS nouns			R-R nouns		
ADV	ENGL	BULG		ENGL	BULG		ENGL	BULG	
Manner	YES	YES		SOME	FEW		NOT	NOT	
Temp.	YES	YES		SOME	SOME		NOT	NOT	
T15	AS nouns			PS nouns			R-R nouns		
	ENGL	BULG		ENGL	BULG		ENGL	BULG	
		PF	IMPF		PF	IMPF		PF	IMPF
In-advl	sometimes	YES	NOT	YES	??	NOT	NOT	NOT	NOT
For-advl	YES	NOT	YES	YES (–ing) NOT (*–tion)	NOT	NOT	NOT	NOT	NOT
T16	AS nouns			PS nouns			R-R nouns		
‘frequent’	ENGL	BULG		ENGL	BULG		ENGL	BULG	
		PF	IMPF		PF	IMPF		PF	IMPF
SG	yes	yes	yes	not but –tion	not but -NE	not but -NE	not	not	not
PL	not	yes	not	yes but -NE	yes	yes	not	not	not
T17	AS nouns			PS nouns			R-R nouns		
ADVL	ENGL	BULG		ENGL	BULG		ENGL	BULG	
Agentive	YES	YES		SOME	NOT		NOT	NOT	

Table 18: Modifiers of verbal structure: A summary

From Table 18 we can observe that R-R nominals behave quite uniformly across languages. ***Thus, due to their non-eventive character and the lack of an underlying verbal structure (134c), R-R nouns do not allow temporal and manner adverbs (T14), aspectual phrases like ‘for/in an hour’ (T15), aspectual adjectives like ‘frequent’ (T16), and agent-oriented adverbials (T17).***

When it comes to the English and Bulgarian eventive nouns, however, we can observe that they do not always behave the same with respect to the tests applied. The most well-

behaved eventive group cross-linguistically is the AS nominal type since these nouns always allow for temporal and manner adverbs (T14), aspectual phrases like ‘for/in an hour’ (T15), and agent-oriented modifiers (T17). Furthermore, only these nouns can systematically appear in the singular when modified by aspectual adjectives like ‘frequent’ (T16). As for the PS nouns, the only property they share in both languages is that they allow only marginally manner and temporal adverbs (T14) and tend to disallow agentive adverbials (T17).

Hence, if we draw a line of aspectual behavior we should place R-R nouns on one end (e.g. the aspectless one) and the AS nominals on the other end of the line (e.g. prototypically aspectual), with the PS type located somewhere in between the two groups. As we will see, the explanation for this state of affairs is syntactic: only the AS nouns have aspectual functional structure (134a) in contrast to the R-R nouns which lack verbal structure at all (134c). As for the PS nouns, they are again located in between, inasmuch as they nominalize only some lower verbal (134b') or aspectual (134b) layers located lower than the aspectual layers of the AS nouns but higher than the attachment site of the R-R nominalizers.

As for the differences observed in the aspectual behavior of the eventive nouns across languages, we shall make three crucial observations.

IN FIRST PLACE, from Table 15 we can see that English AS –ing nouns tend to be atelic and allow for the for-adverbials whereas the Bulgarian AS –NE nouns allow both adverbials depending on the (im)perfectivity of the base verb: the for-adverbials are accepted if the noun is built on primary imperfective (atelic) bases and the in-adverbials are allowed if the base verb is perfective (i.e. telic). **In other words, it seems that the English AS –ing nouns possess the same properties as the Bulgarian primary imperfective (atelic) AS –NE nouns.** However, we have also observed that once a particle incorporates into the nominal, then the in-adverbial is allowed due to the telicizing effect of this element (90b). **Hence, both nominalizers preserve the (a)telicity of their underlying bases.**

IN SECOND PLACE, we should note that this last claim may appear to be at first sight contradicted by THE ‘FREQUENT’ TEST (Table 16). In this respect, recall that only the atelic nouns, inasmuch as they are not countable, always appear in the singular when modified by adjectives like ‘frequent’. Again, what we see is that the English AS –ing nominals and the Bulgarian AS –NE nouns derived from imperfective bases reject the plural, confirming their atelic, i.e. mass (process) nature. ***However, this observation does not imply that English and Bulgarian AS nouns have different properties and syntactic structure; rather, what we deduce is that morphological aspect (PF/IMPF) is a determining aspectual factor in Bulgarian but not in English, and this is precisely what leads to the observed differences.*** Furthermore, and as already observed, ***plurality is made possible within AS nouns in Bulgarian built on perfective bases also because the nominalizer itself, i.e. –NE, derives as an n-head and not as an aspectual process head as is the case for the English –ing*** (e.g. Asp_P^o in (134a)). As a consequence, ***only the –NE nouns can embed NumberP*** (or whatever projection headed by plural markers) ***since plural markers target n-heads, but not non-nominal (aspectual or process) heads.***

FINALLY, the PS nouns also behave in a uniform manner regarding the ‘frequent’ test since they, being *a priori* telic, obligatorily appear in the plural in both languages, the exception being the ***Bulgarian PS –NE nouns which can always appear in the singular, irrespective of the (im)perfectivity of the base verb.*** However, I have already mentioned that such a state of affairs receives a straightforward explanation which is related to the fact that ***the –NE nouns are always sensitive to the features which their base verb bears. Thus, when built on imperfective bases, the –NE nouns always behave in an atelic like manner (e.g. allow the for-adverbial and reject the in-adverbial; appear in the singular when modified by ‘frequent’ but never in the plural). When the base is perfective, we have more possibilities since we add the feature [duration], present on the secondary imperfective suffix –va, and located on top of the [endpoint] feature of the***

perfective (telic) base. Thus, ‘frequent’, which is sensitive to the feature specification of the derivative, can relate to either features, allowing thus for both the plural and singular morphological forms of the noun, the former relating to the [endpoint] feature of the base verb, and the latter to the [duration] feature of the –va morpheme.

Note in this respect, however, that the for-adverbial is disallowed with perfective –NE bases since it cannot relate to both features due to its direct relation to the (a)telicity of the base. Since the base is telic (perfective), the in-adverbial is preferred over the for-adverbial. See the following section for a syntactic explanation to this.

A recap of the observations made so far in this section is offered in (135).

(135) Some observations regarding nominalization types across languages

a. On the denotation of nouns: The denotation of a given derivative depends on the functional structure embedded within it. Only the –ing and –NE nouns systematically denote processes due to the incorporation of a process node ($\text{Asp}_p\text{P}/\text{Asp}^{\text{DUR}}\text{P}$) within them; the –tion and “other-suffix” nouns denote events by virtue of the fact that they are built on lower verbal (VP) or lower aspectual (Asp_qP) layers; the zero-derived and the root “other-suffix” nouns tend to denote objects due to the lack of verbal-aspectual structure within them; finally, the participial Voice –IE nouns denote results since they embed a participial layer (VoiceP).

b. On the (a)telicity of nominalizations: In both English and Bulgarian the (a)telicity of a nominal is syntax-driven, the difference being that in Bulgarian morphological structure instructs syntactic structure. Thus, in the presence of some telicizing projection (e.g. particle or prefix), we obtain telicity; otherwise, the structure remains atelic. A generalization holds that in Bulgarian morphological *primary* imperfectivity signals atelicity (i.e. absence of telicizing layers) whereas perfectivity, at whatever layer of derivation, signals telicity (i.e. the presence of an [endpoint] feature).

c. Aktionsart properties: only the English –ing nominals are ‘special’ with respect to the Aktionsart properties of the base verb since only these nouns are incompatible with both achievement and stative predicates. The rest of the English nominalizations, and all of the

Bulgarian nouns, are in principle able to incorporate any kind of base. This, as Borer (2005b) suggests, is due to the fact that only –ing interacts directly with the event structure of the base verb by virtue of its anti-stative character and its favoring of atelic bases over telic ones. This state of affairs indicates the importance of the nominalizer within a derivative.

d. Argument-structure properties: Argument structure is syntax-driven. Nouns are divided into Result-Referential and Argument-Taking. The former lack verbal and aspectual layers and consequently denote objects or result of events. All nominalizers may give R-R nouns by virtue of their inherent feature [NOM]. Regarding the Argument-Taking nominals, on the other hand, we can distinguish between nouns with obligatory internal arguments (AS nouns) and nouns with optional internal arguments (PS nouns). Whereas all nouns which incorporate verbal layers can be PS nouns, only some –ing and –NE nouns can be true AS nominals. We have already mentioned that this is due to the incorporation of higher aspectual structure which these nominalizers select (e.g. $Asp_P/Asp^{DUR}P$) together with the presence of telicizing structure (e.g. particle or prefix). I will comment on this issue in the following chapter.

e. Modifiers of nominal structure: The data indicate that only the –ing AS nouns systematically reject modifiers of nominal structure such as numerals, demonstratives, plurals, indefinite determiners. I have proposed that this has to do with the functional character of –ing which derives as a process Asp_P node in AS nouns, but not as an n-head. Hence, nominal modification is blocked due to a twofold incompatibility, a syntactic one, where such modifiers target n-heads, and a semantic one, where these modifiers reject, *a priori*, atelic-process heads like Asp_P^o . Crucially, this confirms the inflectional-functional status of –ing in contrast to the derivational status of the rest of the nominalizers.

f. Modifiers of verbal structure: This test is used to confirm the distinction between eventive (AS and PS) *versus* non-eventive (R-R) nouns, on the one hand, and AS vs. PS eventive nouns, on the other hand. Regarding the former case, we can conclude that (i) only eventive nouns allow temporal and manner adverbs, and aspectual modifiers like ‘for/in an hour’, and that (ii) only eventive nouns may appear in the singular when modified by aspectual adjectives like ‘frequent’, ‘repeated’ in contrast to the non-eventive (R-R) nominals which should appear in the plural (e.g. ‘frequent exam*(s)’ vs. ‘frequent

examination(*s)'). As for the **AS VS. PS DISTINCTION**, we have observed that (i) **on semantic grounds**, only the AS nouns have exclusively agentive reading of prenominal possessive phrases or postnominal by-phrases in contrast to the subject-like DP in PS nouns, which receives a more abstract possessor-like interpretation, whereas (ii) **on syntactic grounds**, only AS nouns allow agent-oriented modifiers like 'intentional', 'deliberate'. This indicates that only these nouns have higher aspectual structure related to the presence of the external argument.

Finally, and before I close this chapter, some notes regarding Bulgarian biaspectual nominalizations are in order. As I will show, this is crucial for one main reason. To be more precise, these nouns, due to their morphological and hence aspectual underspecification, ***behave in exactly the same way as the English nominals due to the fact that both verbs, the English verbs and the Bulgarian biaspectual –i(zi)ra verbs, codify aspect in the same way, which is further transferred from the verbal domain to the nominal domain.*** Such a state of affairs confirms our previous claims that ***the driving force of both semantics (eventive interpretation) and syntax (argument structure) is the way in which a language codifies inner aspect: morphologically in the case of standard Bulgarian but according to the properties of the functional structure in the case of English and biaspectual Bulgarian.***

Now I proceed to show the way in which English nouns resemble the Bulgarian biaspectual nouns derived from the loan –ira verbs.

6.6. Biaspectual nominalizations in Bulgarian

In chapter 4 we have seen that there are two verbal paradigms in Bulgarian, the standard one (§ 4.3.2), common to the rest of the Slavic languages, and the biaspectual one (§ 4.3.3), which consists of borrowed –ira/–izira/–uva verbs. We have also tried to show that the verbs which constitute the two paradigms behave significantly different from one another

with respect to inner aspect, which was explained by the fact that these verbs codify inner aspect in a different way. Thus, we have demonstrated that the Bulgarian biaspectuals, in the same way as the English eventive verbs (§ 4.3.1), calculate aspect compositionally, showing sensitivity to the feature specification of their internal arguments (e.g. they show the object-to-event mapping property), and being also sensitive to the telicizing effect of goal Ps. The Bulgarian standard predicates, on the other hand, do not care at all about the feature specification of neither their themes nor the PPs present in the structure. Rather, what is crucial for a standard predicate when calculating inner aspect is morphological (im)perfectivity: perfective verbs (and secondary imperfectives) are always telic whereas primary imperfectives are atelic. As we saw in chapter 5, such a contrastive behavior is syntax-driven, and related to the way in which a system, a paradigm, or a predicate codifies aspect. The aim of this section is to show that such a contrast is also transferred to the nominal domain. Hence, what we expect is that biaspectual nominalizations in Bulgarian would pattern with the nominal types in English. A summary of the Bulgarian biaspectual types is presented in (136).

(136) Bulgarian biaspectual nominals⁸⁵

a. AS nouns: suffix –NE: [–IRA+–NE]: always allow for a resultative reading

(i) Predominant process denotation (–ing translation): *propagandirane* ‘propagating; promotion’, *organizirane* ‘organizing’, *remontirane* ‘repairing’, *mebelirane* ‘furnishing’, *retsenzirane* ‘reviewing; review’, *kontrolirane* ‘monitoring; control’, *formulirane* ‘?formulating; formulation’, *nomerirane* ‘numbering; numeration’, *konsumirane* ‘eating’, *deklarirane* ‘declaring; declaration’, *demonstrirane* ‘demonstrating; demonstration’, etc.

(ii) Predominant result denotation, since the base is an achievement one, yet the process one still available (usually –tion translation): *konservirane* ‘preservation’, *suspendirane* ‘suspension’, *pledirane* ‘advocacy’, *industrializirane* ‘industrialization’, *egzekutirane* ‘execution’, *restavrirane* ‘restoration’, *blokirane* ‘blocking’, etc.

⁸⁵ I will only examine the verbs built on the suffix –ira, and their nominal derivatives. Thus, I leave the –uva biaspectual nominalizations for further research.

b. PS nouns:

(i) **the suffix –tsija** (always derived from –ira verbs): *kultivatsija* ‘cultivation’, *konervatsija* ‘conservation’, *industrializatsija* ‘industrialization’, *ekzekutsija* ‘execution’, *falshifikatsija* ‘forgery’, *restavratsija* ‘restoration’, *demonstratsija* ‘demonstration, show’, *opearatsija* ‘operation’, *konsumatsija* ‘consumption’, etc.

(ii) **“other-suffix” nouns:** *propaganda* ‘propaganda’, *eksplozija* ‘explosion’, *blokaž* ‘lock’ (from *blokiram* ‘to block’), etc.

c. R-R nouns:

(i) **–tsija nouns:** *korektsija* ‘correction statement’, *deklaratsija* ‘declaration’, *korespondentsija* ‘correspondence’, *organizatsija* ‘organization’, etc.

(ii) **“other-suffix” nouns:** *angažiment* ‘engagement’, *kopie* ‘a copy’, *aplodisment* ‘applause’, *eksploziv* ‘explosive; a demolition bomb’, *broderija* ‘emroidery; fancywork’, *mebelirovka* ‘furniture; furnishings’, *retsenzija* ‘a review; a notice’, *formula* ‘formula’, *grupirovka* ‘group’, etc.

From (136) we can observe that there are three morphological types of nominals depending on the suffix which nominalizes the base: –NE, –tsija, and “other-suffix” nominalizers (including gender markers ‘–a’, some native suffixes ‘–ovka’, or some loan suffixes ‘–ment’ (136c: ii)). However, only some –NE nominals can be process-denoting (136a: i) and only some –NE nouns can be true argument-takers, too (136a).

Since I will only examine the –NE and –tsija nominals, I will not pay attention to whether nouns such as *angažiment* ‘engagement’, which are composed of a loan base and a loan suffix, are derivationally formed or whether they directly enter the language as such (I believe we have the second option).

What concerns me here is the crucial observation that there is a **sharp contrast between –NE nominals from the standard paradigm and the biaspectual –NE nouns**. It is true that *in both paradigms only some –NE nouns can be true AS nominals*, but still we have a striking contrast found in the denotation of these nouns. **Thus, the standard –NE nominals are always**

process-denoting, though at occasions they may develop a secondary result meaning (see fn. 43). The biaspectual –NE nouns, on the other hand, have a resultative reading as the default option (136a: ii), indicated by the fact that they can always be translated as an –tion noun in English, though they also preserve their process denotation (signaled by an –ing translation) but only as a secondary choice and therefore available in a limited number of cases, all belonging to the first AS nominal type (136a: i). I claim that this is due to the aspectually ambiguous nature of the final derivative which, in combination with the presence of further nominalizing structure, preempts the default 'nouny', i.e. resultative denotation with these nouns. Thus, all [–IRA+–NE] nouns may give R-R nominals.

Interestingly, the fact that the group of the biaspectual AS –NE nouns is divided into –tion (136a: ii) and –ing (136a: i) members upon translation suggests that in English not only the –ing nouns, but also the –tion nouns should be, in principle, able to give AS nominals, as already suggested in Fu et al. (2001). However, I have noted that the –tion AS group in English is rather limited and idiosyncratic (few nouns like 'removal' are true AS nouns), because the output of the –tion suffix tends to be always ambiguous between PS and R-R reading, which is precisely the case for the [–IRA+–NE] AS nouns (136a: ii). ***In other words, the fact that some [–IRA+–NE] AS nouns receive a –tion translation does not necessarily mean that the English –tion nouns should be obligatory argument-takers.***

AS FOR THE –TSIJA NOUNS, they may never denote processes which may be arguably related to the resultative semantics of the suffix in question. Thus, such nouns are either PS (136b: i) or R-R (136c: i) nominals. ***I claim that it is precisely this morphological type which corresponds to the English –tion nominalizations.*** In this respect, it should be noted that ***the Bulgarian biaspectual nominalizer –tsija, which comes from Greek, exhibits the same aspectual properties as the English –tion, which, within the lexicon of English, is also a borrowing*** (it comes from Latin –tionem). What

both suffixes have in common is that they select for verbal bases, overtly manifested by the verbalizer –ize in English (85b) (e.g. *nominal-ize-ation*) or –(iz)ira in Bulgarian (*nominal-izira-a-tsijsa* 'nominalization') where both verbalizers are also borrowed (from Old French –iser, Latin –izare, Greek –izein; from German: –ira). Furthermore, both nominal types show ambiguous PS–R-R behavior like borrowed verbalizations in Bulgarian (i.e. the –ira verbs), which suggests that ***the distinction loan versus native morphology will be crucial while dealing with any kind of derivatives.***⁸⁶

Now let us compare the syntactic behavior of the Bulgarian biaspectual nouns with those in English. Since we have already shown the English data, I will just exemplify the Bulgarian nominals with respect to the following tests: (i) aspectual properties (§ 6.6.1); (ii) Aktionsart properties (§ 6.6.2); (iii) argument-structure properties (§ 6.6.3); (iv) nominal modification (§ 6.6.4), and (v) verbal modification (§ 6.6.5). I start the discussion with the first test.

6.6.1. Aspectual properties of the Bulgarian biaspectual nouns

In this section I will be primarily concerned with two factors: the possible denotation (e.g. processes *versus* results), and the (a)telicity of the biaspectual –NE and –tsijsa nouns. We have already seen that only –ing and –NE nouns can denote processes and be atelic (see Table 9), so the expectation here will be that only the [–IRA+–NE], most probably those translated as –ing in English, will be both process-denoting (137a) and atelic (138a) in contrast to the –tsijsa nouns which have a resultative semantics (137b) and, as a consequence, behave in a telic-like manner (138b).

⁸⁶ Arguably, the rest of the loan nominalizers in English will either show ambiguous PS–R-R behavior like –tion or else will exhibit R-R properties (e.g. –ment), but not true AS characteristics, the latter being preserved for native material only. I leave the topic of loan categorizers in English and a possible comparison with loan categorizers in Bulgarian for further research.

(137) Process-denoting nouns

a. [–IRA+NE] nouns: –ing translations (136a: i): yes

(i) *degust–ira-NE-to* *na vino-to* *dva chasa*

taste-BIASP-NE-the-NEUT.SG of wine-the.NEUT.SG two hours

‘The tasting of wine for two hours’

(ii) *nomer–ira-NE-to* *na stranitsi-te* *dva chasa*

number-BIASP-NE-the-NEUT.SG of pages-the.PL two hours

‘The numbering of the pages for two hours’

b. [–IRA+NE] nouns: –tion translations (136a: ii): marginal

korig–ira-NE-to *na danŭchnija finansov rezultat ?tseli deset mesetsa*

correct-BIASP-NE-the-NEUT.SG of tax-the financial result ?whole ten months

‘The adjustment of the tax financial result ?for ten months’

b'. –tsija derivative of (b): not

korek-TSIJA-ta *na dŭrŭzavnija bjudŭzet *tseli deset mesetsa*

(*znachitelno namali subsidijata za stolitsa-ta*)

correct-TSIJA-the-FEM.SG of state-the budget *whole ten months

(significantly reduced the subsidy for capital-the)

‘The adjustment of the state budget *for ten months (significantly reduced the subsidy for the capital)’

c. –tsija nouns: not

(i) *degust-a-TSIJA-ta* *na vino-to* **dva dni*

taste-TH.VOW-TSIJA-the-FEM.SG of wine-the.NEUT.SG *two days

‘The wine tasting *for two days’

(ii) *nomer-a-TSIJA-ta* (**na stranitsi*) **dva dni*

number-TH.VOW-TSIJA-the-FEM.SG of wine-the.NEUT.SG *two days

‘The numeration/numbers (*of pages) *for two days’

From (137) we can observe that only the –NE nouns allow for a process reading, the best behaved of which are those translated as –ing in English (136a: i) as expected. As for the ones which receive an –tion translation in English (137b), they allow the durative adverbial only marginally, implying that their primary denotation is a resultative event one (note that

these nouns are eventive, not object-denoting or results), though a secondary durative/process interpretation is also possible. As for the –tsija nouns, they never allow for a process denotation (137b’, c). A recap on all nominalization types in the two languages is offered in Table 19.

	Process (complex events)	Eventive (actions, simple events)	Result-Referential (output of events, objects)
English	–ing	–tion, few Ø-derived	Ø-derived, –tion, few –ing
BULG STND	–NE	“other-suffix”, few –IE	“other-suffix”, –IE, few –NE
BULG BIASP	[–IRA+–NE]	[–IRA+–NE], some –TSIJA few “other-suffix”	all –TSIJA; “other-suffix”

Table 19: Semantic classification of nominalization types

In (138) I offer the relevant data on (a)telicity.

(138) (A)telicity

a. [–IRA+NE]^{ing} nouns: both telic and atelic

- (i) *remont–ira-NE-to* *na kola-ta* *tri chasa/za pet minuti*
 repair-BIASP-NE-the-NEUT.SG of car-the three hours/in five minutes
 ‘The repairing of the car **for three hours/in five minutes**’

- (ii) *nomer–ira-NE-to* *na stranitsi-te* *tri chasa/za pet minuti*
 number-BIASP-NE-the-NEUT.SG of pages-the.PL three hours/in five minutes
 ‘The numbering of the pages **for three hours/in five minutes**’

b. [–IRA+NE]^{tion} nouns: ‘for X time’ is usually marginal

- (i) *restavr–ira-NE-to* *na hram-a* *chetiri godini/za dve sedmitsi*
 restore-BIASP-NE-the-NEUT.SG of temple-the four years/in two weeks
 ‘The restoration of the temple for four years/in two weeks’

- (ii) *ekzekut–ira-NE-to* *na plennitsi-te* *?chetiri godini/za dva chasa*
 execute-BIASP-NE-the-NEUT.SG of captive-the ?four years/in two hours
 ‘The execution of the captives **?for four years/in two hours**’

b'. –tsija derivative of (b): telic

restavr-a-TSIJA-ta *na hrama-a* **chetiri godini/za dve sedmitsi*
 restore-TH.VOW-TSIJA-the-FEM.SG of temple-the **four years/in two weeks*
 ‘The restoration of the temple ****for four years/in two weeks***’

c. –tsija nouns: telic

(i) *demonstr-a-TSIJA-ta* *na iztočno-to bojno izkustvo* **chetiri*
godini/za dva chasa
 demonstrate-TH.VOW-TSIJA-the-FEM.SG of Eastern-the martial arts **four*
 years/in two hours
 ‘The demonstration of the Eastern martial arts ****for four years/in two hours***’

(ii) *ekzeku-TSIJA-ta* *na plennitsi-te* **chetiri godini/za dva chasa*
 execute-TSIJA-the-FEM.SG of captives-the **four years/in two hours*
 ‘The execution of the prisoners ****for four years/in two hours***’

From (138) we can observe that the –NE nominals [–ira+–NE] preserve the biaspectual character of the –ira base and allow for both the ‘in X time’ and the ‘for X time’ modifiers (138a, b). Again, a slightly marginal behavior is detected for the [–ira+–NE]^{tion} nouns (138b), which tend to prefer the time-span adverbial. ***Bearing in mind that the English –ing nouns are atelic and process-denoting, in contrast to the –tion nouns, which are usually telic, then it appears that the [–ira+–NE] nouns pattern with the English –tion nominals when used in a telic context, and with the process –ing nouns, when used in atelic contexts.*** As for the –tsija suffix, it gives telic nominals (138b’, c). As we will see, the explanation to this is syntax-driven where the –tsija suffix, in the same way as the –tion suffix, selects for telic bases. This is another way in which loan categorizers resemble one another.

A recap is offered in Table 20.

	$[-ira+NE]^{ing}$	$[-ira+NE]^{tion}$	–TSIJA
TELIC	YES	YES	YES
ATELIC	YES	?/YES	NOT
PROCESS	YES	?/YES	NOT
EVENTIVE	YES	YES	YES
RESULT	NOT	NOT	YES

Table 20: Aspectual properties of biaspectual nominalizations

CRUCIALLY, the slightly marginal behavior of the $[-ira+NE]^{tion}$ nouns with respect to atelicity and process interpretation may be due to some semantic property of the underlying base such as its achievement character (136a: ii). Since the nominalizer in this case is –NE, a suffix which always preserves the aspectual characteristics of the base verb and which selects for a process layer, then we can tentatively assume that some inherent property of the base is not completely compatible with the atelic for-adverbial, which will consequently explain its marginal presence inside such nouns. However, since the derivative incorporates a process layer, then a process reading cannot be blocked, as is the case for the –tsija/–tion nouns, for example, which do not denote processes.

ALTERNATIVELY, we may assume that the ***biaspectual character of the base is preserved within a –NE nominal as expected and that this is the main reason why both interpretations (telic and atelic) become possible with the $[-ira+NE]$ nouns.*** In order to distinguish between the two available readings, we should additionally take into account the context in which these nouns appear, and this is what explains the context-dependent character of these derivatives (see the previous paragraph). As for the favoring of the telic denotation over the atelic one, it may be due to the fact that the final derivative, being a noun, is usually referential (i.e. it makes reference to some object or (result of an) event, but does not prototypically denote a process). I leave the $[-ira+NE]^{tion}$ derivatives for further research.

Interestingly, however, when an $[-ira+NE]$ noun is being prefixed, it then behaves in a telic-like manner and cannot be interpreted as a process (139b) in contrast to its unprefixed

version which remains aspectually ambiguous (139a). Thus, ***a prefixed biaspectual noun appears to obey the principles of the standard verbal paradigm according to which the presence of prefixation signals a telic derivative, be it a nominal or a verb.***

(139) Prefixed biaspectual nouns: telic and resultative

a. No prefix: both telic (resultative) and atelic (process)

<i>recit-ira-(va)-NE-to</i>	<i>na stihotvorenie-to tri chasa/za pet minuti</i>
recite-BIASP-(IMPF)-NE-the-NEUT.SG of poem-the	three hours/in five minutes
The reciting of the poem <i>for three hours/in five minutes'</i>	

b. Prefix: only telic

IZ-recit-ira-(va)-NE-to na stihotvorenie-to *tri chasa/za pet minuti
 IZ-recite-BIASP-(IMPF)-NE-the-NEUT.SG of poem-the *three hours/in five minutes
 The reciting of the poem completely ****for three hours/in five minutes***'

As for the type of prefixes allowed within such nouns, see chapter 3 (§ 3.3.3, ex. (50-51), (56-57)).

I now draw the attention to the Aktionsart properties of the Bulgarian biaspectual nouns.

6.6.2. Aktionsart properties of the Bulgarian biaspectual nouns

In the previous section we have seen that all nominalization types in both English and Bulgarian (standard paradigm) can nominalize activity predicates (see (101)). However, only in Bulgarian we have consistent nominalization of statives and achievements for all nominal types, whereas in English the –ing suffix blocks both aspectual classes (see (102) and (103)). As for the rest of the English nominalizations (–tion and zero-derived), they can be formed on all Aktionsart types.

Interestingly, the Bulgarian biaspectual nominalizations pattern with the Bulgarian standard nouns inasmuch as all Aktionsart classes are successfully nominalized by both [–ira+–NE] (140a) and –tsija (140b).

(140) Aktionsart properties

a. [–ira+–NE] nouns

(i) Activity predicates: yes

retsitirane ‘reciting’, *shofirane* ‘driving’, *tsirkulirane* ‘circulating’, etc.

(ii) Achievement predicates: yes

blokirane ‘blocking’, *provokirane* ‘provoking’, *shokirane* ‘shocking’, *ekzekutirane* ‘executing’, *likvidirane* ‘removal; winding-up’, *amortizirane* ‘sinking’, *provokirane* ‘provoking; provocation’, etc.

(iii) Stative predicates: yes

ekzistirane ‘existence’, *ignorirane* ‘ignoring’, *harakterizirane* ‘characterizing’, *figurirane* ‘figuring’, *asimilirane* ‘intussusception’, etc.

b. –tsija nouns

(i) Activity predicates: yes

tsirkulatsija ‘circulation’, *manifestatsija* ‘manifestation’, *imitatsija* ‘imitation’, etc.

(ii) Achievement predicates: yes

likvidatsija ‘liquidation’, *amortizatsija* ‘amortization’, *provokatsija* ‘provocation’, *notifikatsija* ‘notification’, etc.

(iii) Stative predicates: yes

ekzistentsija ‘existence’, *asimilatsija* ‘assimilation’, *favorizatsija* ‘favoritism’, *intuitsija* ‘intuition’, etc.

What this indicates is that it is the nominalizer –NE, which both Bulgarian paradigms share, that facilitates nominalization of all Aktionsarts and makes nouns behave alike across paradigms. Thus, in contrast to –ing in English which, being related to inner aspect, blocks stative bases (and most achievements), the –NE suffix, inasmuch as it derives as an n-head, imposes no restrictions on its base verbs.

Now I proceed to the third test, the one affecting the argument-taking properties of these nouns.

6.6.3. Argument-structure properties of the Bulgarian biaspectual nouns

Throughout the chapter I have argued that nouns can be divided into three types according to their argument-taking properties. Thus, we have arrived at the following scenario.

(141) Nominalization types in Bulgarian and English

a. Argument-structure (AS) nominals (Grimshaw's 1990 *Complex Event nominals*)

(i) Bulgarian: some process –NE nouns (transitive or perfective)

(ii) English: some –ing nouns

b. Participant-structure (PS) nominals (Grimshaw's 1990 *Simple Event nominals*): all eventive non-AS nouns

(i) eventive –IE and eventive “other-suffix” nouns and some process –NE nouns

(ii) English: some –ing and some eventive –tion nouns

c. Result-Referential (R-R) nominals (Grimshaw's 1990 *Result nominals*): all nouns

(i) the result –NE, result –IE, and result “other-suffix” nouns

(ii) English: result –ing; result –tion and zero-derived nouns

Regarding R-R nouns (141c), we have already mentioned that both [–ira+–NE] and the –tsija nouns always allow for a resultative interpretation. In fact, ***what seems to be restricted across languages (and paradigms) is the possibility for the process (atelic) interpretation of a given nominal, and for its status as a true AS noun*** (141a). I have already proposed that both properties, the possibility of a noun to denote a process and to be a true AS nominal, are syntax-driven, and available only in the presence of higher aspectual structure. Since both the –ing and –NE nominalizers attach high in the aspectual hierarchy of Cinque (1999), which permits them to incorporate all necessary layers and thus fall within the AS nominal type, then we shall expect that the [–ira+–NE] nouns will also behave like them, given that –NE has the same properties across paradigms. This is in fact confirmed by our data.

In order to successfully organize the [–ira+–NE] and the –tsija nouns into the corresponding AS/PS/R-R slots, we follow the already familiar diagnostics from Table 21.

NOMINAL TYPE	AS NOUNS	PS NOUNS	R-R NOUNS
Denotation	atelic processes [–ira+–NE] ^{ing/tion}	telic events, actions [–ira+–NE], –tsija	results, objects –tsija
Internal argument	obligatory	optional	impossible
External argument	agentive reading Causer/Originator	free-interpretation Possessor	default Possessor
‘frequent’	the noun in SG	the noun in PL	impossible

Table 21: AS vs. PS vs. R-R nouns

Since we have already discussed the first test on denotation, we are now left to exploring the behavior of these nouns with respect to the remaining three diagnostics. I exclude purely R-R nouns since we have already listed them in (136c). The data are presented in (142).

(142) AS vs. PS vs. R-R diagnostics

a. Obligatory status of the internal argument

(i) [–ira+–NE] nouns: should be at least contextually accessible → **AS nouns**

remont–ira-NE-to ??(na kola-ta) (ot Ivan)

repair-BIASP-NE-the-NEUT.SG of car-the (by Ivan)

‘The repairing of the car *by Ivan*’

(ii) –tsija nouns: optional internal argument; *by-phrase → **PS nouns**

demonstr-a-TSIJA-ta (na iztochno-to bojno izkustvo) (*ot/na Ivan)

demonstrate-TH.VOW-TSIJA-the-FEM.SG (of Eastern-the martial arts) (*by/of Ivan)

‘The demonstration of the Eastern martial arts **by/of Ivan*’

b. Exclusively agentive reading of the external argument

(i) [–ira+–NE] nouns: yes → AS nouns

1. *retsit–ira-NE-to* ??(*na stihotvorenje-to*) (*ot/*na^{agent} Ivan*)

recite-BIASP-NE-the-NEUT.SG ??(of poem-the) (by/*of^{agent} Ivan)

‘The reciting of the poem *by/*of^{agent} Ivan*’

2. *Ivan-ov-o-to* *retsit–ira-NE-to* *na stihotvorenje-to*

Ivan-GEN-NEUT.SG-the-NEUT.SG recite-BIASP-NE-the-NEUT.SG of poem-the

‘Ivan’s reciting of the poem’ → [Agent]

(ii) –tsija nouns: PS nouns (see (142a: ii) above.

repar-a-TSIJA-ta (*na DNK*) (**ot/*na ucheni-te*)

repair-TH.VOW-TSIJA-the-FEM.SG (of DNA) (*by/*of scientists-the)

‘The DNA repair **by/*of* the scientists’

c. The adjective ‘frequent’

(i) [–ira+–NE] nouns: SG/PL → AS/PS (exc! activity verbs: *PL/SG: (142c: i: 2.2))

1. **SG:** *chesto-to* *restavr–ira-NE* *na hram-a*

frequent-the restore-BIASP-NE of temple-the

‘The frequent restoration of the temple’

2.1. **PL:** *chest-i-te* *restavr–ira-N(Ė)-IJA* *na hram-a*

frequent-PL-the.PL restore-BIASP-NE-PL of temple-the

‘The frequent restorations of the temple’

2.2. **PL:** **chest-i-te* *konsum–ira-N(Ė)-IJA* *na alkohol*

*frequent-PL-the.PL concume-BIASP-NE-PL of alcohol

*‘The frequent consumptions of alcohol’

(ii) –tsija nouns: *SG/PL → telic, PS (exc! activity verbs: 1.2.)

1.1. **SG:** ??(*)*chesta-ta* *demonstr-a-TSIJA* (*na bojno izkustvo*)

frequent-the demonstrate-TH.VOW-TSIJA (of martial arts)

??(*)‘The frequent demonstration of the martial arts’

1.2. **SG:** *chesta-ta* *konsum-a-TSIJA* (*na alkohol*)

frequent-the consume-TH.VOW-TSIJA (of alcohol)

‘The frequent consumption of alcohol’

2. PL: *chest-i-te* *demonstr-a-TSI(†A)-i* (*na bojno izkustvo*)
frequent-PL-the.PL demonstrate-TH.VOW-TSIJA-PL (of martial arts)
‘The frequent demonstrations of the martial arts’

From (142) we can observe that only the [–ira+–NE] nouns can behave like true AS nominals since only they require the projection of the internal argument obligatorily (142a: i) and impose an agentive reading on the external argument (142b: i). As for the –tsija nouns, they do not require the obligatory presence of their internal argument (142a: ii), nor do they impose an obligatory agentive reading on their external argument (142b: ii). ***This is yet another way in which the –tsija and the –tion nouns, on the one hand, and the [–ira+–NE] and –ing nouns, on the other hand, pattern alike.***

As for the modification by ‘frequent’, we can observe that the [–ira+–NE] nouns can appear in either the plural (142c: i: 2.1) or the singular (142c: i: 1), undermining their biaspectual character. The –tsija nouns, on the other hand, typically reject morphological singular (142c: ii: 1.1) and preferably appear in the plural (142c: ii: 2), again indicating their telic, PS status. Hence, all seems to indicate that a contrast can be established between the [–ira+–NE] nouns, which can behave as true AS nouns, and the PS –tsija nouns.

However, one crucial finding remains unmentioned, which is related to the modification by ‘frequent’ (142c). Notice that though there is a tendency for the [–ira+–NE] nouns to appear in both the singular the plural, and for the –tsija nouns to appear only in the plural, when the base is an activity one (‘consume’, ‘recite’, ‘circulate’, ‘drive’, etc.) then the morphological singular becomes obligatory for both the [–ira+–NE] nouns, which reject plural modification (142c: i: 2.2.) and for the –tsija nouns, which allow for the singular (142c: ii: 1.2). ***This leads me to conclude that some of the inner aspectual properties of the base verbs prevail across derivations within the biaspectual paradigm.*** I leave this issue for further research.

A recap is offered in Table 22. Recall that both suffixes can give R-R nominals.

NOMINAL TYPE	AS NOUNS	PS NOUNS	R-R NOUNS
Denotation	atelic processes [–ira+–NE] ^{ing/tion}	telic events, actions [–ira+–NE], –tsija	results, objects –tsija
Internal argument	obligatory [–ira+–NE]	optional [–ira+–NE], –tsija	impossible –tsija
External argument	agentive reading Causer/Originator [–ira+–NE]	free-interpretation Possessor [–ira+–NE], –tsija	default Possessor
‘frequent’	the noun in SG [–ira+–NE] activity –tsija	the noun in PL non-activity [–ira+–NE] & –tsija	impossible

Table 22: AS, PS and R-R biaspectual nouns

TO RECAP, we have seen that there are three morphological nominal types within the biaspectual paradigm of Bulgarian (136). Leaving the biaspectual “other-suffix” nouns aside, we can conclude that all nominalizers can give an R-R noun (141c), though this reading is preferred in the case of the –tsija nouns. In fact, *what seems to be restricted across languages (and paradigms) is the possibility for the process (atelic) interpretation of a given nominal, and for its status as a true AS noun.*

Regarding this issue, we have concluded that only some [–ira+–NE] nouns, some English –ing and some standard Bulgarian –NE nouns are able to denote processes and be atelic (138a); require their internal arguments obligatorily (142a: i); impose an agentive reading on the external argument (142b: i), and appear in the singular when modified by ‘frequent’ (142c: i: 1). In other words, these three morphological types behave as AS nouns. As for the –tsija nouns, they pattern with the PS English –tion and the PS Bulgarian eventive “other-suffix” nouns inasmuch as they tend to denote telic events (138b', c); they do not require the obligatory presence of their internal argument (142a: ii); they do not impose an obligatory agentive reading on their external argument (142b: ii), nor can they appear in morphological singular when modified by ‘frequent’ (142c: ii: 1).

However, though a parallelism becomes obvious between [-ira+–NE], –NE, and –ing nouns, on the one hand, and –tsija, eventive “other-suffix” and –tion nouns, on the other hand, a striking difference remains at the core of the Bulgarian biaspectual [-ira+–NE] nouns, which is not shared by their English and standard Bulgarian counterparts. To exemplify, we have seen that there is nothing to prevent an [-ira+–NE] noun to behave in a PS telic-like manner. Thus, on par with an atelic process denotation, the [-ira+–NE] nouns allow for a telic reading as well (138a) and can take morphological plural when modified by ‘frequent’ (142c: i: 2) on par with morphological singular (142c: i: 1). To explain this I suggest that it is the nominalizer itself, –NE, which both Bulgarian paradigms share, together with the biaspectual character of the underlying verb, which are responsible for the observed behavior of the [-ira+–NE] nouns. Thus, the nominalizer –NE, which cannot change the aspectual properties of the base to which it attaches, is in principle compatible with both the telic and atelic uses of the base in question, as we already observed for standard –NE nouns. Since there is nothing to block either use of the aspectually ambiguous loan base, these nouns remain biaspectual (i.e. telic and atelic at the same time), else, underspecified for aspect. As a consequence, ***the [-ira+–NE] nouns pattern with the English –tion nominals when used in a telic context, and with the process –ing nouns, when used in atelic contexts. In such cases, it is the context which will determine the aspectual behavior of the noun, be it pragmatic or syntactic (e.g. the properties of the internal argument or the presence of a goal P, see the following chapter, § 7.4.3).***

Interestingly, however, the [-ira+–NE] nouns behave in a telic-like manner under prefixation (139b) in contrast to their unprefixated counterparts which remain aspectually ambiguous (139a). This is due to the fact that the biaspectual nouns, since they form part of the lexicon of Bulgarian, do obey some principles of the standard verbal paradigm. Therefore, the presence of prefixation signals a telic derivative, be it a nominal or a verb, in each Bulgarian paradigm. Furthermore, in the same way as standard derivatives, and in contrast to the English –ing nouns, the Bulgarian biaspectual nouns can be formed on all

Aktionsart types, which holds for both the [–ira+–NE] (140a) and –tsija (140b) derivatives, which again unifies both paradigms.

Now I proceed to examining the behavior of the [–ira+–NE] and –tsija nouns with respect to the modifiers of nominal structure.

6.6.4. Modifiers of nominal structure within the Bulgarian biaspectual nouns

Concerning nominal modification, we can observe that only the –tsija nouns behave as prototypical nominals since only they, be they eventive (i) or not (ii) systematically pluralize (143b), accept any kind of indefinite determiners (144b), demonstratives (145b) and numerals (146b). As for the [–ira+–NE] nominalizations, they are rather restrictive when it comes to modifiers of nominal structure since they tend to reject morphological plural and are thus incompatible with plurality in any of its manifestations (143-146: a).

(143) Pluralization within biaspectual nominalizations

a. [–ira+–NE] nouns

(i) Transitive bases: marginal

1. ??(*)*restavr–ira-N(E)-IJA-ta* *na hram-a*
 restore-BIASP-NE-PL-the.PL of temple-the
 ??(*)‘The restorations of the temple’
2. ??*za da* *izbegnete remont–ira-N(E)-IJA-ta* *na porkiv-i*⁸⁷
 ??in order to avoid repair-BIASP-NE-PL-the.PL of roof-s
 ??‘To avoid repairing roofs’

(ii) Activity/unergative bases: not

- **tsirkul–ira-N(E)-IJA-ta* *na vŭzduh-a*
- *circulate-BIASP-NE-PL-the.PL of air-the
- *‘The circulating/circulations of the air’

⁸⁷ Though this example is found on the Internet via Google I still consider it slightly marginal; the example considerably improves with the noun in the singular.

b. –tsija nouns: YES

(i) Transitive bases: yes

restavr-a-TSI(~~JA~~)-i-te (na hram-a)
restore-TH.VOW-TSIJA-PL-the.PL (of temple-the)
‘The restorations of the temple’

(ii) Activity/unergative bases: yes

tsirkul-a-TSI(~~JA~~)-i-te v Severnija ledovid okean se promenjat
circulate-TH.VOW-TSIJA-PL-the.PL in Arctic ocean refl change
‘The circulations in the Arctic Ocean are changing’

From (143) we can observe that only the –tsija nouns systematically allow pluralization (143b), whereas the [–ira+–NE] nouns show preference for the singular (mass) modification due to their atelic character in AS contexts, i.e. when they appear with their internal arguments (143a: i). Interestingly, when the base is unergative then pluralization under nominalization by [–ira+–NE] is totally out (143a: ii) in contrast to the –tsija nouns which accept it (143b: ii). ***Hence, it is the property of the suffix which is responsible for the observed differences, with –NE favoring a process-atelic interpretation in contrast to –tsija which gives a resultative-telic reading. In a sense, the [–ira+–NE] and the –tsija nouns pattern with the English –ing and –tion nominals respectively regarding this criterion.***

As for indefinites (144), all nouns accept singular indefinites (144: i) whereas plural indefinites (144: ii) are disallowed in the same contexts where plural markers are, i.e. under nominalization by [–ira+–NE] (144a: ii) but not under –tsija (144b: ii).

(144) Indefinites within biaspectual nominalizations

a. [–ira+–NE] nouns

(i) SG: yes

edno remont–ira-NE na kola-ta (otnema dva dni)

one repair-BIASP-NE of car-the (takes two days)

‘One repairing of the car (takes two days)’

(ii) PL: not

**(napravih) edn-i remont–ira-N(E)-IJA na kola-ta*

(made.1PS.SG) one-PL repair-BIASP-NE-PL of car-the

*‘I did some repairings of the car’

b. –tsija nouns: YES

(i) SG: yes:

Imashe edna manifest-a-TSIJA na ploshtad-a

was there one manifest-TH.VOW-TSIJA on square-the

‘There was one manifestation on the square’

(ii) PL: yes

edn-i manifest-a-TSI(A)-i

one-PL manifest-TH.VOW-TSIJA-PL

‘some manifestations’

I assume that the fact that singular indefinites are allowed by both nouns is arguably due to the nominal status of these derivatives and to the fact that any noun can appear in the singular by default. What seems restricted, however, is the combination with plural indefinites, since only the true R-R nouns, i.e. the –tsija ones (144b: ii), can be systematically modified by them. The [–ira+–NE] nouns, on the other hand, do not consistently allow pluralization even in the presence of indefinites (144a: ii), which confirms their mass (atelic, process) nature. ***This is yet another way in which the [–ira+–NE] nouns resemble the English –ing nouns, whereas the –tsija nouns pattern with the English –tion nominals.***

Exactly the same situation is observed for demonstratives, where only the –tsija suffix allows for plural demonstratives (145b: ii) in contrast to the [–ira+–NE] nouns which can only appear in the singular (145a: i). This once again indicates the close relation between the –tsija and the –tion nouns, on the one hand, and the [–ira+–NE] and –ing nouns, on the other hand.

(145) Demonstratives within biaspectual nominalizations

a. [–ira+–NE] nouns

(i) SG: yes

tova ekzekut–ira-NE na dvojka-ta (ne ostana nezabeljazano)

this execute-BIASP-NE of pair-the (not remained unnoticed)

‘This executing/execution of the pair (did not remain unnoticed)’

(ii) PL: not

**tez-i ekzekut–ira-N(Ě)-IJA na zatvornitsi*

this-PL execute-BIASP-NE-PL of prisoners

*‘These executings/executions of the prisoners’

b. –tsija nouns

(i) SG: yes:

tazi oper-a-TSIJA (e skŭpa)

this operate-TH.VOW-TSIJA (is expensive)

‘This operation is expensive’

(ii) PL: yes

tez-i oper-a-TSI(ĴA)-i (sa skŭp-i)

this-PL operate-TH.VOW-TSIJA-PL (are expensive-PL)

‘These operations are expensive’

Finally, the same scenario is found with modification by numerals which is systematic only for the –tsija nouns (146b). Since the numeral ‘one’ coincides with the indefinite ‘one’ (*edno*), which we have already exemplified in (144), I will pay attention to the rest of numerals (e.g. ‘five’).

(146) Numerals

a. [–ira+ –NE] nouns: not

**pet blok-ira-N(E)-IJA na sistema-ta*
five block-BIASP-NE-PL of system-the
*‘Five blockings of the system’

b. –tsija nouns: yes

pet oper-a-TSI(ɬA)-i
five operate-TH.VOW-TSIJA-PL
‘five operations’

FROM THIS SECTION WE CAN CONCLUDE that plurality is natural and systematic only for the –tsija nouns even with unergative bases (143b: ii). Thus, only these nouns systematically allow for pluralization (143b), accept plural indefinite pronouns (144b), plural demonstrative pronouns (145b) and plural numerals (146b). The [–ira+–NE] nouns, on the other hand, preferably appear in morphological singular, thus rejecting plurality in any form (under pluralization as in (143a), or under modification by plural indefinites (144a), plural demonstratives (145a) or plural numerals (146a)). **I suggest that the compatibility of the –tsija nouns with plurality is related to their prototypically telic nature which allows the plural operator to scope over them and enter into a relation with their sub-event divisive structure. The plural operator is rejected in the case of the [–ira+–NE] nouns since these nouns are preferably mass, and do not allow divisions.** A recap is offered in Table 23.

	AS NOUNS	PS NOUNS	R-R NOUNS
Pluralization	*-ing; *[-ira+–NE] <u>–NE: YES except unergative bases</u>	YES	YES
Indefinites	SG: ALL NOUNS PL: *-ing; *[-ira+–NE]; <u>–NE: YES except unergative bases</u>	SG/PL	SG/PL
Demonstratives	SG: ALL NOUNS PL: *-ing; *[-ira+–NE]; <u>–NE: YES except unergative bases</u>	SG/PL	SG/PL
Numerals	SG: ALL NOUNS PL: *-ing; *[-ira+–NE]; <u>–NE: YES except unergative bases</u>	SG/PL	SG/PL

Table 23: Modifiers of nominal structure within nouns

From Table 23 we can observe that the Bulgarian biaspectual (AS) [-ira+–NE] nouns systematically pattern with the English AS –ing nouns, but not with the Bulgarian standard AS –NE nouns. This is reflected in the fact that the former (–ing and [-ira+–NE]) reject pluralization under any circumstances whereas the latter (standard –NE nouns) allow for any kind of nominal modification in both the singular and the plural. The only case in which plurality is blocked is when an unergative base is being nominalized. As I have tentatively suggested, this is due to the atelic process (i.e. mass) character of such bases which are *a priori* incompatible with pluralization, the latter being allowed only in the presence of internal divisions.⁸⁸

⁸⁸ Recall from chapter 2, fn. 47, that *divisiveness* is related to telicity (i.e. *quantity*) in Borer (2005b). Telic events denote quantities since they involve quantification over divisions in contrast to atelic events which are homogeneous (see Krifka 1989). I assume that plurality is also related to *quantity* (i.e. telicity) inasmuch as it involves quantification over divisions, too, whereas processes, being atelic, are homogeneous and non-divisive, thus blocking plurality. This explains why telic nouns allow plural markers in contrast to process-denoting nominals.

Bearing this in mind, we will then expect that the biaspectual nominalizations will pattern with English and not with standard Bulgarian as far as the modifiers of verbal structure are concerned. I proceed to this issue in what follows.

6.6.5. Modifiers of verbal structure within the Bulgarian biaspectual nouns

I just briefly summarize the previous criteria regarding verbal modification which we used to distinguish between nominal types.

(147) Nominalization types and verbal-aspectual modification

a. Eventive (AS and PS) vs. non-eventive (R-R) nouns

- (i) Only eventive nouns allow temporal and manner adverbs
- (ii) Only eventive nouns allow aspectual modifiers like ‘for an hour’, ‘in an hour’
- (iii) Only eventive nouns may appear in the singular when modified by aspectual adjectives like ‘frequent’, ‘repeated’; R-R nominals should appear in the plural (e.g. ‘frequent exam*(s)’ vs. ‘frequent examination(*s)’).

b. AS vs. PS nouns:

- (i) **Semantically:** Only AS nouns have exclusively agentive reading of a prenominal possessive phrase or of a postnominal by-phrase. The subject-like DP in PS nouns receives a more abstract possessor-like interpretation.
- (ii) **Syntactically:** Only AS nouns allow agent-oriented modifiers like ‘intentional’, ‘deliberate’ since only these nouns incorporate higher aspectual structure related to the projection of the external argument.

Since we have already exemplified the behavior of the [–ira+–NE] and –tsija nouns with respect to the tests in (147a: ii, iii) and (147b: i) (see (137), (142c) and (142b), respectively), I will skip them now. Thus, we have seen that only the [–ira+–NE] nouns allow for the durative adverbial ‘for X time’ since only they can be process-denoting (137a, b) in contrast to the –tsija nouns which do not (137b’, c); only the [–ira+–NE] nouns but not the –tsija nouns may appear in the singular when modified by ‘frequent’ (142c), again related to their process (mass) interpretation, and only the [–ira+–NE] nouns force an

(149) Agent-oriented adverbials within biaspectual nominalizations

a. [–ira+–NE]: yes

- (i) *oper–ira-NE-to* *na patsient-a umishleno*
operate-BIASP-NE-the.NEUT.SG of patient-the intentionally
‘The operating of the patient intentionally’
- (ii) *demonstr–ira-NE-to* *na chuvstva umishleno*
demonstrate-BIASP-NE-the.NEUT.SG of feelings intentionally
‘The demonstration of feelings *intentionally*’

b. –tsija: not

- (i) *oper-a-TSIJA-ta* *na patsient-a *umishleno*
operate-TH.VOW-TSIJA-the-FEM.SG of patient-the *intentionally
‘The operation of the patient **intentionally*’
[cf. *bŭrzata operatsija* ‘the quick.ADJ operation’]
- (ii) *demonstr-a-TSIJA-ta* *na chuvstva *(??)umishleno*
demonstrate- TH.VOW-TSIJA-the-FEM.SG of feelings *(??)intentionally
‘The demonstration of feelings **(??)intentionally*’

TO SUM UP, in this section we have observed that the Bulgarian biaspectual nouns, in the same way as the English and the standard Bulgarian nominalizations, present a three-way distinction regarding argument structure and interpretation: process-denoting AS [–ira+–NE] nouns, eventive and telic PS –tsija nouns, and telic R-R –tsija nouns. This division is further reinforced by the data on verbal modification where only the [–ira+–NE] nouns systematically appear in the singular when modified by ‘frequent’; take durative adverbials like ‘for X time’; take temporal and manner adverbs; force an agentive reading of their external arguments and can be modified by agentive adverbials. In other words, these nouns, in the same way as the English –ing and the standard Bulgarian –NE nouns, resemble verbs to a great extent. Under a syntax-driven approach to argument structure and interpretation, it is the incorporation of higher aspectual layers inside these nouns which accounts for their verbal behavior. **Thus, nouns incorporating process layers allow for a process interpretation with complex argument structure (AS nouns) in contrast to nominalizations of lower verbal-aspectual**

structure, which refer to events, preferably telic, rather than processes (PS nouns) and in contrast to root nominalizations, which lack any verbal layer within their derivational history (R-R nouns). As I have proposed, this is further facilitated by the high attachment site of the nominalizer in question (e.g. –NE and –ing, which select for a process layer, versus –tion, “other-suffix” and –tsija, which incorporate/select for lower verbal-aspectual nodes, versus gender suffixes and zero nominalizers which select for roots). Depending on the structure underlying a nominal, verbal modification is either blocked or not. *Arguably, this is cross-linguistically invariable.*

However, although all of the final derivatives belong to the nominal domain, there are cross-linguistic differences when it comes to modifiers of nominal structure. To exemplify, we have concluded that a distinction should be made between English and biaspectual Bulgarian, on the one hand, and standard Bulgarian, on the other hand, where only the latter systematically allow for pluralization in all its manifestations (e.g. plural indefinites, plural demonstratives, and plural numerals). The process-denoting AS –ing and [–ira+–NE] nouns reject morphological plural in contrast to standard –NE nouns which do not. *This is prima facie unexpected bearing in mind that the main difference between English and standard Bulgarian regarding nominal modification was explained by the fact that –ing is an aspectual process head (Asp_P^o), and not an n-head like –NE, which accounts for the lack of plurality within –ing derivations and its presence within –NE nouns (recall that processes correspond to mass nouns and do not pluralize). However, the nominalizer –NE belongs to both paradigms of Bulgarian so it should be derived as an n-head in both of them, thus facilitating pluralization within its biaspectual derivatives, contrary to fact. I leave this finding on intra-variation for further investigation.* Crucially, though, an unergative base under nominalization by –NE can

never be pluralized in neither paradigm of Bulgarian, which indicates the importance of the base, too, apart from that of the nominalizer.

Finally, in the same way as standard Bulgarian, and in contrast to English, biaspectual Bulgarian can take any Aktionsart base and nominalize it; as we have proposed, this has to do with the –NE nominalizing head which both paradigms share and which does not in principle block neither statives nor achievements as its input, as is the case for the –ing nominalizer.

I close this chapter by some minor observations.

6.7. Some concluding remarks

TO CONCLUDE, in this chapter we have reviewed some of the previous analyses on nominalizations in both English and Bulgarian. We have distinguished **three morphological nominalization types in each language**: (i) –NE nouns, “other-suffix” nouns, and Voice –IE nouns in standard Bulgarian; (ii) –ing, –tion and zero-derived nouns in English, and (iii) [–ira+–NE], –tsija and “other-suffix” nouns in biaspectual Bulgarian. Regarding denotation, we have observed that all languages give rise to **three semantic classes: process, eventive and referential (object-denoting) nouns**. Regarding **argument-structure, again a three-way distinction** can be observed: (i) nouns with obligatory internal arguments (AS nouns); (ii) nouns with optional internal arguments (PS nouns), and (iii) nouns without argument structure (R-R nouns). **IN MORE GENERAL LINES**, the English –ing nouns pattern with the Bulgarian –NE nouns from both paradigms; the –tion nouns behave like the standard eventive “other-suffix” nouns and the biaspectual –tsija nouns, whereas the zero-derived nouns in English share properties with the root nominalizations in Bulgarian. As we have noted, the **semantic and syntactic properties which nominalizations share across languages and paradigms are due to a syntactic similarity**. Thus, I have claimed that eventivity arises in the presence of lower verbalizing-aspectual structure (PS nouns), a process interpretation becomes available in

the presence of higher aspectual structure (Asp_P), whereas the absence of any verbalizing structure gives rise to object-denoting (result) nominals. Finally, only in the presence of higher aspectual layers is a noun true argument-taker, requiring its internal arguments obligatorily.

Furthermore, we have also seen that apart from shared functional structure, **THE STATUS OF A GIVEN NOMINALIZER** is also crucial for the final characteristics of a given nominal. Regarding this issue, we have observed an underlying difference between English and Bulgarian. To exemplify, nominalizers project as n-heads in Bulgarian, due to its rich system of gender marking (provided that gender marking is a nominalizing device cross-linguistically), in contrast to English which lacks overt gender morphology and consequently lacks overt n-heads. Hence, the –ing and –tion nominalizers first merge as some aspectual head (Asp_P and Asp_Q) before they incorporate into the universally available nominalizing projection (nP) by virtue of their inherent feature [NOM]. Importantly, this state of affairs explains some of the cross-linguistic differences found among these languages. To give an example, –ing, being an Asp_P head, is directly related to the inner aspectual properties of its underlying base, thus rejecting statives and most achievement predicates as its input in contrast to –NE, which poses no restrictions on its bases inasmuch as it merges as an n-head.

Furthermore, the lack of fully developed gender system in English is also related to the presence of zero alternates in this language (e.g. [_V kiss]/[_N kiss]), which is never the case for languages like Bulgarian where category membership is overtly manifested (e.g. theme vowels verbalize whereas gender markers nominalize). As a consequence, ***category membership is morphologically driven in Bulgarian but syntactically determined in English. As I have proposed, a language will always try to make use of the overt morphological material it has in its lexicon, and in the absence of enough morphological means to determine category label, it makes use of the functional structure and its properties to achieve the same goal. Put differently, in the***

absence of overt gender morphology, English makes use of syntax to achieve the same goals.

Crucially, this state of affairs reminds us of the sharp contrast between verbal bases in standard Bulgarian, which are either perfective-telic or imperfective-atelic in contrast to English and biaspectual bases, which are aspectually ambiguous. Again, a lack of overt (morphological) 'markers' is at play, where overt 'markers' in the verbal domain correspond to direct range assigners to Asp^o which mark inner aspect, whereas overt 'markers' (else, categorizers) in the nominal domain are gender nominalizers which provide roots with a nominal status. In the absence of overt markers/categorizers, it is the properties of the functional structure which determine inner aspect or category membership. Thus, ***in the absence of morphological categorizers, a speaker/learner must syntactically compute the functional environment in order to interpret inner aspect.*** The morphological choice is transparent and therefore less effort is needed on behalf of the speaker to acquire such a morphologically-driven system for marking inner aspect. This explains why Slavic children comprehend aspect earlier than English children (Slabakova 2005 and references therein).

In this respect, most studies on the comprehension of aspect (Weist *et al.* 1991; Vinnitskaya and Wexler 2001; Stoll 1998; Kazanina and Phillips 2003, van Hout, 2005, cited in Slabakova 2005) show that three-year-old Russian learners know the aspectual semantics of morphologically perfective transitive verbs and consistently associate perfective aspect with completion (Stoll 1998, Vinnitskaya and Wexler 2001, Weist *et al.* 1991). Viewed from the perspective of this thesis, this implies that morphological markers of perfectivity and hence telicity are easily acquired and correctly applied from an early age.⁸⁹

⁸⁹ Although children behave target-like on perfectives, they have problems comprehending the imperfective aspect. As van Hout (2003) observes, this has to do with the fact that although children have correctly acquired the aspectual semantics of both the perfective and imperfective early in age (2;6), they have not yet acquired the interface rules with discourse and cannot therefore fully integrate aspect in a discourse structure. The lack of integration of syntax and semantics in the interface with discourse is supported by various studies such as Avrutin & Coopmans (2000), Krämer (2000) (cited in van Hout 2003). In this respect, note that the imperfective aspect has a variety of possible interpretations: ongoing, incomplete and habitual. Regarding this

Finally, ***the interaction between native and loan morphology within a language and across languages suggests that this is not at all a minor issue.***

A parallelism is easily established between loan morphology in Bulgarian and loan morphology in English where loan categorizer show similar properties (e.g. the loan –tion and –tsija nominalizers tend to give R-R nouns or nouns ambiguous between R-R and PS nominals, but not true AS nouns).

However, once ***loan versus native categorizers are examined within a language we find striking differences, resembling the ones found across languages:*** verbs in the loan lexicon of Bulgarian are biaspectual (underspecified or doubly specified for aspect) as they are in English, in contrast to native verbs in Bulgarian which are never ambiguous but rather determine inner aspect on morphological grounds (i.e. with respect to (im)perfectivity). ***In other words, intra-linguistic variation may be (at least partially) attributed to the properties of loan versus native morphology and their corresponding principles of category assignment.***

Within the nominal domain, it will also be interesting to compare the native “other-suffix” nouns with the loan “other-suffix” nouns (135b: ii, c: ii) in order ***to see how native and loan morphology interact with one another.*** A deeper study on the behavior of the semi-loan [–ira+–NE] and the native –NE nouns, on the one hand, and the Bulgarian loan –tsija versus the English loan –tion/ –ment and kin nouns, on the other hand, is also needed in order to better understand the role of borrowings and the division of a lexicon between native stock obeying native principles of computation and non-native stock. Table 24 offers our main findings.

issue, it was shown that children relate imperfective aspect to both ongoing situations (Weist et al. 1991, Vinnitskaya and Wexler 2001) and completed ones (Kazanina and Philips 2003 in comprehension, Vinnitskaya and Wexler 2001 in production, cited in Slabakova 2005), but not to incomplete ones.

NOMINAL TYPE	AS NOUNS	PS NOUNS	R-R NOUNS
Denotation	atelic processes -ing, -NE; [-ira+-NE]	telic events, actions -tion; -ing, -NE; "other-suffix"; [-ira+-NE], -tsija	results, objects all nominalizers
Internal argument	obligatory some: -ing, -NE & [-ira+-NE]	optional -tion; -ing, "other-suffix"; -NE; [-ira+-NE], -tsija	impossible
External argument	agentive reading Some: -ing, -NE & [-ira+-NE]	free-interpretation Possessor -tion; -ing, "other-suffix"; -NE; [-ira+-NE], -tsija	default Possessor
Pluralization	*-ing, <u>-NE: YES</u> ; *[-ira+-NE];	YES	YES
Indefinites	SG: ALL NOUNS PL: *-ing, *[-ira+-NE]; -NE ^{PF} ; <u>±-NE^{IMPF}</u>	SG/PL	SG/PL
Demonstratives	SG: ALL NOUNS PL: *-ing, *[-ira+-NE]; -NE ^{PF} ; <u>±-NE^{IMPF}</u>	SG/PL	SG/PL
Numerals	SG: ALL NOUNS PL: *-ing, *[-ira+-NE]; -NE ^{PF} ; <u>±-NE^{IMPF}</u>	SG/PL	SG/PL
Manner adverbs	YES	English: SOME; STND BULG: FEW	NOT
Temporal adverbs	YES	SOME	NOT
'In X time'	English: *-ing but for PRCL STND BULG: -NE ^{PF} ; <u>±-NE^{IMPF}</u> BIASP BULG: [-ira+-NE]	English: YES; STND BULG: ??-NE ^{PF} ; <u>±-NE^{IMPF}</u> BIASP BULG: [-ira+-NE]; -tsija	NOT
'For X time'	English: -ing but for PRCL STND BULG: -NE ^{IMPF} ; <u>±-NE^{PF}</u> BIASP BULG: [-ira+-NE]	ENGLISH: <u>-ing/*-tion</u> STND BULG: NOT BIASP BULG: [-ira+-NE]; *-tsija	NOT
'frequent'	the noun in SG: -ing, -NE; [-ira+-NE]; the noun in PL: *-ing, *-NE ^{IMPF} ; -NE ^{PF}	the noun in PL: -tion; *-ing, "other-suffix"; -NE; the noun in SG: unergative: [-ira+-NE] & -tsija	impossible
Agentive ADVL	YES: -ing, -NE; [-ira+-NE]	ENGLISH: YES; STND BULG: NOT BIASP BULG: [-ira+-NE]; *-tsija	impossible

Table 24: A recap on chapter 6

From Table 24 we can observe that **R-R NOUNS BEHAVE ALIKE WITH RESPECT TO ALL TESTS ACROSS BOTH LANGUAGES AND PARADIGMS**. Thus, due to the absence of the necessary verbalizing functional-aspectual structure, these nouns denote objects or results and **do not allow**: (i) temporal and manner adverbs; (ii) aspectual modifiers like ‘in/for X time’; (iii) agent-oriented adverbials, or (iv) modification by ‘frequent’. As for modifiers of nominal structure, R-R nouns can appear in the plural.

REGARDING EVENTIVE NOMINALS, we can observe that **AS NOUNS SHARE MANY PROPERTIES ACROSS LANGUAGES AND PARADIGMS**, too. Thus, in both languages only the true AS nouns, i.e. some English –ing, the standard Bulgarian –NE^{STND}, and the biaspectual –NE^{BIASP} (i) may denote processes and be atelic; (ii) allow temporal and manner adverbs, (iii) accept agent-oriented adverbials; (iv) have obligatory internal arguments, and (v) cannot appear in the plural, an exception being the standard –NE nouns built on perfective bases.

AS FOR THE PS NOUNS, THEIR BEHAVIOR IS MUCH MORE VARIABLE where these nouns (i) tend to denote telic events; (ii) have optional internal arguments; (iii) marginally allow adverbial modification, and (iv) may appear in the plural but for the PS –ing and the PS biaspectual nouns built on unergative bases. Interestingly, English PS nouns sometimes allow for agentive adverbials like the Bulgarian biaspectual –NE nouns and in contrast to standard –NE nouns. In other words, this group is rather unstable and permits for more variation regarding the behavior of the nouns.

On observing the behavior of these three kinds of systems (i.e. the English, the Bulgarian biaspectual and the Bulgarian standard paradigms) we may note that the standard Bulgarian paradigm behaves differently with respect to the English and the biaspectual Bulgarian paradigm. Thus, the AS nouns of English and biaspectual Bulgarian appear in the singular with ‘frequent’ and reject the plural. However, this is not the **case for the standard Bulgarian where the availability of the modifiers depends on the morphological (im)perfectivity of the base**, among few other intervening factors (e.g. the feature specification of –va). In other words, **the morphological information of the derivative dominates both verbal (e.g.**

modification by ‘frequent’) and nominal modification (e.g. only nouns built on perfective bases take morphological plural).

A related issue is the data obtained from modification by THE TIME-SPAN AND THE DURATIVE ADVERBIALS, which show a three-way contrast: (i) **English –ing nouns** tend to be atelic, except for particle-incorporating nouns; (ii) **standard –NE nouns** obey the restrictions imposed on them by the standard, morphologically-dominated system of the language where perfective bases, being telic, reject the ‘for’-adverbial in contrast to primary imperfective (atelic) bases which allow it, and (iii) **bare, i.e. unprefixes, biaspectual –NE nouns** always allow for both ‘in/for’-adverbials, since their underlying base is biaspectual, else, underspecified for (a)telicity. Interestingly, ***when a biaspectual –NE noun is prefixed, it becomes telic in the same way as standard prefixed nouns, which suggests that a transition from the biaspectual to the standard paradigm is taking place where the final derivative will consequently obey the principles of the latter. Notwithstanding, this is language specific, else, paradigm dependent.***

However, what is invariable among languages and paradigms is the observation that the incorporation of specific syntactic structure may influence the semantic and syntactic behavior of a given derivative. As we have seen, the incorporation of higher aspectual layers results in a process-denoting noun with an agentive external argument (e.g. AS nominals); the incorporation of lower verbal structure results in event-denoting noun, usually telic, with optional internal arguments and free-interpretation subject (e.g. PS nominals), whereas the lack of any verbal-aspectual layer gives an object-denoting noun with no argument structure at all (e.g. R-R nominals). In other words, ***the prima facie chaotic behavior of the nominalization types resides in the specific way in which a whole system (e.g. the Bulgarian standard paradigm), or some particular group of elements (e.g. the loan verbs in Bulgarian in general; else, the whole group of verbs from the Bulgarian***

biaspectual paradigm), or even some individual functional element (e.g. –ing in English) intervene when deriving a particular item.

Since I have continuously pointed at the importance of syntax for determining the particular way in which a particular nominalization type behaves, I now dedicate the following chapter to my syntactic explanation of the data discussed so far.

CHAPTER 7: FUNCTIONAL STRUCTURE

WITHIN NOMINALS

This chapter offers a syntactic representation of the English and Bulgarian nominalization types. As we have already shown in the previous chapter, interpretation is syntactically driven, as is argument structure and modification (e.g. modifiers of verbal structure relate to the presence of an underlying verbal-aspectual layer whereas modifiers of nominal structure relate to the presence of some nominal node). From the interaction of nominalizing suffixes and aspectual markers (e.g. prefixes, theme vowels, imperfectivizing suffixes) we have concluded that it is aspect, a syntactic phenomenon, which is the driving force of argument structure building not only within the verbal domain, but within the nominal domain as well (see Borer 1999, 2003, 2005b). In this chapter we will show the way aspect is syntactically constructed in each morphological nominalization type together with the consequences this may have on interpretation, argument structure and syntactic behavior.

Furthermore, I will show that whatever **MECHANISMS ARE USED FOR STRUCTURE BUILDING** within the verbal domain will be available within the nominal domain as well. To exemplify, the correct sequence of affixes is obtained by the syntactic mechanism of head movement in both domains. More importantly, the determination of the aspectual properties of a given derivation is further calculated on the basis of **THE DOMAIN OF ASPECTUAL INTERPRETATION**, a syntactic space determined by the functional projection of AspP (see MacDonald 2008b). Whatever techniques are applicable while calculating the inner aspect of a predicate will be also available for calculating the aspectual properties of nominals. Finally, the whole array of functional projections attested within the verbal domain of a given language, inasmuch as it is universally available, will be also available within the nominal domain (needless to say, some projections will also be universally missing from nouns, TP being one such candidate).

The chapter is organized as follows. In section 7.1 I briefly mention some of the general assumptions underlying this work after which the syntactic representation of the English deverbal nouns is offered (§ 7.2) together with the syntax of the Bulgarian standard (§ 7.3) and biaspectual (§ 7.4) nominalizations. Finally, some remarks regarding language variation are provided (§ 7.5).

7.1. Basic assumptions

We have already seen in chapter 4 (§ 4.3) that English predicates and the Bulgarian biaspectual predicates pattern alike with respect to inner aspect (e.g. the object-to-event-mapping property and the telicizing role of goal Ps). We have also seen that within the nominal domain, the nominalization types of these two systems also pattern alike with respect to aspect (chapter 6, § 6.6). Hence, there is some shared property which both systems possess and which governs the behavior of their verbal and nominal elements, the minor differences being due to some specific property of certain individual functional elements (e.g. –ing in English). As I will suggest, the explanation to this is syntax-driven.

Since I have already specified the syntactic mechanism used for the derivation of functional structure (chapter 5), I will just list some relevant points which we need to bear in mind (1).

(1) General assumption

- a. Syntax-driven word-formation approach: roots enter syntax and are assigned category by the functional structure that dominates them (Borer 1999, Marantz 1997, Alexiadou 2001). Recall that sometimes a (verbal) stem may enter at the syntactic component (e.g. in the presence of an idiosyncratic prefix). This explains the close relationship between syntactic structure and morphological structure where a morphological complex of the form C-B-A often indicates the existence of an underlying syntactic structure of the form $[_{AP} A [_{BP} B [_{CP} C]]]$ (see Svenonius 2004a, Baker 1985, 1988, Hale and Marantz 1993, Cinque 1999, and Julien 2002).
- b. Nominalizations may incorporate both Aspect and Voice projections (Alexiadou 2001, Ferrari 2005). This is morphologically manifested in Bulgarian.

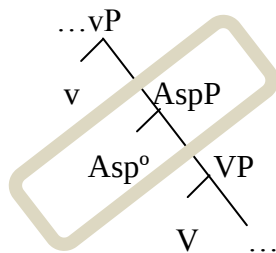
- c. Verbalizing structure licenses event interpretation (Borer 1999); higher aspectual structure licenses process denotation and higher verbal modifiers (e.g. agent-oriented adverbials).
- d. Only in the presence of transitive aspectual structure is argument structure possible both within a noun and within a verb (Borer 1999, Alexiadou 2001 et seq.).
- e. Only nouns derived from phonologically attested verbs (or adjectives), which additionally bear a morpho-phonological relationship with them, can be argument-taking, a property which they inherit from their corresponding bases (Borer 2003: 49).¹
- f. Most of the layers found within the verbal domain may also be present within the nominal domain (arguably excluding Tense node).²
- g. The calculation of the aspectual properties of a given derivative depends on a universally available functional projection, AspP, located between vP and VP, whose head represents an open value in need of range assignment. Since this projection determines a domain of aspectual interpretation (2), i.e. a syntactic space in which an element must be merged in order to be able to contribute to the aspectual interpretation of the predicate, then internal arguments, being within this domain, may contribute to aspect (e.g. this is the object-to-event mapping property) (MacDonald 2008b). This projection is overtly realized in the case of the Bulgarian biaspectuals (see (31b)).

¹ Such a claim will further support the presence of phonological information in the roots (else, stems). To exemplify, *transformation*, which is an argument-taking noun, shows an explicit morphological and phonological derivational relation to the verb *transform*, which enables it to take arguments. Though *metamorphosis*, *shift*, *turn*, etc. may share denotation with *transformation*, only the latter can be argument-taking, implying that phonological faithfulness to the verb base *transform* should be assured, thus preventing a possible derivation of *shift* from *transform* (Borer 2003: 49-50).

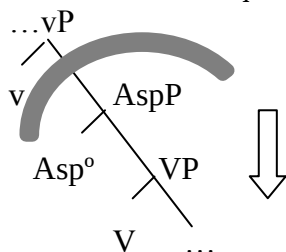
² Since the external argument within a nominalization is always optional in contrast to its obligatory presence within the verbal domain, many authors assume that the Nominative assigning node, TP/IP is absent from nouns. This will further explain the fact that the external argument of a nominal receives Genitive case (available nP-internally), but never Nominative, or is introduced in the form of a by-phrase adjoining to nP (see Alexiadou 2001).

(2) Domains of aspectual interpretation

a. Minimal domain: [-q]NP internal argument; Domain = AspP alone



b. Maximal domain: [+q]NP internal argument; Domain = everything dominated by Asp



We have seen that language variation between the Bulgarian standard eventive verbs, on the one hand, and the Bulgarian biaspectual eventive predicates and the English eventive predicates, on the other hand, is explained by the fact that the former makes use of the minimal domain (2a) whereas the latter calculate aspect within the extended domain (2b) (see chapter 5). As we will see, the same mechanism is transferred to the nominal domain as well.

I start the discussion with the syntax of the English nominalization types.

7.2. The syntax of English deverbal nominals

First, we should bear in mind that the English nominalizations can be classified in two ways: (i) on morphological grounds according to the spell-out of the nominalizing suffix (e.g. -ing, -tion, none/zero), and (ii) according to the argument-taking properties of the nouns where we distinguish between Argument-Supporting (Argument-Structure or Participant-Structure) and Result-Referential nouns. For ease of exposition, and in order to see how morphological structure may instruct into syntactic structure (else, reflects

syntactic structure à la Baker 1985), I present a syntactic account of the English nouns in this twofold way.

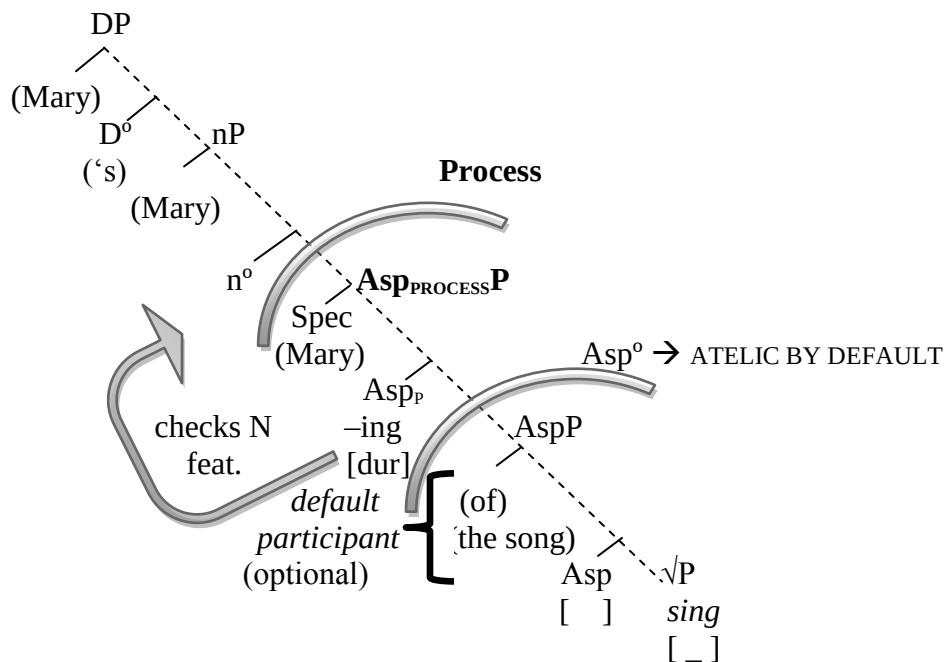
Let us start with the morphologically-based distinction.

7.2.1. On morphological grounds: –ing, –tion, and zero-derived nominals

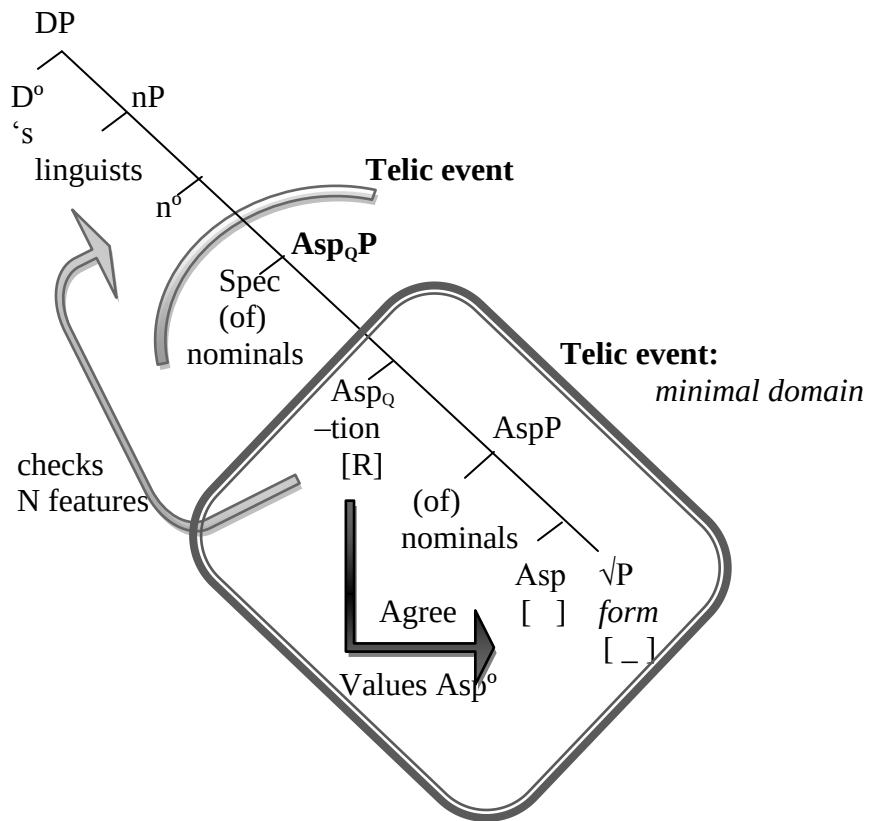
Slightly modifying Borer's (1999) analysis of the three morphological nominalization types in English, I arrive at the following syntactic derivation for the –ing (3a), –tion (3b), and zero-derived (3c) nouns.

(3) Aspectual differences: –ing vs. –tion (Borer 1999: 5)

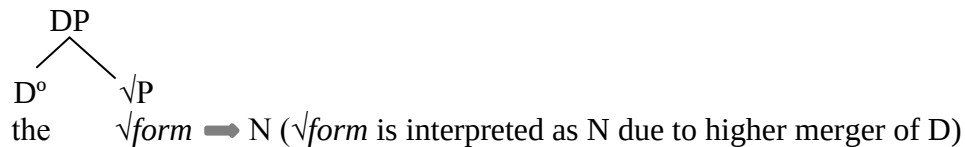
a. –ing nominals: Mary's *singing of the song*



b. -tion nominals: *the linguists' formation of the nominals*



c. Ø-derived nominals: no functional event structure: *the form*



I follow Borer (1999) and assume that the nominalizer -ing heads its own functional projection, Aspect_{PROCESS} Phrase (Asp_P), and checks N(ominal) features (3a), whereas the -tion suffix merges as the head of Aspect_{QUANTITY} Phrase (Asp_QP) and checks N features, too. We have already mentioned that Asp_P introduces a process, not an argument (recall that the process need not originate with an argument, e.g. *it rained*), which accounts for the available process denotation with the -ing nominalizations. Moreover, the DP located in the specifier of Asp_P is always interpreted as the *originator* of that process. Evidence for this comes from the nominalization of statives under -ing which never allow for a stative interpretation but only for an originator one (e.g. *John's loving of Mary*).

AS A GENERAL RULE, THE –ING NOUNS ARE ATELIC since the telicizing projection Asp_QP is absent from the structure. Recall that the aspectual interpretation of a derivative depends on the feature specification of Asp^o , which is always in need of valuation. In the absence of direct range assigners to the open value heading Asp^o (e.g. a telicizing particle which will project as Asp_Q^o), Asp^o remains aspectually underspecified (e.g. $Asp_{[]}$ in (3a)). Hence, the inner aspect of the final derivative cannot be calculated within the minimal domain of inner aspect (2a) because Asp^o is not assigned direct range and remains underspecified for (a)telicity. In such cases, the domain of inner aspect extends (2b) so the nature of the internal argument may influence the aspectual properties of the final derivative (e.g. *the drinking of beer for/*in an hour* vs. *the drinking of a bottle of beer #for/in ten minutes*). Note also that in any –ing derivative $Asp_P P$, which is required by the merger of the –ing suffix, adds its process semantics upon the whole event constructed under its scope. Since this event is aspectually neutral (meaning ‘atelic’ by default), the final derivative refers to an atelic process, imposed on it by the [duration] (else, [process]) feature of the Asp_P node.

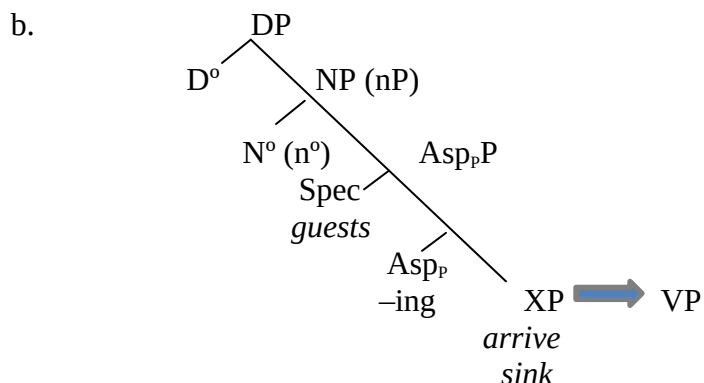
As for the derivation of –ing as a process-related head, we find supporting evidence by the data in (4) and (5), taken from Borer (1999: 10).

- (4) a. **the arriving of the train*
 b. *??The shuttering of the glass* (intransitive reading)
- (5) a. *The sinking of the ship* (intransitive reading)
 b. *The falling of the leaves*

Since achievement predicates (4) do not allow reference to a process, but rather require a subject-of-result(/endstate/change) interpretation, then (4) is ungrammatical because the projection of Asp_QP is required (note that ‘the arrival of the train’ is fine since –al, in the same way as –tion, projects the required Asp_Q). This does not hold for (5) because the predicates in (5) are compatible with a process interpretation. The same holds for ‘the arriving of the guests’ (6a), which, being built upon a telic predicate (e.g. *arrive*) but consequently merged within a process structure (e.g. $Asp_P P$), receives an iterative

interpretation. Borer's (1999) syntactic representation is offered in (6b). Note that I will modify this syntactic analysis in the following subsection based on the mechanism applied in the syntactic representation of the OTEM property (see § 7.2.3).

(6) a. *The arriving of the guests* (see Borer 1999: 10)



REGARDING THE NOMINALIZER –TION (3b), I assume together with Borer (2005b) that it projects an endstate, syntactically realized as Asp_Q (else, Asp_E in Borer 1999). Under my analysis here, this is facilitated by the inherent feature [R(esult)], which the suffix bears.³ Thus, the DP which lands in the specifier of Asp_QP is interpreted as the *subject-of-result* (else, *subject of endstate/change/quantity*), an interpretation only available in the presence of the telic Asp_Q node. Since the Asp_Q node is overtly realized by the suffix –tion, then it is in principles able to mark the event as telic, by valuing the head of AspP, Asp_[], which is aspectually underspecified (shown by the empty brackets [] that refers to the open value heading this projection), and therefore in need of valuation. However, the [R] feature on a nominalizing suffix is not a prototypical range assigner to Asp°, as is the English particle. Hence, the nature of the internal argument, if present, may influence the final interpretation of the noun, thus giving rise to the object-to-event mapping property (e.g. *the calculation of parameters*_[-Q] *for/*in two hours* vs. *the calculation of three parameters*_[+Q] **for/in two hours*). Note, though, that in the majority of the cases, and in the absence of a [-q] internal argument, the –tion nominals are telic and denote results: *the explanation of the problem*

³ Note that we could equally opt for a [T(elic)] feature on the suffix, but since the suffix is a nominalizer, and since [T] is a property of verbs, not nouns, I have opted for a [Result] feature which would be, within the nominal domain, the equivalent of [Telic] within the verbal domain.

**for three hours/in two minutes*. I assume that this is facilitated by the overt morpho-phonological realization of the Asp_Q node via the suffix *-tion* which, in the general case, assigns range to $Asp_{[-Q]}$ marking the whole event denoted by the nominal as telic.

However, there is a limited number of cases where a *-tion* noun allows for the *for*-adverbial even in the absence of a $[-q]$ internal argument: *the exploration of the desert for three years/*in three days*. I assume that in cases like this it is our world knowledge of the base verb that allows for a process interpretation of the derived noun (see chapter 6, § 6.5.1.3).

Evidence for the derivation of *-tion* as head of Asp_QP comes from its incompatibility with a particle (**the formation up of organizations* vs. *the forming and breaking up of organizations*). I tentatively suggest that this is due to the fact that the particle, which also heads Asp_QP , and the *-tion* nominalizer compete for the same position. In this respect, observe the compatibility of an *-ing* noun with a particle: *the writing up of the letter*. This is so because the head of Asp_QP is left unrealized within an *-ing* nominal, so the particle can merge as its head, assign range to it, value $Asp_{[-Q]}$ via an Agree relation and mark it as telic, thus giving a telic event: ‘the writing up of the letter in/*for three hours’.

AS FOR THE ZERO-DERIVED NOUNS (3c), they are formed by the merger of the root (e.g. *kiss*) within a nominal (Determiner-dominated) structure (recall that zero-alternates exist in English due to the lack of overt gender nominalizers; hence, it is the structure which determines whether a root will be interpreted as a noun or verb).

Finally, the correct sequence of suffixes is obtained by head-to-head movement: *form* in (3) merges copies through the successive functional heads, *-ing* in (3a) and *-tion* in (3b), from which *forming* and *formation* emerge, both preserving phonological faithfulness to their base, together with a morphological relation to it.

Now let us turn to the distinction based on argument structure.

7.2.2. Regarding arguments structure: True Argument-Structure vs. Participant-Structure vs. Result-Referential nominals

Recall that true A(rgument)S(tructure) nouns require the presence of their internal arguments obligatorily, i.e. they are derived from an obligatory transitive structure (7a) whereas P(articipant)S(tructure) nouns may or may not overtly realize their internal arguments (7b). As for the R(esult)-R(eferential) nouns, they do not have argument structure at all, and never allow for the projection of internal arguments (7c).

- (7) a. AS nouns: (i) –ing nouns: 'the killing *(of the wrong man)'; 'the stealing *(of gold)',
'the causing *(of pain)', 'the writing up *(of the letter)'
(ii) **NB: few –tion nouns**: 'the distortion *(of new information)', 'the
manipulation *(of images)',
(iii) **NB: some unaccusative –al nouns**: 'the deprival *(of liberty)', 'the
arrival *(of a new era)'
- b. PS nouns: (i) –ing nouns: 'the singing (of the song)', 'the drinking (of beer)'
(ii) –tion nouns: 'the destruction (of the city)', 'the invasion (of Norway)',
'the investigation (of crimes)'
- c. R-R nouns: (i) zero-derived: 'a tender kiss', 'a wide smile', 'the first step';
(ii) suffixed nouns: 'a nice drawing', 'a Chinese building', 'a corrupt
investigation', 'a fake construction', 'an international organization'

AN OBSERVATION IS IN ORDER HERE. We have already noted in chapter 6 (§ 6.5.3) that the true AS nouns in English are the particle-incorporating –ing nominals and some causative –ing derivatives (7a: i). The rest of the –ing nouns fall within either the PS or the R-R type. As for the –tion nouns, we have seen that they are always ambiguous between a PS and an R-R reading (see (110) in chapter 6). Finally, regarding the R-R group we have seen that all nominalizers may fall within it (7c). ***However, we have also noted few exceptional cases of some –tion and –al nominals which behave like true AS nouns inasmuch as they require their internal arguments***

obligatory (7a: ii, iii). I tentatively suggest that this has an exceptional character since these nouns tend to have optional internal arguments as in (8).

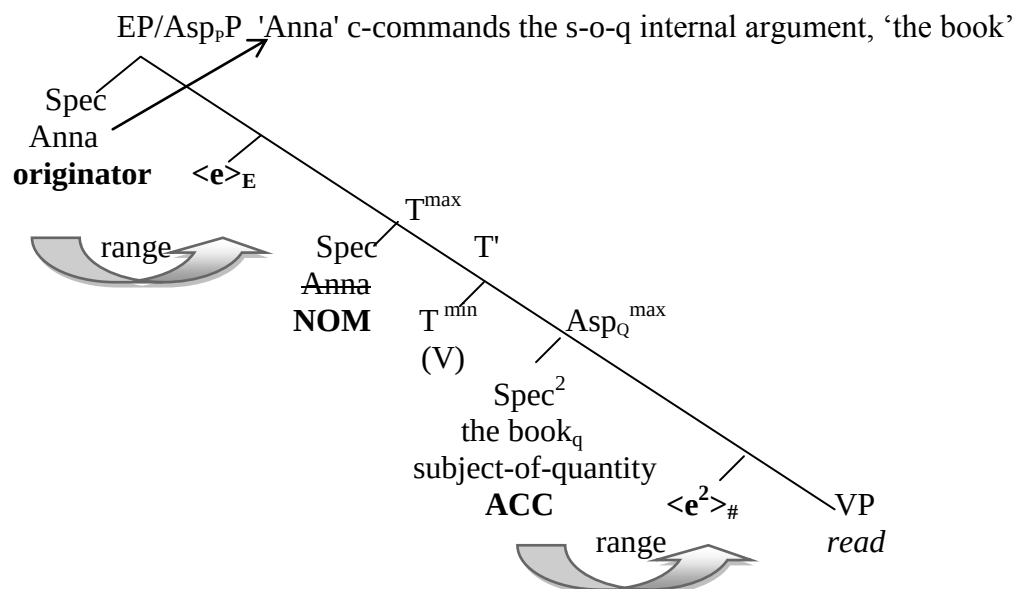
(8) a. <i>(the new) colonialization (of the world)</i>	→R-R/PS noun
<i>the colonialization of America by Spain in the Sixteenth century</i>	→AS noun
b. <i>(the process of) verbalization</i>	→R-R noun
<i>the verbalization of experience by children</i>	→AS noun
c. <i>(an important) discovery</i>	→R-R noun
<i>the discovery of insulin in 1921-22 by Frederick Banting and Charles Best</i>	→AS noun

The fact that some –tion nouns behave in an AS-like manner may be due to our encyclopedic knowledge of the root in cases like those in (8). Note that the internal argument in such cases is optional, underlying the PS status of the nouns in question. However, this cannot be the explanation for the –tion and –al nouns in (7a: ii, iii) since these nouns cannot appear bare, i.e. without their internal arguments. In order to account for this, I assume that the roots on which these nouns are built are ***inherently marked as causative*** (else, obligatory transitive) in the lexicon and once they merge in syntax, this idiosyncratic property will instruct for the obligatory presence of their internal argument. In other words, such roots bear some feature [trans/caus] (else, [endpoint] or [quantity]), which requires the obligatory presence of Asp_QP, so that the internal argument could be assigned the appropriate interpretation (e.g. that of a *subject-of-quantity*) in the specifier of Asp_QP. This line of analysis reminds us of the way ditransitive verbs are treated under Borer's (2005b) theory (e.g. *give something to someone*), i.e. as idioms, or the way primary perfective verbs in Bulgarian are analyzed (see chapter 5, § 5.3.1). However, this has an exceptional character and does not imply that the –tion and the –al nouns, in the same way as the –ing nouns, are prototypical AS nominals in English.

Before I present my syntactic account of the three nominal types, some comments regarding the **PROJECTION OF ARGUMENTS** are in order. In this respect, I assume that the projection of arguments within a nominal abides to the same mechanisms of argument-

structure building present in the verbal domain (see chapter 5). Thus, an underlying transitive structure has the following representation.

(9) Telic transitive predicates (e.g. *Anna read the book*; see Borer 2005b: 85)

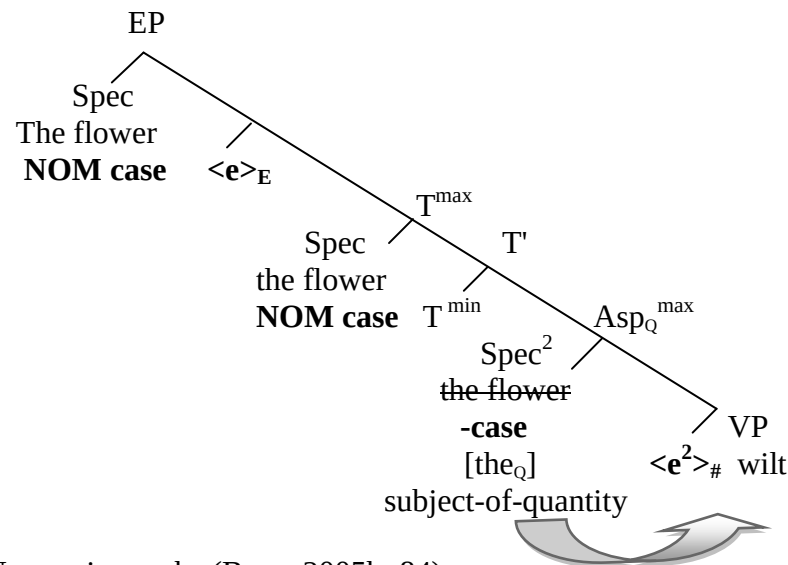


Following Borer (2005b) I assume that there are only two universally available structural case positions.⁴ Therefore, only two of the arguments can be structurally licensed, becoming thus direct arguments: the originator interpretation of the external argument is assigned in Spec,Asp_PP, and the subject-of-quantity interpretation of the internal argument is assigned in Spec,Asp_QP. In order to become arguments and be assigned roles, ‘Anna’ and ‘the book’ (9) must merge into functional specifiers. Until merge takes place, they are devoid of any role and syntactic status. It then follows that if a noun is argument-taking, then these projections should be available within it. In this respect, ***I claim that the true AS nominals, inasmuch as they resemble verbs to a great extent, incorporate a telic transitive structure (i.e. Asp_QP) together with the higher aspectual projection that licenses the external argument (Asp_PP) in contrast to the R-R nouns which lack any verbal (hence, aspectual) structure.***

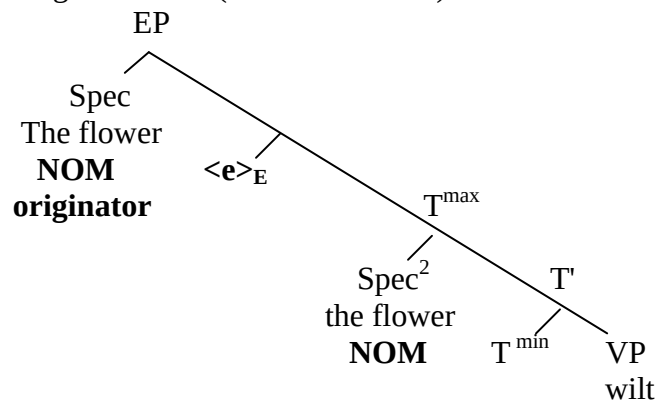
⁴ Accusative case is structural case assigned in Spec,Asp_QP and not associated with some lexical specification linked to inherent case. Nominative case is also structural assigned in Spec,TP.

SOME NOTES ON THE TELICIZING PROJECTION Asp_QP ARE IN ORDER HERE. Recall from chapter 5 that Asp_QP is the projection responsible for the telic interpretation of a predicate (e.g. unaccusatives (10a) or telic transitives (9)). As for unergatives (10b), since they are not telic, Asp_QP will not project, implying that: (i) the structure will remain atelic, and (ii) no internal arguments will be licensed. Since unergatives do not have internal arguments, no additional mechanism is needed for their derivation.

(10) a. Unaccusative verbs (from Borer 2005b: 84)



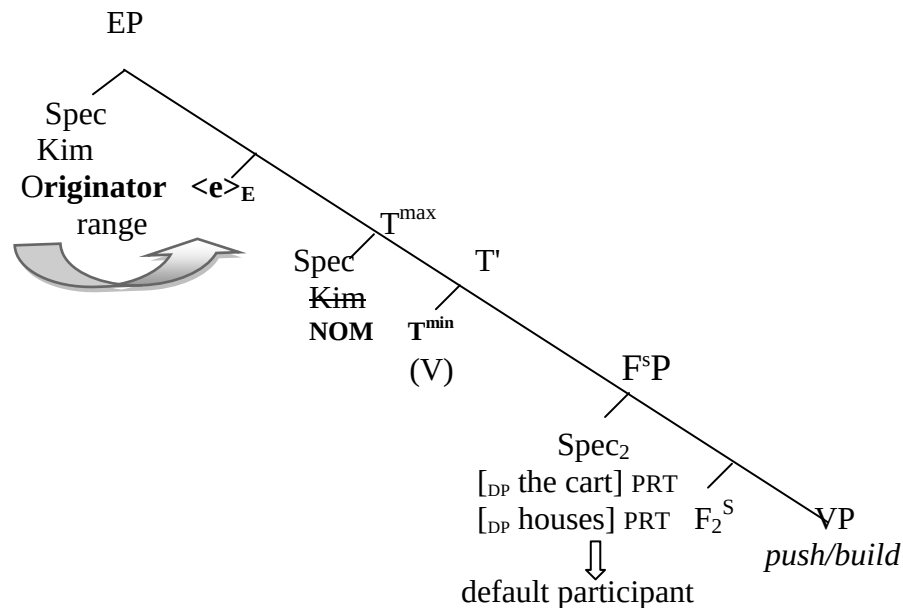
b. Unergative verbs (Borer 2005b: 84)



However, if the predicate is an atelic transitive, then some projection other than the telicizing Asp_QP is needed so that the internal argument could be successfully licensed (e.g. *Anna read poetry*). In cases like this, Borer (2005b) assumes that a shell functional projection (e.g. F^sP) is inserted. This projection is semantically vacuous but phonologically

contentful since it assigns Partitive case to the DP in its Spec, i.e. it is licensed at PF (though not at LF). The DP located in this specifier position receives a default participant interpretation (11).

(11) Atelic transitive predicates (from Borer 2005b: 109)



Bearing this in mind, we shall expect that the nominalizations which incorporate higher aspectual structure (e.g. the –ing nouns, since –ing attaches higher up in the structure) will be able to incorporate all of these syntactic layers. Thus, the true AS nominals, inasmuch as they take internal arguments, will have an underlying transitive structure, either (9) or (10). Nouns built on unaccusative verbs, on the other hand, shall reflect the representation in (10a) whereas nouns derived from unergative verbal bases should have the structure in (10b). Note here that I am not referring to roots (i.e. R-R nouns), since the incorporation of the structures in (9), (10) and (11) is only facilitated by functional verbalizing structure, i.e. the presence of a verb (i.e. in the case of **de-verbal** AS or PS nouns). Applying the mechanisms above, Borer (1999, 2003) arrives at the following syntactic derivations for AS nouns.

(12) The licensing of arguments (from Borer 2003: 51)

(EP = Asp_PP for –ing nouns in Borer 1999, 2003; but –ing = Asp_P in Borer 1999)

a. Verbal domain

(i) *Kim broke/destroyed the vase*

(ii) [_{EP} Kim [_{TP} [_{ASPQ} the vase [_{L-D} break/destroy]]]] (L-D → VP)

b. Nominal domain

(i) *Kim's breaking/destruction of the vase*

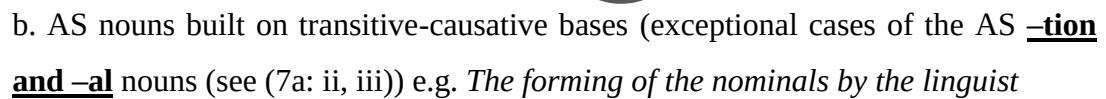
(ii) [_{NP} –tion_{NOM}/–ing_{NOM} [_{EP} Kim [_{ASPQ} the vase [_{L-D} break/destroy]]]] (L-D → VP)

The representation in (12b: ii) implies that only telic nouns, since they incorporate the Asp_QP, will be true AS nominals. As we will see, this is exactly what I claim, the difference being that the –tion morphological type will not be *a priori* able to give rise to an AS noun.

I assume that the true AS nouns incorporate the telicity-related aspectual projection Asp_QP (Borer 2003) together with a higher aspectual layer (Asp_PP, Asp^{dur}P), the former being responsible for the projection and interpretation of internal arguments and the latter being involved in the projection and interpretation of external arguments. Hence, a true AS noun will be instantiated only when these two projections are overtly manifested within a nominal.

As we saw, this is the case for the particle-incorporating –ing nominalizations (7a: i), since –ing is merged as the head of Asp_PP whereas the particle occupies Asp_Q° (13a), or when –ing nominalizes some transitive-causative bases which require the presence of Asp_QP in an idiomatic fashion (e.g. *the killing* *(of the wrong man); *the finding* *(of gold)) (13b). My syntactic representation of true AS nouns is offered in (13).

a. Prototypical (particle-incorporating) AS nominals: only –ing, since –tion and the particle compete for the same position: *The writing up *(of the letter) *for/in two hours*



What the derivations in (13) have in common is the presence of the two aspectual nodes, Asp_Q and Asp_P . As already mentioned, the latter is overtly manifested by the –ing nominalizer. As for the former, it is overtly manifested by the particle (13a) which merges as its head, or is idiosyncratically required by the base (13b) in an idiom-like fashion. Being a true AS noun, its internal argument will be derived in $Spec,Asp_QP$ and assigned structural case there via the insertion of the dummy preposition ‘of’ (see Borer 1999) whereas the external argument, if present, receives an originator interpretation in the $Spec,Asp_P$; however, this position is caseless, so the DP is forced to move to $Spec,DP$ for Genitive case assignment (*John’s finding out of the truth; Mary’s manipulation of the data*), which, in my analysis, also licenses structural case. Otherwise, a by-phrase is adjoined to $Spec,nP$ which is again interpreted as the originator. In either case the external argument is optional, which holds for all nominalization types in both English and Bulgarian. As for the way Asp^o is assigned range, we can observe that the particle (13a) enters into feature-sharing with Asp^o and transmits its feature [endpoint] to it, thus valuing it (recall that such a way of valuation does not follow the classical Probe-Goal relationship established in (Chomsky 2000, 2001) in which the Probe c-commands its Goal (see chapter 2, (17) and subsequent discussion). Put differently, Asp^o inherits the feature [endpoint] of the particle and thus gets valued.

AS FOR WHY THE INTERNAL ARGUMENT IS OBLIGATORY WITH SUCH NOUNS, I make the following assumptions: (i) **in particle-incorporating nouns** (13a) the particle, due to its inherent operator properties in line with prefixes in Bulgarian, requires the presence of a DP argument in its specifier position (e.g. $Spec,Asp_QP$) so that it could satisfy its operator-like properties by binding a variable within this DP. Hence, the DP ‘letter’, which originates in $Spec,Asp_P$, shall further move to $Spec,Asp_QP$ in order to be assigned the correct *subject-of-result* interpretation, characteristic of all transitive telic structures; (ii) **in the case of non-particle incorporating nouns** (13b), it is some inherent property of the base which assures the presence of the quantity-telic node. As a consequence, an internal argument will be required in the specifier position of this telicizing phrase (e.g. Asp_QP) and we will obtain a true AS noun, provided that the projection responsible for the external argument is **syntactically present** (e.g. Asp_P) inasmuch as it is overtly manifested by the –ing nominalizer itself. In this respect, note the contrast between a –tion nominal which

incorporates Asp_QP but not Asp_PP (3b) and which can appear without its internal argument: e.g. *the destruction was devastating* vs. *the destroying* *(of the city).

A final observation regarding the **TRUE AS NOUNS** is in order now, which has to do with their **TELIC CHARACTER**. Recall that the incorporation of Asp_QP directly implies telicity. In the case of particle-incorporating nouns (13a), it is the particle which, being a direct range assigner to Asp, Agrees with the empty value of Asp_[], thus marking it as telic by virtue of its telicizing feature [endpoint]. As a consequence, the aspectual domain of interpretation closes, and the event is interpreted as telic. However, though a process layer is further attached into the structure (via Asp_PP), the telicity of the base cannot be overridden, given that –ing preserves the aspectual properties of its base, so the final interpretation is of a telic predicate with an extended duration, i.e. some repetitive-like interpretation of ‘writing up the same letter over and over again’. As for (13b), it is some feature on the base which Agree with Asp^o in a way similar to that of primary perfective verbs in Bulgarian.

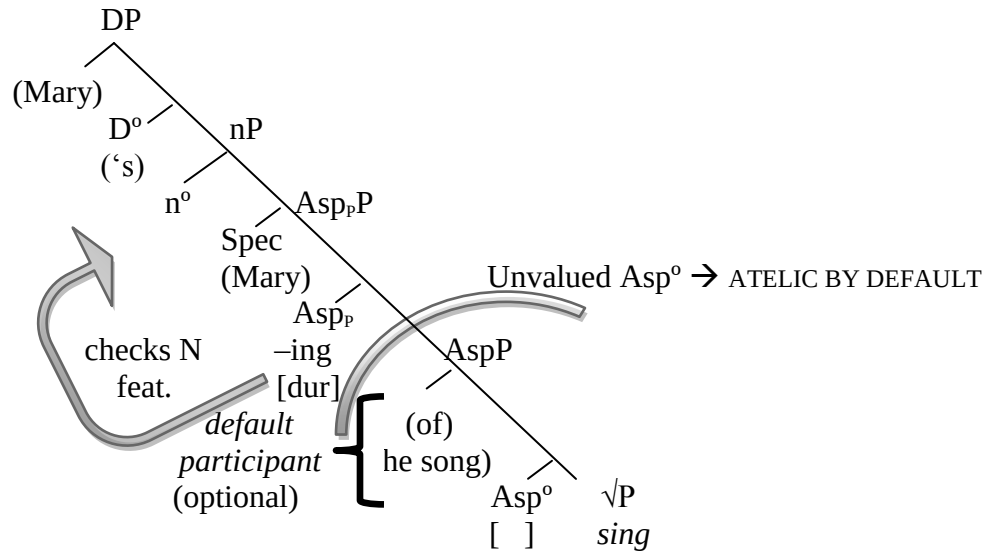
Recall, though, that **TRANSITIVITY** within the verbal domain is also available **IN THE ABSENCE OF TELICITY** (11). When transferred to the nominal domain, we obtain an atelic transitive nominal such as ‘the singing of songs by Mary for/*in three hours’. I claim that in this case Asp_QP does not project, since there is no overt element which forces its presence. It then follows that such nominals will not be true AS nouns, and their arguments will be optional, that is, they will be PS nouns (14).

(14) PS nouns:

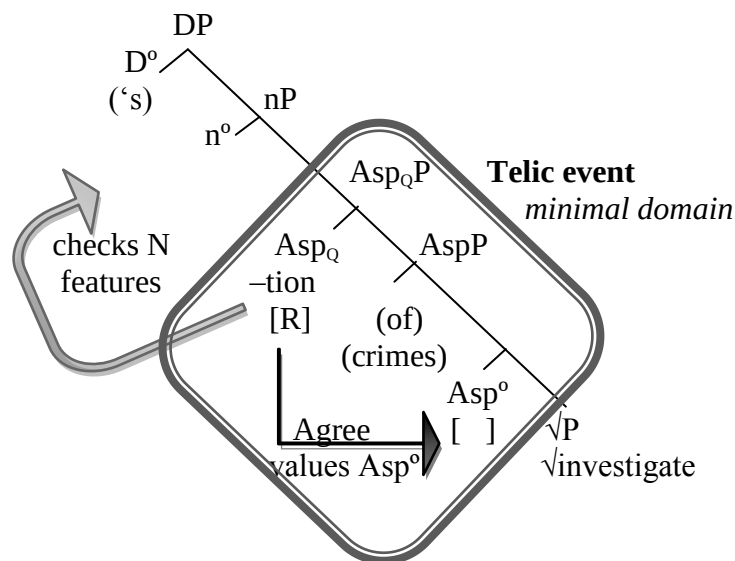
a. Intransitive –ing nouns: atelic; no [endpoint]/[T] feature

e.g. *the singing (of the song by the singer)*;

Mary's singing (Mary: a free interpretation of the Genitive, which may coincide with the agent, but not with the causer; also: the manner in which Mary sings)



b. Eventive –tion (and kin) nominals (evidence for the presence of lower verbalizing structure (e.g. –ize): *the invasion (of Spain and Portugal)*; *the investigation (of crimes)*, *the manifestation (of reality)*; *the discovery (of fire)*)

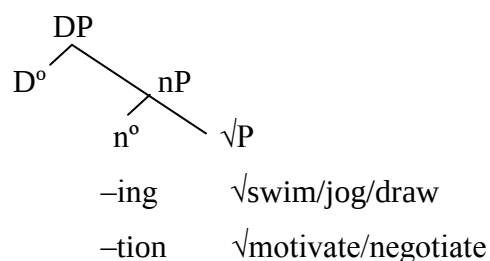


What the derivations in (14) have in common is the fact that the combination [Asp_PP + Asp_QP] is not met; hence, these cannot be AS nouns. To exemplify, in the case of –ing nominals only Asp_PP projects since the nominalizers heads this projections (14a) whereas

in the case of the –tion nouns it is Asp_QP which is present inasmuch as the nominalizer merges as its head. Furthermore, both nominal types incorporate AspP, the projection responsible for the domain of inner aspect. As a consequence, these nouns are given the possibility to have participant structure. Thus, when present, the internal argument, ‘songs’ in (14a), will land in the specifier of AspP, since it is the first available position for that sake (else, we can treat optional arguments as adjoined in the structure creating a specifier position). Once having landed there, ‘songs’ receives a **default participant interpretation** on line with the one assigned in the Spec of the atelic F^{SP} projection within the verbal domain, and additionally gets structural case via *of*-insertion on line with partitive case assignment to the noun in Spec,F^{SP} for predicates (11). The same holds for the –tion nouns (14b) inasmuch as there is no operator-like element such as a particle that may require the movement of the internal argument *crimes* from its base position in Spec,AspP to Spec,Asp_QP. In this respect note that although Asp_QP projects, its head –tion is not a quantifier or an operator and its feature [R], in combination with its feature [nominal], makes reference to a result nominal, but not to argument structure. Consequently, the presence of the internal argument remains optional. As for the external argument, it is merged in the Spec,Asp_PP where it is assigned an originator interpretation in the case of –ing nominals (14a) or is adjoined to NP in the case of –tion nominals (14b).

FINALLY, THE R-R NOMINALS are formed by the merger of the root within an n^o-headed nominal environment. Since there is no verbal-aspectual layer (e.g. AspP), these nouns will be unable to take arguments. Note that any nominalizer can in principles occupy the nominalizing n^o head (15).

(15) R-R nominals: all suffixes



TO RECAP, **true argument structure within a nominal is related to the obligatory (syntactic) presence of two projections: $Asp_P P$ and $Asp_Q P$** (13). The former is the projection responsible for the agent-originator interpretation of the external argument whereas the latter is responsible for the projection and interpretation of the internal argument. This **explains why only -ing nouns can be true argument-takers, given that -ing heads $Asp_P P$** . As for why the internal argument is obligatorily required in such cases, I have proposed that this is due to the operator properties of the element heading $Asp_Q P$. Being an operator, this element requires the presence of the internal argument in $Spec, Asp_Q P$ so that it can scope over it and satisfy its operator-like properties. This is the case for the English particles (*the writing up *(of the letter)*) and the Bulgarian perfectivizing prefixes (*‘iz-jazdaneto *(na sandvicha) ‘the up-eating *(of the sandwich)’*), both elements being heads of $Asp_Q P$. This kind of nouns, which incorporate such elements, will be the **prototypical members for the true AS nominalization** type. **In either case we have a telic derivative** by virtue of the presence of $Asp_Q P$. In the absence of one of these layers (e.g. $Asp_P P$ or $Asp_Q P$), and in the presence of Asp_P , we have a PS nouns (14) whose internal arguments are always optional inasmuch as they occupy $Spec, Asp_P$. Finally, in the absence of any verbal-aspectual structure, we are left the R-R nominals.

CRUCIALLY, recall that under the current analysis Asp_P , which is present in AS and PS nouns, as well as in verbs, is the projection responsible for the measuring out of the event, i.e. for determining the domain of aspectual interpretation. As we have seen, the English eventive predicates do show a property associated with the measuring out of the event via the theme argument, i.e. the so-called object-to-event mapping property (see chapter 4, § 4.3.1). Since this is a property associated with the presence of Asp_P , then we will expect that the nouns which incorporate this projection will also show this property. As we will see, this is exactly the case. I dedicate the following section to this issue.

7.2.3. The object-to-event mapping property within the English nominals

Recall that the OTEM property consists of the ability of the internal argument to affect the aspectual interpretation of a predicate (Verkuyl 1972) as in (16).

- (16) a. *John drank a bottle of wine in 10 minutes/*for 10 minutes*
b. *John drank wine *in 10 minutes/for 10 minutes*

We can observe that the predicate in (16a) is telic whereas the one in (16b) is atelic. Note that these predicates only differ with respect to their internal argument, a [+q]NP ‘a bottle of wine’ in (16a) and a mass [-q]NP ‘wine’ in (16b). Thus, it has been suggested that it is precisely the nature of such arguments which facilitates the telic-atelic interpretation of the English eventive verbs. Since this property holds for the English eventive predicates, we should expect that it would be also transferred to the nominal domain under –ing nominalization, since –ing nouns are more prototypically verbal than the rest of the nouns.

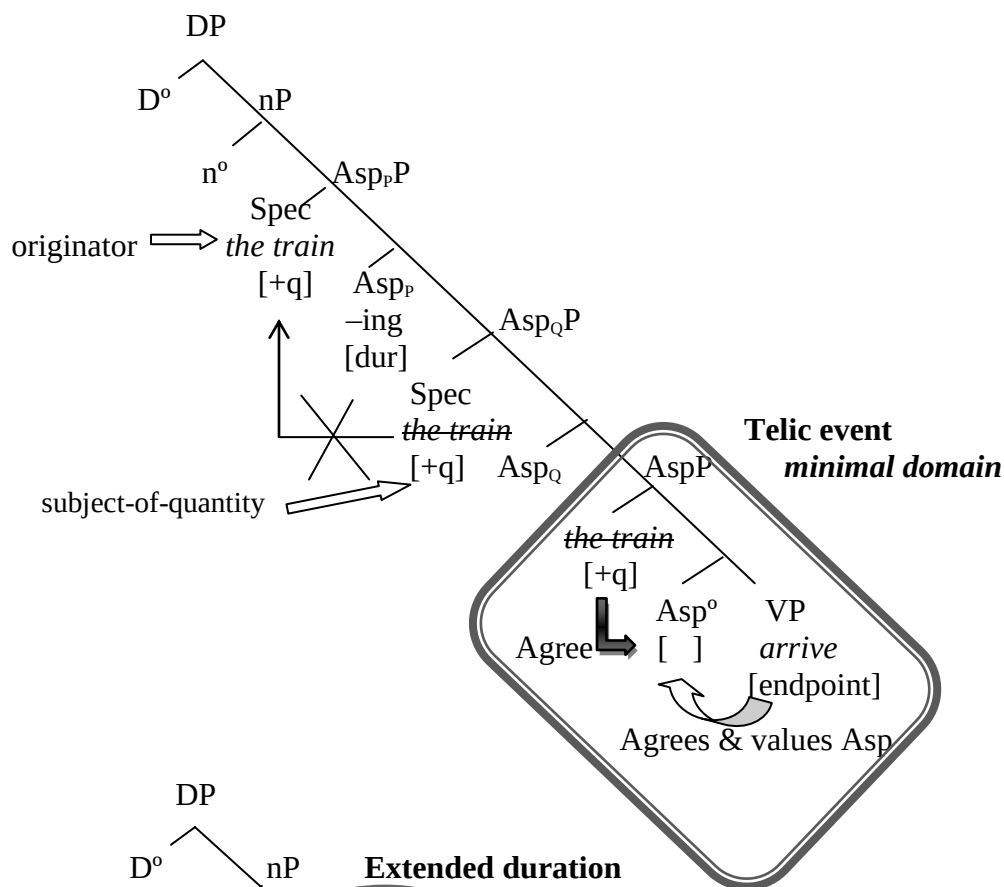
In fact, we have already noticed an instantiation of this property in the case of English –ing nominalizations of **ACHIEVEMENT PREDICATES**. In this respect, recall the already mentioned contrast between ‘the arriving of guests (for two hours)’ (a process reading is possible, due to the [-q]NP status of ‘guests’) vs. *‘the arriving of the train’ (a subject-of-result interpretation is required, and a process reading is blocked). However, in contrast to Borer (2005b), who defends the incompatibility between –ing and Asp_QP (due to the anti-telic properties of the former), ***I assume that –ing is capable of nominalizing achievements and thus incorporate Asp_QP.*** Hence, the derivation of ‘the arriving of the guests’ may not be merely as in (6), but should be rather substituted by a derivation like the one in (17b).

(17) OTEM property within English nominals built on achievements

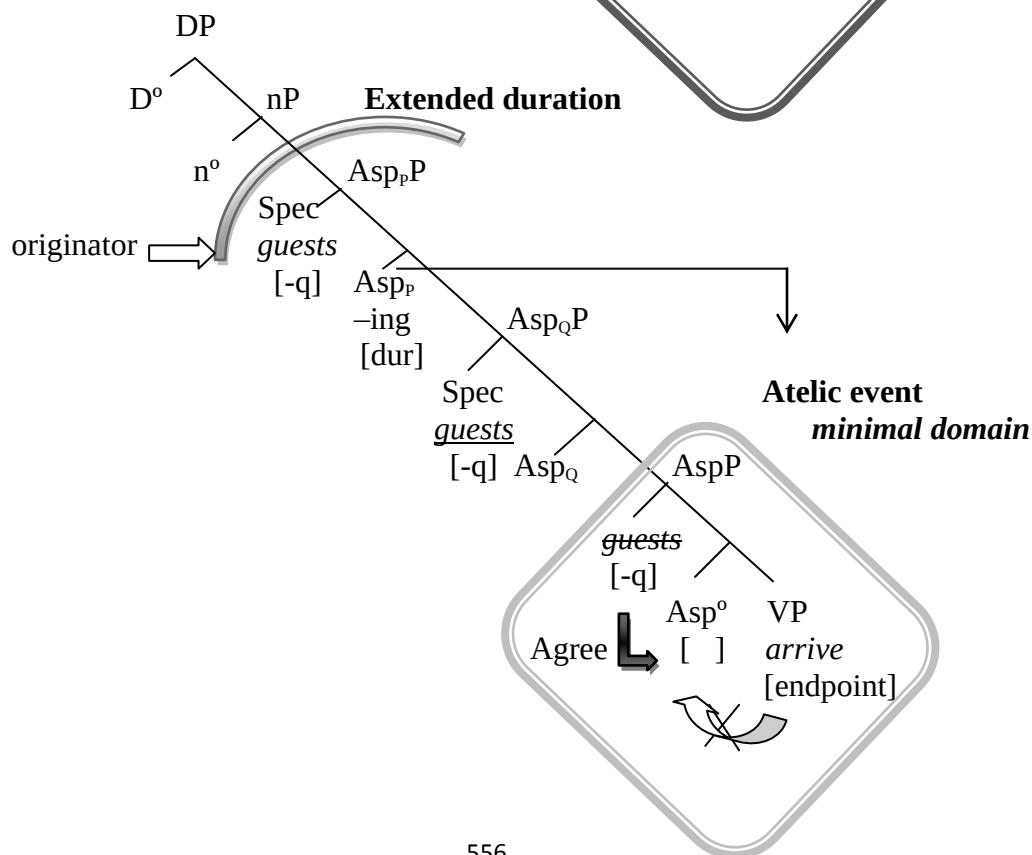
a. **the arriving of the train*

a'. *the arriving of the guests* (repetitive (telic) process reading, hence -ing is allowed)

b.



b'.



From (17b) we can observe that a [+q]NP internal argument, ‘the train’, first merges in the Spec,AspP where it establishes an Agree relation with the head of AspP. Since the feature of this DP is [+q], then the domain of aspectual interpretation ought to extend (MacDonald 2008b). However, the additional inherent [endpoint] feature of the achievement predicate ‘arrive’ also establishes an Agree relation with the Asp head.⁵ ***I assume that the combination of such a double Agree relation established between Asp° and two distinct elements sharing the same value ([+], related to telicity) forces the domain to remain minimal, and hence telic.***

However, the structure in (17b) results ungrammatical. According to Borer, this is so because of the anti-telic properties of the –ing suffix which prevents the further nominalization of the telic predicate (e.g. ‘arrive the train’) by –ing. If this were so, then why are particle-incorporating –ing nouns possible, as we already saw in (13a)? Recall that in the same was as an unaccusative predicate (17b), the particle also requires the presence of Asp_QP (13a). In order to explain the incompatibility of –ing with unaccusatives but its compatibility with particle verbs, I assume that ***the ungrammaticality of the structure in (17b) results from a feature incompatibility between ‘the train’ and Asp_PP***. ‘the train’, which originates in Spec,AspP from where it values Asp° further moves to the specifier position of Asp_QP in order to receive the appropriate interpretation as the *subject-of-result/change*. However, such a DP shall then additionally move to the external argument position, Spec,Asp_PP, since the base verb, ‘arrive’, is unaccusative, and its only argument, ‘the train’, should move from the internal argument position to the external argument position. However, the presence of the suffix –ing blocks further movement of ‘the train’ to Spec,Asp_PP due to a feature incompatibility between the ‘the train’, which is already assigned a *subject-of-result/change* interpretation, and the interpretation assigned in the specifier of Asp_PP, which corresponds to the originator of the event denoted by the noun.

⁵ I assume verbs in English which are prototypically telic, i.e. achievement-like, such as ‘arrive’ to be a kind of idiosyncratic lexical formations specified for the feature [endpoint] in the same way as the Bulgarian primary perfective predicates. In such cases, a VP will enter at the syntactic component, not a root phrase

If, instead of ‘the train’, we have a [-q]NP internal argument as in (17a', b'), then nominalization under –ing is allowed. First, the [-q]NP argument, ‘guests’, merges in the Spec,AspP from where it Agrees with the empty value of Asp^o and immediately marks it as atelic (17b'). Interestingly, note that the inherent [endpoint] feature of ‘arrive’ is also a good candidate for establishing an Agree relation with Asp^o, and mark it as telic. ***However, I tentatively assume that the [-q] value of an internal argument in English is aspectually the most prominent feature related to inner aspect in this language, which always imposes its value onto the structure.***⁶ In other words, from amongst the two possible candidates, the [-q]NP ‘guests’ and the [endpoint] ‘arrive’, the former gains. In fact, such a claim is not odd since ‘guests’ is structurally closer to Asp^o than ‘arrive’, which is yet another reason for it to enter into an Agree relation with Asp. Once the [-q] feature of ‘guests’ values Asp, the structure is marked as atelic, and the domain remains minimal. Since –ing is compatible with atelic structures, the nominalization may move forward. Furthermore, being a [-q]NP, ‘guests’ cannot receive a subject-of-quantity interpretation (arguably, it remains with its default participant interpretation assigned in Spec,AspP) and can therefore land in Spec,Asp_P to be subsequently interpreted as the originator.⁷ However, since the [endpoint] feature of ‘arrive’ is interpretable at LF, it will contribute to interpretation. Thus, such a nominalization will be interpreted iteratively, i.e. as the process of various iterative events of ‘guest-arriving’.

In this respect, note that the behavior of A NON-ACHIEVEMENT PREDICATE in the same context looks differently (18).

- (18) a. *the drinking of the beer for/in an hour*
 b. *the drinking of a bottle of beer ?for/in an hour*
 c. *the drinking of beer for/*in an hour*

⁶ See MacDonald (2010) for an explanation of the asymmetry found in the aspectual influence of an [-q]NP internal argument in contrast to an [+q]NP one.

⁷ I assume that ‘guests’, before landing in Spec,Asp_P, should pass through Spec,Asp_QP since it is a possible landing site; however, being a [-q]NP, it will not receive interpretation there.

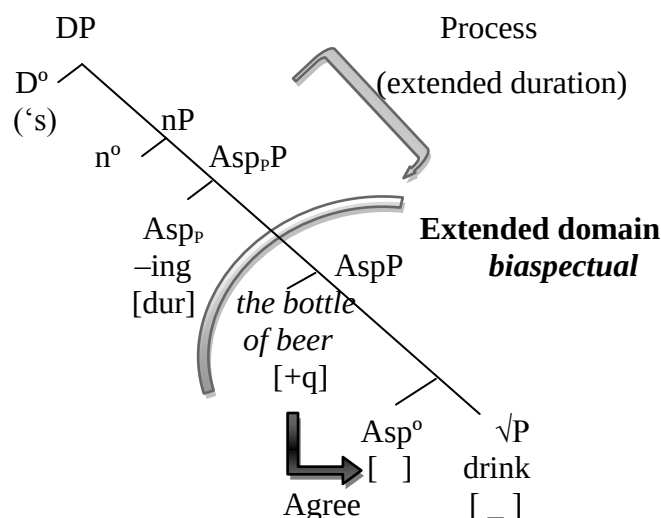
First, we should bear in mind that ‘drink’ is not lexically specified as [endpoint] as it does not belong to the exhaustive list of the achievement predicates of English, so it enters at the syntactic component underspecified for aspect as the vast majority of the English eventive predicates (19). Hence, its aspectual interpretation will depend on the internal make-up of the structure and the feature specification of its components. In the case of a [+q]NP internal argument such as ‘the/a bottle of beer’ (18a,b), the [+q] feature of the DP will enter into an Agree relation with Asp and, as a consequence, the domain of aspectual interpretation will extend (recall that if the internal argument is [+q], the domain extends, in contrast to a [-q]NP which closes the domain and it remains minimal and atelic (see (2))). The nominalization ‘the drinking of the/a bottle of beer’ will be then ambiguous with respect to (a)telicity, i.e. it will remain biaspectual in a sense, since the domain has not been closed. Thus, there will be two available interpretations for the –ing derivative: (i) on its atelic reading, we will have an atelic non-repetitive process denotation (e.g. ‘the drinking of AT a bottle of beer for two hours’), or (ii) on its telic reading, we will have an iterative process of telic events of ‘drinking one and the same bottle of beer for an hour’. If the argument is [-q] such as ‘beer’ (18c), then the [-q] feature on the DP Agrees and values Asp as atelic, the domain of interpretation closes, and ‘the drinking of beer’ will consequently refer to an atelic process. A syntactic representation follows.

(19) OTEM property within English –ing nominals

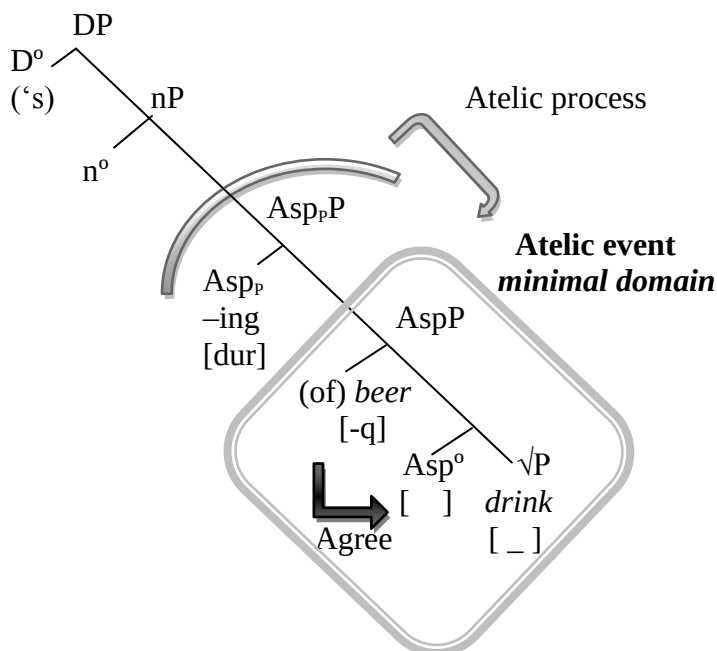
a. *the drinking of the bottle of beer for three hours/in three hours*

a'. *the drinking of beer for/*in three hours* (non-repetitive (atelic) process reading)

b.



b'.



Recall that the external argument merges in Spec,Asp_PP where it receives an originator interpretation. However, this position is caseless, so in order to receive case, this DP argument must further move to Spec,DP where it is assigned structural Genitive,⁸ or else, a by-phrase is adjoined to the nP and a prepositional case is assigned to that DP via the preposition ‘by’.

Apart from the –ing nouns, the –tion nouns also show the OTEM property as we already saw in the previous subsection. Although in the great majority of the cases these nouns denote results due to the feature [R] which the suffix bears (20a, b), we have observed that in the presence of a [-q] internal argument we have an atelic reading (20c).

(20) a. *the explanation of the problem *for three hours/in two minutes*

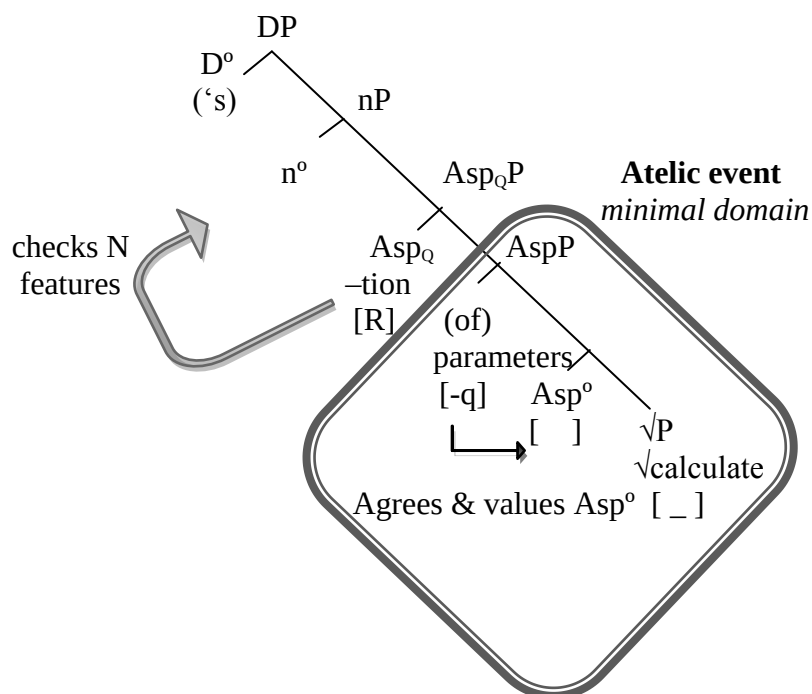
b. *the calculation of three parameters_[+Q] *for/in two hours*

c. *the calculation of parameters_[-Q] for/*in two hours*

⁸ Note that the Possessive phrase (*John's*) which is marked for Genitive case via 's is not restricted thematically since it can refer to either internal or external arguments. Thus, Genitive case assignment within the nominal domain may correspond to both Nominative and Accusative case assignment within the verbal domain, all being structural.

To explain this, I assume that the feature [R] on the –tion suffix, in contrast to an [endpoint] feature on a particle, does not prevent the [-q] internal argument to enter into an Agree relation with the Asp head and thus mark the event as atelic (21).

(21) The OTEM property with –tion nominals



TO RECAP, we have seen that THE ENGLISH TRUE AS NOMINALS (prototypically –ing derivatives) are nouns which **incorporate Asp_QP , the projection responsible for the obligatory presence of the internal argument in telic contexts, together with $Asp_P P$, which is responsible for the projection of the external argument. The fact that –ing nouns refer to processes even in the presence of Asp_QP (13a) whereas the –tion nouns refer to results (14) is explained by the [dur] feature on the suffix in the former case, which is syntactically realized as an Aspect Process head, and the Result feature on the –tion suffix, which merges as a head of Aspect Quantity Phrase.** I have suggested that obligatory transitivity within a nominal is required only when the head of Asp_QP is overtly realized by an element capable of assigning range to Asp directly (e.g. the particle in particle-incorporating –ing nouns); crucially, this element, by virtue of its operator-like properties, forces the internal

argument to move to its specifier position in order to bind a variable within it. This explains why true AS nouns cannot appear bare. **AS FOR THE PS NOUNS**, we have seen that they incorporate verbal layers and the aspectual projection responsible for the determination of inner aspect, AspP. In case they take arguments, these are optional and assigned a default participant interpretation in the specifier of AspP (14) (or else adjoined to Asp^o creating a specifier). These include atelic transitive –ing derivatives (14a) and eventive –tion nouns (14b). If the arguments do not project, then these nouns are **R-R NOMINALS**, and no verbal or aspectual layer is present within the structure (15). As we saw, all suffixes can give R-R nominals by virtue of their nominal feature which forces them to project as n^o-heads.

Finally, **THE ZERO-DERIVED NOMINALS**, in the same way as the R-R nouns, lack argument structure due to the lack of verbal-aspectual structure (3c). This is so because these nouns are formed by the merger of the root within a nominal, Determiner-dominated environment, which assigns them a nominal interpretation. There is no nominalizing suffix and hence n-head in such cases due to the lack of an overt morpho-phonological realization (e.g. a gender marker).

Another important observation regarding the English nominalizations is the fact that the **OBJECT-TO-EVENT MAPPING MECHANISM**, which is instantiated within the verbal domain, ***is operative within the nominal domain as well***. Thus, the feature specification of the internal argument is a crucial determinant for the behavior of a nominal. In this respect, recall that only the AS and the PS nouns are capable of taking internal arguments and hence show this property. I assume that the availability of the OTEM mechanism within the nominal domain is facilitated by the fact that the English eventive predicates are underspecified for aspect [_] together with the fact that (as a general rule) there are no direct range assigners in this language. Hence, ***in the same way as within the verbal domain, the inner aspect of a nominal is determined indirectly, by virtue of the properties of the internal arguments*** (i.e. via the OTEM mechanism). However, ***once a direct range assigner enters the numeration (e.g. a particle), the indirect range-assignment mode is blocked, and range is assigned to the open value***

heading Asp by this element. This explains why particle-incorporating nominals are telic, irrespective of their internal arguments, given that the particle, in the same way as Bulgarian prefixes, is a direct range assigners to Asp by virtue of its feature [endpoint].

In what follows I will discuss the syntactic derivation of the Bulgarian standard (§7.3) and biaspectual (§7.4) nominals.

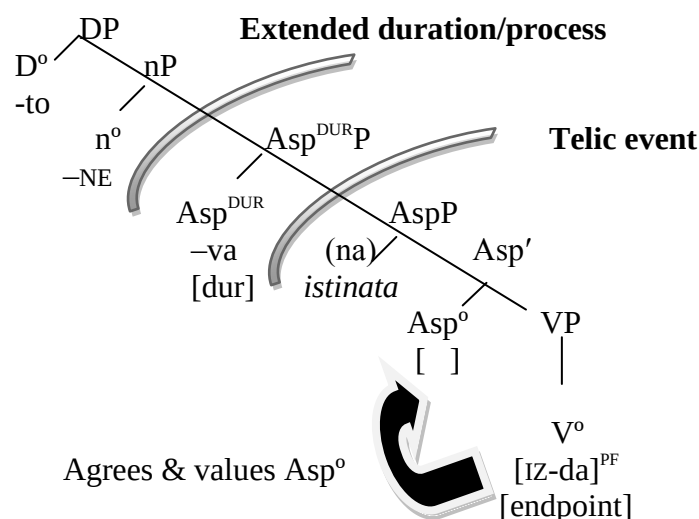
7.3. The syntax of Bulgarian deverbal nouns (the standard paradigm)

Recall that there are three morphological nominalization types in Bulgarian: (i) –NE nouns; (ii) Voice –IE, and (iii) “other-suffix” nouns (see § 6.3). Let us start with the syntactic derivation of the first nominal group.

7.3.1. The syntax of –NE nominals

We already mentioned that –NE constructions are always formed from imperfective verbal bases and always allow for a process interpretation. I suggest that there is a strong correlation between these two facts which allows me to propose the following syntactic representation:

(22) [iz-da]–va-ne-to *(na istinata) ‘the spilling of the truth’



From (22) we see that the lexical category shows the prefix IZ-, which indicates that we have a verbal stem and not a root. The presence of the prefix further shows that this base is perfective due to the perfectivizing role of prefixes in general. Recall that –NE nouns are exclusively formed from imperfective verbal bases, being this a morphological requirement of the selectional properties of this nominalizer. Hence, the –NE suffix always selects for such bases. Therefore, the verb phrase (VP) in (22), being perfective, should consequently be imperfectivized so that the –NE suffix may be successfully attached, satisfying its morphological requirements. This is done by the addition of the secondary imperfective morpheme –va which, in my analysis, heads its own functional projection, Aspect Durative Phrase (Asp^{DUR}P) (else, Aspect Imperfective Phrase (Asp^IP) in Markova 2007, 2010).⁹ ***I suggest that in prefixed contexts –NE, in order to satisfy its morphological properties, always selects for this Asp^{DUR}P, which in turn the syntactic manifestation of secondary imperfectivity. In this way, duration is incorporated into the structure (e.g. the feature [dur] heads Asp^{DUR}P) and a process interpretation becomes available.***

To see how this may be so, note that the imperfective suffix –va, in the same way as present tense thematic vowels (see (30)), is endowed with the feature [dur] (see chapter 3, § 3.4). However, this feature brings about an eventive reading in the former case (30) but a process one in the latter (22). I tentatively suggest that this is due to the fact that the lower verbal domain (VP) is related to eventivity whereas the higher aspectual domain (Asp^{DUR}P) is related to the process interpretation of nouns.¹⁰ Hence, the same feature can bring about various interpretations within a nominalization depending on its attachment site. Alternatively, we may call the lower realization of the [dur] feature on V^o [eventive] and its higher realization on Asp^{DURo} [process]. Finally, the correct morphological order of suffixes is obtained by head movement. The same derivation as the one in (22) will hold for nouns

⁹ Svenonius (2004a: 181) regards –(a)va as a thematic vowel. In my analysis the secondary imperfective suffixes merge as heads of their own functional projection Aspect Imperfective Phrase (Asp^IP). See Istratkova (2004) for a similar proposal.

¹⁰ A similar claim is found in Borer (1998: 65), who suggests that the aktionsart process/eventive distinction is also syntactically represented where the lower argument position (my VP domain) is linked to an eventive interpretation whereas the higher one (Asp_PP) relates to the process interpretation.

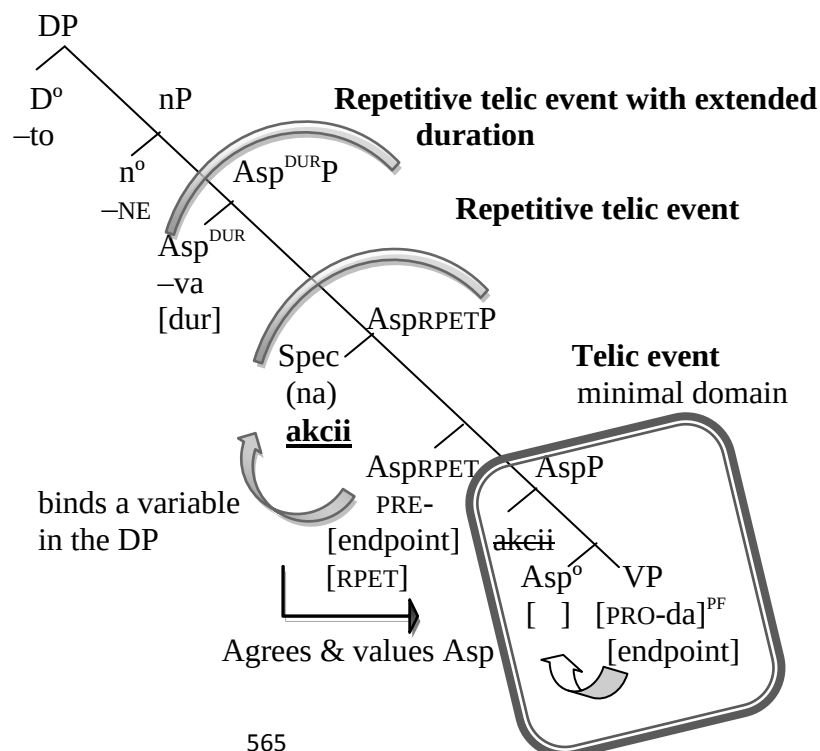
based on primary perfective bases, the difference being that there will be no prefix involved in the derivation of such bases; consequently, it will be the base itself which will bear the feature [endpoint], but not the lexical prefix.

REGARDING THE ARGUMENT-TAKING PROPERTIES OF THE –NE NOUNS, I assume that, in the same way as in English, this has to do with the presence of the AspP together with some telic layer such as Asp_QP, or another prefix-headed node, and a process layer like Asp^{DUR}P, which will correspond to Asp_P in English. As we will see, this will be the case for some –NE nouns inasmuch as only this nominalizer can select various aspectual layers but not for the “other-suffix” (7.3.3) and Voice –IE nouns (7.3.2). Furthermore, in the same way as English –ing nouns, the –NE nouns can be true AS nouns, PS or R-R nouns. The syntactic representation is the same as the one proposed for English nominalizations where true AS nouns are those which force the projection of Asp_QP, or some related prefix-headed projection (e.g. prefixed nouns as in (23a)); PS nouns are those which incorporate only AspP (23b) and R-R nouns lack any aspectual and verbal layers (23c).

(23) Argument structure within –NE nominals: both Asp_QP and Asp^{DUR}P are present

a. True AS nouns (cf. (13a))

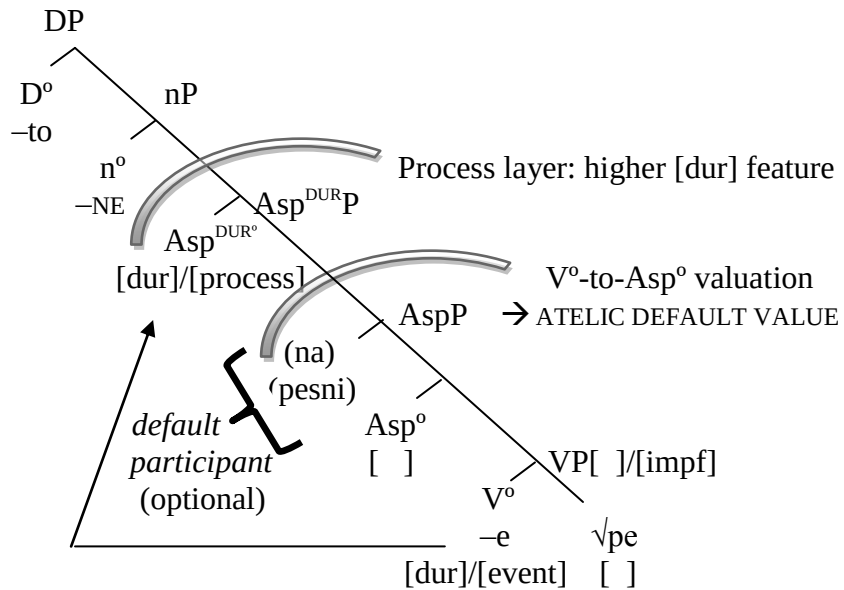
[PRE-[PRO-da]^{PF}]^{PF}-va]^{IMPF}-NE-to na *akcii* ([again-[sell]-va-NE]-the of shares) 'the re-selling of shares'



b. PS nouns (cf. (14a)): only Asp^{DUR}P is present)

pe-e-NE-to (na pesni)

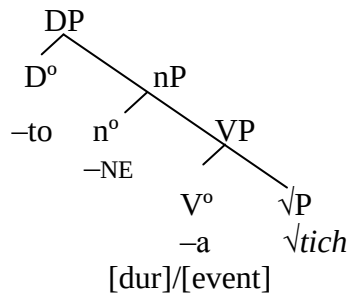
sing-TH.VOW/IMPF-NE-the (of songs) 'the singing (of songs)'



c. R-R nouns (cf. (15)): no aspectual layer

tich-a-ne-to

run-TH.VOW-NE-the ('running')



From the representations in (23) we observe that internal arguments are first merged in Spec,AspP (23a, b). In the case of PS nouns, no other projection apart from AspP is present so these arguments remain optional and receive a default participant interpretation when present (23b). In the presence of a prefix, however, the argument located in Spec,AspP further moves to the next aspectual specifier in order to be assigned the appropriate interpretation and satisfy the operator properties of the corresponding prefix (e.g. Spec,AspRPETP in (23a)). This operation, being obligatory, results in a true AS noun. Observe here that Asp_QP, which is present in English AS nouns, is absent in (23a). In fact, this is so because Bulgarian disposes of a full range of aspectual prefixes which head their

own functional aspectual projections along the hierarchy of Cinque (1999), Asp_QP being just one such candidate among many others (recall that pure perfectivizers head this projection). Hence, although Asp_QP may be absent from the structure, this does not prevent a noun from taking internal arguments inasmuch as other prefix-headed aspectual projections are present (e.g. AsprPETP). Finally, the R-R nouns are those in which no aspectual projection is available so there is no space for internal arguments to emerge (23c).

AN OBSERVATION REGARDING THE PROCESS DENOTATION OF ALL –NE NOMINALS IS IN ORDER HERE. On comparing the derivations for the AS (23a) and the PS (23b) –NE nouns we can observe that only the former incorporate the secondary imperfective suffix –va whereas the latter first merges a thematic vowel –e that later moves to the process-related node, Asp^{DUR}P, which is selected by –NE. As we observed, this is so because the base in (23a) is perfective (i.e. prefixed), so the presence of the secondary imperfectivizer is obligatory (recall that –NE selects for morphologically imperfective bases only) whereas the base in (23b) is primary imperfective so no –va is needed. In the latter case, I propose that the base vowel –e first merges as V^o, i.e. as a present tense thematic vowel, in order to verbalize the structure, and later moves to Asp^{DUR} in order to check the [dur] (else, [process]) feature on this head.¹¹ Such a move will additionally explain the derivational relation of the imperfect vowel to the present tense one. **Crucially, it is the presence of Asp^{DUR}P in both cases that accounts for the fact that both nominalizations, the AS one incorporating –va and the PS one which lacks –va, may refer to processes**, as we already saw in the previous chapter. However, as we will see, this is not the case for the rest of the nominalizations types (see §

¹¹ As we already observed in chapter 3, § 3.4.1, thematic vowels are aspectual in nature. Pashov (1976: 51–54) suggests that the morpheme which distinguishes between the present, Aorist and imperfect verbal bases is the thematic vowel on which they are built and which, he claims, expresses aspect and (un)boundedness. Following this view, I have suggested that the present tense thematic vowel is endowed with the feature [dur] (else, [-bounded]) whereas the Aorist vowel, on the other hand, is endowed with the feature [endpoint] (else, [+bounded]) and denotes a (temporally) bounded and telic event. As for the imperfect tense base, due to its derivational relation to the present tense base, the relevant feature is again [dur] (else, [-bounded]) which, when merged on an aspect node (e.g. Asp^{DUR}P), licenses the process reading of the derived constituent (e.g. –NE nouns). For a similar analysis of these vowels, see Stancheva (2003).

7.3.2 and 7.3.3) since these nouns incorporate different syntactic layers within them which determines both their denotation and syntactic behavior.

Now let us turn to a striking difference between nominalizations in English and standard Bulgarian which concerns the **MANIFESTATION OF THE OBJECT-TO-EVENT MAPPING PROPERTY**. This property, as we saw in (19), holds for the English argument-taking nouns (AS and PS nominals), but not for the Bulgarian ones (24).

(24) a. Imperfective bases: atelic events

pi-e-NE-to *na bira/butilka bira* *dva chasa/*za dva chasa*
 drink-TH.VOW/IMPF-NE-the of beer/a bottle of beer two hours/*in two hours
 'the drinking of beer/a bottle of beer for two hours/*in two hours'

b. Perfective bases: telic events

IZ-pi-va-NE-to *na *bira/butilka bira* **dva chasa/za dva chasa*
 IZ-drink-IMPF-NE-the of *beer/a bottle of beer *two hours/in two hours
 'the drinking up of *beer/a bottle of beer *for two hours/in two hours'¹²

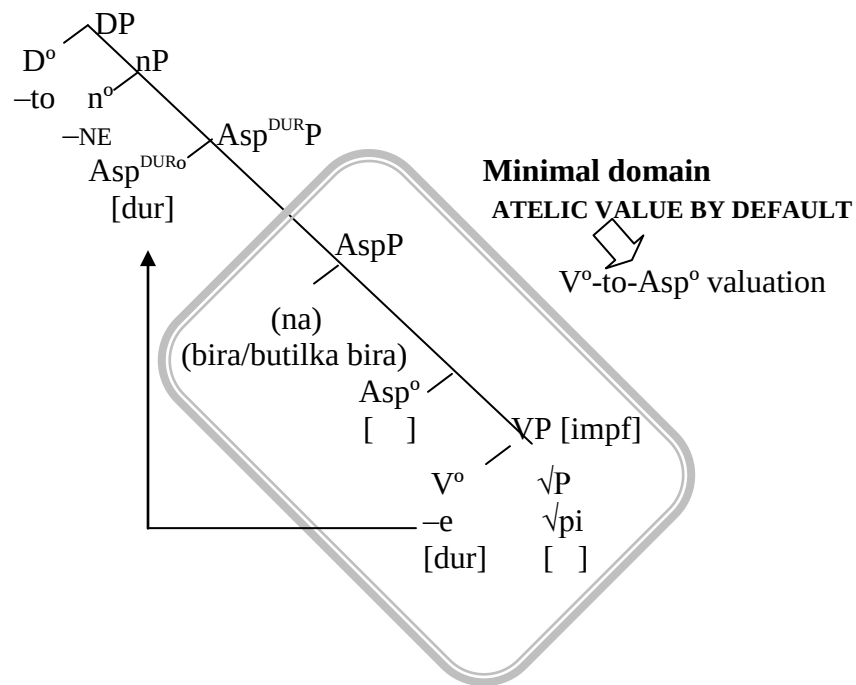
As we saw in the previous chapter, only the –NE nouns are argument-taking so only they should be tested on the OTEM property. However, we also saw in chapter 5 that contrary to the English verbal predicates, the Bulgarian standard verbs do not show this property. As I have proposed, this is due to the driving force of morphology for the calculation of inner aspect in this language where morphological (primary) imperfectivity signals atelicity in contrast to perfectivity, which gives rise to telicity, irrespective of the nature of the internal argument (see chapter 4, § 4.3.2). Furthermore, we also saw that the nominalizer –NE does not change the aspectual properties of the base on which the noun is built; consequently, –NE nominals will preserve the aspectual properties of their bases and will not show the OTEM property (24). Syntactically, this is explained by the fact that the inner aspect with both standard verbs and standard –NE nouns is always calculated within the minimal

¹² Recall that in some prefixed contexts the internal argument cannot appear bear (e.g. 'beer' in (24b) is ruled out). This may be related to the fact that the event, which is telic, requires that its participants agree in features; put differently, we have an instantiation of the reverse of the OTEM, i.e. an event-to-object mapping.

(closed) domain of aspectual interpretation precisely by virtue of the overt morphological means the language possesses, which serve as direct range assigners to Asp (25). In the presence of direct range assigners to Asp, the domain closes and all possible candidates for indirect range assignment (e.g. internal arguments) are blocked.

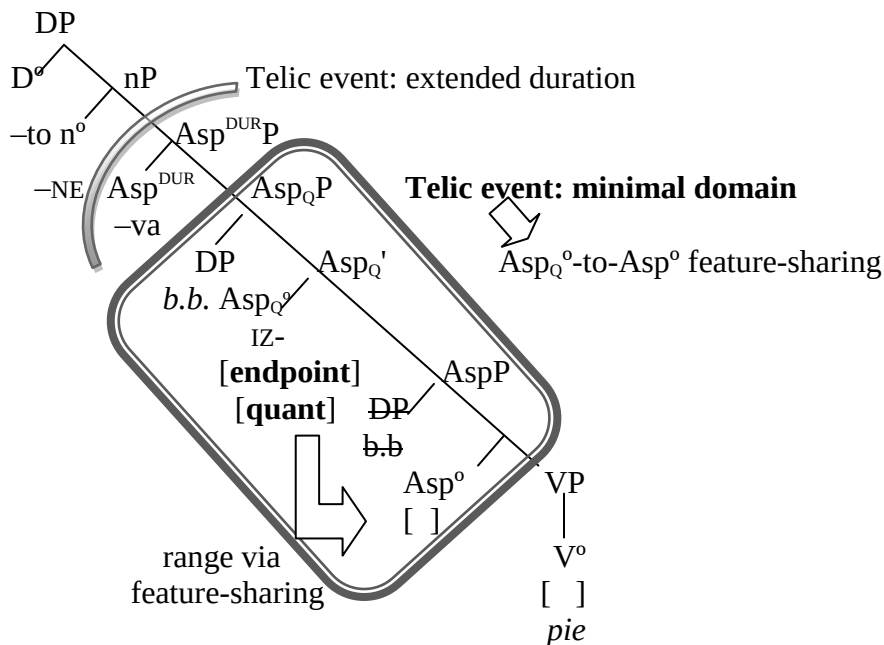
(25) No object-to-event mapping property within Bulgarian – NE nominals

a. Imperfective bases: atelic nouns (see (24a, 23b))



The derivation in (25) proceeds as follows. The root is selected to form part of the conceptual array with its default unmarked [] value (else, already specified for its morphological feature [impf]; see fn. 35, chapter 5). Once V° (e.g. the thematic vowel) is merged in syntax, the root verbalizes and Asp° checks its features; yet, there is no [endpoint] feature to assign it a quantity value, so further aspectually relevant heads are being checked by Asp°; again, no [endpoint] features are found. Thus, in the absence of another direct range assigner (e.g. a prefix or an [endpoint] feature on V°), Asp° receives its unmarked atelic value upon feature-sharing with V° (marked as [impf] or []) and the domain closes. As a consequence, the intervening effects, i.e. aspectually relevant features, coming from the internal arguments (e.g. OTEM) are blocked.

b. Perfective bases: telic nouns (see (24b))



Recall that the purely perfectivizing prefix *IZ-* heads its own Asp_QP and merges with its two inherent features: [endpoint] and [quantity] (see chapter 5, § 5.3.1). As a consequence, the prefix assigns value to Asp° via the head-to-head feature copying mechanism (Asp_Q°-to-Asp°), and the event is marked as telic within the minimal domain of inner aspect under direct range assignment, as usual. Therefore, no aspectually relevant features coming from the internal argument (i.e. the OTEM property) are able to change the telicity of the event. Furthermore, the internal argument (*butilka bira* 'a bottle of beer', (24b)), which is merged in Spec,Asp_QP, gets quantificationally bound by the prefix, preventing it to appear bare (*bira* 'beer'). Once the event has been telicized, and hence perfectivized, the imperfective suffix *-va* is merged so that the *-NE* nominalizer could satisfy its selectional restrictions and nominalize the derivation under its scope; consequently, the interpretation we get is one of a telic event with extended duration.

Before we proceed to the next nominalization type, **SOME COMMENTS REGARDING THE WAY I TREAT -ING AND -VA ARE WORTH MENTIONING.** Recall that *-ing* heads Asp_PP whose head is endowed with the feature [duration] and *-va* heads Asp^{DUR}P again headed by the feature [duration]. Crucially, the feature [duration], when inserted within the higher aspectual domain (above AspP), is interpreted as [process], which explains the process

denotation for both *-ing* and *-NE* nominals. A question to ask then is what makes *-ing* different from *-va* so that two distinct projections (Asp_pP and $\text{Asp}^{\text{DUR}}\text{P}$) headed by the same feature are required? As I have already shown in chapter 6 (subsection 6.5.1.2.2), there are sufficient reasons to treat these suffixes differently despite the fact that both of them introduce a process by virtue of their feature [duration]. I list these reasons in (26).

(26) On some differences between *-ing* and *-va*

- a. **Inner vs. outer aspect:** (i) nominal *-ing* is directly related to inner aspect: it blocks stative bases and prefers atelic structures over telic ones; (ii) *-va*, on the other hand, is related to outer aspect and poses no requirements on its input (recall that *-va*, being a secondary imperfectivizer, always attaches to perfective bases in order to make them imperfective; however, this is a morphological requirement).
- b. **Verbal vs. nominal status:** *-va* is a verbal aspectual (imperfectivizing) suffix whereas *-ing* is a nominal one (note that although *-ing* first merges as an aspectual process head, it moves to n^0 in order to check its feature [$_{\text{NOM}}$]; furthermore, in R-R nouns *-ing* is merged directly under n^0 , again by virtue of its nominal feature (15)).
- c. **On the external argument:** Borer (1999) proposes that nominal *-ing* heads the Asp_pP whose specifier hosts the external (originator) argument. Evidence for this comes from the fact that all *-ing* nouns have an originator interpretation (e.g. they do not nominalize non-originator weather predicates; statives are accepted on their agentive/originator reading, not the stative one, etc.). We have evidence to conclude that *-ing* and the originator external argument are inter-related. However, *-va* has nothing to do with the projection and interpretation of external arguments, it is just a mere imperfectivizing suffix which adds duration into the structure by virtue of its inherent feature [dur] (hence, *-va* derivatives can be built upon non-originator weather predicates and stative bases, as we already saw in the previous chapter).
- d. **Scope properties:** *-va* resembles progressive *-ing*: both pertain to the domain of outer aspect and, like negation, are operator-like elements which scope over the event denoted by the verb, be it telic or atelic. Nominalizing *-ing*, in contrast to progressive *-ing*, pertains to the domain of inner aspect, where (a)telicity is calculated, and is directly involved in the event structure of an element.

e. Position within Cinque's hierarchy: From chapter 5 we have concluded that *-va* heads its own functional projection, $\text{Asp}^{\text{DUR}}\text{P}$, which occupies its corresponding place in the hierarchy of Cinque. Nominal *-ing*, on the other hand, heads the originator Asp_P . The former should be higher than the latter, since outer aspect (e.g. *-va*) is higher than inner aspect (e.g. *-ing*) (see Appendix 1.1).

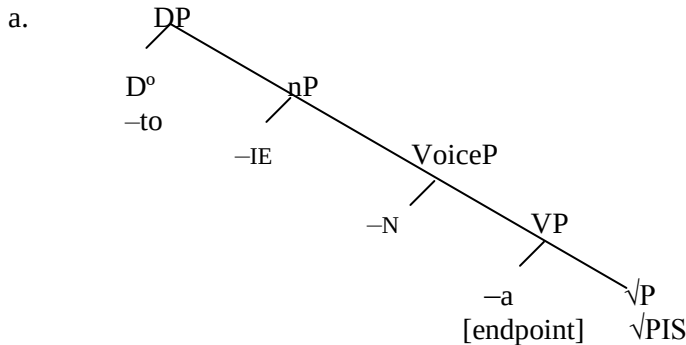
From (26) it follows that *-va* and (nominal) *-ing* are two distinct elements heading two distinct functional projections, Asp_P and $\text{Asp}^{\text{DUR}}\text{P}$, respectively.

Now let us turn to the syntactic representation of the Voice *-IE* nouns.

7.3.2. The syntax of Voice *-IE* nominals

We have previously seen that these nouns are formed from passive participial verbal bases. A syntactic representation of their derivation is offered in (27).

(27) *pis-a-n -ie -to* ‘the written thing, the writing’



b. Head movement:

$[\text{DP Spec } [\text{D}^\circ [\text{n}^\circ_4 [\text{VOICE}_3^\circ [\text{V}^\circ_2 \sqrt{0}_1 (\text{pis-}) + \text{V}^\circ (-a-)]_2 + \text{Voice}^\circ (-N-)]_3 + \text{n}^\circ (-IE-)]_4 + \text{D}^\circ (-to)] [\text{nP Spec } t_4 [\text{VOICEP Spec } t_3 [\text{VP Spec } t_2 [\sqrt{\text{P}} \text{Spec } t_1]]]]]$

SOME COMMENTS ARE IN ORDER HERE. I have claimed that thematic vowels are “verbalizers”, i.e. they turn a categoriless root into a verbal stem. In my view, this is a necessary step to take in order to enable the participial morphemes *-N/-T* to be further

licensed and joined up. Put differently, participial suffixes select for verbal bases exclusively. We also saw that present tense thematic vowels bear the feature [dur] (25a) inasmuch as they denote *unboundedness* (see fn. 11). In the case of Voice –IE nominals, however, the presence of a thematic vowel gives different results. Thus, although –IE nominals contain a thematic vowel, in the majority of cases they denote results of events or objects. I claim that this is due to the different type of the thematic vowel involved in the formation of these nouns and to the additional presence of the participial suffix. In this respect, we saw that –IE nouns are participial in nature and are formed from the Aorist verbal base (see chapter 6, § 6.3.2). Hence, the thematic vowel which participates in their derivation is the Aorist one (‘–a’ in (27)). I claim that this vowel, inasmuch as it is related to *boundedness*, bears the feature [endpoint] which adds a resultative denotation to the derived nominal (see fn. 11). This result denotation is then further reinforced by the semantic contribution of the participial suffixes –N/–T themselves which, in my analysis, are Voice heads (see Cinque 1999: 101–103; Ferrari 2005) and have the effect of turning a verbal stem into a participle, thereby assigning a resultative meaning to the derived nominal.¹³

As for why participial nominalizations lack internal arguments, I tentatively assume that this is related to the lack of AspP, which facilitates a noun to become Participant-Structure, and which allows, with the addition of further telicity/transitivity-related projections (e.g. Asp_QP) a PS noun to become a true AS nominal.

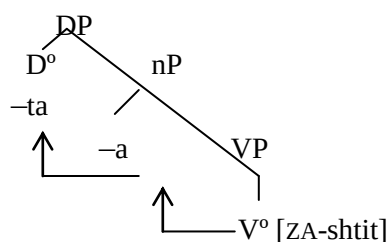
I now proceed to a syntactic analysis of the “other-suffix” nominals.

¹³ Roeper and van Hout (1999) claim that the English adjectival suffix –*able* operates as a passivizer which results in the dethematization of the subject position. For them, passivizing –*able*/–*ed* suffixes subcategorize for a passive VoiceP with a [+Theme] feature on its Specifier which then percolates to the next available Specifiers in the derivation. Treating passivization (English –*able*/–*ed* or Bulgarian –N/–T suffixes) as a dethematization device related to a particular feature ([+Theme] in their analysis) explains why passive nominalizations, which inherit this passive feature, are of the result-type, as there is no true Agent argument. Whether the relevant passivizing feature is also [+Theme] in Bulgarian –IE nouns is left for further investigation.

7.3.3. The syntax of “other-suffix” nominals

Recall that this group includes gender-derived nouns and nouns derived via various suffixes marked for gender. In the case of gender-derived nouns, I claim that the nominalizing head is the gender morpheme, as diagrammed below:

(28) [ZA-shtit]-a-ta ‘the defense’



The representation in (28) shows that gender nominals are formed by merging a gender marker with a verbal stem VP (in cases where there is a prefix, or, alternatively, a root phrase $\sqrt{P}$). I claim that it is the gender marker itself that nominalizes $\sqrt{P}$ /VP. The same derivation as the one in (28) holds for “other-suffix” nominals with the only difference being that the nominalizer is now the suffix already inflected for gender, and not just the gender morpheme.

So far we have seen that the gender nouns and the majority of the “other-suffix” nouns denote objects, abstract concepts, results of actions, etc. (see chapter 6, fn. 50). This can easily be accounted for by the fact that the nominalizing head n^0 merges directly with the root or previously verbalized stem as in (28), thus not providing any space for other functional projections to intervene and license an eventive denotation. There are, however, some cases of “other-suffix” nominals, especially those formed by the suffixes –BA, and –ITBA, which can also denote events:¹⁴

(29) *kraž-ba-ta* *stana* *v tri chasa*
 steal-BA-the.FEM.SG took place at three o'clock
 ‘The theft took place at three o'clock’

¹⁴ Reichenbach (1947) claims that “happen”, “take place”, and “occur” can only be predicates of events. Whenever a noun appears as the subject argument of these predicates, it is event-denoting in my analysis.

One way to account for the eventive reading of such nouns is to suggest that it is the nominalizing suffix –BA that brings about eventivity (see Georgiev 1999). However, we have evidence to claim that it is the presence of a verbal thematic vowel which is responsible for this, rather than some property of the suffix.¹⁵ To see how this may be so, consider the noun in (29). The root of this noun is √KRAĐ and not √KRAŽ. The final consonant of the root [D] is palatalized to [Ž]. To account for this I follow Svenonius (2004a: 180) who claims that consonant mutation consists of palatalization of the final consonant of the root before certain suffixes. It has been argued that consonant mutation in the root implies the underlying presence of a vowel, which is deleted on the surface (see Halle (1963) and Flier (1972) for Russian and Scatton (1983) for Bulgarian, among others). We may thus suppose that final consonant palatalization in the nominal *kraž*-BA ‘theft’ shows that a vowel deletion process has taken place. Following Svenonius (2004a), I suggest that the deleted vowel is the thematic vowel.¹⁶ To exemplify, the root √KRAĐ is first “verbalized” by a thematic vowel. When the nominalizer –BA attaches to the newly formed verbal stem, i.e. the root plus the thematic vowel, the vowel is eliminated and the final [D] of the root softens to [Ž], which indicates vowel reduction. In other words, it is not merely the suffix that brings about the eventive interpretation of these nouns, but the thematic vowel itself, which is inherently endowed with the feature [dur] (30).

As for the eventive “other-suffix” –ITBA nominals (e.g. *kos-i-tba* ‘mowing’, *gon-i-tba* ‘chase’), we may reanalyze them as containing a thematic vowel –I and a suffixal element –TBA, respectively. The difference between these nouns and the –BA nominals discussed above

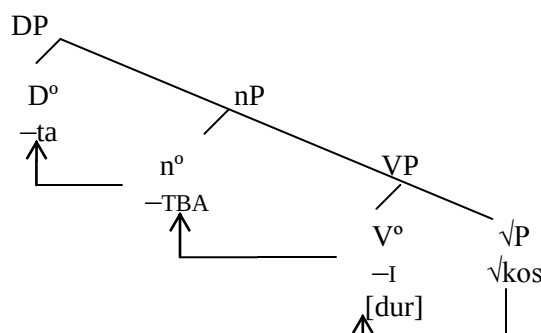
¹⁵ The fact that suffixes cannot bring about eventivity on their own is shown by the fact that there are cases where the same suffix (e.g. –BA) may form result/object nominals (ii) and cases where it yields an event noun (i): (i) *kraž*-BA-ta stana v 3 časa (the theft occurred at 3 o’clock)

(ii) **mol*-BA-ta stana v 3 časa (*the request occurred at 3 o’clock)

¹⁶ Svenonius (2004a) accounts for this fact by a more general morpho-phonological rule in Slavic, the regressive Vowel-Vowel (henceforth VV) simplification. That is, he proposes that, for a consonant to mutate, there need to be two vowels. For him, certain underlying sequences of two vowels result in palatalization of the preceding consonant. Palatalization takes place when one of the vowels is eliminated.

is that, in this instance, the thematic vowel is overt (–I) whereas in the former case it is covert.

(30) *kos-i-tba-ta* ‘the mowing’



If we compare the representation in (30) with those in (28) above, we can see that there is an additional layer in the derivation of these nouns, the VP projection. Recall that V°, being a “verbalizer”, contains the thematic vowel. In this case, the vowel (‘–I’ in (30)) corresponds to the present tense thematic vowel, which is the last element of the present tense base *kos-i* ‘s/he mows’. Following Stancheva (2003) I propose that this vowel bears the feature [dur] which, when merged on a lower verbal head (V°), assigns an eventive interpretation to the derived noun (see fn. 11). The correct order of suffixes is obtained by head movement. Again, the lack of AspP prevents such nouns to take internal arguments and become either PS or AS nominals.

TO RECAPITULATE, we have seen that the three morphological nominalization types differ syntactically. The “other-suffix” nominals are derived by the merger of a root or a verbal stem with a nominalizing head n°, where n° is a gender morpheme or derivational suffix marked for gender. This suggests that such nouns denote objects or abstract concepts. The eventive interpretation of some of these nominals is explained by the additional presence of a present tense thematic vowel endowed with the feature [dur] (else, [-bounded]/[+eventive]) which, apart from verbalizing the structure, assigns an eventive reading to the derived noun. As for Voice –IE nominals, they are derived by the merger of a participial base with the nominalizing suffix –IE. Bearing in mind that participles are formed from the Aorist verbal base, it is the Aorist thematic vowel and its feature [endpoint] (else, [bounded]), together with the passivizing function of the participial suffix –N/–T, which contributes to the result

interpretation of these nouns (see fn. 11). Finally, the process reading of –NE nouns is accounted for by the fact that they embed a higher $\text{Asp}^{\text{DUR}}\text{P}$ whose head bears the feature [dur] (else, [-bounded]) which is interpreted as [process].

The observations made so far indicate that there is a strong relationship between syntactic structure and interpretation, i.e. process, eventive, resultative, etc. We have seen that thematic vowels, being aspectual in nature, contribute to event structure. Thus, the Aorist vowels add a resultative interpretation to the derived noun due to their feature [endpoint] (27) whereas the present tense vowels, which bear the feature [dur] (else, [-bounded]), assign an eventive denotation to the corresponding noun when located in the lower verbal domain (30), or a process reading if merged in the higher aspectual domain (23). Furthermore, we have also seen that syntax drives argument structure, too, where only in the presence of AspP are internal arguments allowed within a nominal. If no other aspectual projection apart from AspP is available, then the nouns is a Participant-Structure one. If, on the other hand, other higher transitivity/telicity and process related aspectual layers are involved in the derivation of a noun, then we obtain a true Argument-Structure nominal.

Another observation to be made is the striking difference between English and standard Bulgarian as far as the object-to-event mapping property is concerned. Whereas English argument-taking nouns (AS and PS –ing and –tion nominals) show this property (§ 7.2.3), the Bulgarian (AS and PS) nominals do not (§ 7.3.1). As we have already explained it in chapter 5 when dealing with verbs, this has to do with the different properties of the verbal bases in these languages: biaspectual in English (with the sole exception of the [endpoint] unaccusatives), but either perfective/telic or imperfective/atelic in Bulgarian, together with the way Asp^0 is assigned range in each language: within the minimal domain in Bulgarian, via AspX^0 -to- Asp^0 feature sharing, but within the extended domain for the majority of the English eventive predicates. Furthermore, the (un)availability of the object-to-event mapping property is additionally correlated with the absence of direct range assigners to Asp^0 in English but their presence in standard Bulgarian.

Interestingly, we saw that the Bulgarian biaspectual verbs behave like the English verbs regarding the object-to-event mapping property. It is then logical to expect that the corresponding nominalizations will also preserve this property. I dedicate the following section to a syntactic account of the Bulgarian biaspectual nominals.

7.4. The syntax of the Bulgarian biaspectual nominals

We have already seen that there are three basic morphological nominalization types within the Bulgarian biaspectual paradigm, the $[-ira+NE]$ nouns, the $-tsija$ nouns, and the “other-suffix” nouns (see chapter 6, § 6.6). I will only comment on the first two nominalization types.¹⁷ The first group of nouns are an interesting combination of both non-native ($-ira$) and native ($-NE$) morphology. Bearing in mind that affixes are aspectual in nature and project in syntax, and that syntax is the driving force for both semantics and argument structure, then the question which arises is what happens when both native and non-native principles of grammar (else, morphology) meet one another.

I start with the $[-ira+NE]$ nouns.

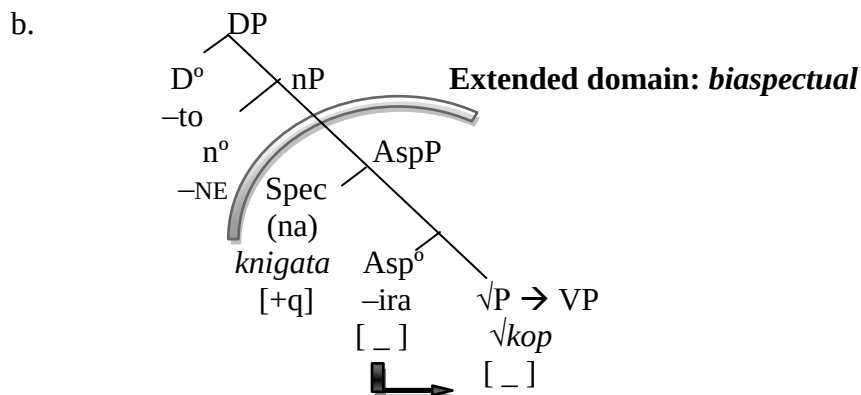
7.4.1. The syntax of $[-ira+NE]$ nominals

A crucial fact which we should bear in mind when examining the $[-ira+NE]$ nouns is the observation that when these nouns take a $[+q]$ internal argument, they are semantically ambiguous between a telic and an atelic interpretation. Thus, they always allow for a process reading in line with standard $-NE$ derivatives, but at the same time they are also compatible with telic modifiers such as the time-span adverbial ‘in X time’. A syntactic representation follows.

¹⁷ The “other-suffix” biaspectual nouns are left aside, but I assume that their derivation will be similar to the one proposed for the standard Bulgarian “other-suffix” nominals (28, 30).

(31) [-ira+–NE] nominals

- a. *kop–ira–ne–to* *na kniga–ta ot Ivan dva chasa/za dva chasa*
 copy-BIASP-NE-the-NEUT.SG of book-the by Ivan two hours/in two hours
 ‘The copying of the book by Ivan for two hours/in two hours’



From (31b) we can observe that the categoriless root $\sqrt{\text{kop}}$ ‘copy’ enters the numeration devoid of any feature specification with respect to [endpoint]. Recall that the same phenomenon is observed within the verbal domain of both English and Bulgarian biaspectual eventive predicates (see chapter 5, § 5.3). **The root further verbalizes by the addition of the suffix –ira, an Asp head (else, the root is interpreted as a verb upon the merger of –ira, i.e. when embedded within (verbal) aspectual structure)**. Alternatively, we may treat the suffix –ira as the overt realization of a verbalizing V head on par with the Bulgarian thematic vowels. However, this is problematic because loan verbs like *kopira* ‘copy’ never allow V-adjoining idiosyncratic (i.e. lexical) prefixes to attach to them: we cannot have a prefix x- attaching to *kopira* and giving a verb with a different denotation, e.g. *x-*kopira* → ≠copy. Therefore, –ira is the manifestation of some higher functional layer, whose presence both verbalizes the structure and prevents lower (functional) elements to intervene (e.g. [_{ASPP} –ira [_{VP} kop-]]^V vs. *[_{ASPP} ... [lexical prefix [_{VP} –ira [_{VP} kop-]]^{VP}]^{PREF+V})).

Furthermore, since **this suffix is not native, it has no relevant interpretation in the language so it is again devoid of any feature specification with respect to [endpoint] or [duration]**. Hence, the verbal formation [$\sqrt{\text{kop}}\text{–ira}$]^{ASP} ‘copy’ is aspectually underspecified, else, neutral with respect to

(a)telicity (or, put differently, biaspectual). It then follows that the nominalizer –NE, which always selects for imperfective bases, will be able to directly attach to this formation without additional syntactic mechanisms (e.g. the merger of the secondary imperfective suffix). In fact, such a morphological requirement on behalf of –NE is hard to preserve here since we are dealing with borrowed bases for which (im)perfectivity is totally irrelevant, and even inexistent. Hence, the –NE nominalizer will be always capable to attach directly to the biaspectual base without the insertion of the –va morpheme.

As for the way **INNER ASPECT IS CALCULATED** in the derivation above, we can observe that we are operating **WITHIN THE EXTENDED DOMAIN** of aspectual interpretation inasmuch as (i) the base is underspecified for (a)telicity, and (ii) the internal argument *kingata* ‘the book’, which originates in Spec,AspP, is marked as [+q]. Thus, in order to value Asp^o, the domain extends but in the absence of any direct range assigner to it (e.g. an [endpoint] feature on a prefix), the noun remains ambiguous with respect to (a)telicity. As a consequence, ***both telic and atelic modifiers are allowed (e.g. the time-span adverbial and the for-adverbial, respectively) since the –NE nominalizer always preserves the aspectual properties of its bases.*** Therefore, on its atelic reading (i.e. in atelic contexts, i.e. when modified by the for-adverbial, e.g. ‘the copying of the book for two hours’), the noun will refer to a process, whereas on its telic reading (i.e. when modified by the in-adverbial, e.g. ‘the copying of the book in two hours’), the noun will refer to the accomplishment of that process, i.e. to a telic event.

Interestingly, note that there is no [endpoint] feature present in the structure in (31), which is what facilitates the aspectual ambiguity of the noun (recall that the base is biaspectual, i.e. aspectually ambiguous). However, once the **FEATURE [ENDPOINT] ENTERS THE NUMERATION** on a given element, then the direct range-assigning mode becomes available. This is instantiated in the presence of telicizing prefixes.

(32) Prefixed bases: –va is always optional

a. no –va: *atelic/telic

PRE-kop-ira-ne-to *(na kniga-ta) *dva chasa/za dva chasa

PRE-copy-BIASP-NE-the-NEUT.SG *(of book-the) *two hours/in two hours

‘The re-copying *(of the book) *for two hours/in two hours’

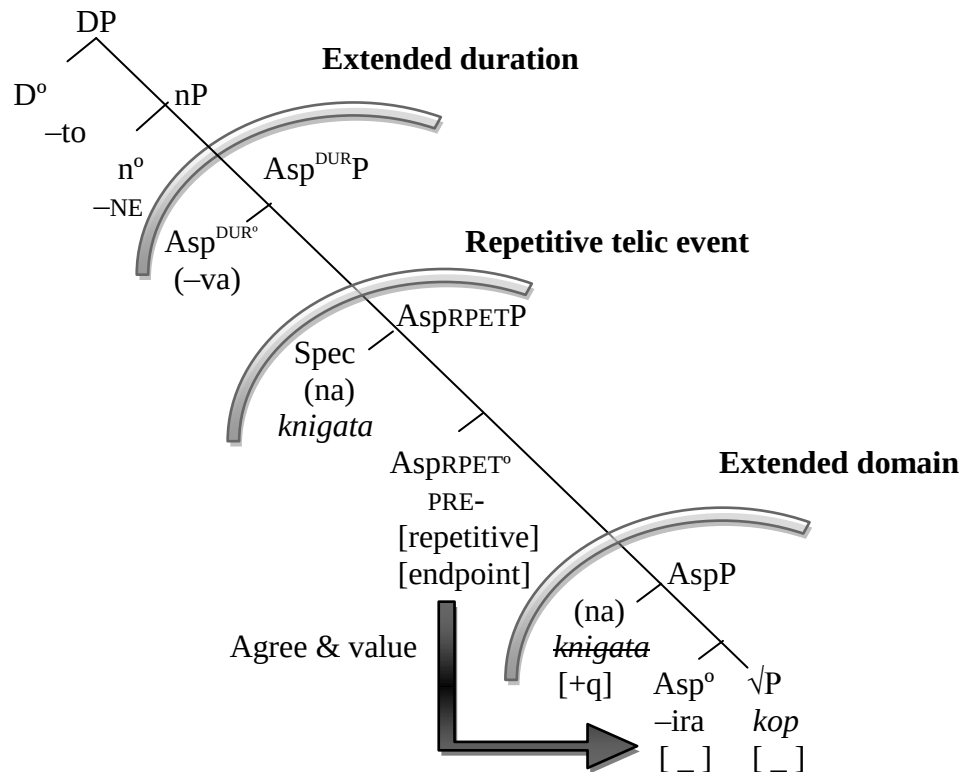
b. –va is present: in/for-adverbials; yet, still telic

PRE-kop-ir(a)-va-ne-to *(na kniga-ta) dva chasa/za dva chasa

PRE-copy-BIASP-IMPF-NE-the-NEUT.SG *(of book-the) two hours/in two hours

‘The re-copying *(of the book) for two hours/in two hours’

c.



From (32a) we can observe that **WHEN A PREFIX IS PRESENT IN THE STRUCTURE**, then we have a telic event. This is explained as follows: the loan root $\sqrt{\text{kop}}$ 'copy' enters the numeration devoid of any feature after which it verbalizes by the merger of *–ira*, an Asp° . However, neither the base nor Asp° possess any feature capable of determining the inner aspect of the predicate so the domain extends (note that the internal argument is [+q]). Once the prefix *PRE-* 're-/again' is merged as head of its own functional projection à la Cinque (e.g. AspRPETP), its [endpoint] feature enters into an Agree relation with Asp° via

the head-to-head feature copying mechanism, assigns range to its open value, and the event is interpreted as telic. The telic reading of the event denoted by the noun is further reinforced by the selectional restrictions of the repetitive prefix itself which, as we saw in chapter 4, selects for telic bases exclusively.

However, we also have the option, though only in colloquial registers, to **INSERT THE SECONDARY IMPERFECTIVE SUFFIX –VA** in prefixed contexts (32b).¹⁸ In this case, an atelic interpretation becomes available despite the presence of the prefix. I tentatively assume that it is the [duration] feature of –va, an Asp^{DUR} head, which the for-adverbial targets and which, when overtly realized, highlights the durativized, process-like reading of the derived element (recall that a similar situation is found with the PO-verbs). However, although a process reading is made available in the presence of –va, this morpheme, being an outer aspectual marker, cannot override the telic character of its base (e.g. *PRE-kopiram* 're-copy') and a telic reading coexists on par with the durative one. Evidence for the underlying telicity even in the presence of –va comes from the resulting repetitive reading of the denoted event where the interpretation we get is one of 'a repeated process of copying *the same book* over and over again for two hours' (32b). The same is true for the rest of the prefixes.

In this respect, a distinction should be made between standard and biaspectual –NE nouns. To exemplify, recall that the presence of prefixation within the standard –NE nouns requires the obligatory presence of the imperfectivizing suffix –va, since –NE always selects for imperfective bases and since prefixes always perfectivize. However, this is not the case for

¹⁸ We should bear in mind that the insertion of –va within prefixed –NE biaspectuals is not totally assimilated by all speakers, and that there are speakers who do not feel confident with –va derivatives as in (32b). This implies that we are probably in the process of assimilating the non-native morphology and derivations to the standard paradigm. Thus, applying native strategies (e.g. prefixation in order to obtain telicity, –va suffixation to stress the process denotation, etc.) to non-native formations arguably makes us feel more confident with our utterances, which is not at all unexpected bearing in mind that all non-native elements finally tend to assimilate to the dominating native (i.e. standard) paradigm of the particular language.

the biaspectual –NE nouns, shown by the optional presence of the –va morpheme (32a). As already observed, this is arguably due to the fact that we are dealing with a different paradigm here, much more like English and languages with similar morphology, where notions such as perfectivity and imperfectivity are inexistent.

Another observation worth mentioning is the **OBLIGATORY PRESENCE OF THE INTERNAL ARGUMENT WITH PREFIXED BIASPECTUAL NOMINALS** (*knigata* 'the book' in (32)). In the same way as prefixed standard –NE nouns, ***the biaspectual –NE nouns behave as true argument-structure nominals under prefixation***. This is due to the presence of the prefix, a perfectivizing and a telicizing element, which both paradigms (the biaspectual and the standard one) share. As in the verbal domain, prefixes head their own functional projections inside nouns as well. In the examples above the repetitive prefix PRE- enters syntax as head of its own aspectual projection, AsprPETP, and is inherently endowed with two feature, the telicizing feature [endpoint] shared by all Bulgarian prefixes, and the outer aspectual feature [repetitive]. As for its place in the syntactic tree, it follows the hierarchy of aspectual features of Cinque (1999) (see Appendix 1.1). Furthermore, the presence of a prefix, which is an operator-like element, additionally requires the obligatory presence of an internal argument in its specifier position, so that it could scope over it and thus satisfy its operator-like properties. Hence, *knigata* 'the book' undergoes successive cyclic Spec-to-Spec movement starting from its original Spec,AspP position, and further moving to the specifier of the AsprPETP in order to satisfy the binding properties of the prefix.¹⁹ ***THIS EXPLAINS WHY PREFIXED NOUNS ARE TRUE-ARGUMENT TAKERS EVEN IN THE BIASPECTUAL PARADIGM OF BULGARIAN.***

REGARDING ARGUMENT STRUCTURE, observe the contrast between the noun in (31) which lacks any telic layer such as AsprPETP and the prefixed noun in (32), which incorporates such a layer. As expected, the former is a PS noun since it can appear bare in contrast to the latter, which is a true AS nouns for the reasons just mentioned (i.e. the binding properties of the prefix). Thus, the optional internal arguments in a PS nouns merge in their basic

¹⁹ The reader is referred to chapter 5 for the restrictions imposed by each prefix type in Bulgarian (e.g. lexical, inner and outer prefixes) since the same restrictions are operative under nominalizations like this one, too.

position, Spec,AspP where they receive a default participant interpretation and structural case (via *of*-insertion). However, no prefix is present such that the obligatory presence of the internal argument be required, so we are left with a PS nominal (31). Yet, once a prefix enters the derivation, the movement of this argument to the specifier of the projection headed by the prefix is made obligatory due to the operator properties of the prefix. It is precisely in this position where this argument receives an interpretation, that of a subject-of-quantity (else, subject-of-affected change). Hence, the final result is a true argument-taker. ***In other words, it is the additional presence of a telic layer which makes a PS noun become a true AS nominal.*** As we saw, this holds for both English and standard Bulgarian.

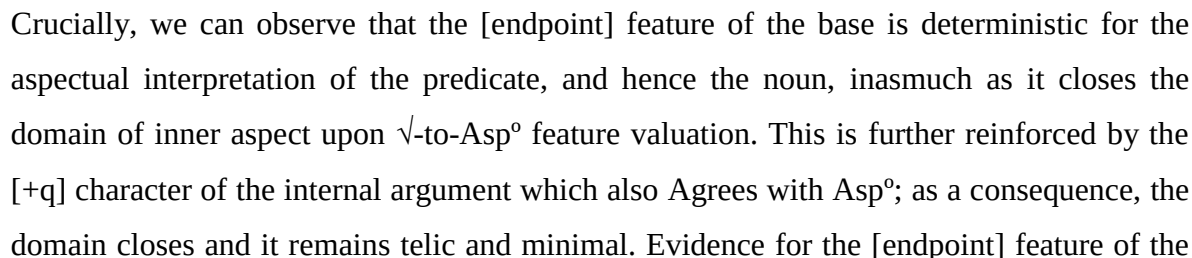
Finally, regarding the [-ira+–NE] nominalizations, I should briefly comment on one important observation, i.e. the fact that though the general trend is for a loan verbal derivative to be aspectually neutral, ***there are some loan roots semantically specified as [endpoint]***. This is the case of some prominent achievement predicates (e.g. *blokiram* ‘block’, *suspendiram* ‘suspend’, etc.) that enter Bulgarian and which, when nominalized, ***maintain their telic character which they arguably inherit from the foreign language.*** Since these are only rare cases, and since the list of the achievement predicate across languages is always exhaustive, this does not represent any theoretical or acquisition problem. I assume that the root in such cases enters the language already specified for its inherent feature [endpoint] in the same way as the Bulgarian primary perfective predicates, or the English achievements. This will therefore confirm our claim that biaspectual nominalizations are sensitive to certain principles of the foreign language from which they borrow the base. ***This will represent a non-native way of telicizing the structure*** (native here referring to Bulgarian), ***in contrast to prefixation, which is prototypically native.***²⁰ Again, since the base is telic, and since we have at our disposal all aspectual elements from the standard

²⁰ Another question which arises is whether the [endpoint] feature on the foreign achievement roots could be assigned by some native principles of interpretation. I assume that either these roots enter the language already specified for their feature [endpoint] in the same way as they are in the foreign language, or else it is their semantics that requires the presence of an [endpoint] feature.

(33) [–ira+–NE] nominalization of achievement predicates

blok-ira-ne-to *(*na dviženie-to*) **dva chasa/za dva chasa*
block-BIASP-NE-the-NEUT.SG *(of traffic-the) *two hours/in two hours
'The blocking *(of the traffic) *for two hours/in two hours'

blok-ir(a)-va-ne-to *(*na dviženie-to*) dva chasa/za dva chasa
block-BIASP-IMPF-NE-the-NEUT.SG *(of traffic-the) two hours/in two hours
'The blocking *(of the traffic) for two hours/in two hours'



root (else, verbal stem) comes from the telic behavior of the derived noun. To exemplify, note that the in-adverbial is always allowed, even when –va projects (33b), whereas the for-adverbial is allowed but only on a repetitive interpretation of the event denoted by the noun and only in the presence of –va. Hence, although we introduce duration into the structure via the secondary imperfectivizer (33b), we cannot get rid of the underlying telicity of the base and the interpretation we obtain is one of a ‘repetitive blocking of the traffic for two hours’.

From the observations so far we can conclude that the process of nominalization within the biaspectual paradigm obeys both standard and foreign strategies of word formation and interpretation. The former is facilitated by the presence of native functional elements which preserve their formal properties across paradigms such as the following:

(34) Native strategies of interpretation within [–ira+–NE] nominalization

a. **Prefixes** form part of the lexicon of Bulgarian and are hence accessible to nominalization processes within the biaspectual paradigm. When prefixes enter the numeration, they always bear the feature [endpoint] and telicize in both paradigms. This is an instantiation of direct range assignment to Asp^o which the biaspectual paradigm borrows from the standard one. Therefore, even if we add duration into the structure via the secondary imperfective suffix –va, which is also accessible to the biaspectual paradigm, the telicity of the base cannot be overridden (32b, 33b).

b. **The suffix –va**, when present, bears its inherent feature [dur] which is interpretable at LF. Since the [dur] feature is compatible with atelic modification, then the for-adverbial is allowed on par with the in-adverbial (32b). What makes modification by the for-adverbial possible is the feature [dur] of –va that the for-adverbial targets (recall that the same holds for PO-verbs which, although modified by the for-adverbial, remain telic). In this respect, note that standard –NE nouns derived on perfective/telic bases (either prefixed or not), incorporate –va obligatorily, but remain telic, therefore allowing the for-adverbial but only on a repetitive (i.e. telic) reading. This is so because telicity cannot be obviated within the standard paradigm even if we add duration onto it, given that –va is a morpheme

related to outer aspect and not inner aspect. As we saw, the same holds for prefixed –va biaspectual nouns, the difference being that –va is added to a prefixed biaspectual (32b) always on purpose, in order to stress the durative (process) denotation of the noun, and not by some morphological requirement of the nominalizer (recall that the biaspectual paradigm is morphologically insensitive). Thus, ***I tentatively assume that the speakers who apply this strategy (–va = process/durativized event) are pressed by some inner urge to standardize the non-native paradigm and have conceptualized the presence of –va as the presence of duration.*** Furthermore, some of the speakers who use this strategy find the presence of the in-adverbial marginal in such cases, indicating that they have gone one step further in their conceptualization of –va as duration, i.e. they interpret the presence of –va as the presence of process, i.e. atelicity.²¹

As for the non-native properties of an [–ira+–NE] nominalization, they are presented below.

(35) Non-native properties of [–ira+–NE] nominalizations

a. **The suffix –NE** selects for imperfective bases. Since imperfectivity is inexistent within the biaspectual paradigm, then any predicate can be nominalized by –NE, without the additional insertion of –va, even in the most prominent cases of prefixation (32a).

b. The presence of the **suffix –ira** cannot determine neither the interpretation nor the syntactic behavior of the derivative since it, being a borrowing, is devoid of any aspectually relevant features, be they semantic or morphological. Thus, its mere function is to verbalize (like –ize in English).

c. The verbalized [$\sqrt{P+}$ –ira]_{ASP} formation is therefore **aspectually neutral**, underspecified for the feature [endpoint] or [duration], schematically represented by [_]. This makes it possible for both telic and atelic modifiers to appear in such nouns (see (32)). This is not the case for the standard –NE nominals, which are either telic or atelic,

²¹ Similar situation is found in the phonological nativization of the loan verbs in some Bulgarian dialects. Thus, in order to disambiguate the (a)telicity of the borrowed verb, which is always biaspectual, there are speakers who shift the stress from the penultimate syllable to the final syllable to achieve atelic interpretation, e.g. kopírĭra (telic) vs. kopirÁ (atelic).

depending on the morphological (im)perfectivity of their bases but this is the case for the English eventive verbs, which are as a general rule aspectually underspecified, too.

d. Due to the aspectual ambiguity of the base, the calculation of inner aspect may be done within the **extended domain**, which is instantiated when the internal argument is specified as [+q] (31, 32). In this respect, recall that this is never the case for standard Bulgarian which always calculates aspect within its minimal domain due to the availability of direct range assigners to Asp^o.

e. There are some **semantically telic (achievement) bases** which, on entering the derivation, close the domain and give rise to telic events exclusively (33). This is an instantiation of a direct range assignment via the Root-to-Asp feature sharing mechanism, which implies that some properties of the foreign base (e.g. its inherent [endpoint] feature on the base) may be decisive for the final interpretation of the event. Recall that this is exactly what happens with nominalization of achievement bases in English (13b, 17b, b').

TO RECAP, we have seen that the [–ira+–NE] nominals share properties with both English and Bulgarian. Like the English nouns, they tend to receive interpretation within the extended domain of inner aspect since their bases lack any aspectually relevant feature capable of valuing Asp^o, and since the –ira verbalizer itself is also devoid of any feature, too. However, once a prefix enters the numeration, we obtain a telic interpretation as is the case for the particle-incorporating –ing nouns in English (13a) or prefixed –NE nouns in standard Bulgarian (23a). In such cases, and due to the operator properties of both prefixes and particles, the presence of the internal argument becomes obligatory. As a consequence, we have an AS nominal. Furthermore, we also have achievement bases which enter Bulgarian already specified for the feature [endpoint] (33). When such bases nominalize, the result is a telic interpretation in the same way as achievement nominalizations in English (13b, 17b, b') or nouns formed on primary perfective verbs in standard Bulgarian (22). As we have observed, this is so because the nominalizer which participates in the formation of these [–ira+–NE] nominals (e.g. –NE) is taken from the standard paradigm and is unable to change the aspectual properties of the base under its scope. Thus, in the presence of an [endpoint] feature in the structure we have a telic event. However, in contrast to the –NE from the standard paradigm which always selects for imperfective bases,

the –NE from the biaspectual paradigm never requires the presence of the secondary imperfectivizing suffix –va even in the case of prefixed or achievement base, which are formally perfective in standard Bulgarian. To explain this, I have suggested that –NE is allowed to attach to non-imperfectivized biaspectual bases because of the total irrelevance of notions such as (morphological) (im)perfectivity within the biaspectual paradigm of Bulgarian as is the case for English.

Now let us turn to the second nominal type, the –tsija nouns.

7.4.2. The syntax of –tsija nominals

We have already seen that the **–tsija nouns share characteristics with the English –tion nouns** inasmuch as both of them (i) give PS nouns; (ii) have a resultative interpretation, not a process one; (iii) behave in a telic manner; (iv) show similar aktionsart properties (nominalize any kind of predicate); (v) show similar nominal behavior (allow all kinds of modifiers of nominal structure); (vi) allow only some low manner and temporal adverbs, etc. I claim that such a parallelism is syntactically reflected in the fact that both suffixes select for the telic Asp_QP, the difference being that **–tion heads this projection whereas –tsija, being a nominalizing head (n°) located above Asp_QP selects for this projection**, in the same way as –NE selects for an Asp^{DUR}P. Alternatively, we may suggest that –tsija, being a borrowed suffix, and in the same way as –tion, is the head of Asp_QP. However, I prefer to treat –tsija in line with the rest of the nominalizers in Bulgarian, i.e. as an n-head, despite its non-native status. Arguably, such a line of analysis is made available by the fact that although a borrowing, this suffix is assigned gender (e.g. feminine, since it ends in –ja).

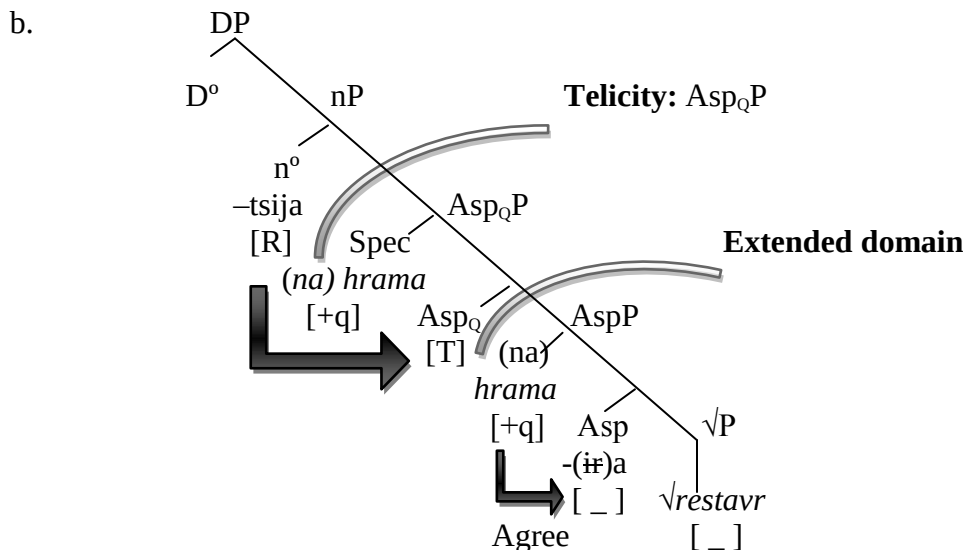
However, note that **the similar behavior between the English –tion and the Bulgarian –tsija nouns may be morphologically-driven and, consequently, syntactically reflected**. As I have already observed, both nominalizers are borrowings within the lexicon of the corresponding language (e.g. –tsija comes from Greek and –tion comes from Latin). Hence, their similar properties may not be

a mere coincidence but may arguably be related to a common underlying ancestor (e.g. a nominalizer giving result nouns) from which both suffixes derive and hence inherit some of their properties. If this is indeed the case, then the possible cross-linguistic differences found between the –tsija and the –tion nouns will be related to the different level of standardization together with the different morphological properties of the particular language that borrows such forms, and the interaction between native and non-native morphology within this language. Crucially, this will also imply that even borrowings, these elements preserve at least some of their properties inherited from the common ancestor which will consequently have both semantic and syntactic effects. I leave the distinction loan-native at the morphological level for further research.

A syntactic representation of the –tsija nouns follows.

(36) The syntax of –tsija nouns

- a. *restavr-a-TSIJA-ta* (na hrama-a) **chetiri godini/za dve sedmitsi*
 restore-TH.VOW-TSIJA-the-FEM.SG (of temple-the) *four years/in two weeks
 ‘The restoration (of the temple) ***for four years/in two weeks**’



The PS (and not AS) properties of the –tsija nominalizations is due to the absence of any process-related layer (e.g. $Asp_P/Asp^{DUR}P$), which accounts for the optionality of the internal argument (recall that only in the presence of $Asp_P/Asp^{DUR}P$, in combination with

Asp_QP, or a similar telic-transitive structure, is a noun capable of being true argument-structure nominal). In this respect, recall that although Asp_QP is overtly realized by –tsija, this does not force the internal argument to land in the specifier of this projection because –tsija is not an operator-like element; furthermore, the [R(esult)] feature on –tsija, in combination with its inherent feature [nominal], does not relate to argument structure. As for the telic character of these nouns, it arises as a consequence of the incorporation of the telicizing Asp_QP which the suffix –tsija selects (else, heads as –tion in English) and whose feature [R(esult)], in line with [R] on –tion, together with the [+q] value on the DP internal argument, Agrees with Asp_Q° and marks the event as telic.

THE DERIVATION PROCEEDS AS FOLLOWS. First, both the root and the Asp head are devoid of any aspectually relevant features. Thus, neither the root nor the Asp head itself are capable of closing the aspectual domain of interpretation under valuation, so the next candidate is the DP *hrama* ‘the temple’ located in the Spec,AspP. Since the DP is [+q], the domain extends; however, since –tsija forms part of the numeration, then Asp_QP is also immediately selected, since –tsija selects for it (else, heads it). Once an Agree relation is established between the [R] feature on –tsija and the head of Asp_QP, the event is marked as telic. ***No further functional layers can be added since the nominalizing head –tsija projects immediately on top of Asp_QP*** (in the same way as the Voice suffix –IE selects for and projects on top of VoiceP), thus ***closing the space for higher aspectual projections to appear within such nouns*** (e.g. Asp_PP/Asp^{DUR}P). This additionally explains the lack of productive prefixation with these nominals since such prefixes merge above Asp_QP on top of which the derivative nominalizes.

Before I go on, I would like to make some comments regarding **THE STATUS OF –A AS AN ASP HEAD WITHIN –TSIJA DERIVATIVES** (see (36)). In fact, it is interesting to note that –a corresponds to the third conjugation vowel, which is quite expected bearing in mind that the third conjugation is the productive one Bulgarian. Thus, all biaspectual verbs, since they end in –a (e.g. –ira) belong to it. It is also interesting to note that ***the suffix –ira never appears within a –tsija noun***. Thus, the status of –ira as an Asp head may be

prima facie questioned inasmuch as Asp projects within a –tsija noun but is never overtly realized. However, any –tsija noun has its –ira verbal pair, implying that **–a and –ira are either mutually exclusive (in case they compete for the same position, Asp°), or that –a is just a subpart of –ira** (i.e. its final vowel), which is inserted just to indicate the relationship of the derivative to the corresponding verbal entry and its membership to the third conjugation. Why shall we then treat –a as an Asp head rather than a verbalizing V head on par with theme vowels? Regarding this issue, I suggest that we have supporting evidence in defense of the treatment of **–a as the shortened morpho-phonological version of –ira and therefore the overt realization of the Asp node**. Observe the following data.

- (37) a. *moderen* (A) > a'. *modern-iz-ira* (V) > a''. *modern-iz-a-tsija* (N)
 b. *modern* (A) > b'. *modern-ize* (V) > b''. *modern-iz-a-tion* (N)

From (37) we can observe that in the same way as deadjectival verbs in English (37b'), the Bulgarian deadjectival loan verbs (37a') incorporate the verbalizing suffix –iz (English –ize). **If –iz in Bulgarian is treated in the same way as –ize in English, i.e. a V head, then –ira cannot be a V head, since it always appears in any loan verb, in contrast to –iz which appears only in the case of deadjectival and subsequently verbalized bases.** This represents therefore enough evidence to suggest that **–ira is not a V head, but rather the overt manifestation of the AspP head**. In this respect, recall that the suffix –tion always selects for verbal bases (e.g. **verbalation* vs. *verbalization*, see chapter 6, (85) and subsequent discussion) in the same way as –tsija (e.g. **modernatsija* from *moderen* 'modern'). This is yet another way in which the –tsija and the –tion nouns resemble one another.

Crucially, regarding the derivational history of –tsija derivatives, it is important to observe that apart from being PS nouns, arguably facilitated by their derivational relation to a verb, –tsija can also give R-R nominals (this is no news since, as we already saw, all nominalizers are capable of giving R-R nouns). Regarding this issue, it is necessary to

observe that **for Borer (2003) the resultative/referential properties of these nouns derive from the fact that they do not bear any morpho(-phono)logical relation to a verb (or an adjective) in their derivational history since they are borrowed forms. This explains the fact that borrowed nouns never allow for a true AS reading.** However, as we can observe from the representation above, **there are two strong pieces of evidence against such an approach.**

First, the presence of the verbalizing element –iz in deadjectival verbs (37a’), which is preserved under –tsija nominalization (37a’’), implies, contra Borer (2003), that we have an underlying verb, which further explains the possibility of such nominals to refer to events. Second, all –tsija nouns derive exclusively from –ira verbs (e.g. *transformiram* ‘to transform’ → *transformatsija* ‘transformation’), a fact which at least implies that any –tsija noun has its corresponding –ira verb in the language. Such a coincidence is hard to neglect, so I prefer to treat the –tsija nouns as truly deverbal, in the same way as the PS noun *destruction* in ‘the destruction took place at three o’clock’.

TO RECAP, we can conclude that the –tsija nouns behave quite uniformly with the English –tion nouns. Thus, both nominalizers are endowed with the feature [R(esult)], which enters into an Agree relation with the Asp head and marks the event denoted by the noun as telic. The slight difference, though, is that like all Bulgarian nominalizers, the –tsija one is an n-head which selects for Asp_QP (in line with –NE which selects for a process, i.e. Asp^{DUR}P), whereas the –tion suffix heads Asp_QP (in line with the –ing nominalizer which heads the process projection, i.e. Asp_PP).

Finally, some comments on the instantiation of the Object-to-Event mapping property within [–ira+–NE] nominals are necessary to close the discussion.

7.4.3. The Object-to-Event mapping property within [–ira+–NE] nominals

We have already mentioned that this property is operative in both domains of English, i.e. the verbal and nominal domains, in contrast to the standard Bulgarian verbs and nouns, which lack such a property. We have already shown that the Bulgarian biaspectual predicates do show this property, so our expectation will be that it will be also preserved within the biaspectual nominal domain under [–ira+–NE] nominalization, since this nominalization type is the more verbal-like and since only –NE preserves the properties of its underlying base. As we can see, this prediction is borne out (38).

(38) OTEM property within Bulgarian [–ira+–NE] nominalizations

a. [+q]NP: extended domain of aspectual interpretation; both telic and atelic (see 38b)

kosnum–ira-NE-to *na vino-to* *dva chasa/za dva chasa*

consume-BIASP-NE-the-NEUT.SG of wine-the.NEUT.SG two hours/in two hours

‘The consuming of **the wine for two hours/in two hours**

(English: *the drinking of the beer for/in three hours*)

a'. [-q]NP: only atelic; *telic (see 38b’)

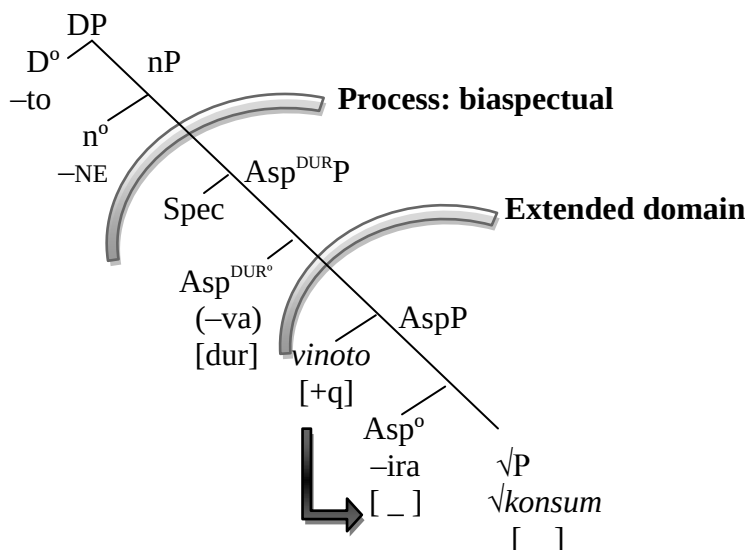
kosnum–ira-NE-to *na vino dva chasa/*za dva chasa*

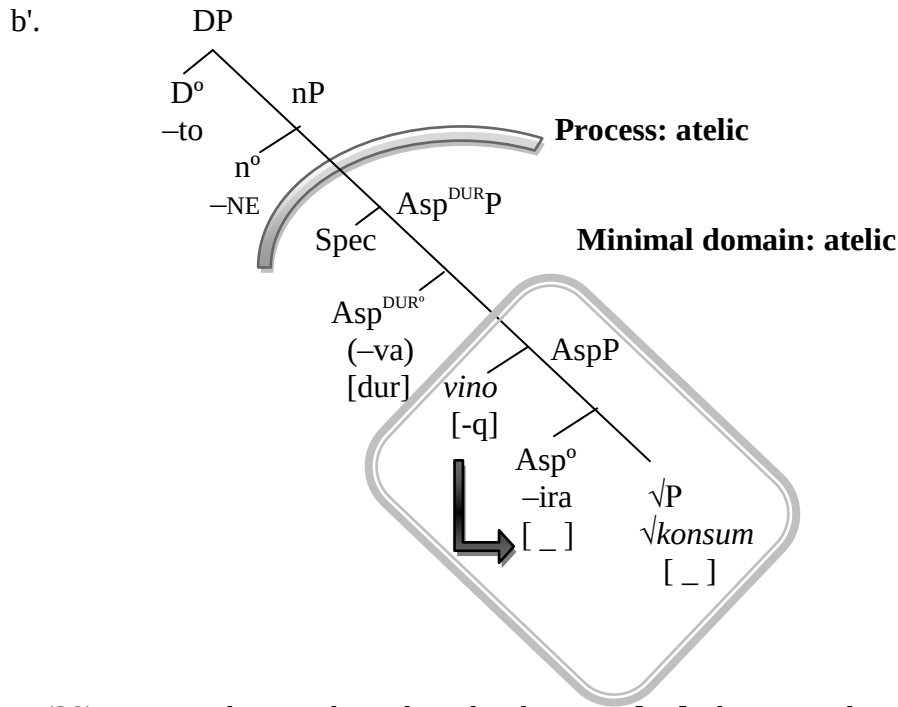
consume-BIASP-NE-the-NEUT.SG of wine two hours/*in two hours

‘The consuming of **wine for two hours/*in two hours**

(English: *the drinking of beer for/*in three hours*)

b.





From (38) we can observe that when the theme is [+q], the event denoted by the noun is either telic or atelic, i.e. it remains biaspectual (38a, b) in contrast to a [-q]NP which gives rise to atelic interpretation (38a', b'). This is exactly what happens within the verbal domain of Bulgarian biaspectual eventive predicates, so the explanation is the same: when the internal argument is a [+q]NP, then, due to the aspectually weak character of the positively specified quantity feature (e.g. [+q]) aspect cannot be determined, i.e. Asp° cannot be assigned value. Therefore, the domain extends, and any feature present in the structure may add its value to the aspectual interpretation of the final derivative. However, in the absence of such features, we are still left with two possibilities: (i) having a default atelic reading, or (ii) obtaining a telic interpretation. In both cases the internal argument is optional due to the lack of a telic-transitive projection, and receives both case and interpretation by first merger in Spec,AspP. Since -NE is the nominalizer selected to form part of the numeration, then the aspectual properties of the base will be preserved under nominalization. Thus, on the atelic reading of the noun (e.g. when modified by the for-adverbial), we obtain an atelic process, whereas on its telic reading (e.g. when modified by the in-adverbial) the interpretation we have is one of a telic event with extended duration.

If, on the other hand, the internal argument is negatively specified for the feature [quantity] (e.g. [-q]), then, due to the aspectually prominent atelicizing character of this feature, and

due to the absence of morphological prominence within this paradigm, Asp^o is immediately marked as atelic upon Spec-to-Head Agreement ($Spec, AspP\text{-}to\text{-}Asp^o$), after which the domain closes, and the final derivative is interpreted as an atelic process (38a', b').

Finally, let us examine the OTEM property in the case of prefixation (39).

(39) OTEM property within prefixed $[-ira+NE]$ nominalizations

a. $-va$ does not project: telic interpretation only

IZ-kosnum-ira-NE-to **(na vino-to)* **dva chasa/za dva chasa*

IZ-consume-BIASP-NE-the-NEUT.SG of wine-the.NEUT.SG *two hours/in two hours

‘The complete consuming of **the wine** **for two hours/in two hours*

(English: the drinking up of the bottle of beer **for three hours/in three hours*)

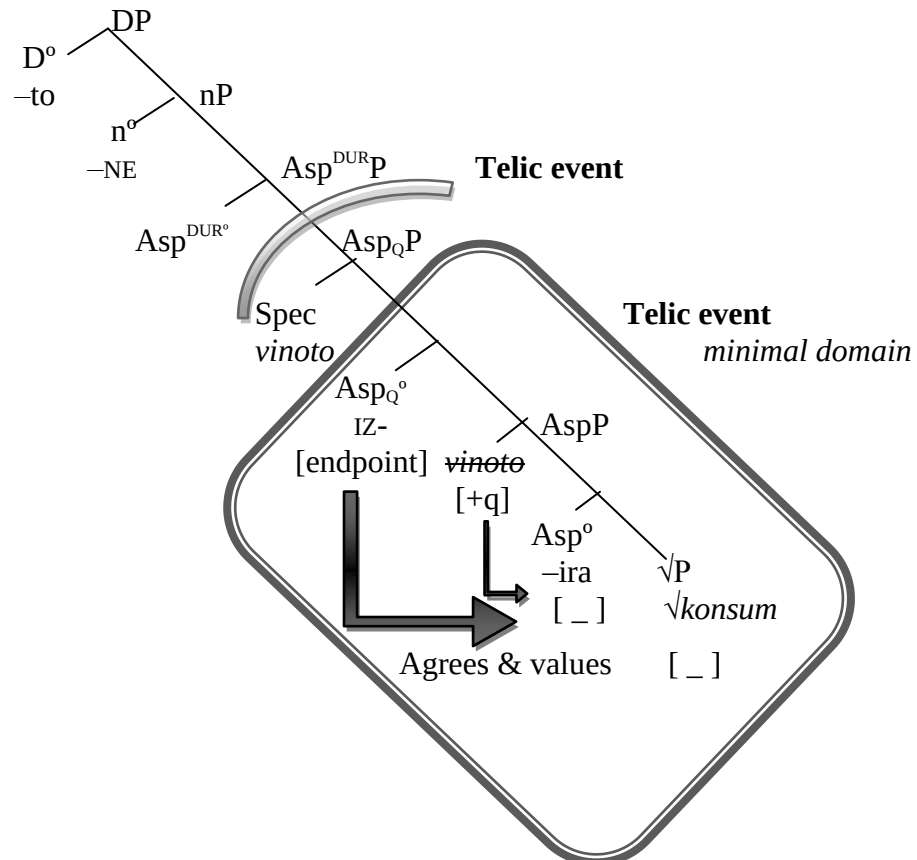
a'. $-va$ projects: only telic; for-adverbial allowed but on a (telic) iterative reading

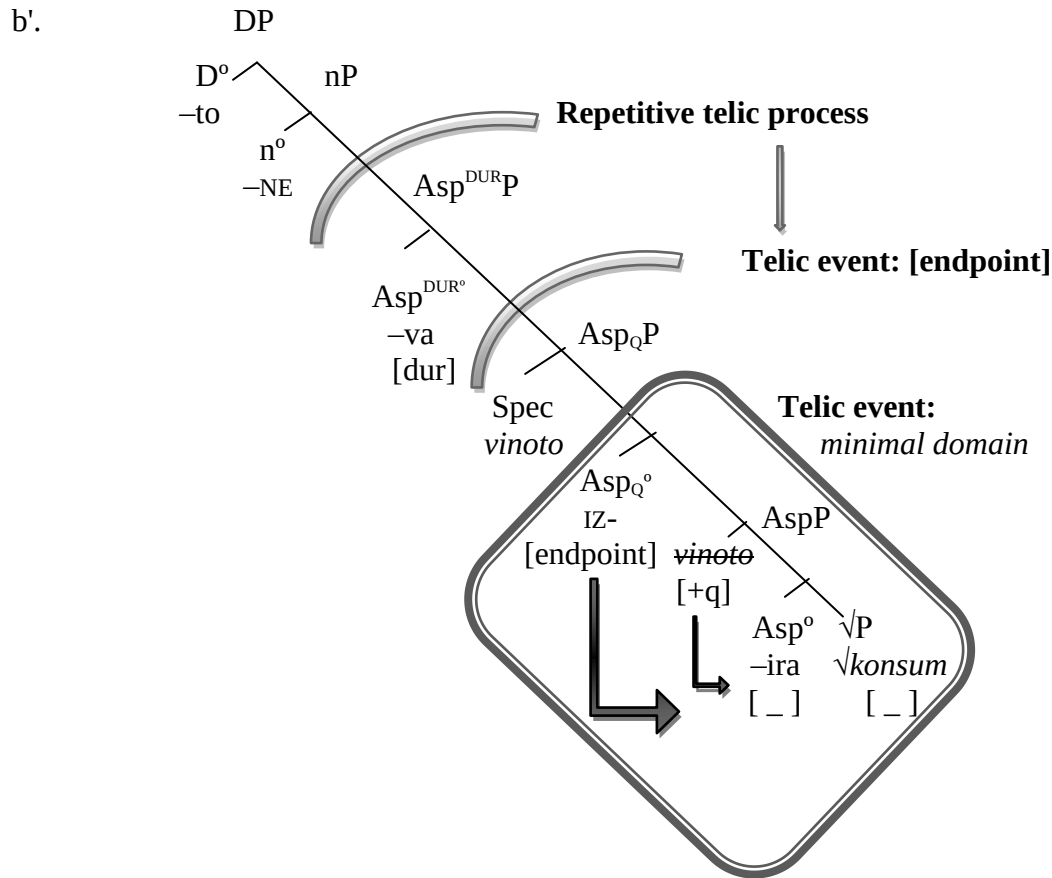
IZ-kosnum-ir(α)-va-NE-to **(na vino-to)* *#dva chasa/za dva chasa*

IZ-consume-BIASP-IMPF-NE-the-NEUT.SG of wine-the.NEUT.SG #two hours/in two hours

‘The complete consuming of **the wine** *#for two hours/in two hours*

b.





In the same way as within the verbal domain, prefixes, due to their aspectually prominent feature [endpoint], telicize the event, marking the head of AspP as telic. Since the feature of the prefix is prominent enough to close the domain upon direct range assignment to Asp°, the inner aspect of the event is calculated as telic within the minimal domain of interpretation. Consequently, the for-adverbial is rejected (39a, b). Interestingly, since the base is interpreted as telic, some speakers can additionally insert the secondary imperfective suffix -va, which will add duration to the base (39a'). In such cases, the event is interpreted as an iterative process, the process reading being facilitated by the overt realization of the Asp^{DUR} head. As a consequence, we have a telic event with an extended duration, and the interpretation we obtain is one of a 'repetitive process of consuming the same wine for the duration of two hours' (else, 'repetitive consumptions of the same wine').

TO RECAP, we can conclude that the OTEM property is present with the [-ira+NE] nominalizations as is the case for the English -ing nouns. Thus, in the presence of a [+q]NP

internal argument, the event denoted by the noun remains biaspectual, permitting for both telic and atelic interpretations. This is due to the fact that a [+q] feature on an NP is not deterministic enough to close the domain of aspectual interpretation and value Asp° , together with the fact that the root (or verbal base) is also devoid of any aspectual feature capable of valuing Asp° . If, on the other hand, the internal argument is [-q], then it Agrees with Asp° , the domain closes and remains minimal, and we obtain an atelic process reading. However, when a prefix enters the structure, it projects a transitive-telic structure (Asp_QP in (39)), and its feature [endpoint] values Asp° by the head-to-head feature copying mechanism (e.g. Asp_Q° -to- Asp° Agreement). As a consequence, the domain closes and the only interpretation available is one of a telic event.

Such a state of affairs once again implies that if a language (Bulgarian) has at its disposal a specific means for codifying inner aspect such as prefixation, it can always make use of it, even when dealing with non-native bases which are a priori aspectually non-interpretable (else, ambiguous). However, the loan (non-native) way of aspectual calculation is also preserved, reflected in the atelicizing role of a [-q] internal argument (38a', b'), which is blocked within the standard paradigm. Crucially, what this shows is ***that it is the structure and the properties of the functional elements present within it which will finally determine which way of aspectual calculation will be chosen***. Regarding this issue, we should always bear in mind that in the presence of direct range assigners such as prefixes, the indirect mode of valuation is blocked. Arguably, this is cross-linguistically true.

Now we are ready to close the chapter with some final observations.

7.5. Some final observations on chapter 6 and 7

In this work I adopt a functional approach to morphology, i.e. a syntactically-based mechanism of word formation, according to which roots enter syntax and are assigned category by the universally available functional structure in which they are inserted (Borer 1999, Marantz 1997, Alexiadou's 2001 et seq.). Following Borer (1999, 2003, 2005b, et

seq.) I assume that arguments are assigned interpretation in accordance with the particular functional event structure in which they appear. This explains our claim that argument structure is dependent on event structure, where the latter is understood here as the presence of particular aspectual nodes.

Furthermore, following Borer (1999, 2003, et seq.) I assume that in order to be properly licensed and interpreted, arguments must merge in functional specifiers: (i) Spec,Asp_QP for internal arguments in telic contexts, with a subsequent *subject-of-change/quantity* interpretation (e.g. telic transitive structures: accusative case assignment); (ii) Spec,F^SP (my Spec,AspP) for internal arguments in atelic contexts, with a subsequent *default participant interpretation* (e.g. atelic transitive structures: partitive case assignment), and (iii) Spec,EP (Spec,Asp_PP in nouns) for external arguments. I further assume that this way of argument structure licensing, inasmuch as it is universally given and uniform across languages, will be operative not only within the verbal domain of the language but within its nominal domain, too. In this chapter I have tried to show that this is indeed the case.

7.5.1. Some observations on the superiority of a syntax-driven approach to argument structure and interpretation

Since I endorse a functional approach to argument structure, my current investigation questions the lexically based approaches according to which the projection (and interpretation) of arguments is dependent on the properties of the lexical items (e.g. its theta grid) and on the existence of lexical rules (universal linking principles), which associate the particular arguments, already specified in the lexical entry of the verb, with particular syntactic positions (e.g. UTAH, ‘The Uniformity of Theta Assignment Hypothesis’, Baker 1988). I believe such an approach to be empirically refutable.

Evidence supporting the superior status of functionally-driven (else, constructionist) approaches to argument structure comes from the use of borrowed roots by speakers. If speakers really possessed some knowledge about the lexical semantics of a particular verb, which will consequently allow them to use

the verb in the appropriate syntactic context and assign the relevant interpretation to that verb and its arguments, then it is difficult to explain the sensitivity to the syntactic structure which bilingual children show when immersed within different linguistic environments.

To exemplify, a bilingual child speaking languages A (e.g. Bulgarian) and B (e.g. Catalan), when immersed in linguistic environment A, often borrows listemes (i.e. semantically contentful roots devoid of any grammatical information; else, concepts) from language B. Thus, the child recurs to Catalan $\sqrt{\text{mand}\check{z}}$ (*menjar* 'eat') instead of Bulgarian $\sqrt{\text{jad}}$ 'eat'. This happens in cases when the child cannot immediately access (i.e. does not recall) the native A correspondence to this listeme (e.g. $\sqrt{\text{jad}}$). This is a communicative strategy for which the child opts in order to get the conversation going on. What is crucial here is to observe that the borrowed listeme from language B, e.g. L^B ($\sqrt{\text{mand}\check{z}}$), is devoid of any semantic content in language A. (We should note that the child usually opts for this strategy when both participants in the communication know language B as well, i.e. know the conceptual package of the borrowed listeme). Thus, ***in order to make the borrowing native like (A-like), the child inserts L^B in (the intended) functional environment A, which assigns interpretation to L^B*** . For example, if the child aims at a telic transitive structure, she may produce utterance (40a), and if the intended reading is intransitive, then we have (40b, b').

- (40) a. *IZ-mandž-ih* *supa-ta*
 IZ-eat-1.PS.SG.AOR soup-the
 'I ate up the soup'
- b. *NA-mandž-ih* *se*
 NA-eat- PS.SG.AOR se.REFL
 'I ate enough'
- b'. *mandž-ih* *dva chasa*
 eat- PS.SG.AOR two hours
 'I was eating for two hours'

Thus, ***even if the interlocutor does not know the meaning of the listeme, she does differentiate the transitive use of the listeme (40a) from its intransitive use (40b, b').*** Crucially, such a strategy shows us that ***what determines the final interpretation of listemes is the structure itself, a knowledge already possessed by the child at an early age.***²² This is completely expected under a syntactic approach to argument structure. Thus, since the child knows that prefixes telicize the structure in language A (though not in language B), she prefixes L^B to obtain a telic predicate to which further functional tense markers are added, together with the relevant internal argument (40a); if, on the other hand, the intended reading is intransitive, something like (40b, b') is produced in accordance with the language A specific principles of aspectual computation and grammar.

In this respect, and more closely related to the topic of this chapter, is the following way of nativizing borrowed listemes:

- (41) a. *kolump–ira-h* *bebe-to* (from Spanish *columpiar* ‘swing’)
 swing-BIASP-1.ps.sg.Aor baby-the
 ‘I swang the baby’
 b. *kolump–ira-h se*
 swing-BIASP-1.ps.sg.Aor se.REFL
 ‘I swang’

- (42) Biaspectual formations: (from Spanish *imprimir* ‘print’)
 a. *imprim–ira-h* *dokumenti-te dva chasa/za dva chasa*
 print-BIASP-1.ps.sg.Aor documents-the
 ‘I printed the documents’

²² As already mentioned in chapter 6, section 6.7, studies on the comprehension of aspect (Weist *et al.* 1991; Vinnitskaya and Wexler 2001; van Hout, 2005, among many others) show that learners know the aspectual semantics of morphologically perfective verbs and consistently associate perfective aspect with completion (Stoll 1998, Vinnitskaya and Wexler 2001, Weist *et al.* 1991). This confirms the claim that morphological markers of perfectivity and hence telicity are easily acquired and correctly applied from an early age.

b. Outer prefixation

DO-imprim-ira-h *dokumenti-te*
DO-print-BIASP-1.ps.sg.Aor documents-the
'I finished printing the documents'

(41) and (42) exemplify the most common **COMMUNICATIVE STRATEGY IN LISTEME BORROWING**: the –ira suffixation of loan listemes. Thus, a child decides to borrow a listeme such as *kolump* 'swing' or *imprim* 'print', to which she adds the necessary language A available functional items (prefixes, reflexive markers *se*, etc.) and to which interpretation is finally assigned in accordance with the linguistic environment into which the listeme is inserted. Crucially, –ira preserves its biaspectual verbalizing characteristics, so an –ira derivative will be aspectually ambiguous as expected (42a). This implies that ***biaspectual word formation is an active process and an extremely productive word formation device in Bulgarian, and that the child is totally aware of it.*** Furthermore, the addition of outer prefixation to a borrowed listeme (42b) also shows the importance of productivity in word formation. Since the child knows that outer prefixes, e.g. DO- 'finish' in (42b), are the most productive ones in the language, as well as the most semantically transparent, she confidently uses them in her strategy.²³

This state of affairs is not easily accounted for within a lexicalist approach to argument structure, since borrowed roots/listemes are devoid of any semantic or formal properties when used under the communicative strategy in question. In this respect, observe that any functional information of the borrowed item is being completely removed (e.g. from *imprimir* 'print' the third conjugation vowel –I of the original (Spanish) language is eliminated, and the child borrows just the root *√imprim* to which she assigns only a

²³ Both ways of nativizing borrowed listemes are also found in adult communication between native speakers of language A, living in a B-speaking country; however, adults use this communication strategy for two reasons: when the native listeme is not immediately accessible, as with children, or (ii) for humor and entertainment.

conceptual content). Crucially, even in the absence of knowledge about the conceptual meaning of the listeme (e.g. even if the interlocutor does not know that *kolump(ira)* means ‘swing’), we are able to differentiate a transitive from an intransitive structure (41a, 42a vs. 41b, b', 42b), and a telic (40a) from a biaspectual (42a) structure, on the sole basis of that structure.

In this respect, and applying the same strategy, the child often produces biaspectual –NE formations with borrowed listemes, that function identically as the [–ira+–NE] derivatives discussed in section 7.4, which again confirms the sensitivity of the child to the productive morphology of the language.

Interestingly, the fact that the child (or adult) only opts for productive morphemes such as nominalizing suffix –NE, the biaspectual verbalizing suffix –ira, outer prefixation, productive inner prefixation, etc., indicates that ***the functional hierarchy of aspectual features which we presented in chapter 5 has been already acquired by the child***. In this respect, note that the higher in the hierarchy an element is located, the more productive it is. Furthermore, since the attachment site of a given element on this hierarchy determines semantic transparency and productivity to which the child is sensitive, then it confirms both the availability of the hierarchy and its early acquisition on behalf of children. Some notes on the hierarchy governing both verbalizations and nominalizations are offered in the following subsection.

7.5.2. Some observations on the aspectual hierarchy governing verbalizations and nominalizations

We have seen that verbalizing structure licenses event interpretation (Borer 1999). I have claimed that thematic vowels, which pertain to the lower domain of the hierarchy, repeated here in (43), license event interpretation to the derived nominal (30) in contrast to the higher aspectual structure which licenses the process-denotation of –ing and –NE nouns (together with higher verbal modification such as agent-oriented adverbials). This implies that the properties of a given derivative will be dependent on the attachment site of the

particular nominalizer (else, verbalizer). As for root derivations, since they do not have their dedicated place in the hierarchy, which starts with V (see Appendix 1.1), they receive a rather idiosyncratic interpretation which, in the nominal domain, will correspond to an object-denoting (R) noun lacking event properties inasmuch as the latter are V-dependent.

(43) The verbal-nominal functional hierarchy

THE HIERARCHY:

A. Higher domain of outer aspect: semantic transparency & morphological productivity

- NE: nP
- va: Asp^{DUR}P --> process structure (not atelicity! But no external arguments here)
- Outer prefixes*
- Inner prefixes 2*

B. Higher domain of inner aspect: semantic transparency & morphological semi-productivity

- ing: Asp_PP process structure (not atelicity; not mutually excluded with Asp_QP!!;
external arguments in nouns)
- Asp_QP (telicity): internal arguments (subject-of-quantity; Accusative case)
- Inner prefixes 1: spatial...*
- ira: AspP (domain of inner aspect: default internal argument; optional)

C. Lower verbal domain: idiosyncrasy; lack of productivity

- Theme vowels /-iz/-ize: VP
- Lexical (idiosyncratic) prefixes* } adjoin to V^o

D. Outside the hierarchy

√P

We have already seen evidence in support of the aspectual hierarchy in chapter 4. However, we have further empirical evidence coming from prefixation within nominalizations which again supports the existence of such a hierarchy. This will be further commented on in the following chapter.

Before I close this chapter, I would like to make some final observations regarding the following issues: (i) the universal character of the nominal typology; (ii) the availability of the domain of aspectual interpretation within both the verbal and the nominal domains; (iii) the similarities found between nouns and verbs, and (iv) the status of language variation.

Let us start with the first issue.

7.5.3. Some observations on the nominal typology across languages

In chapter 6 I have tried to show that there are three cross-linguistically (and arguably universally) available nominalization types: argument-structure (AS), participant-structure (PS) and result-referential (R-R) nouns. All the differences observed between these nominals are attributed to their underlying syntactic structure.

R-R nouns are nominals built directly upon the root, which prevents them to take any verbal and aspectual modifiers, and to project arguments, since all these properties are related to the morphological presence of an underlying verb in the derivational history of a noun. However, because R-R nouns do incorporate a nominalizing structure in their morpho-syntactic make-up (e.g. n^0), they do allow for modifiers of nominal structure such as plurals, indefinite determiners, demonstratives, etc. This is cross-linguistically invariant.

PS nouns, on the other hand, are nominalizations of some lower verbal-aspectual layers (e.g. VP, AspP). In Bulgarian, V^0 is overtly manifested by theme vowels, whereas in English and the biaspectual paradigm of Bulgarian we may arguably suggest that –ize (ENGL) and –iz (BULG BIASP), which attach to adjectives to make them verbs, and are further

preserved within the corresponding –tion (ENGL) and –tsija (BULG BIASP) nominalizations, are the overt manifestation of this category. Since these nouns have a verb as part of their derivational history, they are able to denote events, and allow some lower manner and temporal adverbials. As for their internal arguments, these are always optional and merged in Spec,AspP where they receive structural case via of-insertion and a default participant interpretation.

Finally, the true AS nominals are those which are capable of projecting true syntactic arguments. This is facilitated by the incorporation of higher aspectual layers inside these nouns such as Asp_PP, for external arguments, and some telicizing-transitive structure like Asp_QP or other prefix-headed aspectual projections, for internal arguments. Thus, ***only in the presence of Asp_PP and Asp_QP (or other telic projections) are nouns able to take obligatory syntactic arguments.*** As we saw, this is the case for particle-incorporating –ing nouns in English or prefixed –NE nouns in both Bulgarian paradigms, since these functional items, i.e. particles and prefixes, apart from being prototypical telicizing devices by virtue of their inherent feature [endpoint], are also operator-like elements which transitive the structure by virtue of their quantificational properties. Therefore, whenever these items are present, they project as heads of their own functional projection (Asp_QP for particles and Asp^xP for prefixes), and the internal argument is obligatorily required in the specifier position of this projection in order to be properly bound by the operator-like prefix/particle and consequently assigned its appropriate interpretation. However, if no such element is present in the structure, then the internal argument remains in its first merger position, i.e. Spec,AspP, where it receives a default participant interpretation and structural case via of-insertion (this holds for atelic transitives), i.e. we obtain a PS noun. As for the presence of Asp_PP, it is justified by the nominalizers themselves: –ing heads this projection whereas –NE selects for it (in case of prefixation). Regarding this issue, observe the following data.

- (44) a. *the enemy destroyed *(the city)*
 b. *the teacher examined *(the students)*

- (45) a. *the destroying* *(of the city) → AS NOUN
 a'. *the destruction* (of the city) → PS NOUN
 b. *the examining* *(of the students) → AS NOUN
 b'. *the examination* (of the students) → PS NOUN

(46) When a PS noun becomes AS noun

- a. *the enemy's destruction* *(of the city) → AS NOUN
 b. *the examination* *(of the students) by the teacher → AS NOUN

Like their verbal counterparts (44), the true AS nouns (45a, b) require their internal arguments obligatorily even if the external one is not overtly realized (45a, b). As for the PS nouns (45a', b'), though they allow for the omission of their internal arguments (45a', b'), they behave like true AS nouns once the external argument is overtly realized (46). Hence, ***in the presence of the external argument, the internal argument cannot be omitted, which makes a PS noun behave like true AS nominal.*** In this respect, recall that the external argument is always optional in nouns though not in verbs.²⁴

Thus, we have reasons to believe that only those nouns which are morphologically derived from verbs can be true AS nominals, which will further confirm Borer's (1999) observation that morphological representation cannot be divorced from the grammar. However, our

²⁴ To account for this it has been suggested that the TP projection, and consequently its EPP feature, which is responsible for the obligatory presence of external arguments within the verbal domain, is absent from nominals, explaining therefore the optionality of the external argument. Following Zucchi (1989) some have claimed that of-insertion within a noun represents an instantiation of Absolutive case assignment whereas by-insertion is related to ergative case assignment (see also Alexiadou 2001). In this way, the obligatory presence of the internal argument when the by-phrase is present reflects an underlying ergative case assignment condition: ergative case is assigned only in the presence of a theme in the Absolutive case. This once again confirms the close relationship and the shared properties of de-verbal AS nouns and verbs. I will make no claims regarding this issue.

contribution to such an observation consists in the fact that only when higher aspectual levels are involved in the derivation of a nominal (e.g. minimally VoiceP, Asp_QP, but not just V°), then morphological and, consequently, syntactic (and semantic) inheritance takes place, and comes to play a role in the determination of the properties of the final derivative.

Finally, when dealing with nominals a question arises as to **WHETHER THE PRESENCE OF NOMINALIZING HEADS À LA MARANTZ (1997) ARE INDEED NECESSARY**. I have already mentioned that the postulation of overt n° heads is justified in Bulgarian due to the fully developed gender system in the language (chapter 6, § 6.5.4). Since gender is a prototypically nominal property, I assume that what nominalizes the base in languages in which gender is syntactically active to be the gender marker itself, or some derivational suffix marked for gender. ***In English, on the other hand, there is no well-developed grammatical gender system and gender is by no means syntactically active, so people turn out to be insensitive to the grammatical gender distinctions in the language.*** As a consequence, using gender marking as a nominalization device is disallowed, so the language has to find another mechanism to achieve this goal. Thus, I assume, following Borer (1999) that ***it is the functional structure in which the listeme is inserted which finally determines its category membership***. This is manifested by the high number of zero derivations in the language, i.e. category-ambiguous forms which can be both nouns and verbs at the same time. This, as expected, is not found in Bulgarian since we have a full array of functional material which overtly verbalizes or nominalizes the listeme. In other words, ***category alternations in English are syntactically determined, by inserting a category-neutral root into a functional deterministic structure*** (Borer 2005b), ***whereas in Bulgarian, in the presence of overt morphological material to accomplish this goal (e.g. gender markers, theme vowels), they are morphologically determined***. This explains why all Bulgarian nominalizers project as n-heads in contrast to English nominalizers which project as other aspectual functional projections (e.g. Asp_Q° for –tion and Asp_P° for –ing). To exemplify, –tion first derives as Asp_Q head and then merges under n° in order to check its [-_{NOM}] feature whereas –ing originates in Asp_P° and

later merges as an n^0 head also to check its $[-_{\text{NOM}}]$ feature. In Bulgarian, on the other hand, all overt nominalizers originate under n^0 since they are all specified for grammatical gender. This, of course, has its consequences.

The fact that $-NE$ can attach to any base, e.g. stative, atelic, telic, secondarily imperfectivized, containing all kinds of prefixes (idiosyncratic, inner, outer), etc. implies that it is located in the highest place in the hierarchy. This represents no theory internal problems since this suffix is an n^0 head which can, in principle, occupy any place within Cinque's hierarchy. Crucially, recall that the aspectual hierarchy is fixed and universally given, whereas the attachment site of a given nominalizer is language specific. ***However, the attachment site of a given nominalizer does play a role in the final properties of the derivative, inasmuch as it can incorporate only those aspectual projections located under its scope, i.e. below it. However, if $-NE$ were derived as some aspectual head with a particular place within the hierarchy, in the same way as $-ing$ or $-tion$, then due to its feature $[-_{\text{NOM}}]$ it would not permit the incorporation of any higher aspectual layers but would immediately incorporate to n^0 and close the domain for further verbal modification (e.g. higher aspectual prefixation).*** Thus, we will predict that $-ing$ and $-tion$ will not be able to include prefixes located above the projections they head (Asp_p and Asp_Q). I leave this for further research. However, we will see in the following chapter that such a claim receives empirical support in the case of the Bulgarian $-NE$, Voice $-IE$, “other-suffix” and the $-tsija$ nominals. It then follows that whether a suffix projects as n^0 or whether it originates as some aspect-related head may have its consequence in the language and give rise to language variation.

Now let us mention some notes on the domain of aspectual interpretation.

7.5.4. Some observations on the domain of aspectual interpretation

A crucial assumption made in this chapter is the postulation of an aspectual domain of interpretation, AspP, which determines the final aspectual properties of a given derivative (MacDonald 2008b). We have seen that such a domain is operative within verbs, and we expect that it will be also operative within argument-taking nouns. As we have noted, this is indeed the case. To exemplify, in the same way as with verbs, AS nouns compute their inner aspect on the basis of AspP. I summarize the findings in (47).

(47) a. **Bulgarian standard paradigm:** operates within the minimal domain of AspP because Asp^o is valued in relation to the presence/absence of morphological perfectivity. This is a direct range assigning mode (via the V^o/AspX^o-to-Asp^o feature sharing mechanism) and prevents the object-to-event mapping (OTEM) property from emerging, being the latter an instantiation of indirect range assignment.

b. **English and Bulgarian biaspectual paradigm:**

(i) General trend: in the absence of direct range assigners to Asp^o, and given that the verbal entry is underspecified for aspect (e.g. for the feature [endpoint]), the indirect mode is chosen; thus, Asp^o is valued via the **OTEM mechanism**.

► [+q]NP internal argument extends the domain of interpretation because a [+q] value on NPs is not strong enough to close the domain and give rise to telicity (in contrast to an [endpoint] feature on a prefix or a particle). Hence, the event remains biaspectual, i.e. aspectually underspecified and both telic and atelic modifiers are possible.

► [-q]NP internal argument closes the domain and it remains minimal and atelic; this is due to the aspectually strong atelicizing character of the [-q] feature on nouns in these languages.

(ii) In the presence of **direct range assigners to Asp^o** like particles and prefixes, the domain closes upon the Agreement relation established between the [endpoint] feature of the head realized by the prefix or the particle, and remains telic.

From (47) we can observe that there is a clear distinction between standard Bulgarian, on the one hand, and English and biaspectual Bulgarian, on the other hand, an observation we

have already exemplified in chapter 5. Such an underlying difference is further transferred to the nominal domain as well. Thus, due to the different means which these languages dispose of, the way in which they mark inner aspect substantially differs: ***standard Bulgarian completely relies on the morphological specification of the base and, as a consequence, always operates within the minimal domain of inner aspect.*** Recall that standard Bulgarian verbs are either [endpoint] (PF) or []/[impf] (IMPF). Since the feature [endpoint] is aspectually deterministic, the domain closes once the feature enters the structure. As a consequence, the nature of the internal argument (i.e. the OTEM) is totally irrelevant. As for English and biaspectual Bulgarian, their verbs do not bear the [endpoint] feature (recall that, exceptionally, some achievements do). Hence, in order to calculate inner aspect they rely on the feature specification of the surrounding environment, i.e. the [+/-q] feature of the internal argument. Hence, in the absence of morphological sensitivity, the OTEM is operative within these languages. However, some instances of direct range assigners such as prefixes and particles are available for these languages as well, so on entering into the structure these elements, in the same way as the [endpoint] feature in standard Bulgarian, close the domain and give rise to telicity.

TO RECAP, we have made the following observations for nominal structures:

(48) a. English:

- (i) –ing operates within both extended (biaspectual) domains or minimal atelic domains, and exceptionally within minimal telic domains, the latter being instantiated in the presence of a particle. This goes against Borer's (2005b) claim that –ing is an anti-telic element. I claim that –ing preserves the properties of its underling base.
- (ii) –tion always operates within minimal telic domains. This is due to the fact that –tion heads Asp_QP whose presence immediately marks the structure as telic and thus closes the domain.

b. Bulgarian biaspectual paradigm:

(i) –NE operates within both telic (extended or minimal, the latter being instantiated in the presence of prefixation) and minimal atelic domains. In the same way as –ing, –NE preserves the aspectual properties of its underlying base (recall that the crucial difference between –ing and –NE is that the former but not the latter is an anti-stative element, and shows preference to atelic structures).

(ii) –tsija operates always within minimal telic domains like –tion: this is due to the fact that this suffix selects for Asp_QP in the same way as –IE selects for VoiceP.

Once Asp_QP enters the structure, the domain closes and remains telic.

c. Bulgarian standard paradigm: the domain is always minimal due to the driving force of morphology in this language. See the explanation above.

From the data presented in this subsection we can conclude that variation concerning the universally available domain of aspectual interpretation and the way a language calculates inner aspect is related to the properties of the lexicon of the language, e.g. whether a language has at its disposal some direct range assigner to Asp^o such as particles bearing an [endpoint] feature, etc., and to the features of the lexical items, e.g. whether the verb has [endpoint] feature or not, together with the properties of the elements from the functional lexicon of grammar, e.g. –ing is anti-stative, in contrast to –NE; –ing is an aspectual head, in contrast to –NE which is a high attaching n^o; both –tsija and –tion select for Asp_QP, etc.

Now we are ready to summarize the observed similarities between verbs and nouns.

7.5.5. Some observations on the similarities between nouns and verbs

I summarize the main findings in (49).

(49) a. **Argument structure:** both nouns (AS) and verbs project syntactic arguments, whose position is universally given: the originator argument (external) role emerges in Spec,EP (for verbs) or Spec,Asp_PP (for nouns); the *subject-of-quantity* internal argument which emerges in telic contexts occupies Spec,Asp_QP, whereas the internal argument in

atelic structures is located in Spec,AspP where it receives a *default participant* interpretation. Both domains also have the full array of functional projections.

b. **Case assignment:** There are only two universally available structural case positions:

(i) **Within the verbal domain:** Accusative case is structural case assigned in Spec,Asp_QP; Nominative case is also structural case assigned in Spec,TP. (Recall that Partitive case, which is mutually excluded with Accusative case, is the one assigned in Spec,F^SP in atelic transitive structures).

(ii) **Within the nominal domain:** *of*-insertion is structural case assigned to a DP located in Spec,Asp_QP (telic structures) or Spec,AspP (atelic structures); the former has been treated in terms of accusative case assignment which gives rise to telicity, whereas the latter to partitive case assignment which gives rise to atelic interpretation in languages like Finnish (Borer 2005b). The external argument is either licensed by structural Genitive in Spec,DP (e.g. ‘John’s formation of the nominal’) on par with structural Nominative for verbs, or by the insertion of a *by*-phrase.

c. **Adverbs:** adverbs occur inside both verbs and de-verbal (AS) nominalizations. In this respect, only nouns can be modified by adjectives and adverbs, confirming their incorporation of both nominal and verbal structure at the same time.

Finally, I close the chapter with some speculations on language variation.

7.5.6. Some observations on language variation

I assume that all languages dispose of their language-specific means to codify inner aspect, which depends on the functional lexicon of the language and the features of its functional items. Since inner aspect is computed on the basis of the domain of aspectual interpretation, i.e. AspP, I assume that this projection is present within all languages. However, the way in which a language calculates the domain is dependent on whether this languages possesses direct morphological means to value Asp^o (morphological (im)perfectivity in terms of the feature [endpoint] and prefixes in standard Bulgarian), or whether the dominant strategy of valuation, in the absence of direct range assigners, is environment sensitive. The latter is

exemplified by the object-to-event mapping mechanism which I assume to be universally available though blocked in the presence of a direct range assigner to Asp.

The fact that standard Bulgarian does not make use of the OTEM is due to the presence of direct range assigners to the open value of Asp^o in this language. Thus, in the presence of such a ‘marked’ option (‘marked’ in the sense that not all languages may have it, in contrast to the universally available OTEM), a language blocks the rest of mechanisms. ***I assume the object-to-event mapping to encode a more deeply embedded computational strategy: in the absence of positive evidence for the valuation of Asp^o, compute its domain according to the feature specification of the surrounding environment. Since this is a general computational mechanism it will be universally available as is the capacity of humans to compute that the properties of [A + B] = [the properties of A + the properties of B].***

Therefore, we can conclude, together with Borer (2003), that “...*language variation represents a mix and match of universally available strategies, not always consistently used in any given language, but determined by the arbitrary phonological properties of the inventory of grammatical formatives*” (Borer 2003: 64). Thus, as already observed in Borer (2005b), language variation is related to the morpho-phonological properties of grammatical formatives (e.g. categorizing suffixes), not to the syntactic structures or the semantics of these grammatical formatives, inasmuch as the latter are invariant and universal (see Borer 2005b: 15).

From the observations so far we can conclude that the *prima facie* chaotic behavior of the nominalization types has its deep and underlying reasons, which reside in the specific way in which **a whole system** (e.g. the Bulgarian standard paradigm), or some **particular group of elements** (e.g. the loan verbs in Bulgarian in general; else, the whole group of verbs from the Bulgarian biaspectual paradigm), or even **some individual functional element** (e.g. –ing in English; –tsija in biaspectual Bulgarian, etc.) intervenes when deriving a particular item.

We can additionally observe that inter- and intra-linguistic variation turns out to be the same kind of variation. Thus, the variation observed between standard and biaspectual Bulgarian (intra-linguistic), on the one hand, and standard Bulgarian and English (inter-linguistic), on the other hand, is the same kind of variation, reinforced by similar underlying (morphological) reasons.

I dedicate the following chapter to summarize the general conclusions we have arrived at throughout this thesis.

CHAPTER 8: THE ROLE OF PREFIXATION IN THE NOMINALIZING PROCESS: UNIFYING NOMINAL AND CLAUSAL STRUCTURE

This chapter is a means of summarizing the main findings and generalizations that we have arrived at in this dissertation, and to further clarify some minor issues which have been mentioned but just partially explained.

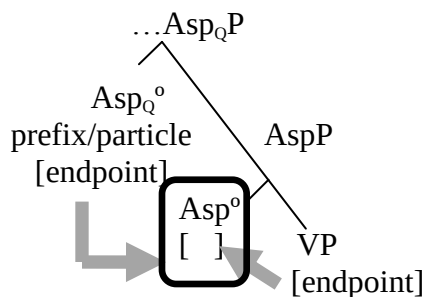
One of the primary concerns throughout this investigation has been the way inner aspect (i.e. (a)telicity) is syntactically represented both within verbs and within nouns. Following MacDonald (2008b) I have defended the presence of a universally available aspectual projection, AspP, with respect to which inner aspect is calculated. Adopting Borer's (2005b) view that the functional projections are headed by open values (e.g. []) in need of range assignment, I have proposed that the head of this projection, Asp^o, also bears an open value which should be assigned range via an element from the structure. Following Borer (2005b), I assume that there are two modes of valuing Asp^o: (i) direct range assignment, which is manifested under my analysis via the ***head-to-Asp^o feature sharing mechanism***, and (ii) indirect range assignment, which takes place in the absence of a direct range assigner to Asp^o in the structure. The object-to-event mapping property discussed throughout the whole thesis is an instantiation of the latter. As I have shown, ***in the presence of direct range assigners such as prefixes or particles, or some aspectually relevant feature on the root, the indirect mode of Asp^o valuation is blocked***.

The mode by which Asp^o is assigned range is further interrelated with two distinct domains of aspectual interpretation. Following the intuition which lies behind MacDonald's (2008b) theory about the aspectual domain of interpretation, I assume that the direct range-assigning

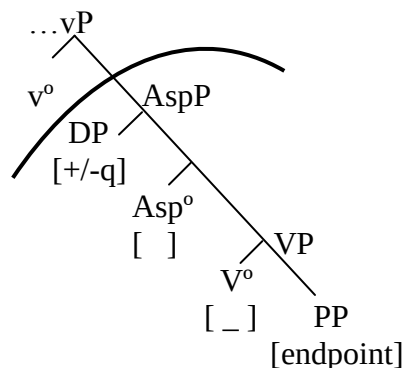
mode is operative within the minimal domain of interpretation (1a) in contrast to the indirect mode of valuation which extends the domain (2b). Once extended, any feature from the structure may contribute to the aspectual interpretation of the final derivative (e.g. the [+q] value on the internal argument or the [endpoint] feature on P°).

(1) On the aspectual domain of interpretation

a. Minimal domain of interpretation (interpreted here as **closed** upon first merger)



b. Extended domain = everything dominated by AspP



By examining three languages: (i) standard Bulgarian, (ii) biaspectual Bulgarian and (iii) English, I have shown that the former calculates aspect always within the minimal domain (1a) due to the presence of direct range assigners to Asp° in contrast to biaspectual Bulgarian and English which, as a general rule, make use of the extended domain of interpretation inasmuch as they tend to lack direct range assigner to Asp° (1b).

In order to account for this, I have insisted on the importance of morphological (im)perfectivity in standard Bulgarian for the codification of inner aspect (chapter 4, § 4.2).

We have provided evidence in defense of the claim that perfectivity equals telicity in this language, and that all perfective verbs, whether primary (2b) or prefixed (2c, d), give rise to telicity. In the absence of perfectivity, the predicate remains atelic (2a).

(2) a. **Primary imperfectives (i.e. unprefixes): atelic**

jado-h (*sandvich-a*) *dve minuti/*za dve minuti*
eat.Aor.1PS.SG (sandwich-the) two minutes/*in two minutes
‘I ate (the sandwich) for two minutes/*in two minutes’

b. **Primary perfectives: telic**

hvŕli-h **(pari-te si) na vjatŕ-a *dve minuti/za dve minuti*
throw-Aor.1PS.SG *(money-the REFL) to wind-the *two minutes/in two minutes
‘I threw my money away *for two minutes/in two minutes’

c. **Lexical prefixes: telic**

*Ivan [PRO-dade] kafe-to *dva chasa/za dva chasa*
Ivan sold.PF coffee-the *two hours/in two hours
‘Ivan sold the coffee *for two hours/in two hours’

d. **Inner prefixes: telic**

IZ-jado-h **(sandvich-a) *dve minuti/za dve minuti*
IZ-eat.Aor.1PS.SG **(sandwich-the) *two minutes/in two minutes*
‘I ate *(the sandwich) *for two minutes/in two minutes’

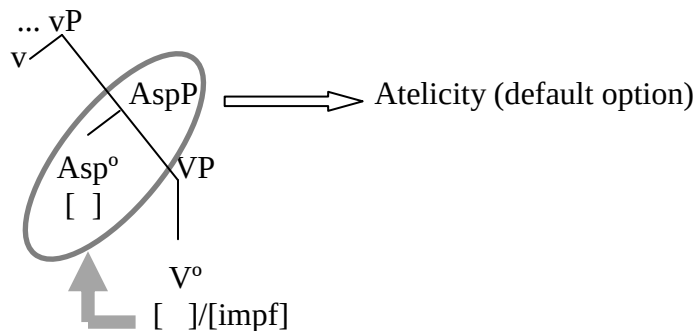
e. **Outer prefixes: telic**

PRE-jado-h **dve minuti/za dve minuti*
EXCESSIVELY-eat-Aor.1PS.SG **two minutes/in two minutes*
‘I had a lot of/enough eating *for two minutes/in two minutes’

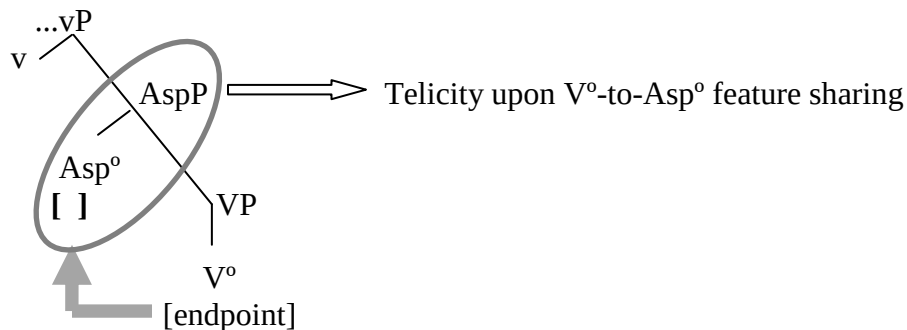
We have explained this state of affairs by assuming that there is a an inherent and interpretable feature [endpoint] which the prefix bears (3c, 3d, 3e), and which primary perfective verbs also have (3b). ***In other words, morphological perfectivity in Bulgarian is syntactically manifested by an [endpoint] feature.*** In chapter 4 we provided evidence supporting the fact that all prefixes in Bulgarian bear such a feature (e.g. lexical (3c), inner (3d) and outer (3e)). It is precisely this feature which

telicizes the structure in both the verbal and the nominal domain. I assume that this feature is a direct range assigner to the open value of the AspP head (e.g. []). Upon merger, the feature [endpoint] marks the event as telic by establishing an Agree relation with Asp°. In the absence of the feature [endpoint], the predicate remains in its default value, i.e. atelic. This is the case for primary imperfective verbs (3a). This state of affairs confirms Borer's (2005b) claim that **atelicity is what remains in the absence of telicity**. An abstract representation follows.

(3) a. Primary imperfectives: no [endpoint] → default atelic (e.g. *peja* 'sing'; *jam* 'eat')

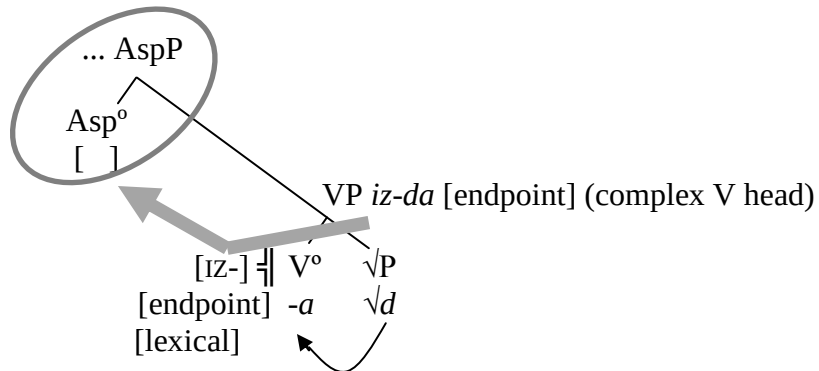


b. Primary perfectives: [endpoint] → telic predicates (e.g. *rodja* 'give birth'; *dam* 'give')



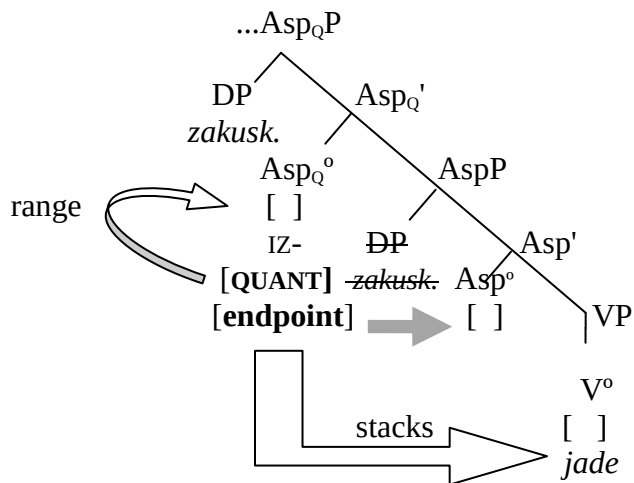
c. Lexical (idiosyncratic) prefixes: [endpoint] → telic predicates

e.g. *dam* 'give' → *IZ-dam* 'publish'



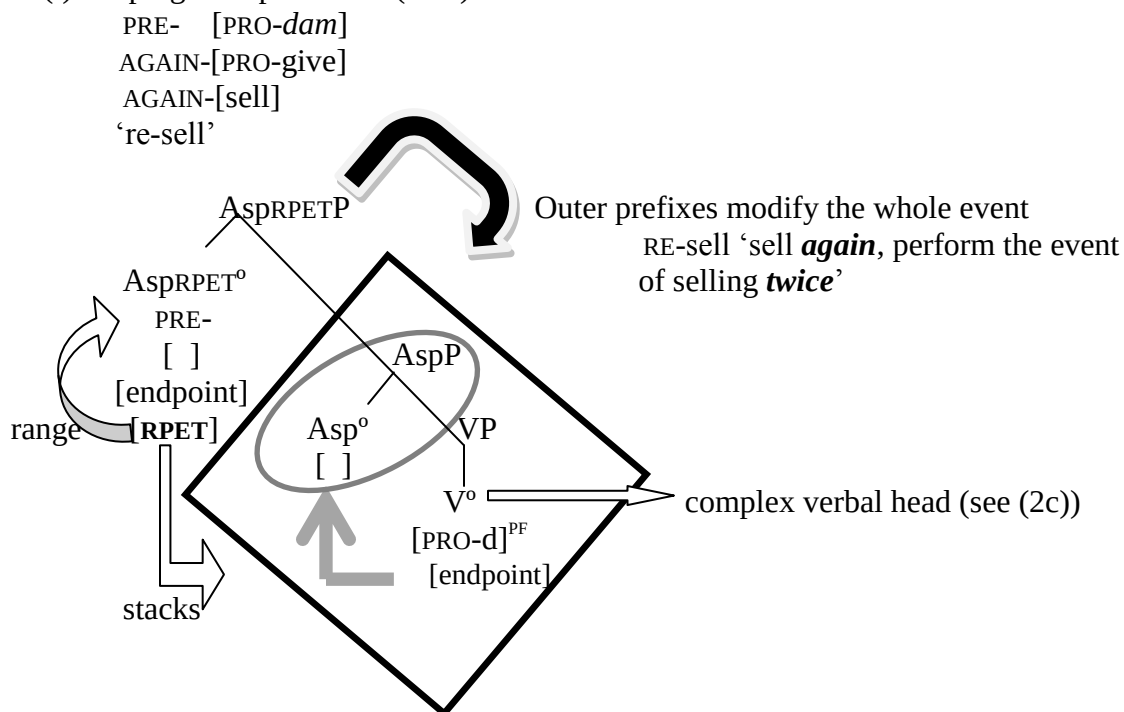
d. Inner quantificational prefixes (e.g. pure perfectivizers = Asp_Q^0): [endpoint] $\rightarrow$ telic predicates

IZ-jade zakuska-ta
IZ-ate breakfast-the
'S/he ate the breakfast'

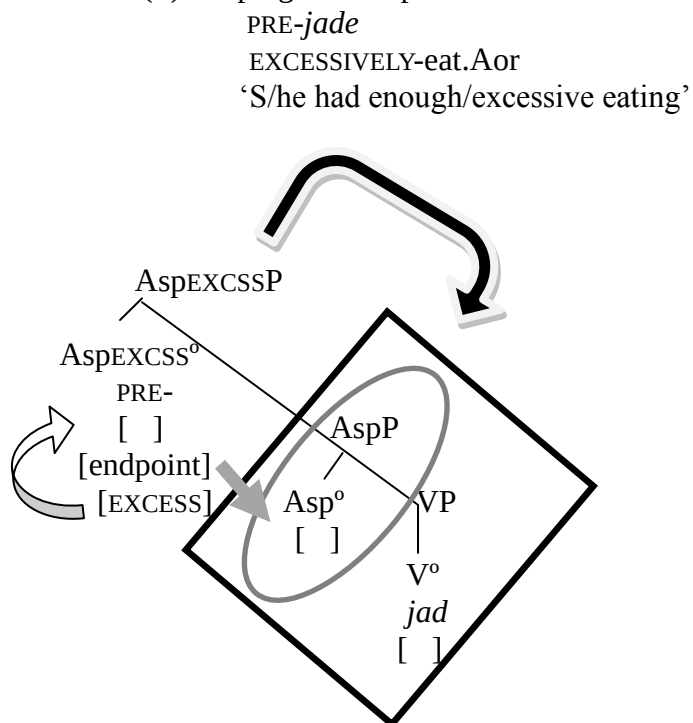


e. Outer prefixes: [endpoint] → telic predicates

(i) Scoping over perfective (telic) bases:



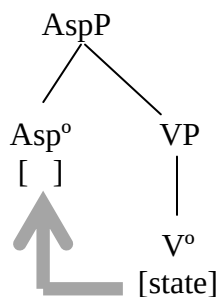
(ii) Scoping over imperfective bases:



In all of the representations above the feature [endpoint] on the prefix, or else on the root, establishes an Agree relation with Asp^0 , assigns range to its open value (e.g. []) and thus marks the event as telic. Since this feature originates on a head (some aspectual head headed by the prefix like Asp_0^0 in (3d), or alternatively on the root (3b)), we have an instantiation of the **head-to- Asp^0 feature sharing mechanism, which represents a direct range-assigning mode**. Crucially, upon merger, this feature immediately values Asp^0 as telic, and the domain closes, so that further features cannot change the aspectual telic value assigned to Asp^0 . This is an instantiation of the minimal domain of Asp^0 calculation.

Interestingly, however, there is a small number of **STATIVE PREDICATES WHICH REMAIN STATIVE AND HENCE ATELIC EVEN UNDER PREFIXATION** (*PRI-NAD-leža* ‘belong to’ (IMPF)). I have claimed that **the inability of prefixes to telicize some stative bases resides in the different lexical properties of statives (4) where features such as [endpoint] turn out to be irrelevant for the determination of inner aspect, or at times even blocked** (see chapter 4, § 4.4; chapter 5, § 5.3.3). As already mentioned, this has to do with the presence of a [state] feature on the root which blocks any intervening features such as [endpoint] from entering into an Agree relation with $\text{Asp}_{[]}$, and thus telicize the structure. In other words, it is the [state] feature on the root which values Asp^0 via the head-to- Asp^0 feature sharing mechanism in line with primary perfectives (3b) where the [endpoint] feature on the root Agrees with Asp^0 . My conjecture is that this is universally true. Thus, a stative predicate remains stative (i.e. atelic) throughout the whole derivation.

(4) Statives: Asp^0 denotes a state



It then follows that the ***standard Bulgarian paradigm always calculates aspect according to the head-to-head feature sharing mechanism, i.e. via direct range assignment to Asp°***. This, as I have already proposed, is due to the driving force of morphology in this language where the presence of perfectivity at any level of derivation signals telicity. In this respect, recall that the pure Kimian statives allow only some central coincidence relation prefixes which, inasmuch as they lack an [endpoint] feature, are unable to perfectivize and hence telicize the stative base (see chapter 5, (47)). ***This implies that the [state] feature on the root blocks perfectivization since statives are cross-linguistically atelic, and since perfectivity signals telicity in Bulgarian.***

Different observations were found for **ENGLISH AND BIASPECTUAL BULGARIAN**. The verbal systems of these languages lack the morphological aspectual distinction perfective-imperfective, and verbs enter at the syntactic component devoid of any feature specification. As a consequence, it is the featural make-up of the whole surrounding (functional) environment which finally determines the inner aspect of the derivative (5).

(5) English and Bulgarian biaspectual eventive predicates

a. [-q] NP: atelic

(i) Bulgarian biaspectuals

*Ivan konsum-ira bira edin čas / *za edin čas.*

Ivan consumed-IRA.BIASP beer one hour/ *in one hour

‘Ivan consumed beer for one hour/ *in one hour.’

(ii) English eventives

*John read poetry for an hour/ *in an hour.*

b. [+q] NP: ambiguous

(i) Bulgarian biaspectuals

Ivan konsum-ira bira-ta edin čas / za edin čas.

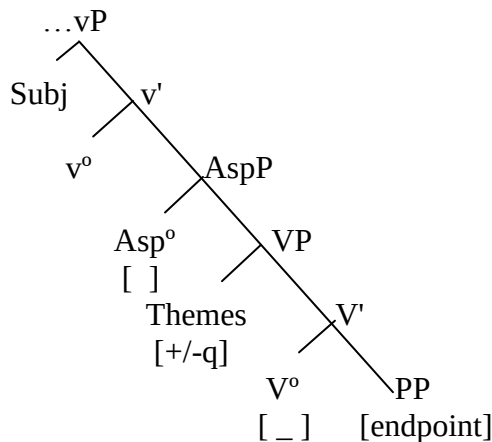
Ivan consumed-IRA.BIASP beer-the one hour/in one hour

‘Ivan consumed the bottle of beer for one hour/in one hour.’

(ii) English eventives

John read a newspaper for an hour/in an hour.

c. Abstract representation



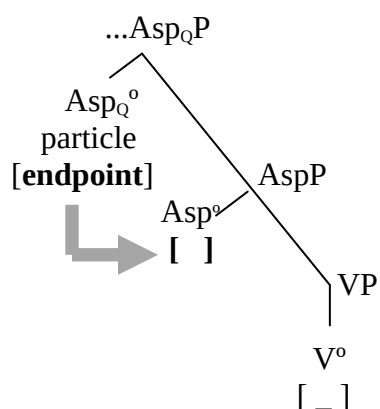
From (5c) we can observe that there is no aspectually relevant feature on V^o , or on some telicizing aspectual head, which can value Asp^o via the head-to- Asp^o feature sharing mechanism. Note that V^o is aspectually ambiguous, reflected by its $[\_]$ value, which implies that both telic and atelic interpretations will be *a priori* possible (observe the difference here between a default $[]$ value on primary imperfective verbs in Bulgarian which refers to a default atelic interpretation (3a) in contrast to the ambiguous $[\_]$ value on the Bulgarian biaspectual and English verbal bases (5c)). In the absence of direct range assigners to Asp^o , be it a feature on the base or on another element, the indirect mode of valuation is chosen, since it is the only remaining option. As a consequence, the computational mechanism of the object-to-event mapping becomes operative, which promotes the feature specification of the internal argument as a determinant of inner aspect.

To exemplify, the indirect mode of Asp^o valuation is instantiated via an Agree relation between the features of the internal argument located in Spec,AspP and Asp^o (i.e. we have Spec-to-head feature sharing). As we saw, if the argument is $[-q]$, Asp^o is valued as atelic (5a); if the argument is $[+q]$, the domain extends to everything dominated by Asp^o and the role of prepositions becomes crucial. If no goal P is present, whose $[\text{endpoint}]$ feature could further contribute to the final interpretation of the derivative as telic, then the predicate remains aspectually

ambiguous (5b). This is presumably due to the aspectually weak [+q] feature of the internal argument in contrast to the aspectually strong atelicizing [-q] feature of such an argument.

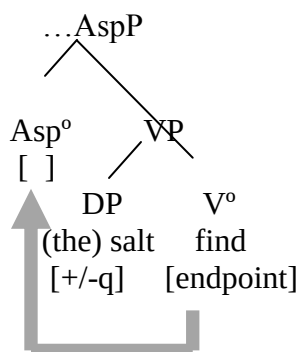
However, there is a small number of functional items which function as direct range assigners to $\text{Asp}_{[-q]}$ in these languages as well. This is the case for particles in English or prefixes in biaspectual Bulgarian. Since these elements are heads specified for the feature [endpoint] in the same way as standard Bulgarian perfectivizing prefixes, we obtain a telic predicate via the head-to-head (Asp_Q° -to- Asp°) feature sharing mechanism (6).

(6) Direct range assignment in English and biaspectual Bulgarian



Finally, in the same way as the Bulgarian primary perfective predicates (3b), there is a small group of achievement verbs in these languages, which also bear the feature [endpoint]. As a consequence, we obtain a telic interpretation via the V° -to- Asp° feature sharing mechanism (7). I assume that this is not a theory internal problem inasmuch as the list of the achievement predicates in a language is exhaustive, as is the idiosyncratic list of the Slavic primary perfectives (at about fifty in each Slavic language). Whether such a state of affairs holds universally or not is to be investigated.

(7) Achievement predicates in English and biaspectual Bulgarian (e.g. *block*, *spot*, *find*; *blokiram* ‘to block’, *shokiram* ‘to shock’, *matiram* ‘to mat (in chess)’)



All of these data show that variation exists due to the way in which a language values Asp° . This is further dependent on the morphological means of valuation a language has at its disposal. As for the AspP , it is universally available inasmuch as all languages have a way to express inner aspect, i.e. to give rise to telic or atelic interpretation of an event.

Having summarized some of the major observations made in this study, we are now ready to turn to some minor issues, which will further contribute to our claims that aspect is the driving force of both syntax and semantics, and that language variation resides in the morphological means of which a language disposes and which will eventually determine the way this language will calculate inner aspect. This will be significant for several reasons.

FIRST, all languages have their particular means to express aspect, which implies that this is a universal category. We have already mentioned that in the presence of telicity, which is syntactically materialized as Asp_QP or another [endpoint]-headed projection, the internal argument often becomes obligatory, which gives rise to true argument-taking nouns. ***Therefore, we have reasons to assume that what actually governs argument structure as well as interpretation is inner aspect.*** This will be defended in section 8.1.

SECOND, the way in which aspectual morphemes relate to one another may additionally influence the aktionsart properties of the predicate. Thus, we have seen that telicizing

prefixes take an activity (atelic) predicate and turn it into an achievement (telic) predicate in standard Bulgarian. Some suffixes, on the other hand (e.g. –va) add duration to the final interpretation of the event due to their inherent feature [duration]. ***In other words, affixation may contribute to the aspectual properties of the final derivative and may additionally instruct into syntactic structure.*** This will be commented on in section 8.2.

IN THIS RESPECT, we have seen that both prefixes and suffixes may be endowed with some aspectual feature and consequently influence the final interpretation of the derivative. This state of affairs made me conclude that both types of elements should be treated alike. Regarding this issue, we have seen a systematic relationship between the affix type and its function: nominalizers occur as suffixes in English and Bulgarian, whereas telic markers usually appear in the form of a prefix.¹ ***Due to this, I treat these elements as (aspectual) heads occupying their own dedicated position within the same aspectual hierarchy irrespective of whether they are materialized as prefixes or suffixes within a given language.*** This will be defended in section 8.3.

FURTHERMORE, the fact that both verbs and nouns may incorporate higher aspectual projections, which crucially appear in the same order in both domains, is indicative of the similarity between the two domains. I assume this similarity to be driven by the ability of nominalizers (n^o) and verbalizers (V^o) to appear within a universally given hierarchy of aspectual features (Cinque 1999). The attachment site of each nominalizer/verbalizer is language-specific. ***In other words, it is precisely aspect which is the vehicle for unifying both the nominal and the clausal domain.*** This will be discussed in section 8.4.

FINALLY, given that aspect drives both syntax and semantics, and taking into account that prefixes are aspectual morphemes which may be present within both verbs and nouns, I will

¹ In this respect, recall that particles are derivationally related to prefixes, which, on the other hand, are related to prepositions where the grammaticalization pattern is free PPs → particles → prefixes.

briefly comment on the contribution of prefixation in unifying verbal and nominal structure (§ 8.5).

All of the above-mentioned observations will have an impact on the language variation question, which will consequently shatter the status of inter- and intra-linguistic variation as separate kinds of variation. Thus, I close the chapter with some notes on language variation to finally conclude, à la Borer (2005b), that ***variation resides in the morpho-phonological properties of grammatical formatives (i.e. of the functional elements), and not to syntactic structures or the semantics of those elements*** (Borer 2005b: 15) (§ 8.6).

8.1. Aspect as the basic determinant of argument structure

In this subsection two issues will become clear: (i) the role of telicity (e.g. Bulgarian prefixation and English particles) in argument structure (§ 8.1.1) and the aspectual function of suffixation (§ 8.1.2). This will hold for both the nominal and the verbal domain.

8.1.1. The role of telicity in argument structure

We have already seen that primary imperfective verbs in Bulgarian denote atelic events, i.e. activities (also states, but these are excluded for the time being). These verbs usually allow for the omission of their internal argument (8a). Once a prefix is attached to the base, the internal argument becomes obligatory (8b). The same observation is found for particles in English (8c).

(8) Argument structure within verbs

a. Primary imperfectives

(i) <i>chete dva chasa</i>	(ii) <i>risuva dva chasa</i>	(iii) <i>stoi dve godini</i>
read-Aor two hours	draw-Aor two hours	build-Aor two hours
‘S/he read for two hours’	‘S/he drew for two hours’	‘S/he built for two hours’

Denotation: (i) S/he spent two hours *reading*

(ii) S/he spent two hours *drawing*

(iii) S/he spent two years *building*

b. Prefixed perfectives

(i) *PRO-chete* **(kniga-ta)* (ii) *NA-risuva* **(kartina-ta)* (iii) *PO-stroi* **(kŭshta-ta)*

PRO-read-Aor **(book-the)* NA-draw-Aor **(picture-the)* PO-build-Aor **(house-the)*

‘S/he read **(the book)*’ ‘S/he drew **(the picture)*’ ‘S/he built **(the house)*’

Denotation: (i) S/he read the book *through*

(ii) S/he drew the picture *up*

(iii) S/he built the house *up*

c. Particles in English

(i) *He sang for two hours; He wrote for two hours; He cooked for two hours*

He ate for two hours; He read for two hours

(ii) *He sang up *(the song); He wrote up *(the letter); He cooked up *(the meal)*

*He ate up *(the sandwich); He read through *(the book)*

From (8) we can observe that prefixes transitivize the base to which they attach (See Filip 1999) and, like particles in English, require the overt realization of the internal argument. I have already claimed that this is syntax-driven, i.e. the prefix (e.g. the pure perfectivizers in (8b)) and the particle (8c) are telicizing elements by virtue of their inherent feature [endpoint]. Once they enter the numeration, they merge as heads of the telicizing $\text{Asp}_{\text{Q}}\text{P}$. Furthermore, both elements, inasmuch as they are related to inner aspect, are quantificational operators and require an overt DP in $\text{Spec,Asp}_{\text{Q}}\text{P}$ over which they can scope, and in which they can bind a variable, satisfying thus their operator-like properties. (See chapter 4, § 4.2.1 for further evidence in support of the scope properties of the prefix). This explains why the internal argument is obligatory in the presence of such elements.

However, there are other cases where a prefix (or a particle) do not require the overt realization of the internal argument (9).

(9) Outer prefixes: no internal argument required²

a. (i) <i>toj IZ-bŭrza</i>	(ii) <i>toj ZA-spa</i>	(iii) <i>toj PRE-jade</i>
he iz-hurry.Aor	he za-sleep.Aor	he pre-eat.Aor
'he hurried up'	'he fall asleep'	'he ate excessively/he overate'
b. (i) <i>He shouted out</i>	(ii) <i>He over-ate</i>	(iii) <i>He over-slept</i> ³

To account for the fact that the internal argument is not realized in cases like those in (9) I assume that this has to do with the ***inherent properties of the base and that of the prefix***. To be more precise, the ***outer degree prefixes in Bulgarian such as the excessive PRE- (9a: iii) select for imperfective (atelic) bases exclusively, to which they assign their aspectual value of excessiveness and no internal argument is required inasmuch as the prefix is not quantificational in nature.***⁴ Arguably, the same will hold for the English outer prefix OVER- which, when attached to an unergative base, leads to the interpretation of excessiveness, too (9b: ii, iii). In such cases, the particle functions as a degree modifier. If, on the other hand, the same prefix PRE- attaches to perfective bases then (i) the interpretation we have is a repetitive one, (ii) the prefix is interpreted as the outer repetitive PRE- meaning 'again', and (iii) the internal argument becomes obligatory (e.g. PRE-[*PRO-dam*] *(*stokata*) 're-sell *(the goods)'). As for English, the combination of OVER- with a potentially transitive base will also require the realization of the internal argument (e.g. *I overcooked *(the roast)*). Consequently, ***the properties of the prefix and the particle (e.g. whether it is a manner outer***

² See Appendix 3.6 for outer prefixes in English.

³ Note here that *oversleep* has both an intransitive use meaning 'to sleep beyond one's usual or intended time for sleeping' and a transitive one when the intended meaning is 'to sleep beyond the time for' (e.g. *I overslept my appointment*). I leave the topic of the particle-prefix typology in English for further research. For more details, see Markova & Padrosa-Trias (2008) where the typology of lexical, inner and outer prefixes established for Bulgarian is exemplified for English and Catalan as well.

⁴ Other prefixes that attach to unergative bases like excessive PRE- may also appear without an internal argument inasmuch as the final derivative is assigned a different semantic value. This may be the case for some outer manner prefixes like IZ- in *toj IZ-vika* (he iz-shouted) 'he gave a shout, he shouted suddenly'; *toj IZ-plaka* (he iz-cried) 'he gave a cry'; he shouted out; he cried out, etc.

prefix/particle or an inner quantificational one) and that of the base (e.g. potentially transitive or unergative) are crucial for the final properties of the derivative. Under the theory developed here, I propose that it is the prefix (else, the particle) which sets certain restrictions on its base.

We have observed that the properties of the **REPETITIVE PREFIXES** are related to **THEIR SELECTIONAL RESTRICTIONS**. To exemplify, repetitive prefixes select for perfective bases, which may be semantically driven: in order to show that the action is repeated, we need the previous instantiation of this action to be completed, i.e. to be telic (i.e. perfective). Note that the same holds for English repetitive prefixes (e.g. *I re-read *(the book)*). What is therefore important is to observe that the cases in which the internal argument remains optional under prefixation involve outer prefixes (9), but not quantificational inner ones (8b). Here we can include the group of the outer prefixes such as the manner prefixes, the degree prefixes, the durative outer prefix PO-⁵, and the inceptive ZA- prefix. Note that all of these prefixes are instantiations of outer aspect, which confirms our division of prefixes as inner and outer aspectual modifiers (see Cinque's hierarchy in Appendix 1.1).

Apart from the outer prefixes, the inner spatial prefixes do not require the presence of an internal argument neither. These prefixes, instead of requiring an internal argument, appear with a PP complement which, even if omitted, is understood by the semantics of the prefix (10) (see chapter 5, (34c: ii)).

(10) Spatial prefixes (particles)

- a. *ptiche-to IZ-letja* (ot *stajata*)
 bird-the out-fly.Aor out of the room
 'The bird flew out of the room'

⁵ Recall that the durative prefix PO- plays the same role as the *for*-adverbial in English which is due to its durative feature. Since duration has nothing to do with argument structure, PO- is unable to change the argument-taking properties of the base.

b. *He ran out (of prison)*⁶

I will not deal with such cases here. Thus, I will be primarily concerned with potentially transitive bases which take optional internal arguments and which, in the presence of a prefix or a particle, obligatorily appear with their internal arguments as in (8b, c). I will also exclude the causative prefixes from the discussion. It will just suffice to note that these prefixes take unergative bases and causativize them, making their external argument (e.g. *the baby, the dog*) internal (11). This is arguably due to some particular inherent feature that such prefixes have (e.g. [cause], see chapter 3, (52c)).

- (11) a. (i) *bebe-to plaka* (ii) *toj RAZ-plaka bebe-to*
 baby-the cry.Aor he RAZ-cry.Aor baby-the
 ‘The baby cried’ ‘He made the baby cry’
- b. (i) *kuche-to laja* (ii) *toj raz-laja kuche-to*
 dog-the bark.Aor he RAZ-bark.Aor dog-the
 ‘The dog barked’ ‘He made the dog bark’

Crucially, we have seen that the **SAME CONSIDERATIONS WHICH HOLD FOR PREFIXES AND PARTICLES WITH VERBS (8) ARE PRESERVED WITHIN THE NOMINAL DOMAIN AS WELL**. In other words, these elements are telicizers and transitivizers with both nouns and verbs. As a consequence, the presence of such an element within a noun, given its quantificational operator-like status, will require the insertion of the internal argument obligatorily. ***Put differently, prefixes and particles will be capable of affecting the argument-taking properties of nouns in the same way as they affect verbs*** (8).

Regarding this issue, recall that based on their argument-structure properties, nouns are divided into two types: (i) argument-taking nouns, including here the P(articipant)-S(tructure) and the true A(rgument)-S(tructure) nouns, and (ii) non-argument-taking

⁶ Recall that particles and prefixes are two different options to express directionality. However, English, being a satellite-framed language (see Talmy 1991, 2000) shows preference for particles (e.g. *go out, go in*).

R(esult)-R(eferential) nominals. Crucially, we have seen that the true AS nouns are precisely those which incorporate a prefix or a particle (12c), (with the additional requirement that the nominalizer is –ing for English or –NE for Bulgarian, being these the most verbal-like in properties); in the absence of such telicizers, the noun remains either a PS nominal (12b), whose internal arguments are optional, or else an R-R noun, which does not take any internal arguments at all (12a). This holds true for both standard Bulgarian (examples (i)) and English (examples (ii)). (See chapter 6, § 6.5.3 for more details on the argument-taking properties of nouns).

(12) Arguments within –ing and –NE nouns

a. R-R nouns: no internal arguments

(i) Primary imperfective bases

jad-e-NE-to *ot/na* *Ivan e na masa-ta*
eat-TH.VOW-NE-the.NEUT.SG *by/from/of Ivan is on table-the.FEM.SG
‘The meal *by/from/of Ivan is on the table’

(ii) Non-particle incorporating (unergative) bases

The irritable crying (of the baby) ^{EXT.ARG} *lasted several hours a day*
*(This is)*⁷ *a nice building, an expensive painting, a drawing, etc.*

b. PS nouns: optional internal arguments

(i) Primary imperfective bases

pe-e-ne-to *(na pesen-ta)* *e korektno*
sing-TH.VOW-NE-the.NEUT.SG (of song-the.FEM.SG) is correct
‘the singing of the song is correct’

(ii) Non-particle incorporating bases

The eating (of the breakfast) lasted several hours
The cooking (of the meal) lasted three hours

⁷ Recall that only R-R nominals can appear in the predicative position: **This is the examination of the students by the teacher* vs. *This is the examination/the exam/the picture* (Grimshaw 1990).

c. true AS nouns: obligatory internal arguments

(i) Perfective bases: prefixes

[IZ-p(e)]-java-ne-to *(na pesen-ta) (ot Maria)

[IZ sing]-java.IMPF-NE-the.NEUT.SG *(of song-the.FEM.SG) (by Mary)

‘the singing of the entire song on behalf of/by of Mary’

(ii) Particle-incorporating bases

The eating up *(of the breakfast)

The cooking up *(of the meal)

In other words, prefixes and particles are transitivizing devices within both verbs (8) and nouns (12). As we can observe, the nouns formed from unprefixated or non-particle incorporating bases can either give an R-R noun as in (12a) or else a PS nouns, if the base has the potential to be transitive (12b). **However, once a prefix or a particle is attached to the PS noun, the internal argument becomes obligatory and the noun becomes an AS nominal (12c).**

Needless to say, the same observations hold for the Bulgarian prefixed biaspectual nominals (13b). Again, only under nominalization by –NE is a nominal capable of being a true AS nouns.

(13) Telicity inside Bulgarian biaspectual nominalizations

a. Unprefixated bases: PS nouns

retsit-ira-ne-to (na poema-ta)

recite-BIASP-NE-the.NEUT.SG (of poem-the.FEM.SG)

‘The reciting (of the poem)’

b. Prefixed bases: AS nouns

IZ-retsit-ira-(va)-ne-to *(na poema-ta)

IZ-recite-BIASP-(IMPF)-NE-the.NEUT.SG *(of poem-the.FEM.SG)

‘The reciting *(of the entire poem)’

The data in (14) are indicative of the fact that we do not always need a prefix to obtain a true AS nominal. However, in the majority of the cases we do need telicity, i.e. morphological perfectivity (12c, 14a). Crucially, there are some exceptional cases of AS nouns in the absence of perfectivity (i.e. telicity) in Bulgarian (14b). In such cases, the base, although atelic, is obligatory transitive, else, causative (e.g. *break*), and this transitivity is further transferred to the nominal domain in the case of –NE derivatives. ***This state of affairs implies that some lexical idiosyncrasy in certain cases cannot be discarded and that it is precisely some inherent [transitive] feature of the base which instructs for a transitive syntactic structure.***¹⁰

These observations hold only for both verbs and the truly de-verbal –NE nouns, inasmuch as the properties of the base are preserved only under –NE nominalization. Thus, eventive PS “other-suffix” nouns cannot become AS nouns under prefixation (15a), nor preserve the obligatory transitive nature of atelic bases (15b) or primary perfective bases (15c).

(15) Eventive PS “other-suffix” and Voice –IE nouns: the PS nature preserved

a. Prefixation and argument structure: PS nouns (optional internal arguments)

(i) Voice –IE nouns

RAZ-resh-e-n-ie-to (na sdelk-i-te) (ot Ivan)
 RAZ-solve-TH.VOW-N.PASS.PART-IE-the.NEUT.SG (of deal-PL-the.PL) (by Ivan)
 ‘The authorization (of the transactions) (by Ivan)’

(ii) “Other-suffix” nouns

[PRO-d]-a-žba-ta (na tursk-i stok-i)
 [sell]-A.TH.VOW-ŽBA-the.FEM.SG (of Turkish-PL goods-PL)
 ‘The sale (of Turkish goods)’

¹⁰ The same observation holds for obligatory ditransitive verbs which arguably bear some inherent feature that further instructs into syntax requiring the obligatory presence of two arguments (e.g. *put something somewhere*). However, the list of such verbs is exhaustive, as is the list of the Bulgarian primary imperfectives, which take obligatory internal arguments (*nosja* ‘carry’, *chupja* ‘break’, *gonja* ‘pursue’, etc.), and therefore not a theory-internal problem to our claim that syntax drives semantics and argument structure.

b. Transitivity of primary imperfective (atelic) bases: PS nouns

(i) Voice –IE nouns

gon-e-n-ie-to (na ezichnits-i-te)
pursue-TH.VOW-N.PASS.PART-IE-the.NEUT.SG (of pagan-PL-the.PL)
‘The persecution (of the pagans)’

(ii) “Other-suffix” nouns

gon-i-tba-ta (na pari /na nedostižimo-to /na pushach-i-te)
pursue-TH.VOW-TBA-the.FEM.SG (of money/of unattainable-the/smoker-PL-the.PL)
‘The chase/pursuit/hunting (of money/of the unattainable/of the smokers)’

c. Transitivity of primary perfective bases: PS nouns (*by-phrase)

(i) Voice –IE nouns

resh-e-n-ie-to (na zadach-i-te) (*ot Ivan)
solve-TH.VOW-PASS.PART-IE-the.NEUT.SG (of exercise-PL-the.PL) (*by Ivan)
‘The solution (to the exercises) (*by Ivan)’

(ii) “Other-suffix” nouns

god-EŽ-ūt (na prints Uljam s Keit Midŭltŭn)
engage-EŽ-the.MASC.SG (of prince William with Kate Middleton)
‘The engagement (of Prince William with Kate Middleton)’

As for the English and Bulgarian biaspectual nouns, we do find cases such as (14) where a noun is argument-taking even in the absence of direct range assigners to Asp_Q , i.e. in the absence of particles (16a) and prefixes (16b). This additionally confirms our claim that **some lexical idiosyncrasy does exist**, though it has an exceptional character and an exhaustive list of members.

(16) a. English AS non-particle nominals

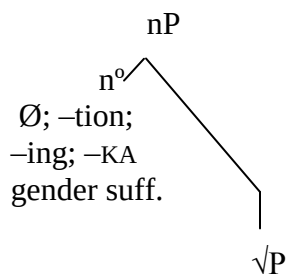
- (i) *The breaking* *(of promises)
- (ii) *The studying* *(of the lesson)
- (iii) *The memorizing* *(of conventional figures)

b. Bulgarian biaspectual unprefixated AS nominals

- (i) *remont-ira-NE-to* ??(*na kola-ta*)
 repair-BIASP-NE-the-NEUT.SG ??(of car-the)
 ‘The repairing ??(of the car)’
- (ii) *oper-ira-NE-to* ??(*na patsient-a*)
 operate-BIASP-NE-the-NEUT.SG ??(of patient-the)
 ‘The operating ??(of the patient)’

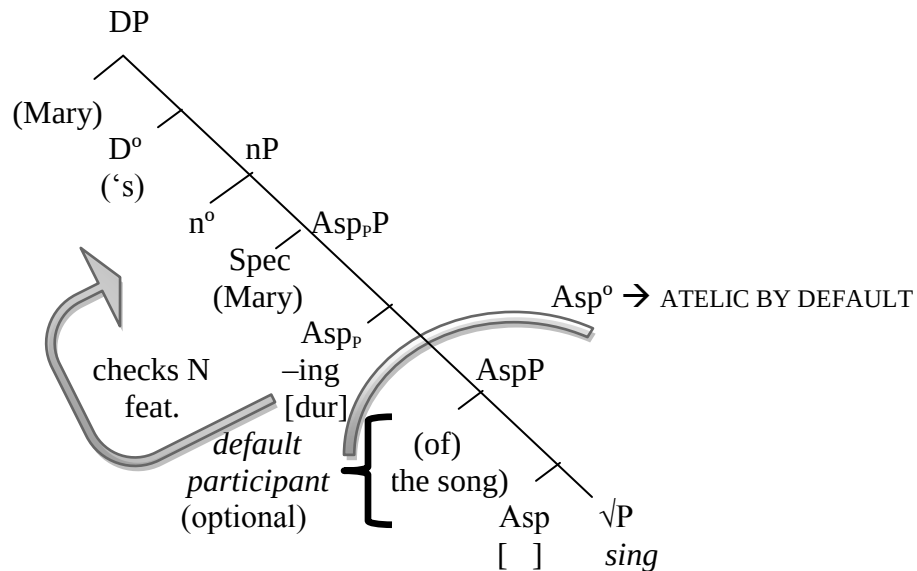
From the observations above ***I have concluded that the prototypical true AS nouns are the prefixed standard Bulgarian –NE nouns, the particle-incorporating English –ing nouns and the prefixed biaspectual [–ira +–NE] nouns.*** The reason for their argument-taking properties is twofold: (i) only these nominalizers preserve the aspectual properties of their bases, so only they will pattern identically with their base verbs, and (ii) only in the presence of transitivity elements such as prefixes and particles, together with a process layer headed or selected by the nominalizer itself (e.g. Asp^{DUR}P selected by –NE or Asp_pP headed by –ing), is a noun capable of taking internal arguments, and thus behave like a verb (17c). In the absence of one of these layers (e.g. the telic or the process projection), the noun is either a PS one or an R-R nominal. In case some lower verbal-aspectual layer is present, we obtain a PS noun (17b); if, on the other hand, the noun has no verbal layer in its derivational history, then it will fall within the R-R nominal type (17a). The abstract representation of the nominal typology is given in (17).

(17) a. R-R nominals



b. PS nouns: the optional internal argument is located in Spec,AspP where it receives structural case via *of*-insertion and default participant interpretation in lines with paritive case assignment within verbs

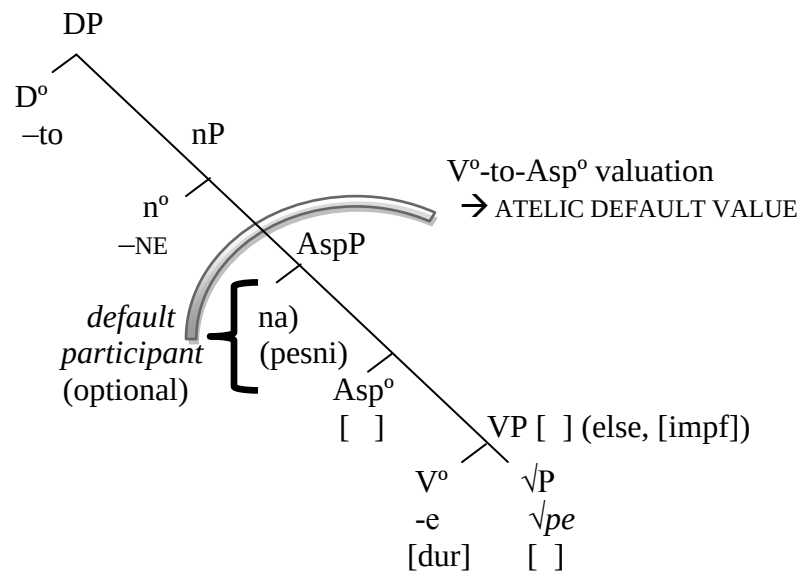
(i) English: *the singing (of the song by the singer)*



(ii) Standard Bulgarian

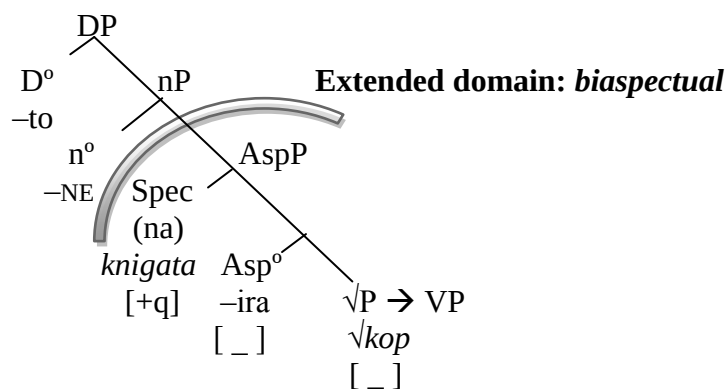
pe-e-NE-to (na pesni)

sing-TH.VOW-NE-the (of songs) 'the singing (of songs)'



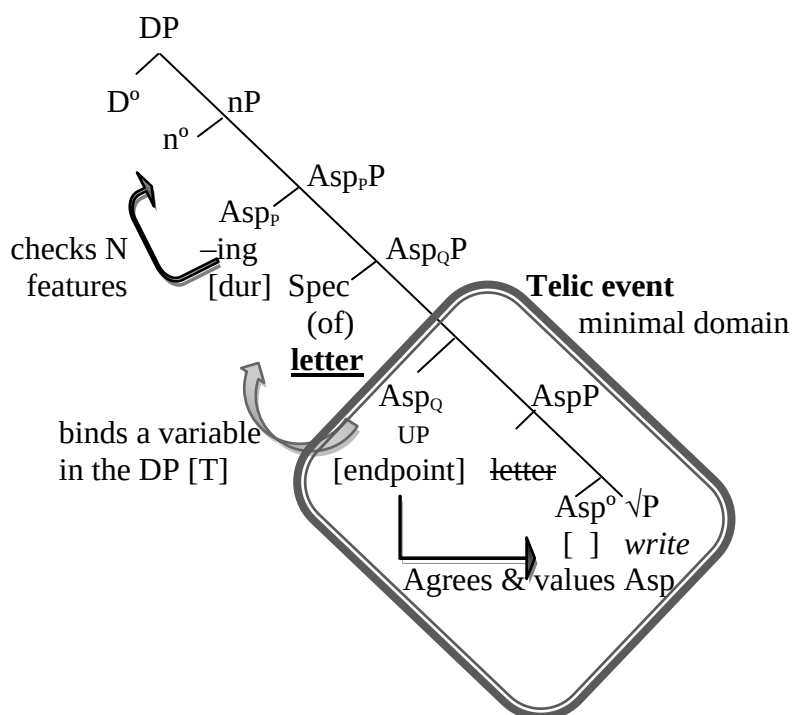
(iii) Biaspectual Bulgarian

kop-ira-ne-to (na kniga-ta) dva chasa/za dva chasa
 copy-BIASP-NE-the-NEUT.SG (of book-the) two hours/in two hours
 ‘The copying of the book for two hours/in two hours’



c. AS nominals: incorporate higher aspectual layers: both Asp_QP and $\text{Asp}^{\text{DUR}}\text{P}/\text{Asp}_P\text{P}$

(i) English: The writing up *(of the letter) *for/in two hours



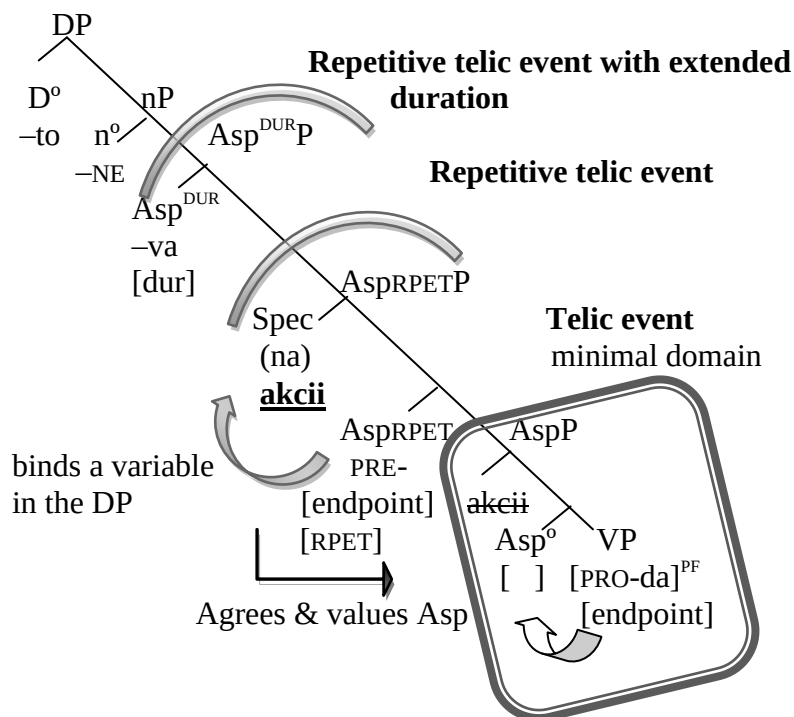
(ii) **Standard Bulgarian:** $\text{Asp}^{\text{DUR}}\text{P}$ is selected by $-\text{NE}$; the prefix heads its own projection

$[\text{PRE}-[\text{PRO}-da]^{\text{PF}}]^{\text{PF}}-\text{va}]^{\text{IMPF}}-\text{NE}-\text{to na akcii}$

$[\text{AGAIN}-[\text{THROUGH-give}]^{\text{PF}}]^{\text{PF}}-\text{impf}]^{\text{IMPF}}-\text{NE}-\text{the of shares}$

$[\text{AGAIN}-[\text{SELL}]^{\text{PF}}]^{\text{PF}}-\text{impf}]^{\text{IMPF}}-\text{NE}-\text{the shares}$

'the re-selling of shares'



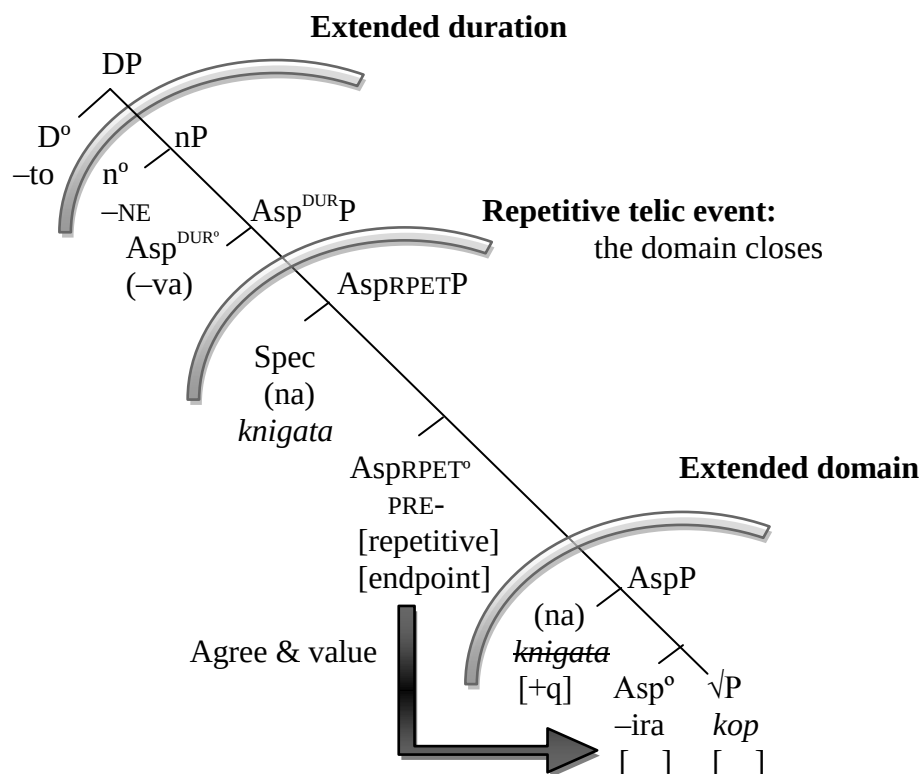
(iii) **Biaspectual Bulgarian:** Asp^{DUR}P is selected by –NE; the prefix heads its own telicizing projection

PRE-kop-ir(ə)–va-ne-to

**(na kniga-ta) dva chasa/za dva chasa*

PRE-copy-BIASP-IMPF-NE-the-NEUT.SG **(of book-the) two hours/in two hours*

‘The re-copying **(of the book)* for two hours/in two hours’



The same mechanisms of aspectual calculation as those proposed for verbs (3, 6) hold for the derivations in (17), where the observed differences between languages are due to the properties of their base verbs: either perfective (e.g. [endpoint]) or imperfective (e.g. []) in standard Bulgarian, but aspectually ambiguous (e.g. [_]) in English and biaspectual Bulgarian. See chapter 7 for a detailed explanation of the syntax of nominal types in English (§ 7.2), standard Bulgarian (§ 7.3), and biaspectual Bulgarian (§ 7.4).

Crucially, another difference observed between the nominal structures in English and Bulgarian is the fact nominalizers project as overt n° heads in Bulgarian but not in English. To account for this, I have proposed that it is due to the fully developed gender system in Bulgarian, in which grammatical gender is syntactically active, but not in English (chapter

6, § 6.5.4). Since gender is a prototypically nominal property, I assume that what nominalizes the base in languages that are sensitive to gender distinctions is the gender marker itself, or some derivational suffix marked for gender. In English, on the other hand, there is no well-developed grammatical gender system, so people turn out to be insensitive to the grammatical gender distinctions in the language. As a consequence, using gender marking as a nominalization device is disallowed, so the language has to find another mechanism to achieve this goal. Thus, I assume, following Borer (1999) that it is the functional structure in which the listeme is inserted which finally determines its category membership. This is manifested by the high number of zero derivations in the language, i.e. category-ambiguous forms which can be both nouns and verbs at the same time. This, as expected, is not found in Bulgarian since we have a full array of functional material which overtly verbalizes or nominalizes the listeme/root. In other words, ***category alternations in English are syntactically determined, by inserting a category-neutral root into a functional deterministic structure (Borer 2005b), whereas in Bulgarian, in the presence of overt morphological material to accomplish this goal (e.g. gender markers, theme vowels), they are morphologically determined.*** This explains why all Bulgarian nominalizers project as n-heads in contrast to English nominalizers which project as other aspectual functional heads (e.g. Asp_Q^o for –tion and Asp_P^o for –ing). This state of affairs reminds us of the way inner aspect is determined in the two languages: morphologically in Bulgarian, but functionally (i.e. compositionally) in English.

Additional evidence for the N^o-STATUS OF THE BULGARIAN NOMINALIZERS comes from the fact that all of the nominalization types in Bulgarian accept any kind of nominal modifiers (e.g. they can pluralize (see chapter 6, (118)), accept indefinite determiners (see chapter 6, (119)), demonstratives (see chapter 6, (120)) and numerals (see chapter 6, (121))). As for English, only the true AS –ing nouns behave differently since they neither pluralize (see chapter 6, (122a: i)), nor take any indefinite determiners (see chapter 6, (123a: i)), demonstratives (see chapter 6, (124a: i)) and numerals (see chapter 6, (125a: i)). I assume that the incompatibility of high functional projections within an AS –ing noun is due to the fact –ing represents an aspectual process head within a true AS –ing noun, but not a

nominal head as –NE. As a consequence, these modifiers are blocked due to a twofold incompatibility: a syntactic one, where such modifiers target n-heads, and a semantic one, where these modifiers reject, *a priori*, atelic-process heads like Asp_p^o (observe that mass nouns, which are considered to correspond to atelic events within the verbal domain (Borer 2005b), also reject numerals, indefinite determiners and plural markers).

TO SUMMARIZE THIS SECTION, we have seen that prefixation and particle insertion often result in obligatory transitivity of the base verb. This is additionally transferred under –NE and –ing nominalization since only these nominalizers preserve the properties of their verbal bases. Thus, in the presence of such transitivity devices, a PS noun (12b, 13a) becomes an AS noun, reflected in the obligatory presence of the internal argument (12c, 13b). I tentatively assume that this is due to the quantificational operator-like properties of the assigner itself (i.e. the prefix or the particle). However, some idiosyncrasy of the base cannot be neglected inasmuch as we have instances of unprefixated and non-particle constructions which are obligatory transitive in both the verbal and the nominal domain (14, 16, 17). Yet, this has an exceptional character. A recap is offered in table 1.

Absence of prefixes/particles			Presence of prefixes/particles	
	Inner aspect	Argument structure	Inner aspect	Argument structure
Atelic bases	atelic processes	PS nouns	telic events	AS nouns
Telic bases	telic events ¹¹	AS/PS	telic events	AS nouns

Table 1: The role of prefixes and particles: –ing and –NE nouns

So far we can conclude that nouns mirror verbs in (argument) structure where the argument-taking properties of the former obey the same restrictions as the latter. However, apart from structural similarity, nouns and verbs share further semantic properties, being

¹¹ Recall that –ing prefers atelic bases over telic ones. However, when attached to a particle-incorporating telic base, the result is a telic noun. In other words, –ing preserves the properties of its base.

these structurally dependent. Furthermore, recall that one of the reasons to divide nouns into R-R, PS and AS, apart from their argument-taking properties, is related to their denotation. As we have seen, R-R nouns denote objects or results; the PS nouns denote events or actions, usually telic, whereas only the true AS nouns are capable of denoting processes (see chapter 6, § 6.5.1 for further details). Again, there is a structural reason for this, explained by the presence or absence of certain aspectual layers.

Since suffixes may play a crucial role in interpretation, given their aspectual character, and due to the relevance of aspect for both argument-structure and denotation, I dedicate the following subsection to the role of suffixation in interpretation. In this way, a parallelism between nouns and verbs regarding aspectual interpretation will be emphasized.

8.1.2. Suffixation and aspectual interpretation

This section treats the inherent aspectual features of the Bulgarian and English suffixes. More precisely, I will be interested in the aspectual contribution of **thematic vowels, the Bulgarian secondary imperfective suffix –va, and the English nominal suffix –ing**. Some minor comments will be provided on the role of **participial morphemes**, too, and on **the English –tion and the Bulgarian biaspectual –tsija nominalizers**. Since I have provided sufficient details on the aspectual function of these morphemes in chapter 3 (§ 3.4), and chapter 6 (§ 6.4, § 6.5.1.3, § 6.5.1.2.2), I will just briefly summarize the main generalizations.

To begin with, we have mentioned that there are **THREE VERBAL BASES WHICH PLAY A CRUCIAL ROLE FOR THE DERIVATION OF THE BULGARIAN VERBS**: the present tense base (18), the aorist base (19), and the imperfect base (20) (Bojadjiev et al. 1999: 287). The vowel in which the corresponding base ends, once the person and number endings are removed, is the corresponding theme vowel (also known as ‘present tense thematic

vowels’, ‘aorist vowels’, and ‘imperfect thematic vowels’, for bases in the present tense, the aorist tense, and the imperfect tense, respectively) (see chapter 3, § 3.4.1).¹²

(18) The present tense base

a. First conjugation: thematic vowel: E

(i) Primary imperfective base

pishe-sh **Base: PISHE ‘write’**

write-2PS.SG

‘you write’

(ii) Perfective bases: the same

PRE-pishe-sh ‘you copy’

b. Second conjugation: thematic vowel: I

(i) Primary imperfective base

govori-sh **Base: GOVORI ‘talk’**

talk-2PS.SG

‘you talk’

(ii) Perfective bases: the same

IZ-govori-sh ‘you pronounce’

c. Third conjugation: thematic vowel: A

(i) Primary imperfective base

gleda-sh **Base: GLEDA ‘watch’**

watch-2PS.SG

‘you watch’

(ii) Perfective bases: the same

PRE-gleda-sh ‘you revise’

¹² Recall that the present tense thematic vowel (18) is the one used to determine the conjugation membership of the verbs whereas according to the aorist vowel (19) these conjugations are additionally subdivided into subclasses (called *razred* ‘range; grade; category’) (see Bojadjev et al. 1999: 346; BAG 1983, vol. 2: 304-314). Finally, the imperfect thematic vowel (20) is derivationally related to the present tense vowel and is used in the imperfect tense.

(19) The Aorist base

a. First conjugation

(i) Primary imperfective base

pisa-hte **Base: PISA ‘write’**
write-AOR.2PS.PL JA = SPJA JA > E (SHE)
‘you wrote’

(ii) Perfective bases: the same

PRE-pisa-hte ‘you copied’

b. Second conjugation

(i) Primary imperfective base

govori-hte **Base: GOVORI ‘talk’**
talk- AOR.2PS.PL
‘you talked’

(ii) Perfective bases: the same

IZ-govori-hte ‘you pronounced’

c. Third conjugation

(i) Primary imperfective base

gleda-hte **Base: GLEDA ‘watch’**
watch- AOR.2PS.PL
‘you watched’

(ii) Perfective bases: the same

PRE-gleda-hte ‘you revised’

(20) THE IMPERFECT BASE

a. First conjugation

(i) Primary imperfective bases → Imperfect thematic vowel

pish-e-she **Base: PISHE ‘write’**
write-TH.VOW.2/3PS.SG
‘you/(s)he were/was writing’

(ii) **Perfective bases: IMPF2 suffix –va** → Imperfect thematic marker

PRE-pis-va-she ‘you/(s)he were/was copying’

b. Second conjugation

(i) Primary imperfective base

govor-e-she

Base: GOVORI/GOVORE ‘talk’

talk-TH.VOW-2/3PS.SG

‘you/(s)he were/was talking’

(ii) **Perfective bases: IMPF2 suffix** –ja, + theme vowel change (I → A)¹³

IZ-govar-ja-she ‘you/(s)he were/was pronouncing’

c. Third conjugation¹⁴

(i) Primary imperfective base

gled-a-she

Base: GLEDA ‘watch’

watch-TH.VOW-2/3PS.SG

‘you/(s)he were/was watching’

(ii) **Perfective bases: consonant mutation = imperfectivization (D → Ž)**

PRE-gležda-she ‘you/(s)he were/was revising’

What we can observe from (18), (19) and (20) is the fact that when dealing with perfective base (examples (ii)) the imperfect vowel (20a: ii, b: ii, c: ii) is more complex than the rest of the vowels since it incorporates an aspectual secondary imperfectivizing (IMPF2) suffix (e.g. –va, –ja, and consonant mutation). As I have mentioned, I assume the IMPF2 suffix + the thematic inflectional marker –a (e.g. –v-a; –av-a; –uv-a, –jav-a, etc.) to be the imperfect vowel. Observe the following derivations taken from Manova (2005: 239).

¹³ The imperfect vowel for the I and II conjugation verbs is mutating JA (*pormenlivo* JA), which implies that under stress we have [JA] (e.g. *chetjjàh* ‘I was reading’), and when non-stressed, we have [E] (*misleh* ‘I was thinking’). The 2nd and the 3rd person singular imperfect forms end in [E] because the following suffix is –SHE (e.g. *chete-she* ‘you were reading/he was reading’) which is doubly softened by the presence of the consonant [SH] and the front vowel [E]. For more details, see Pashov (1999: 144).

¹⁴ Recall that the verbs from the third conjugation have the same base and therefore the same thematic vowel for all tenses (18c, 19c, 20c).

(21) a. **Primary imperfectives (IMPF1)**

IMPF1 = ROOT + THEMATIC MARKER (TM) + INFLECTIONAL SUFFIX (ISUFF)

<i>stro-</i>	<i>j-</i>	<i>a</i>
build	- TM	-1.PS.SG
'I build'		

b. Prefixed perfectives (PF)

PF = PREFIX + IMPF1

<i>do-</i>	<i>stroja</i>
'I complete building'	

c. Secondary imperfectives (IMPF2)

IMPF2 = PREFIX + ROOT + ASPECTUAL SUFFIX (ASUFF) + TM + ISUFF

<i>do-</i>	<i>stro-</i>	<i>jav-</i>	<i>a-</i>	<i>m</i>
'I complete building'				

According to Manova (2005: 240), imperfectivization in Bulgarian can be accomplished either by an aspectual suffix in the derivational slot (e.g. *-jav* in (21c)) or inflectionally, by a thematic marker only. However, the **productive rules of imperfectivization** involve the presence of aspectual suffixes which can be of two types: (i) **two productive IMPF2 suffixes** which are *-v-a* (in *kaz-v-a-m* 'I say' (IMPF2), from *kaža* 'say' (PF)) and *-(j)av-a* (e.g. *izor-av-a-m* 'I plow' (IMPF2), from *iz-ora* 'I plow' (PF)), and (ii) **two unproductive aspectual suffixes** which are *-(j)a* (e.g. *izgovar-ja-m* 'I articulate') and *-uv-a* (e.g. *kup-uv-a-m* 'I buy'). Since aspectual suffixes always combine with the thematic marker *-a*, I follow Manova (2005) and assume that these IMPF2 suffixes can be treated as complex thematic markers of the type *-(V)va-*.¹⁵ For ease of exposition, I use **-va as the imperfect thematic marker which is used with perfective bases**.¹⁶ Furthermore, whenever I use the term

¹⁵ As Manova (2005: 243) observes, IMPF2 verbs in Bulgarian are always marked by the thematic marker *-a*, which is the default marker for imperfectivity (there are only very few verbs with TM *-a-* which are not imperfective).

¹⁶ I prefer to treat *-va* as a complex imperfect thematic marker and not merely as an imperfect thematic vowel since it is more than a vowel: it consists of IMPF2 suffix and the thematic marker *-a*. Note that Svenonius (2004a: 181) regards the suffix *-va* as thematic vowel.

'secondary imperfective suffix –va', I refer to this complex imperfect thematic marker (e.g. –va in (20a: ii)). As for the realization of the **imperfect thematic vowel with primary imperfective bases** (20a: i, b: i, c: i), I will use the term *imperfect thematic vowel* only (e.g. –a in (20c: i)).

In chapter 3 we have seen that thematic vowels play an aspectual role in Bulgarian, which made us conclude, together with Stancheva (2003), that the aorist vowel (19) denotes *boundedness* whereas the imperfect vowel/marker (20) and the present tense vowel (18) *unboundedness*. I have further proposed that this aspectual difference is best treated in terms of inherent interpretable features which these vowels bear. A recap is offered in (22).

(22) The featural make-up of the Bulgarian thematic vowels

- a. Present tense & Imperfect vowel/marker: [duration] → unboundedness
- b. Aorist vowel: [endpoint] → boundedness

In chapter 7 we have further related these features to the derivation of some nominalization types in Bulgarian. Thus, we have seen that the “other-suffix” nouns incorporate a lower verbalizing layer (V), which is morphologically and syntactically manifested by the present tense thematic vowel. It is precisely the incorporation of this vowel which facilitates the eventive denotation of these nouns (23a) and further allows them to become PS nominals. As for the nouns which lack such a layer, they are neither eventive nor PS, but rather denote results or objects (23b) in the majority of the cases. I claim that it is precisely the feature [duration] which, when attached low in the structure (i.e. on the theme vowel node V^o), gives rise to an eventive interpretation.

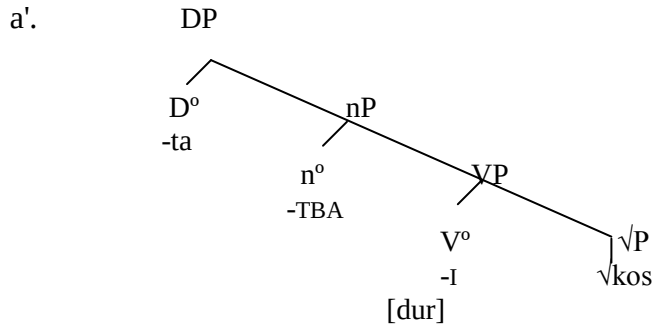
(23) Theme vowels inside nominals: the general trend

- a. Theme vowels: eventive denotation: PS nouns

kos-i-tba-ta (na *ljutserna*)

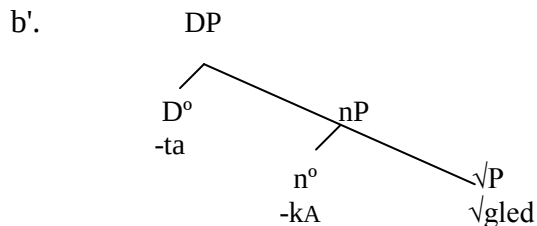
mow-TH.VOW-TBA-the.FEM.SG (of alfalfa)

‘The mowing (of alfalfa)’



b. No theme vowel: results and objects: R-R nouns¹⁷

gled-ka-ta (**na pejzaža*)
 see/look at-KA-the.FEM.SG (*of the landscape)
 ‘The view/scene (*of the landscape)’



¹⁷ We have some exceptions to this general trend where an unergative (primary imperfective atelic) base such as *gon* ‘pursue’ gives an event-denoting PS nominal even in the absence of thematic vowels (i). As I have observed, this root is idiosyncratic inasmuch as it requires an internal argument even in the absence of prefixation (i.e. perfectivity) when dealing with verbs. Furthermore, recall that the same base *gon*, when participating in the formation of a participial Voice –IE nominal, still gives rise to eventive denotation (ii), which is *prima facie* unexpected bearing in mind the participial nature of such derivatives. I assume that the fact that some unergative bases are very prone to give eventive derivatives even in the absence of overt morphological material which should, in principle, license such a denotation, is related to our world knowledge and to the markedly atelic nature of the base itself. Alternatively, we may assume that there is an exhaustive list of some unergative bases which, in the same way as statives, preserve their atelic process (or activity) denotation under all kinds of nominalization, not only within a –NE noun as we shall expect (recall that only the –NE nominalizer preserves the properties of its base).

- (i) *gon-ka-ta* (*na divi svine*)
 pursue-KA-the (of feral pigs)
 ‘the race of feral pigs’ (*gonka* ‘a collective hunt activity’)
- (ii) *gon-e-n-ie-to* (*na ezichnitsi-te*)
 pursue-TH.VOW-N.PASS.PART-IE-the (of pagans-the)
 ‘The persecution (of the pagans)’

Based on the observations above, I have claimed that ***the present tense thematic vowel is a V° head endowed with the feature [duration] which allows for an eventive interpretation of the nouns*** derived from such bases (23a'). As for the imperfect tense base, due to its derivational relation to the present tense base, the relevant feature is again [duration].¹⁸ However, the attachment site of this feature differs, which is consequently reflected in its different aspectual contribution. Let us recall why this is so.

To begin with, note that when the base is perfective (e.g. prefixed), the complex imperfective thematic marker always incorporates the secondary imperfective suffix –va (or one of its allomorphs –av-a, –uv-a, –(j)av-a, –a, –ja, etc.) (20a: ii, b: ii; 21c). This implies that all –va derivatives, i.e. all IMPF2 verbs, will be built on the imperfect tense base (20). Since imperfect tenses are used to denote a process in the past (e.g. *I was writing*, i.e. *I was at the process of writing*), this implies that ***the feature [duration] which the imperfect marker bears is interpreted as [process]***. In fact, recall from chapter 7 (§ 7.3.1) that this is syntactically manifested by the assumption that the –va suffix heads its own functional projection Asp^{DURATIVE}P (24b). This has been claimed to hold not only for the –va suffix, but also for the English nominal suffix –ing which also heads a process-related projection (e.g. Asp^{PROCESS}P) (17c). In other words, these suffixes always select for a process layer by virtue of their inherent feature [duration], which is consequently interpreted as [process], and this is precisely what accounts for the process denotation of both the Bulgarian –NE (24a) and the English –ing (24b) nominals, inasmuch as these nominalizers incorporate these projections. Observe the following derivations.

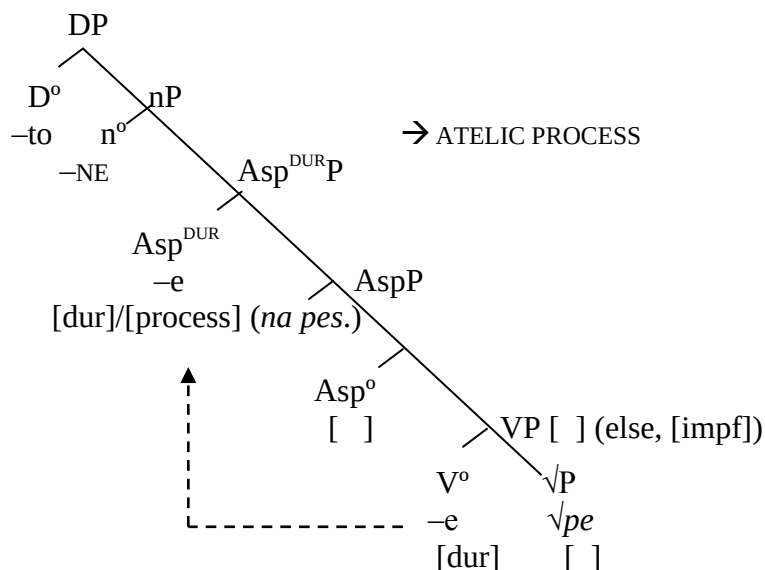
¹⁸ Alternatively, we may treat the feature on the imperfect marker as [process] since this feature is the higher instantiation of the feature [duration] which present tense vowels bear.

(24) The feature [duration] within nominals

a. Bulgarian –NE nouns

(i) **Primary imperfective (atelic) bases:** PS nouns (see 17b: ii)

pe-e-ne-to (na pesen-ta) tri chasa /*za tri chasa
 sing-TH.VOW-NE-the.NEUT.SG (of song-the.FEM.SG) three hours/*in three hours
 ‘The singing (of the song) for three hours/*in three hours’



First note that no –va (i.e. no IMPF2 suffix + TM –a) is necessary since the base is already imperfective (recall that –NE always selects for morphologically imperfective bases exclusively, be they IMPF1 or IMPF2, and that the function of –va is only to imperfectivize an already perfective base; hence, no –va is needed with IMPF1 bases). However, although the secondary imperfectivizing suffix is not merged into the structure, we have an imperfect theme vowel, which the primary imperfective base bears when selected by –NE (e.g. –e in the example above; else, see (20a: i; b: i; c: i)). This state of affairs confirms the fact that **–NE always selects for the imperfect tense base and thus incorporates the imperfect vowel.**¹⁹ Since this base is syntactically manifested by Asp^{DUR}P, then

¹⁹ Note that the present tense vowel (ii) and the imperfect vowel (iii) may coincide, so when incorporated within a –NE derivative (i) we may not be sure which is the one selected.

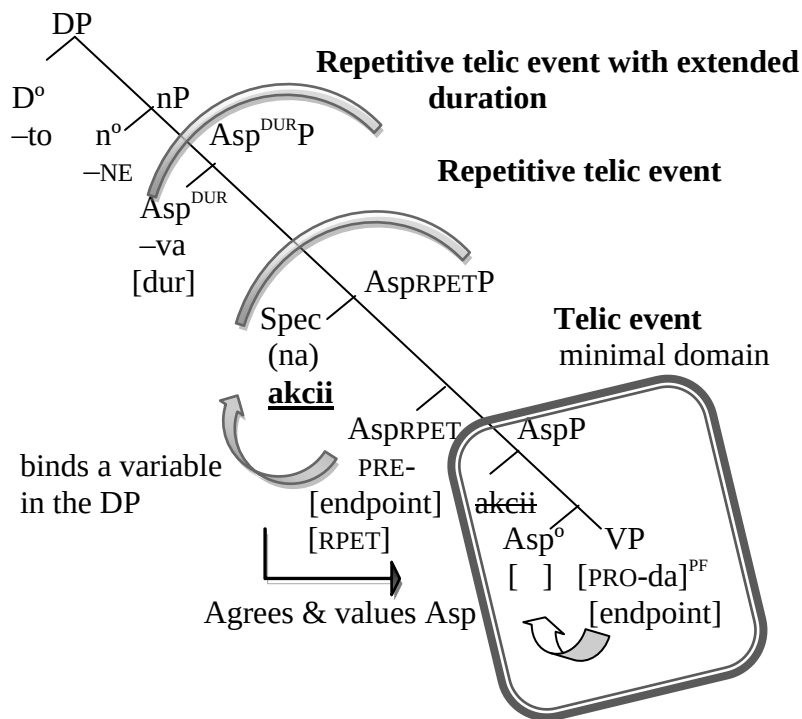
(i) <i>pe-E-ne</i>	(ii) <i>pe-E-sh</i>	(iii) <i>pe-E-she</i>
sing-TH.VOW-NE	sing- E -PRES.TENSE.2PS.SG	sing- E -IMPF.2/3.PS.SG
'singing'	'you sing/are singing'	'you/(s)he were/was singing',

this projection is present even in the absence of *-va* (20a: i, b: i, c: i) (note here that the head of $\text{Asp}^{\text{DUR}}\text{P}$ is overtly manifested by *-e*, being this the imperfect thematic vowel). Consequently, the [duration] feature on $\text{Asp}^{\text{DUR}_0}$ is interpreted as [process] and, when attached to atelic bases, gives rise to an ***atelic process*** interpretation of the derived noun. Whether *-e* derives first as V^0 like the present tense vowels and thereby verbalizes the root, and later incorporates into $\text{Asp}^{\text{DUR}_0}$ (probably to check its [duration] feature as [process]), or it immediately merges under $\text{Asp}^{\text{DUR}_0}$ is not that relevant. What is important is to note that it is the presence of this vowel which allows for the process reading of the derivative.

(ii) **Perfective (telic) bases:** (see 17c: ii)

[PRE-[PRO-*da*]^{PF}]^{PF}-*va*]^{IMPF}-NE-*to na akcii*

[AGAIN-[SELL]^{PF}]^{PF}-*impf*]^{IMPF}-NE-the shares 'the re-selling of shares'



However, when these vowels do not coincide, it is the imperfect one (vi) which is selected by *-NE* (iv), not the present tense one (v). Hence, I assume that the *-NE* nominalizer always selects for the imperfect vowel, be it simple as in (i) and (iv), in the case of primary imperfective bases, or a complex thematic imperfect marker (e.g. *-va* = IMPF2 + TM), with perfective bases.

(iv) *hod-E-ne*

walk-TH.VOW-NE
'walking'

(ii) *hod-I-sh*

walk-I-PRES.TENSE.2PS.SG
'you walk/are walking'

(iii) *hod-E-she*

walk-E-IMPF.2/3.PS.SG
'you/(s)he were/was walking',

Note here that since the base is perfective (e.g. lexically prefixed in this case), the –va imperfect thematic marker is necessary to imperfectivize the base; as a consequence, Asp^{DUR}P projects because it is both headed by –va and selected by –NE; the [duration] feature on Asp^{DURo} (which is now overtly manifested by the complex thematic marker –va), when attached to telic (perfective) bases, gives rise to a ***prolonged telic event or else a telic event with extended duration.***

b. English –ing nouns:

(i) **Atelic bases:** –ing heads Asp_PP whose feature [duration] allows for an atelic process denotation of the derived noun (see (17b: i)

e.g. *The singing of the song for three hours/*in three hours*

(ii) **Telic bases:** –ing heads Asp_PP whose feature [duration], in combination with the [endpoint] feature on the particle, gives rise to a repetitive telic event interpretation of the derived noun (see (17c: i)

e.g. *The singing up of the song #for three hours/in three minutes*

(**Interpretation with the for-adverbial:** *the same song has been sung various times repetitively in the duration of three hours*)²⁰

From (24) we can observe that the English –ing nouns (24b: i) and the Bulgarian –NE nouns (24a: i) built on atelic bases denote atelic processes, which confirms the presence of a [duration] feature within such derivatives (else, a [process] feature). In this respect, recall that only these nominalizers preserve the aspectual properties of their bases (see chapter 6, 6.5.1.2.1). Therefore, if the base is telic (perfective), then the feature [duration] in combination with the [endpoint] feature present in the structure gives rise to a prolonged telic event denotation of the derivative (20a: ii, 20b: ii) (recall that particle and prefixes are endowed with the feature [endpoint] and telicize the structure). It is precisely this prolonged reading which signals the presence of [duration] within the structure. ***This state of affairs made us conclude that both –ing and –NE nouns are built on a process [duration]-incorporating layer. As I have proposed, the feature [duration] that participates in the formation of the –ing***

²⁰ Recall that the *for*-adverbial can combine with telic event but only on a repetitive reading.

and –NE nouns is syntactically realized as $Asp_P P$ and $Asp^{DUR} P$, respectively. More precisely, we have seen that –ing, being an aspectual morpheme, heads $Asp_P P$ whereas –NE, being an n^0 head, selects for $Asp^{DUR} P$ (i.e. –NE selects for the imperfect tense base which is instantiated by $Asp^{DUR} P$).

TO RECAP, from the data above we can conclude that the Bulgarian **present tense thematic vowels** (18); **the imperfect thematic marker** –va, which appears with perfective bases (20a: ii; b: ii; c: ii); **the imperfect thematic vowel** in primary imperfective contexts (20a: i; b: ii; c: ii), together with **the nominal –ing suffix** in English, **are aspectual morphemes** which may influence the final interpretation of the derivative by virtue of their inherent feature [duration]. Furthermore, we have also seen that the interpretation of this feature [duration] depends on its attachment site. ***When located within the lower verbal domain, i.e. on the present tense thematic vowel, which is a verbalizing V^0 head, it assigns an eventive interpretation to the derived nominal (23a). If, on the other hand, this feature is located on a process-related aspectual projection (e.g. $Asp^{DUR} P$ or $Asp_P P$), then a process interpretation becomes available (24).*** Furthermore, we have also established a ***parallelism between the –ing nominalizer and the Bulgarian –NE suffix, inasmuch as only these suffixes preserve the aspectual properties of their bases (24).*** However, what differentiates –ing from –NE is that the former is an aspectual head (Asp_P^0) whereas the latter is an n^0 head which selects for the process-related layer, $Asp^{DUR} P$. Recall that the status of Bulgarian nominalizers as n^0 heads is due to the rich system of gender marking in this language (see chapter 6, § 6.5.4). This is not the case for English since gender is not a classificatory category in this language;²¹ therefore, nominalizers first merge as an aspectual heads and later incorporate into n^0 by virtue of their inherent feature [$_{NOM}$] (see chapter 7).

²¹ Recall that Slavic grammars consider gender a classificatory category for nouns which, although not usually marked by a special suffix in the noun, divides the lexicon into classes that trigger agreement. The same holds for Aspect which is classificatory for verbs since without being overtly marked for aspect they are classified as either perfective or imperfective (see Manova 2005: 238-239).

NOW LET US PROCEED TO ANALYZING THE BULGARIAN AORIST VOWEL (19). In this respect, recall that this vowel participates in the derivation of participles and nouns built on participles. As I have proposed, it is endowed with the feature [endpoint] (else, [bounded] as in Markova 2010) and denotes a (temporally) bounded and telic event. We have already suggested that it is precisely this feature which contributes to the resultative semantics of both participles and participial nominalizations built on the aorist base (see chapter 3, § 3.4.2; chapter 6, § 6.3.2, and chapter 7, § 7.3.2). An example is provided below.

(25) Voice –IE nouns

a. Perfective (telic) bases:

(i) Results:²²

osnov-a-n-IE

base-AOR.TH.VOW-N.PASS.PRT-IE

‘basis; grounds; reason; foundation’

(ii) Telic events:²³

[O-pustosh]-e-n-IE-to

na stolitsa-ta

**tri*

dni/za tri dni/zapochna v tri chasa

[O-desolation]-AOR.TH.VOW-N.PASS.PRT-IE-the.NEUT.SG of capital-the.FEM.SG

*three days/in three days/started at three o’clock

‘The devastation of the capital *for three days/in three days/started at three o’clock’

²² Also *darenie* ‘donation’, *izobretenie* ‘invention’, *lishenie* ‘deprivation’, *reshenie* ‘decision’, *udarenie* ‘stress (syllabic), accent’, etc.

²³ The eventive interpretation of the derived nominal may be ascribed to our encyclopedic knowledge of the root, which will allow such nouns to accept event modifiers such as ‘during’, ‘take place’, ‘last’, etc. Else, we can account for this historically (see chapter 6, fn. 43). The same observation holds for other eventive underived nouns such as *lesson*.

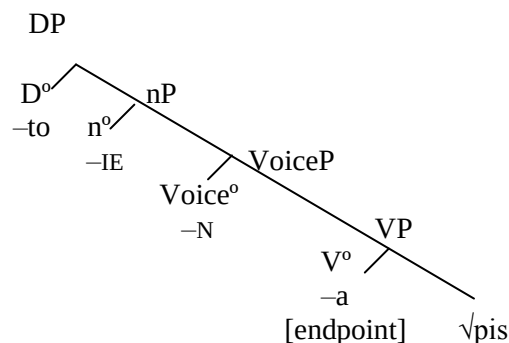
(i) results or objects; sometimes telic events

write-AOR.TH.VOW-N.PASS.PRT-IE-the.NEUT.SG is on table-the.FEM.SG/*started at three o'clock

(ii) atelic events, but the result (telic) reading is always available

at **move-TH.VOW-N.PASS.PRT-IE** more-long time behind slow freight
 automobiles and intensive counter ***move-AOR.TH.VOW-N.PASS.PRT-IE*** not lose
endure-AOR.TH.VOW-N.PASS.PRT-IE

c. An abstract representation (see chapter 7, § 7.3.2 for a detailed analysis)



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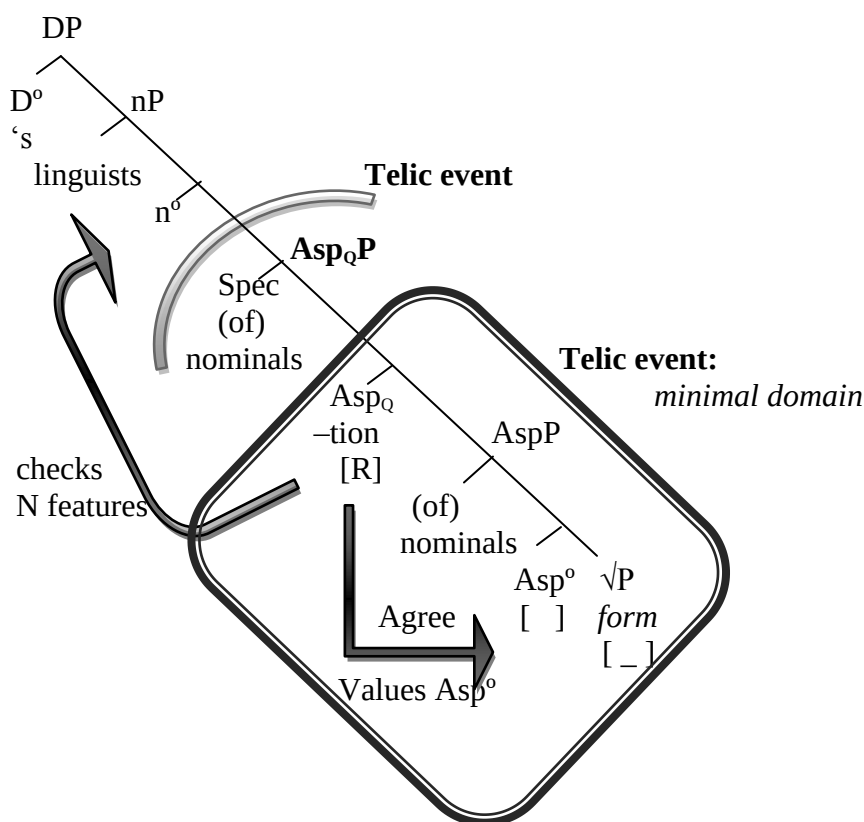
of Voice –IE nominals built from primary imperfective (i.e. atelic) bases which are capable of denoting atelic events, thus preserving the aspectual properties of the base (25b: ii). However, the result interpretation is always present event in those cases though it may optionally be accompanied by an eventive reading. In this respect, see *dviženie* in (25b: ii) which, according to the context in which it appears, can be either eventive and therefore translated as ‘moving’ or else resultative and translated as ‘movement/traffic’.

Such a state of affairs suggests that when higher aspectual levels are involved in the derivation of a nominal (e.g. VoiceP), then morphological and, consequently, syntactic (and semantic) inheritance may be a factor for determining the properties of the final derivative. A claim like this is further reinforced by the fact that ***the –IE nouns are always capable of denoting results, which, as I have already proposed, is due to the incorporation of a participial syntactic layer inside them.*** This is morphologically manifested by the presence of the participial suffixes –N and –T, which are the two morphemes used to form participles in Bulgarian. Following Cinque (1999: 101–103) and Ferrari (2005), I have further assumed ***that these suffixes are Voice heads and have the effect of turning a verbal stem into a participle, thereby assigning a resultative meaning to the derived nominal.*** Crucially, ***such a result denotation is additionally reinforced by the telicizing feature [endpoint] which the aorist thematic vowel bears and on which participles, and consequently, participial nouns, are built*** (25c). In other words, ***the thematic vowel, being the aorist one, adds a resultative denotation to the derived nominal.*** Thus, Voice –IE nominals inherit the feature specification of both the aorist theme vowel (e.g. [endpoint]) and the participial suffix (e.g. [passive]), which participate in their derivation. As a consequence, we have a result nominal.

Finally, SOME NOTES REGARDING THE –TION AND THE –TSIJA NOMINALIZERS ARE IN ORDER. As we have noted, these suffixes, in the same way as English particles, head the quantity-telic Asp_QP layer. This explains why these nominal types pattern alike inasmuch as both of them (i) give PS nouns; (ii) have a resultative interpretation, not a process one; (iii)

behave in a telic manner; (iv) show similar aktionsart properties (nominalize any kind of predicate); (v) show similar nominal behavior (allow all kinds of modifiers of nominal structure); (vi) allow only some low manner and temporal adverbs, etc. (see chapter 6, § 6.5 and § 6.6). I claim that such a parallelism is syntactically reflected in the fact that both suffixes select for the telic Asp_QP , the difference being that –tion heads this projection (in line with –ing which heads the process Asp_P layer) whereas –tsija, being a nominalizing head (n°) located above Asp_QP selects for this projection, in the same way as –NE selects for an $\text{Asp}^{\text{DUR}}\text{P}$.²⁴ A syntactic representation follows.

(26) a. **–tion nominals:** *the linguists' formation of the nominals* (see chapter 7, § 7.2.1)



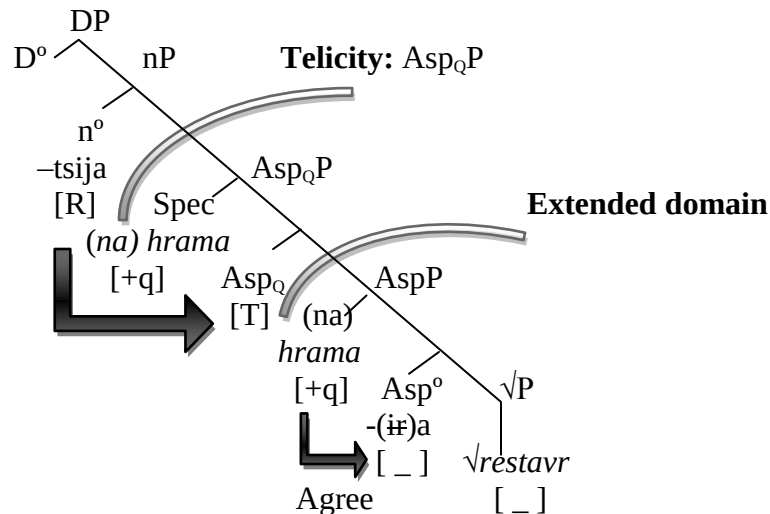
²⁴ Alternatively, we may suggest that –tsija, being a borrowed suffix, and in the same way as –tion, is the head of Asp_QP . However, I prefer to treat –tsija in line with the rest of the nominalizers in Bulgarian, i.e. as an n-head, despite its non-native status. Arguably, such a line of analysis is made available by the fact that although a borrowing, this suffix is assigned gender (e.g. feminine, since it ends in –ja).

b. The syntax of –tsija nouns (see chapter 7, § 7.4.2)

restavr-a-TSIJA-ta (na hrama-a) *chetiri godini/za dve sedmitsi

restore-TH.VOW-TSIJA-the-FEM.SG (of temple-the) *four years/in two weeks

‘The restoration (of the temple) **for four years/in two weeks*’



As we have seen, the PS (and not AS) properties of the –tion and –tsija nominalizations is due to the absence of any process-related layer (e.g. $\text{Asp}_p\text{P}/\text{Asp}^{\text{DUR}}\text{P}$), which accounts for the optionality of the internal argument (recall that only in the presence of $\text{Asp}_p\text{P}/\text{Asp}^{\text{DUR}}\text{P}$, in combination with Asp_qP , or a similar telic-transitive structure, is a noun capable of being true argument-structure nominal). In this respect, recall that although Asp_qP is overtly realized by –tion, this does not force the internal argument to land in the specifier of this projection because –tion is not an operator-like element like particles; furthermore, the **[R(esult)] feature on –tion and –tsija, in combination with their inherent feature [nominal], does not relate to argument structure**. As for the telic character of these nouns, it arises as a consequence of the incorporation of the telicizing Asp_qP which the nominalizer selects/heads and whose feature [R(esult)] together with the [+q] value on the DP internal argument, Agrees with Asp_q° and marks the event as telic.

TO RECAPITULATE, we have seen that suffixes have an aspectual role in both Bulgarian and English. Thus, **the aorist thematic vowel, which participates in the derivation of participles and nouns built on them, is endowed with**

the feature [endpoint] which, together with the passivizing function of the participial suffixes –N/–T, gives rise to result nominals (i.e. the Voice –IE nouns) (25). Present tense vowels, on the other hand, are syntactically manifested as verbalizing V° heads. Due to their low attachment site (on V°), their feature [duration], when incorporated within a nominal, gives rise to an eventive interpretation of the final derivative (23a). This, as I have previously mentioned, is related to the fact that the lower verbal domain is associated with the eventive interpretation of nominals (see chapter 3, § 3.4.1). Finally, *the Bulgarian imperfect thematic vowel* (when the base is primary imperfective) as well as the imperfect thematic marker²⁵ (i.e. the IMPF2 suffix + the THEMATIC MARKER –a-, which is added to perfective bases) *is also endowed with the feature [duration].* However, in contrast to the present tense vowel, the imperfect vowel/marker attaches higher up in the structure, as a head of its own functional Asp^{DUR}P. Therefore, when such a feature participates in the formation of a given nominal (i.e. the –NE nouns), it will be consequently interpreted as [process] since the higher aspectual domain is related to the process denotation of the final derivative (see chapter 3, § 3.4.2) (24a). Something similar holds for the English suffix –ing which, in the same way as the imperfect –va suffix, heads its own functional projection, Asp_PP, whose head bears the feature [duration] which is consequently interpreted as [process]. As for the –tion and the –tsija suffixes, they head/select for the telicizing Asp_QP and due to their inherent feature [Result] give rise to a telic resultative interpretation. A recap is offered in table 2.

²⁵ Alternatively, we may call the imperfect thematic marker (i.e. the secondary imperfectivizer –va) an imperfect thematic vowel as in Svenonius (2004a: 181).

Attachment site	Low	Intermediate	High
Bulgarian	present tense vowel	(i) aorist vowel (ii) –N/–T PASS.PART. suffixes	imperfect marker (–va) (IMPF2 + TM –a–)
English	(–ize)		–ing
Syntax	V ^o	(i) aorist vowel: V ^o (ii) –N/–T: Voice ^o	Asp ^{DUR} P (BULG) Asp _P ^o (ENGL)
Function	verbalizing and eventive	(i) telicizing (ii) resultative/passive	durativizers
Features	[duration]	(i) [endpoint] (ii) [passive]	[duration] → [process]
Denotation	eventive/action	resultative; telic events	process
Nominalizers	“other-suffix” (–tion; –tsija)	Voice –IE	–NE –ing

Table 2: The aspectual role of suffixation

Now we are ready to turn to the aktionsart properties of some affixes.

8.2. Aktionsart, event features and affixation

We have already mentioned that inner aspect has been used to describe two phenomena: (i) the division of verbs into lexical classes such as states, activities, accomplishments and achievements, also known as Aktionsart (Vendler 1957), and (ii) the super-ordinate distinction of predicates into telic (event-denoting) and atelic (process-denoting) (Garey 1957, Dowty 1972, 1979). It has been suggested that both accomplishments and achievements describe telic events (27a) in contrast to activities and states, which describe atelic events (27b) (see chapter 4, § 4.1).

(27) Aktionsart and telicity

a. Telic events

(i) Accomplishments: *John drank a bottle of beer in two minutes/*for two minutes.*

(ii) Achievements: *John found the key in two minutes/*for two minutes.*

b. Atelic events

- (i) Activities: *John sang *in two minutes/for two minutes.*
- (ii) States: *John was ill *in two minutes/for two minutes.*

Apart from a difference in telicity, the predicate types in (27) also differ with respect to two aspectual properties, <endpoint> and <duration> (see table 3) (MacDonald 2008b, Krifka 1992, among many others).

	<endpoint>	no <endpoint>
	Telic predicates	Atelic predicates
<duration>	Accomplishments (extended in time)	
no <duration>	Achievements (punctual in time)	

Table 3: Aktionsart properties

In chapter 4 I have concluded that the only feature relevant for the codification of inner aspect is [endpoint], excluding thus the [duration] feature as a deterministic ingredient of the event structure of a predicate. Consequently, the accomplishment-achievement distinction becomes unnatural inasmuch as it is based exclusively on this feature. Following this line of thought, I have shown that we have only three aktionsart classes: (i) activities (atelic events), (ii) statives, and (iii) telic events.

Regarding the feature [duration], however, we are not excluding the possibility for it to form part of a given derivative. Thus, due to its interpretable character, such a feature will be able to contribute to the final interpretation of a predicate. This was claimed to be the case for the Bulgarian prefixed –NE nouns which incorporate such a feature via the –va suffix. As we have seen, when a telic (perfective), i.e. [endpoint]-incorporating base is nominalized, the presence of the –va morpheme and its feature [duration] gives rise to a **prolonged durativized**, though still telic, interpretation of the –NE derivative (24a: ii). The same holds for the English particle-incorporating –ing nouns which, being built upon a telic [endpoint]-incorporating base (recall that particles bear an [endpoint] feature),

but which additionally incorporate the [duration] feature in the form of –ing, are also interpreted in a **repetitive, telic manner** (24b). Therefore, the contribution of the [duration] feature cannot be neglected. What I simply mean by eliminating such a feature as deterministic for inner aspect is that this feature, which is morphologically manifested by different means in different languages (e.g. the Bulgarian durative outer prefix PO-, the imperfective thematic marker –va, or the English suffix –ing), is unable to determine inner aspect by its own.

Evidence for this claim comes from the fact that secondary imperfective verbs in Bulgarian embed [duration] which is brought into the structure as a feature on the imperfect thematic marker –va. However, though such a feature is present, the for-adverbial is disallowed since the predicate remains telic (28b) and behaves in the same way as the prefixed perfective verb from which it is derived (28a). The same observation holds for the corresponding –NE derivatives based on such verbs (see chapter 6, § 6.5.1.2.1).

(28) Secondary imperfectives and telicity

- a. *IZ-jad-o-h* *si* *zakuska-ta* *za dve minuti/*dve minuti*
 IZ-eat-AOR.1PS.SG REFL breakfast-the in two minutes/*for two minutes
 ‘I ate up my breakfast in two minutes/*for two minutes.’
- b. *IZ-jažd-a-h* *si* *zakuska-ta* *za dve minuti/*dve minuti*
 IZ-eat-IMPF-AOR.1PS.SG REFL breakfast-the in two minutes/*for two minutes
 ‘I ate up my breakfast in two minutes/*for two minutes.’

From (28) we can observe that the for-adverbial, which targets atelic events, is incompatible with both the non-durative prefixed predicate (27a) and its durativized version (28b). This is due to the fact that both events are telic since they incorporate the deterministic [endpoint] feature which the prefix bears. As a consequence, both accept the time-span adverbial ‘in two minutes’. In other words, the feature [duration] cannot atelicize an already telic entity by superimposing itself onto the telicizing [endpoint] feature of the prefix. For further supporting evidence questioning the aspectual significance of the

[duration] feature and for the elimination of the accomplishment-achievement distinction in Bulgarian and English, see chapter 4, § 4.1 (§ 4.1.1 for Bulgarian and § 4.1.2 for English).

Thus, what we need to bear in mind is ***the capacity of the feature [endpoint] to influence the inner aspect of the derivative***. As I have proposed, the inner aspect of a predicate in both English and Bulgarian is calculated according to the presence of this feature. To exemplify, whenever [endpoint] is present in the structure, it values Asp^0 and we have telicity (see (3b, c, d, e) for standard Bulgarian, and (6) and (7) for English and biaspectual Bulgarian). In this respect, I have suggested that ***the standard Bulgarian verbs mark aspect via the direct range-assigning mode*** which is in turn accomplished by the direct merger of an [endpoint] feature into the structure. This is morphologically manifested in Bulgarian by the perfective aspect. Bearing in mind that ***morphological perfectivity is syntactically manifested by the interpretable telicizing [endpoint] feature***, it will follow that in the presence of morphological perfectivity at whatever level of derivation (e.g. in the case of prefixation (3c, d, e) or primary perfective bases (3b), we will always have telicity. This is exactly what happens in standard Bulgarian in both verbs (see chapter 4, § 4.2) and nouns (see chapter 7, § 7.3.1 for –NE nouns, being these the most verbal-like). Such a way of assigning value to Asp^0 results in an immediate marking of the event as telic, which consequently blocks the possible aspectual influence of the internal argument (e.g. the object-to-event-mapping mechanism is blocked) and the goal PPs. In the absence of perfectivity, the event remains atelic, which is the case for all primary imperfective verbs in Bulgarian (3a). ***In other words, standard Bulgarian makes use of a morphologically-driven Asp^0 mode of valuation.***

AS FOR THE BULGARIAN EVENTIVE BIASPECTUAL VERBS AND ENGLISH EVENTIVE PREDICATES, they are morphologically insensitive and underspecified for any aspectually relevant feature. As a general rule, these languages lack direct range assigners to Asp^0 so the aspectual interpretation of a given derivative is determined according to the indirect mode of valuation, i.e. according to any aspectually relevant feature within the surrounding syntactic environment (5c). Hence, the feature specification of the internal argument (i.e.

the object-to-event mapping property) and the nature of the PPs will be deterministic for inner aspect in this case. ***This is a compositional (syntactic) way of valuing Asp°.*** Interestingly, we have also observed that some direct range assigners to Asp° are also present in these languages. This is morphologically manifested by ***prefixation and particles, whose feature [endpoint] marks the event as telic upon merger*** (6). Furthermore, in line with primary perfective verbs in Bulgarian, we have also found some idiosyncratic instantiations of the feature [endpoint] on certain prominently telic verbal bases in English and biaspectual Bulgarian (7).

Finally, we have seen THAT STATIVE PREDICATES BEHAVE UNIFORMLY ACROSS LANGUAGES AND PARADIGMS, which suggests that stative predicates have an invariable universal feature (e.g. [state]) shared across both (and arguably all) languages. I have claimed that it is precisely this feature [state], which finally superimposes itself onto the whole structure and marks the event as stative, irrespective of any other surrounding features (4). Interestingly, when a [state] base enters the derivation, prefixation is blocked in standard Bulgarian. ***In other words, the feature [state] of the base blocks the merger of the feature [endpoint] on the prefix in the same way as direct range assignment blocks indirect range assignment*** (i.e. in the presence of a particle the object-to-event mapping property is blocked in English). This explains why only some purely locative [CCR] prefixes are allowed within a stative derivative (see chapter 5, (47a, 48a: i)) and why even under prefixation, the stative base remains imperfective (e.g. *PRED-stoja* (IN FRONT OF-stay) 'be imminent, be at hand; lie ahead/before'; *ZA-visja* (BEHIND-hang) 'depend on') (see chapter 5, § 5.3.3 for further details on stative).

A recap is offered in table 4.

	Standard Bulgarian	Biaspectual Bulgarian	English
Atelic events	primary imperfectives: no [endpoint]	no [endpoint]	no [endpoint]
<u>direct assigners</u>	YES: []/[impf] ²⁶ on V°	NO	NO
<u>indirect assigners</u>	NO	YES: [-q]NP	YES: [-q]NP
Telic events	perfectives verbs [endpoint] on:	+ [endpoint] [endpoint] on:	+ [endpoint] [endpoint] on:
<u>direct assigners</u>	(i) V°: primary PF verbs (ii) Prefixes	(i) V°: achievements (ii) Prefixes	(i) V°: achievements (ii) Particles
<u>indirect assigners</u>	NO	YES: [+q]NP; goal P	YES: [+q]NP; goal P
States	uniform stative (atelic) behavior across languages		

Table 4: The codification of inner aspect

From the table above we can observe that ***the way in which aspectual features relate to one another affects the aktionsart properties of the predicate***. Thus, ***prefixes and particles, due to their inherent feature [endpoint], take an activity (atelic) predicate and turn it into a telic predicate in both English and Bulgarian***. In other words, whenever an [endpoint] feature is present on a direct range assigner, the event is marked as telic. As expected, this is due to the fact that the direct range-assigning mode blocks the indirect one in the process of Asp° valuation. In the absence of an [endpoint] feature, we have atelicity, which confirms Borer's (2005b) claim that atelicity is what remains in the absence of

²⁶ Recall from chapter 5 that the underived verbs in standard Bulgarian enter with a default unmarked [] value. In the absence of an [endpoint] feature in the structure, a default atelic value is assigned to Asp°. Alternatively, and in order to reflect the morphological relevance of imperfectivity in the standard paradigm of Bulgarian, we may also opt for the feature [impf] instead of the no-feature [] default option. This choice will additionally reflect the fact that standard verbs in Bulgarian are either perfective or imperfective (see chapter 5).

telicity. As for true state predicates, they bear a [state] feature which, upon merger, values Asp^o as [S] and blocks the subsequent merger of an [endpoint] feature. ***Arguably, this has to do with the anti-telic properties of the [state] feature.***

FROM THE OBSERVATIONS SO FAR WE CAN CONCLUDE that ***there is a strong relationship between aktionsart and event features in both English and Bulgarian.*** However, ***the way a language establishes such a relation may differ, which is further dependent on the morphological means the language has at its disposal to codify inner aspect.*** As we saw, whenever the feature [endpoint] is present in the structure, we have a telic event and whenever a [state] feature is merged, the event is marked as stative. This is cross-linguistically true.

In this respect, we have observed that both English and Bulgarian dispose of morphological means to assign range to Asp^o[] ***directly***: (i) prefixes; (ii) particles, and (iii) an idiosyncratic and exhaustive list of some achievement verbal bases, which are lexically specified for the [endpoint] feature.²⁷ However, this is not the general trend in English and the biaspectual paradigm of Bulgarian. To exemplify, we have seen that standard Bulgarian marks inner aspect morphologically where the presence of perfectivity at whatever level of derivation signals telicity, whereas primary imperfectivity (i.e. the absence of perfectivity) signals atelicity. This strong morphological tendency is further reflected in the way standard verbs enter the numeration. In this respect, I have proposed that underived verbs are either [endpoint]-incorporating (e.g. the primary perfective verbs) or else appear with their default [] value (alternatively, they can be endowed with an [impf] feature, see fn. 26). ***Thus, it is from the very beginning that standard verbs are specified for both morphological aspect (perfective and imperfective),***

²⁷ Throughout the whole thesis I have excluded the perfectivizing semelfactive suffix –N in Bulgarian which, being a perfective marker, is also a telicizing device, the difference being that it adds a punctual interpretation to the base to which it attaches:

- (i) *skocha* ‘jump’ (PF) → *skok-n-a* ‘jump once; give a jump’ (PF)
- (ii) *vikam* ‘shout’ (IMPF) → *vik-n-a* ‘shout once; give a shout’ (PF)

and inner aspect (telic and atelic). Since primary imperfectivity does not block further perfectivization, primary imperfective [] verbs (else, [impf] verbs) can be perfectivized by the additional merger of a prefix which, as we saw in chapter 4 (§ 4.2.1) is both a perfectivizing and a telicizing device (e.g. *spja* 'sleep' (IMPF1) → *ZA-spja* 'fall asleep' (PF)). When translated to the domain of inner aspect, this will simply imply that atelic bases can be further telicized by the addition of a prefix. **However, English and biaspectual Bulgarian are morphologically insensitive languages.** Due to this, their verbs are devoid of any feature capable of valuing Asp^0 and are therefore unable to instruct into syntactic structure upon merger (here we should exclude the achievement bases with bear an [endpoint] feature (7) in the same way as primary perfective bases in standard Bulgarian (3b)). In this case, and when no other morphological direct range assigner is present such as prefixation or particles, the open value of the Asp^0 is assigned range indirectly, by looking at the properties of the surrounding environment (e.g. internal arguments, goal Ps). **Hence, variation found within the domain of inner aspect is related to the mode in which a language assigns range to Asp^0 and to the lexical-morphological properties of the verbs themselves.**

In what follows I present a unified analysis of prefixes and suffixes since this will also have consequences on the language variation issue.

8.3. A unified analysis of prefixes and suffixes

In this section I will be primarily interested in the interaction between nominalizing suffixes (n^0 heads) and aspectual affixes (Asp^x heads), the latter usually being manifested as prefixes in English and Bulgarian.

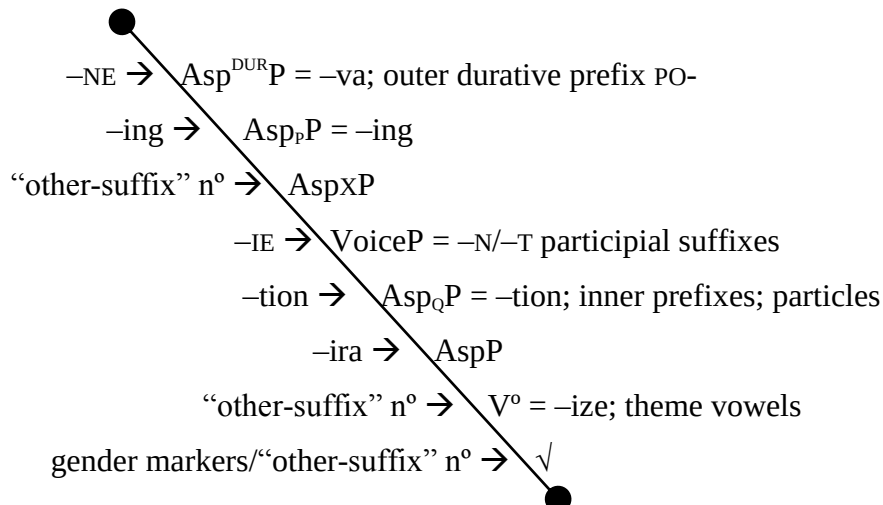
By now we have seen that nominalizing **suffixes have selectional properties of their own, which may further influence the final interpretation of the derivative.** To exemplify, there are nominalizing suffixes which attach to roots: some “other-suffix” nominalizers, and the gender markers; others attach on top of the

thematic vowel: those participating in the eventive “other-suffix” nouns, whereas others select for higher aspectual projections: the nominalizer –IE selects for participial bases, i.e. the VoiceP whereas the –tion and the –tsija suffixes always select/head Asp_QP ; the suffix –NE selects for $Asp^{DUR}P$, whereas the –ing suffix heads $Asp_P P$. Finally, there are also some suffixes with free attachment site possibilities: on top of the root, or on top of V^0 (e.g. the “other-suffix” nominalizers). This is the general trend.

We have already seen that whether a nominal incorporates some verbal or aspectual layer or not is crucial for the final denotation and argument-taking properties of the derivative. Thus, root nominalizations (e.g. [$\sqrt{} + n^0$]) usually denote objects and results and fall within the group of the R(esult)-R(eferential) nominals (17a); nouns incorporating (lower) thematic vowels [e.g. [$V + n^0$]] become event-denoting and may fall within the P(articipant)S(tructure) nominal type (17b), whereas nouns incorporating higher aspectual layers (e.g. [$Asp^{DUR}P/Asp_P P (+ Asp_Q P) + n^0$]) are both process-denoting and A(rgument)S(tructure) (17c). The attachment site of some affixes is offered in (29).

(29) The selectional properties of nominalizers

Nominalizer Projection = head of the projection



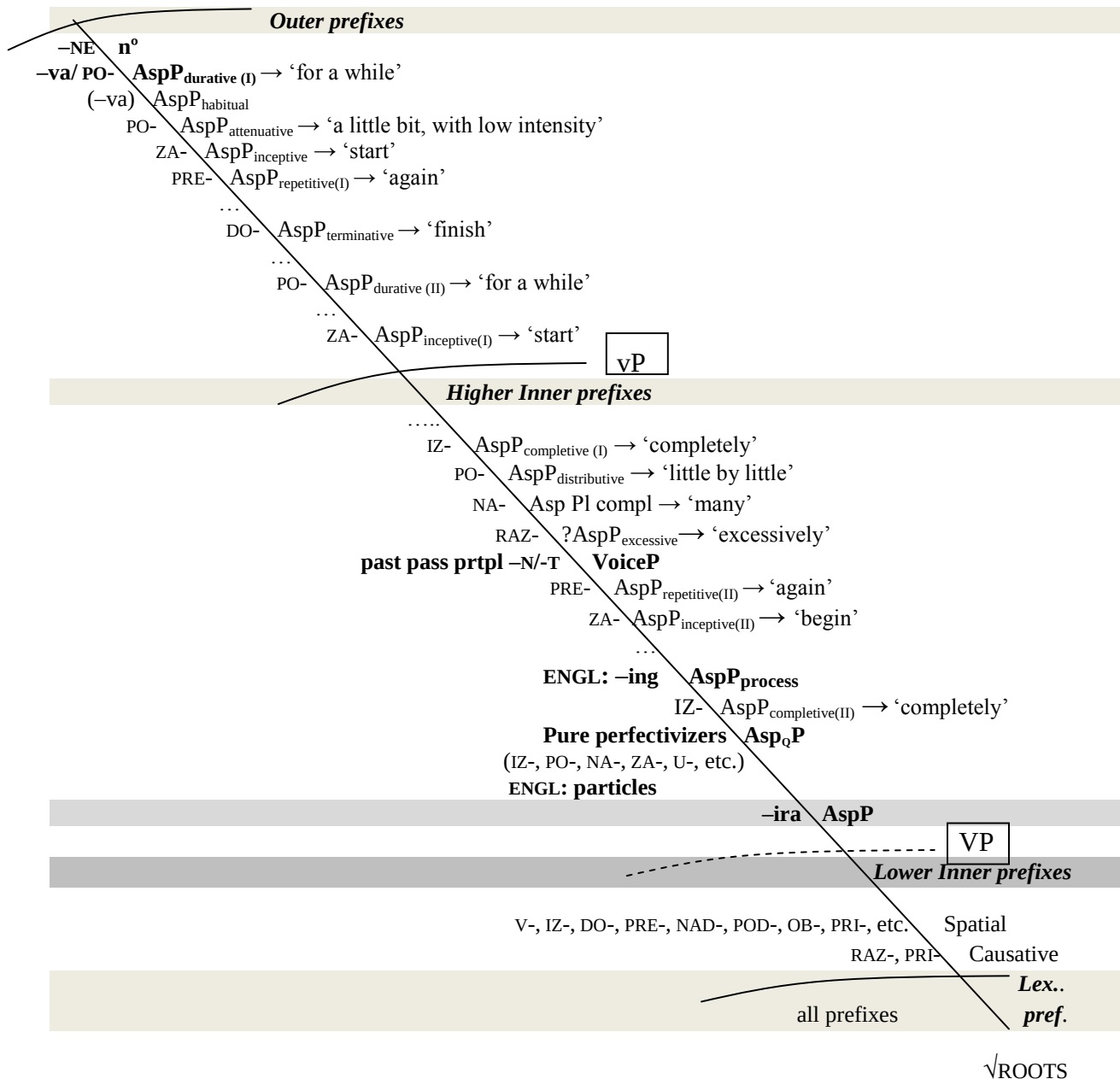
From (29) we can observe that both nominalizers (left-hand side) and aspectual features (right-hand side) are ordered along a fixed featural hierarchy. The higher a nominalizers is

located, the more aspectual projections it can incorporate. Thus, due to the high attachment site of –ing and –NE (also intermediate –tion and –IE, and the free-attaching “other-suffix” nominalizers), the corresponding nouns have the opportunity to incorporate higher aspectual layers inside them. This is not the case, however, for the V^o or root nominalizers, since the structure nominalizes on top these projections (e.g. VP, √P). Evidence for this claim comes from the fact that only the **–NE nouns in Bulgarian may incorporate any kind of prefix in contrast to the rest of the nominalizations which have limited prefixation possibilities**. This state of affairs is due to the fact that **prefixes**, which are ordered along a fixed hierarchy of aspectual features à la Cinque (1999), **can only be incorporated within a noun if the relevant nominalizer is located above the given prefix**. Once the structure nominalizes, no prefix is able to attach to it. Basically, this is related to the general assumption that aspect markers are in principle compatible with verbal structures, but not nominal ones. Thus, the fact that –NE can attach to any base, e.g. stative, atelic, telic, secondarily imperfectivized, containing all kinds of prefixes (idiosyncratic, inner, outer), etc. implies that it is located in the highest place in the hierarchy. This represents no theory internal problems since this suffix is an n^o head which can, in principle, occupy any place within Cinque’s hierarchy. Crucially, recall that the **aspectual hierarchy is fixed** and universally given, whereas the attachment site of nominalizers is language specific.

In this respect, we should bear in mind that nominalizing suffixes are n^o-heads only in Bulgarian, due to the classificatory character of the fully developed grammatical gender system in this language. In English, on the other hand, the particular nominalizer is first derived as some aspectual head (Asp_Q^o for –tion and Asp_P^o for –ing) and is later merged under n^o in order to check its nominal feature. Crucially, **the attachment site of a given nominalizer plays a significant role for the final properties of the derivative, inasmuch as it can incorporate only those aspectual projections located under its scope, i.e. below it**. Thus, if –NE were derived as some aspectual head which, being aspectual, will have a fixed place within Cinque’s hierarchy, in the same way as –ing or –tion, then due to its feature [–_{NOM}] it would not permit the incorporation of any higher aspectual layers but would immediately incorporate

to n^0 and close the domain for further verbal modification (e.g. higher aspectual prefixation). Thus, we will predict that –ing and –tion will not be able to include prefixes located above the projections they head (Asp_P and Asp_Q). I leave this for further research. It then follows that whether a suffix projects as n^0 or whether it originates as some aspect-related head may have consequences in the language and give rise to language variation. The hierarchy of aspectual features is given in (30) (see Appendix 1.1).

(30) The hierarchy of aspectual features (based on Cinque 1999)



In analyzing prefixes, I have assumed that they express features of functional-aspectual heads which are linearized according to the functional hierarchy in (30). Hence, the relative order between adverbs and prefixes (which is linear, transitive and antisymmetric) is due to the structural (syntactic) positions they occupy within the functional array of the given language, not to purely semantic scope principles of the conceptual-intentional interface. Such a claim is further supported by several pieces of evidence, already mentioned in chapter 3 (§ 3.3), and summarized here in (31).

(31) **In defense of Cinque's (1999) hierarchy** (see chapter 3, § 3.3.3)²⁸

a. **Order:** the surface order in which the Bulgarian prefixes appear corresponds to the order which Cinque (1999, 2004) proposes for adverbs cross-linguistically.

b. **Domains and hierarchical relations:** prefixes are hierarchically ordered, and the surface order is always [outer [inner [lexical]]]. This corresponds to a three-domain distinction: outer aspectual domain, inner aspectual domain, idiosyncratic domain.

²⁸ I leave aside the discussion concerning the lower and the higher instantiations of a given feature (e.g. AspPinceptive(I) vs. AspPinceptive(II); AspPcompletive(I) vs. AspPcompletive(II); AspPrepetitive(I) vs. AspPrepetitive(II)). The prediction is that since these positions are available, we can have one and the same prefix (e.g. completive IZ-) realized twice (e.g. as completive I and completive II). This is indeed the case, reflected in *izcompl.I-PO-izcompl.II-bistrja* (compl.I-PO-compl.II-clarify) 'manage to clarify a little'. Another issue left aside is the whole range of possible prefix combinations. It should be noted that almost all of the prefixes are 'poly-semantic' and 'multifunctional' with meanings which vary as a consequence of the prefix's interaction with the morphological string immediately preceding it. Consequently, the hierarchy in (30) is a partial, not an exhaustive representation of the Bulgarian prefixation data, and a sample of the overall aspectual hierarchy, since only some of the prefixes are mapped onto more than one position. I leave the various combinatory options in bi- and multiple prefixation for further research. Thus, the three neat prefixal categories (lexical, inner, and outer) are just intended to account for most, though not all of the observed meaningful combinations. In this respect, traditional studies show that in bi-prefixal structures the prefix PO- can combine with 20 prefixes, ZA- with 17, DO- and NA- with 16, PRE- with 13, RAZ- with 6, etc. (see Dejanova 1974 for a detailed study on polyprefixation from a semantic point of view). Finally, many combinations of inner and outer prefixes are logically possible but do not in fact occur (e.g. *DO-IZ-PO-NA-PRE-RAZ-[PRED-O-PRE-delja] 'finish-completely-little by little-many-again-one by one-[predetermine]). I assume that this is not a theory-internal problem, but rather has to do with computational load and processing demands (see psycholinguistic models of morphological complexity according to which there may be some constraints on the processing of morphological structures that affect affix combinations).

c. **Scope:** the left-most prefix (e.g. PO-) scopes over the one(s) to its right (e.g. NA-), which is indicative of the higher position of the former. Thus, higher prefixes c-command the lower ones and scope over them, which has semantic consequences (e.g. *NA-jadoh se* ‘I ate enough’; *PO-NA-jadoh se* ‘I ate *almost* enough’).

d. **Compositionality:** the inner and outer prefixes, since they are inserted via merge in narrow syntax along the hierarchy in (30), are semantically compositional and transparent, i.e. the morphological complex [prefix + V] could be easily decomposed into a prefixal part and a verbal part, with its final denotation being the combination of the semantics of the prefix together with the semantics of the verb. The lexical prefixes, on the other hand, adjoin to V^o, the lowest head in (30), and therefore form part of the lowest syntactic domain related to idiosyncrasy.

The above observations are further supported by the interaction of prefixes and nominalizers. Thus, all nominalizations can be built on bases which incorporate a lexical prefix. This is due to the fact that these prefixes attach low in the structure, below V^o (33), so any nominalizer above V^o, i.e. all nominalizers, can in principle take such bases (32).

(32) Lexical prefixes inside nominals

a. Gender-derived nominalizations

[RAZ-kaz]-*ŭt* *za detsa*
 [RAZ-say]-the.MASC.SG for children
 [narrate]-the.MASC.SG for children
 ‘the story/narration for children’

b. “Other-suffix” nominals

[PRO-d]-*a-žba-ta* *na diamant-i*
 [PRO-give]-A.TH.VOW-ŽBA-the.FEM.SG of diamond-PL
 [sell]- A.TH.VOW-ŽBA-the.FEM.SG of diamond-PL
 ‘the sale of diamonds’

c. Voice –IE nominals

[NA-kaz]-a-n-ie-to *na Ivan*

[NA-say]-A.TH.VOW-N.PASS.PRT-IE-the.NEUT.SG of Ivan

[punish]-A.TH.VOW-N.PASS.PRT-IE-the.NEUT.SG of Ivan

‘the punishment of Ivan/Ivan’s punishment’

d. –NE nominals

[RAZ-kaz]-va-ne-to **(na vits-ove)*

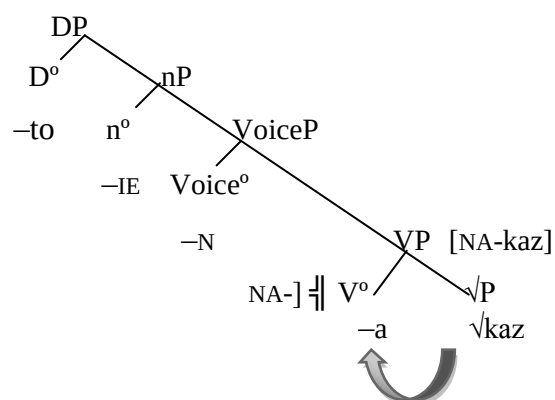
[RAZ-say]-va.IMPf-NE-the.NEUT.SG **(of joke-PL)*

[tell/narrate]-IMPf-NE-the.NEUT.SG **(of joke-PL)*

‘The telling of jokes’

A syntactic representation follows. The same procedure is applied when deriving the rest of the prefixed derivatives.

(33) The syntax of lexical prefixes inside nominals (see (32c); see also (3c))²⁹



In the same way as the lexical prefixes, the pure perfectivizers are also allowed within any morphological nominal type:

²⁹ Recall that the symbol || in syntactic derivations represents lexical stacking to V° via an adjunction process. See chapter 3, section 3.3.3.1, (41) and subsequent discussion.

(34) Pure perfectivizers within “other-suffix” nouns

- a. *belja* ‘peel’ → *O-belja* ‘PF-peel’ → *O-bel-ka* ‘peeling’
- b. *ucha* ‘study’ → *NA-ucha* ‘PF-study’ → *NA-uk-a* ‘science’ [ch → k]
- c. *stroja* ‘build’ → *PO-stroja* ‘PF-build’ → *PO-stroj-ka* ‘building’

(35) Pure perfectivizers within Voice –IE nouns

- a. *rusha* ‘destroy’ → *RAZ-rusha* ‘PF-destroy’ → *RAZ-rush-E-N-IE* ‘destruction’
- b. *sadja* ‘plant’ → *NA-sadja* ‘PF-plant’ → *NA-sažd-E-N-IE* ‘plantation’
- c. *žertv-uvam* ‘sacrifice-IMPF’ → *PO-žertv-uvam* ‘PF-sacrifice’ → *PO-žertv-uva-N-IE* ‘sacrifice, donation’

(36) Pure perfectivizers within –NE nouns

- a. *RAZ-rush-ava-NE* ‘destroying’ (see (31a))
- b. *PRO-chit-a-NE* ‘reading (through)’
- c. *PO-žertv-uva-NE* ‘sacrificing’ (see (31c))

I assume that the lexical prefixes and the pure perfectivizers are allowed within all nouns because all of the nominalizers (e.g. –NE, –IE, “other-suffix”) can in principle attach higher than the projection headed by such prefixes (see (30)). For the syntactic derivation of pure perfectivizers, see (3d).

However, higher prefixes can only appear inside the –NE nouns because of the highest attachment site of the –NE nominalizer (see (30)). Thus, any prefix below the scope of –NE (i.e. all prefixes) can be incorporated as the derivation proceeds (37a-a’). Similarly, the Voice –IE nouns allow only for prefixes located below the –IE nominalizer such as pure perfectivizers (34) or repetitives (37b), but not the higher ones (37b’). Finally, in the same way as the Voice –IE nouns, the “other-suffix” nouns also allow repetitive prefixes to project inside them (37c), and even one layer higher prefixes, the excessive RAZ- (37c’), but not higher than RAZ- ones (37c’').

(37) Higher aspectual prefixes inside nominals

►-NE nouns

a. Repetitive prefixes

PRE-[PRO-*d*]-*ava-ne-to* *na tursk-i* *stok-i*

AGAIN-[sell]-ava.IMPF-NE-the.NEUT.SG of Turkish-PL goods-PL

‘The selling again of Turkish goods’

a'. Higher completive + attenuative + pure perfectivizers

IZ-PO-PRO-*chit-a-ne-to*

COMPLETELY-LITTLE BY LITTLE-THROUGH-read-a.IMPf-NE-the.NEUT.SG

na vestnits-i-te

of newspaper-PL-THE.PL

‘The reading through completely little by little of the newspapers’

a''. Cumulative

NA-pŭrŭž-va-ne-to na kartof-i

NA-fry-va.IMPf-NE-the.NEUT.SG of potato-PL

‘The frying of enough/many potatoes’

a'''. Excessive

RAZ-tich-va-ne-to na hora

RAZ-run-va.IMPF-NE-the.NEUT.SG of people

‘The running of *many* people’

a'''''. Terminative

DO-*chit-a-ne-to* *na vestnits-i-te*

FINISH-read-a.IMPf-NE-the.NEUT.SG of newspaper-PL-THE.PL

‘Finishing the reading of the newspapers’

► Voice –IE nouns

b. PRE-vŭzpit-a-n-ie-to *e trudna zadacha*

AGAIN-educate-A.TH.VOW-N.PASS.PRT-IE-the.NEUT.SG is difficult task

‘The re-education is a difficult task’

b'. *IZ/*DO-uvoln-e-n-ie-to na rabotnitsi-te

*COMPLETELY/*FINISH-dismiss-E.TH.VOW-N.PASS.PRT-IE-the of workers-the

'*The complete dismissal of the workers/*Finishing the dismissal of the workers'

► **“Other-suffix” nouns**

C. PRE-[PRO-*d*]-*a-žba-ta* *na tursk-i* *stok-i*
AGAIN-[sell]-A.TH.VOW-ŽBA-the.FEM.SG of Turkish-PL goods-PL

‘The sale again of Turkish goods’

c'. RAZ-[PRO-*d*]-*a-žba-ta* *na tursk-i* *stok-i*
EXCESSIVE-[sell]-A.TH.VOW-ŽBA-the.FEM.SG of Turkish-PL goods-PL

‘The sale (in excess) of Turkish goods’

c''. *IZ/*DO-[PRO-*d*]-*a-žba-ta* *na tursk-i* *stok-i*
 *COMPLETELY/*FINISH-[sell]-A.TH.VOW-ŽBA-the.FEM.SG of Turkish-PL goods-PL
 ‘*The sale completely of Turkish goods/*Finishing the sale of Turkish goods’

From (37) we can observe that only –NE nouns embed any prefix (37a-a'''). As for the –IE nouns, the highest prefix they can incorporate is the repetitive PRE- (37b), which is located just below the projection which the nominalizer selects, i.e. below VoiceP (30). As I have already mentioned, the reason for this is syntactic. Once the verbal stem incorporates the passive participial suffix –N/–T, the nominalizer –IE immediately attaches to the structure (see (33)). ***Once nominalized, further prefixation is blocked.*** Bearing in mind that the participial morphemes –N/–T derive under VoiceP, this explains why only the aspectual prefixes found below it are accepted inside –IE nominals (i.e. the prefix PRE-). Higher prefixes, on the other hand, are not (37b').

Interestingly, the “other-suffix” nouns are also compatible with the repetitive prefix PRE- (37c). I assume that this has to do with the fact that the “other-suffix” nominalizers, when they incorporate the VP layer, attach as high as the –IE nominalizer, i.e. as high as VoiceP (see (29)). This is further confirmed by (i) the aspectual similarity between these nouns, inasmuch as both types denote telic events and often fall within the group of the R-R nominals (see chapter 6, § 6.5.3.1); (ii) their parallel syntactic behavior (see chapter 6, § 6.5.1.3), and (iii) the fact the –IE nouns are often complementary and synonymous with the “other-suffix” nouns.³⁰ Thus, the “other-suffix” nominalizer –BA in (37c) can incorporate

³⁰ The suffix –(N)IE has a Russian origin and there is a tendency to replace nouns ending in –(N)IE with other synonymous “other-suffix” nominals (e.g. *stremle*–NIE → *strem*–EŽ ‘striving, aspiration’).

the repetitive prefix *PRE-* because the projection headed by *PRE-* is under the scope of *–BA*. Crucially, however, note that prefixes higher than *PRE-* are also allowed inside an “other-suffix” noun (37c’). I assume that this is due to the fact that though the “other-suffix” nominalizers are able to attach as high as *VoiceP* (29), they do not directly select this projection as the *–IE* nominalizer does. Therefore, there is no intermediate position such as *VoiceP* in the case of *–IE* nouns that could block further prefixation. Consequently, the “other-suffix” nouns are able in principle to incorporate higher prefixes such as the excessive *RAZ-* (37c’). However, the rest of the higher prefixes are disallowed, which is syntactically unexplained (37c’’).

Regarding the **PREFIXATION POSSIBILITIES OF THE “OTHER-SUFFIX” NOUNS**, a question arises as to why the “other-suffix” nominalizers do not attach as high as *–NE*. Note that in the same way as the *–NE* suffix, these nominalizers should be able to incorporate any aspectual projection since there is no blocking layer (e.g. *Voice^o* participial suffixes) which obliges *n^o* to nominalize the structure there. Such a state of affairs cannot receive a structural explanation. Therefore, I assume that this may be related to some semantic incompatibility between the prototypical telic simple event denotation of the “other-suffix” nouns and the inherent semantics of the higher aspectual layers. I leave this for further investigation.

Since I have already presented a syntactic account of prefixation (see chapter 5, § 5.3.1) together with a syntactic account of the Bulgarian nominalization types (see chapter 7, § 7.3), I will here just exemplify the syntactic derivation of a prefixed *–NE* nominal (38). The same mechanisms apply when the rest of the nouns are derived.

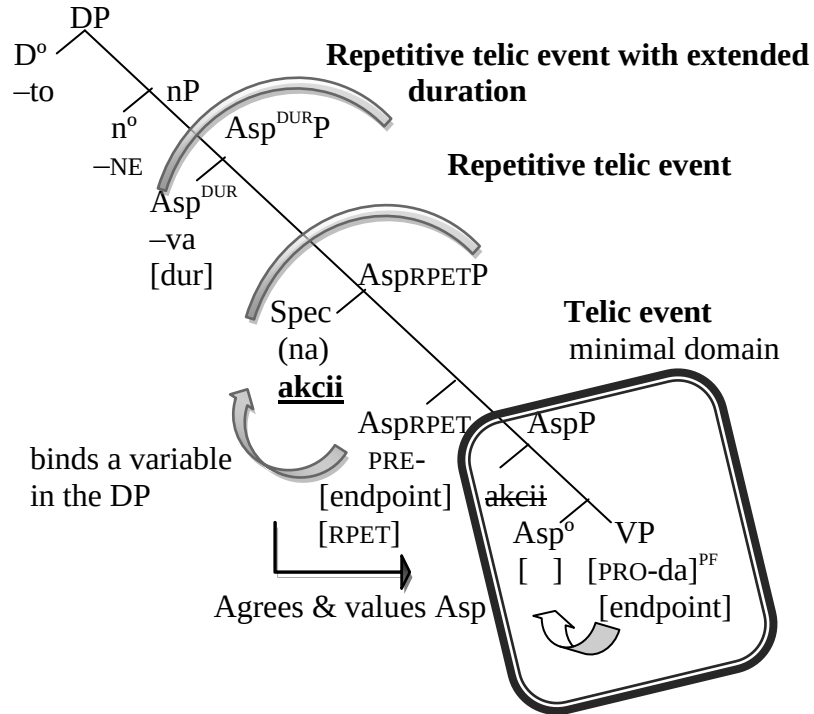
(38) The syntax of –NE nominal (see chapter 7, (23a))

[PRE-[PRO-da]^{PF}]^{PF}-va]^{IMPF}-NE-to na akcii

[AGAIN-[THROUGH-give]^{PF}]^{PF}-impf]^{IMPF}-NE-the of shares

[AGAIN-[SELL]^{PF}]^{PF}-impf]^{IMPF}-NE-the shares

'the re-selling of shares'



From the representation in (38) we can observe that the lexical category shows the prefix PRO-. Since this is a lexical prefix (signaled by the square brackets), it will adjoin to the V° head via lexical stacking (see (33)) and thus enter syntax on a complex perfective verbal head [_{V°}PRO-d]^{PF} ‘sell’. The derivation proceeds as follows: the lexically prefixed base [_{V°}PRO-d]^{PF} undergoes further prefixation by the repetitive prefix PRE-. I suggest that prefixes merge in syntax as heads of their own functional projections and attach to the previous syntactic object via stacking, i.e. without movement. After prefixation, the complex perfective head [_{AsprPET°}AsprPET° (PRE-) +V° ([PRO-d-])] is then imperfectivized by head-moving into Asp^{DUR°}, which is headed by the imperfective suffix -ava. The newly formed multiple head [_{AspDUR}[_{AsprPET°} (PRE-) +V° ([PRO-d-])] +Asp^{DUR°} (-ava-)] is further nominalized by incorporating itself into the n° head, which the –NE nominalizer hosts ([_{n°} [_{AspDUR}[_{AsprPET°} (PRE-) +V° ([PRO-d-])] +Asp^{DUR°} (-ava-)] + n° (-NE-)]. Finally, the definite article –to is attached to this complex nominalized head again by head movement, which

results in $[D^0 [n^0 [Asp_{DUR} [Asp_{RPET^0} (PRE-) + V^0 ([PRO-d-])] + Asp^{DUR_0} (-ava-)] + n^0 (-NE-)] + D^0 (-to)]$. The same procedure holds for the derivation of the rest of the prefixes and suffixes.

TO SUM UP, the observations so far indicate that there is a strict relationship between prefixes and suffixes in Bulgarian (e.g. nominalizers (n^0), verbalizers (theme vowels), or imperfectivizers ($-va$)). Such a state of affairs is best explained if we assume that all of these affixes are ordered along a fixed hierarchy of aspectual projections (30). **Thus, the prefixation possibilities of a given noun will depend on the attachment site of the relevant nominalizing suffix.** Furthermore, we have presented evidence in defense of the aspectual role of some suffixes. These include the durative semantics of the secondary imperfective morpheme $-va$, the passivizing role of the participial morphemes $-N/-T$, the eventive function of theme vowels, the aspectual ambiguity of the $-ira$ suffix, etc. Since all of these features have their place within the hierarchy in (30), then the morphological markers of these features (i.e. the suffixes themselves) are best treated as heads within this hierarchy on par with aspectual prefixes and adverbs.

FINALLY, the treatment of affixation as pertaining to a fixed hierarchy as in (30) is further supported by the **PREFIXATION POSSIBILITIES OF LOAN $[-IRA+NE]$ NOMINALIZATIONS**. The behavior of these nouns will be crucial for several reasons. First, being loan derivatives, the affixes which participate in their formation will be those which are **morphologically productive**. Second, such affixes will also have to be **semantically transparent**, inasmuch as we are dealing with non-native bases. In other words, we will predict that only intermediate and higher domain affixes (39b, c) will be able to participate in the formation of such nouns.

(39) The syntactic domain to which affixes may pertain (see chapter 3, § 3.4)

a. The lower syntactic domain: below VP

- no morphological productivity
- related to inner aspect and capable of affecting argument structure
- idiosyncrasy

- prefixes: (i) lexical; (ii) inner: causative and spatial; (iii) outer: anterior
 - suffixes: theme vowels; –ize; gender markers,
- b. The intermediate syntactic domain: between VP-vP**
- morphological productivity
 - relate to inner aspect and argument structure
 - semantic transparency
 - prefixes: inner quantificational (cumulatives, distributives, pure perfectivizers)
 - suffixes: –ira, –N/–T, –IE, “other-suffix” nominalizers, –tion, –tsija
- c. The higher syntactic domain: above vP**
- morphological productivity
 - semantic transparency
 - outer aspect (event modifiers)
 - prefixes: outer (except for the anterior ones)
 - suffixes: –va, –ing, –NE, “other-suffix” nominalizers

Crucially, the importance to investigate the prefixation possibilities of the loan [–ira+–NE] nominalizations is not only to confirm the three-way domain distinction in (39) but also to prove that the explanation to both the domain distinctions and the way affixes interact with one another is structural.

Regarding this issue, it is important to observe that the [–ira+–NE] derivatives incorporate a specific aspectual head, i.e. the loan –ira morpheme, which heads its own functional projection, AspP (30), on the one hand, and a native nominalizing suffix –NE, on the other hand. It will then be necessary to compare such non-native loan –NE derivatives to the native –NE nouns, as they are both formed by the same nominalizing head –NE, and further see whether the –ira layer will restrict the behavior of the loan nouns somehow. Adopting a syntax-based account to word order and prefix incorporation, we will predict that ***any layer below the –ira suffix will be excluded from these nouns since the loan base, which is usually nominal*** (e.g. *remont* in *remont-ira* [repair–ira] ‘to repair’) ***does not become a verb until it incorporates the –ira suffix.***

In this respect, recall that prefixes are attached to verbal bases only. Thus, ***only after –ira is incorporated within the derivative will prefixation become available. Therefore, only prefixes merged above the –ira layer will be able to attach*** (here, recall that the –NE nominalizer has all of the prefixes under its scope (30)). In other words, in contrast to native –NE nouns, which incorporate any kind of prefix since the native verbalizers (i.e. the thematic vowels) originate at the very bottom of the hierarchy in (30), and hence the root verbalizes low in the structure, the [–ira+–NE] nouns will only incorporate the projections above the –ira morpheme on which the base verbalizes. As we can observe from the examples in (40) – (42), our predication is borne out.

(40) Lexical prefixes within loan –NE nominalizations

a. #NA-tsiti-r(v)a-ne	b. #PRO-blok-ir(v)a-ne	c. #S-oper-ir(v)a-ne
#NA-recite-BIASP-NE	#PRO-block-BIASP-NE	#S-operate-BIASP-NE
‘#NA-reciting’	‘#PRO-blocking’	‘#S-operating’

#: not possible if the intended meaning is something different from ‘reciting’, ‘blocking’, ‘operating’ like *dam* ‘give’ → [IZ-dam] ‘publish’

(41) Inner prefixes within loan –NE nominalizations

a. *V-park-ir-va-ne	
into-park-BIASP-NE	
‘*parking into’	
b. *RAZ-nerv-ir-va-ne	
make-irritate-BIASP-NE	
‘*making s.o. nervous’	
c. PO-konsum-ir-va-ne	c’. IZ-deklam-ir-(v)a-ne
PO-consume-BIASP-NE	IZ-recite-BIASP-NE
‘consuming/consumption’	‘reciting’

From (40, 41) we can observe that only the quantificational prefixes can appear inside a loan –NE nominalization (41c) in contrast to the lexical (40), spatial (41a) and the causative (41b) ones, which cannot. This is due to the fact that only the inner quantificational prefixes are located above the –ira projection in contrast to the latter which, due to their structurally inferior position, cannot attach to the loan base since it gets verbalized higher up in the structure, where the –ira suffix originates (e.g. in AspP). This claim is further confirmed by the fact that the higher aspectual prefixes are allowed within a loan –NE nominal (42).

(42) Outer prefixes within loan –NE nominalizations

a. Phasal prefixes

DO-kop-ir-(v)a-ne-to

‘finishing the copying’

b. Repetitive prefixes

PRE-grup-ir-(v)a-ne-to

‘the regrouping’

d. Manner prefixes

IZ-vibr-ir-va-ne-to

‘the giving of a sudden vibration’

d'. Reversive manner prefixes

OT-abonir-(v)a-ne-to

‘the unsubscribing’

TO CONCLUDE, we have seen that both prefixes and suffixes have their own dedicated position within the fixed aspectual hierarchy in (30). The way prefixes and suffixes interact depends on the structural position of each element. Such a treatment of affixation nicely accounts for several facts: (i) the division of prefixes into lexical, inner, and outer (see chapter 3, § 3.3.3); (ii) the division of nominals into R-R (root-incorporating), PS (V-incorporating), and AS (incorporating higher aspectual layers); (iii) the prefixation possibilities of each nominal type (i.e. AS, PS, R-R nouns); (iv) the prefixation of loan nominalizations; (v) the morphological productivity and the semantic transparency of affixation, etc.

All of the above observations indicate that **functional structure governs both interpretation** (e.g. thematic vowels, being functional heads, give eventive interpretation whereas imperfective morphemes (e.g. Asp^{DUR}P/Asp_PP) give a process denotation) **and argument structure** (e.g. causative and telicizing prefixes and particles require internal arguments). Such a state of affairs confirms our syntax-driven theory of aspect as the basic ingredient of both semantics and argument structure, which is reflected in both the verbal and the nominal domain. In the remaining section I will further show how aspect may unify nominal and clausal structure.

8.4. The role of aspect in unifying nominal and clausal structure

It is widely accepted that ASPECTUAL DISTINCTIONS ARE PRESENT BOTH WITHIN THE VERBAL DOMAIN AND WITHIN THE NOMINAL DOMAIN. Thus, (a)telicity in the verbal domain has been related to (non)quantity in the nominal domain, where the **mass** (i.e. non-quantity)-**count** (i.e. quantity) distinction corresponds to the **atelic-telic** characteristics of a predicate. In other words, (a)telicity is a property which both DPs and IPs share. Related to this is also another common characteristic which these two types of elements have, namely, their ability to make reference to events (43a), processes (43b), results (43c), or states (43d).

(43) Semantic parallelisms between DPs and IPs

a. Events (actions)

- (i) *They travelled around the world*
- (ii) *Their trip around the world*

b. Processes (atelic)

- (i) *He was reading the book*
- (ii) *The reading of the book (by him)*

c. Results (telic)

- (i) *They destroyed the city completely*
- (ii) *The complete destruction of the city*

d. States

- (i) *They are friends/happy/ill/wise*
- (ii) *Their friendship/happiness/illness/wisdom*

I have already suggested that such a **SIMILARITY IN DENOTATION RESULTS FROM A STRUCTURAL SIMILARITY**. To exemplify, nouns and verbs built on quantity (telic) structures will be result-denoting (43c); those built on higher aspectual structure (e.g. $\text{Asp}^{\text{DUR}}\text{P}/\text{Asp}_\text{P}$) will be process-denoting (43b); those built on lower verbalizing structure (VP) will be event-denoting, and, finally, those incorporating stative structure will denote states (43d).

Apart from this, we have also seen **THE CLOSE RELATIONSHIP WHICH CAN BE ESTABLISHED BETWEEN THE ASPECTUAL PROPERTIES OF NOUNS AND VERBS**. Thus, we have noted that the aspectual properties of nouns may influence the aspectual interpretation of the predicate in certain languages (e.g. English and biaspectual Bulgarian). In cases like this, a non-quantity (atelic/mass) NP internal argument gives rise to a non-quantity atelic verbal structure (known as the object-to-event mapping property); other languages like Finnish, on the other hand, make use of case marking to mark (a)telicity: Accusative case on the NP internal argument gives rise to telic structures whereas partitive case on this argument results in atelicity. Again, the mechanism responsible for such an interaction is syntactic in nature, and instantiated by the syntactic operation of Agree: the features of the NP argument Agree with the head of AspP and as a consequence value this head as telic or atelic, accordingly. In this respect, recall that in the same way as verbs, the PS and AS nouns, inasmuch as they incorporate some AspP , make use of this projection (see 17b, c). It then follows that both nouns and verbs calculate inner aspect identically, again confirming a similarity between both syntactic objects.

Apart from their semantic similarities based on aspectual grounds, ***nouns and verbs are also functionally alike***. As we saw, they show ***striking similarities with respect to the functional categories they incorporate and to the way in which argument structure is being licensed***.

Regarding the latter, it just suffices to recall that prefixation and particle insertion has a twofold function: it gives rise to (i) a telic interpretation of the derivative and (ii) the obligatory presence of the internal argument for both verbs (44a) and nouns (44b). The former, as we saw, is due to the fact that prefixes and particles are the overt morphological manifestation of a telicizing layer (e.g. Asp_QP for particles and purely perfectivizing prefixes, or some other prefix-headed telicizing projection for the rest of the prefixes). As for the latter, we have seen that these elements are quantificational operators which require the presence of some DP in their specifier position in order to bind a variable within it and thus satisfy their operator like properties. As a consequence, we obtain a telic derivative with an obligatory internal argument which translates into a transitive-telic structure in the verbal domain or a true AS noun in the nominal domain.

(44) Argument structure

a. Verbs

(i) *He sang (the song) for three hours*

(ii) *He sang up *(the song) in three minutes/*for three minutes*

b. Nouns

(i) *the singing (of the song) for three hours*

(ii) *the singing up *(of the song) in three minutes/*for three minutes*

Related to argument structure is another crucial observation that we already mentioned, i.e. ***the ability of arguments to be structurally licensed in both verbal and nominal structures***. Thus, following Borer (1999) I assume that all direct arguments occupy the specifier position of some aspectually relevant projection in which they receive structural case. The difference between verbs and nouns regarding case assigning consists in the ability of the latter to license structural genitive (arguably, in Spec,DP) for both internal (*John's destruction*) and external (*the enemy's destruction of the city*) arguments in contrast to verbs which mark their external arguments as Nominative and their internal arguments as Accusative/Partitive (in nominative-accusative languages). As we already suggested, Nominative is not structurally available within a nominal since the TP projection is absent. Therefore, in order to license the external argument, we either

abide to Genitive case marking or else insert a by-phrase (*the destruction of the city by the enemy*). Related to this observation is one important difference between nominal and verbal derivatives, i.e. the fact that the projection of the external argument is always optional for nouns but obligatory for verbs. As we suggested, this has to do precisely with the absence of TP and its EPP feature inside nominals and its presence inside verbs.

Another observation approximating nominal and verbal derivatives and, at the same time, related to argument structure is the fact that once the by-phrase is inserted, making thus the agent/causer overt, the internal argument cannot be omitted neither with verbs (45a) nor with nouns (45b). As we saw, this is one of the conditions upon which a PS noun like *destruction*, which may appear bare (e.g. *the destruction was devastating*) becomes a true AS nominal (45b).

(45) a. **(The city) was destroyed by the enemy*

b. *The enemy's destruction *(of the city), the destruction *(of the city) by the enemy*

Finally, we have also seen that ***both verbs and de-verbal nouns (i.e. nouns incorporating verbal layers) allow for truly verbal modification such as manner adverbs, the anaphor DO SO, aspectual modifiers (e.g. frequent, in/for-adverbials, etc.), prefixation***, etc. This has been related to the functional aspectual (verbal) structure these derivatives share. To exemplify, temporal and manner adverbs are compatible only with the V-incorporating eventive nouns, be they AS or PS, which implies that such modification is sensitive to the presence of a VP layer inside a noun (see Fu et al. 2001). R-R nominals, on the other hand, are devoid of the necessary functional verbal(-aspectual) structure, which prevents them from licensing such modifiers. The agent-oriented modifiers, on the other hand, are compatible only with AS nominals, since only these nouns incorporate higher aspectual layers responsible for the agentive reading of the external argument (e.g. *Asp_PP* whose specifier assigns an originator interpretation to the DP located there). In other words, the verbal modification data not only approximates nouns and verbs based on their shared structure, but also confirms our

division of nouns into PS, AS and R-R nominals. A summary of the findings is offered in (46) (see chapter 6, § 6.5.5 for more details).

(46) Nominalization types and verbal-aspectual modification

a. Eventive (AS and PS) vs. non-eventive (R-R) nouns

- (i) Only eventive nouns allow temporal and manner adverbs
- (ii) Only eventive nouns allow aspectual modifiers like ‘for an hour’, ‘in an hour’
- (iii) Only eventive nouns may appear in the singular when modified by aspectual adjectives like ‘frequent’, ‘repeated’; R-R nominals should appear in the plural (e.g. ‘frequent exam*(s)’ vs. ‘frequent examination(*s)’).

b. AS vs. PS nouns:

- (i) **Semantically:** Only AS nouns have exclusively agentive reading of a prenominal possessive phrase or of a postnominal by-phrase. The subject-like DP in PS nouns receives a more abstract possessor-like interpretation.
- (ii) **Syntactically:** Only AS nouns allow agent-oriented modifiers like ‘intentional’, ‘deliberate’ since only these nouns incorporate higher aspectual structure related to the projection of the external argument.

However, the crucial difference between verbs and nouns is related to the fact that only the latter allow for adjectival modification, or modification by numerals, demonstratives, determiners, etc., implying that they incorporate some additional nominal(izing) (nP) structure which is absent from verbs. Even though, the common functional structure for both nouns and verbs will be the same, and will basically correspond to the hierarchy of aspectual features in (30). In other words, it is aspect (e.g. aspectual features) which eventually unifies both nominal and verbal structure and explains the shared properties between both nouns and verbs (e.g. interpretation, argument structure, etc.).

TO SUM UP, we have seen that the structure of nP mirrors the structure of a vP/IP in several respects. **FIRST**, both nPs and vPs/IPs may incorporate higher aspectual layers, thus licensing truly verbal modifiers and event or process semantics. More importantly, the incorporation of higher functional layers opens up a possibility for the licensing of

argument structure, too. **SECOND**, we have seen that the same syntactic mechanisms which operate within the verbal domain are also operative within nouns. To exemplify, the calculation of inner aspect is achieved by the valuation, via an Agree relation, of the head of AspP, the syntactic projection responsible for the domain of aspectual interpretation of a given derivative. **THIRD**, the functional structure incorporated within a given derivative determines both the semantics and the syntactic behavior of this derivative. As for the nature and the properties of this functional structure, it is aspectual in nature and universally available, and ordered along a fixed hierarchy of aspectual features (30). Thus, it turns out that what really governs the behavior of both nouns and verbs, together with their argument structure possibilities and event semantics, is aspectual functional structure. Put differently, ***aspectual functional structure is the driving force for both syntax and semantics.***

Now let me briefly summarize the way prefixation may affect the properties of the nominalizations.

8.5. The role of prefixation in the nominalizing process

Taking into account all of the above-mentioned considerations, we can conclude that prefixation (and in a more narrow sense particle incorporation in languages with unproductive prefixes) is aspectual in nature and therefore plays a crucial role in the behavior of both verbs and nouns. Due to their aspectual nature, and to the fact that they participate in both nominal and verbal objects, prefixes turn out to be the best device for unifying nominal and verbal structure, and the best way to show how aspect drives both syntax and interpretation.

There are various ways in which prefixation (and, consequently, particle incorporation) may affect a derivative. I summarize the main findings in (47).

(47) The role of prefixation in the nominalizing process

a. **Inner aspect:** prefixes and particles are *direct range assigners to Asp^o* both within verbs ((3d, e); (6)) and within AS nouns (17c). Due to their **INHERENT FEATURE [ENDPOINT]** they telicize the structure upon merge. Thus, an atelic (activity) predicate (2a) becomes a telic (achievement) one under prefixation (2c, d, e) or particle incorporation. Furthermore, prefixes tend to be disallowed with stative bases both with verbs and nouns inasmuch as the feature [state] has an anti-telic effect, thus blocking the [endpoint] feature on the prefix (arguably, this should hold for English particles as well) (4). **This is one way in which nouns pattern with verbs.**

b. **Affecting argument structure:** Both particles and prefixes, being transitivizing-telicizing devices, may function as **QUANTIFICATIONAL OPERATORS** which require a DP in the specifier position of the projection they head (e.g. Asp_oP or another [endpoint]-headed projection) so that they could bind a variable within it and thus satisfy their operator-like properties. Therefore, when attached to potentially transitive atelic bases (8a: i, c: i), these elements require the internal argument obligatorily (8b, c: ii) and by virtue of their [endpoint] feature telicize this base. When transferred to the nominal domain, we have seen that the incorporation of prefixes and particles within a PS noun (12b) gives rise to an AS nominal, whose internal arguments become obligatory as expected (12c). Furthermore, in the same way as with verbs, the [endpoint] feature on these elements telicizes the structure, too. ***It then follows that nouns and verbs pattern alike with respect to the way argument structure is licensed within them, which is in turn aspectually-dependent (e.g. only in the presence of an [endpoint] feature are internal arguments obligatorily required within a derivative).*** **This is another way in which nouns pattern with verbs.**

c. **On the aspectual hierarchy of functional projections:** Throughout the thesis I have proposed that prefixes are divided into three types: **lexical, inner and outer** (see chapter 3, § 3.3.3 for evidence in defense of this three-way distinction). The lexical prefixes, inasmuch as they are incorporated into V^o via lexical stacking (3c), are idiosyncratic and unproductive, since they originate below VP. However, the inner prefixes (3d) and the outer prefixes (3e) are aspectual in nature and endowed with an additional aspectual value (e.g. [RPET] for repetitive prefixes), apart from the [endpoint] feature shared between all prefixes. It is

precisely this value which enables them to project as aspectual heads in syntax and be thus semantically transparent, compositional and productive. Following Cinque (1999) I have assumed that there is a universally available hierarchy of functional-aspectual features according to which aspectual values are ordered (30). Our prefixation data show us that this is exactly the case, where the linearization pattern is always [lexical [inner [outer]]], and the inner and the outer prefixes themselves do not appear in a free order neither (see chapter 3, § 3.3.3). ***Thus, we have seen that prefixes are linearized precisely according to the hierarchy of aspectual features in (30), which, as expected, holds for both verbs and nouns incorporating these prefixed bases. However, what differentiates verbs from nouns is the fact that prefixation within a nominal is dependent on the properties of the relevant nominalizer.*** As we saw, once the verbal base nominalizes, further prefixation is blocked since prefixes select for verbs, but not nouns. This is confirmed by the fact that the lexical prefixes and the pure perfectivizers are allowed within all nouns because all of the nominalizers (e.g. –NE, –IE, “other-suffix”) can in principle attach higher than the projection headed by such prefixes. However, higher prefixes can only appear inside the –NE nouns because of the highest attachment site of the –NE nominalizer (30). Thus, any prefix below the scope of –NE (i.e. all prefixes) can be incorporated as the derivation proceeds (37a-a’’’). Similarly, the Voice –IE nouns allow only for prefixes located below the –IE nominalizer (34, 37b), but not the higher ones (37b’).

d. Indicate the presence of aspectual structure within a derivative: bearing in mind the observations in (47c), we can establish another parallelism between nouns and verbs by virtue of prefixation. To exemplify, if a derivative incorporates a given prefix, then, due to the aspectual properties of the latter, this derivative will also incorporate the relevant aspectual projection headed by the prefix. As we saw, this may be directly related to argument structure since the incorporation of quantificational prefixes within a derivative makes this derivative an argument-taker (see (47b)). ***The difference between nouns and verbs*** is that ***this generalization will hold only for the –ing and –NE nominals since only these nominalizers preserve the aspectual properties of their bases.***

e. **Three syntactic layers of affixation:** Another observation provided in this thesis is the fact that the properties of each prefix type (e.g. lexical, inner and outer) and the prefixation possibilities of the loan [-ira+–NE] nominalizations indicate the existence of three syntactic domains (39): (i) outer aspectual syntactic domain (above AspP headed by –ira), (ii) inner aspectual domain (between VP and AspP), and idiosyncratic domain (below VP). The higher in the structure an affix is, the more morphologically productive and semantically transparent it will be. ***This domain distinction holds true for both verbs and deverbal nouns.*** Regarding this issue, we have seen that the [-ira+–NE] derivatives incorporate only those prefixes located above the projection headed by –ira (i.e. above Asp⁰). Bearing in mind that this suffix is an aspectual head, then its function is to verbalize. Therefore, any layer below the –ira suffix will be excluded from these nouns since the loan base, which is usually nominal, does not become a verb until it incorporates the –ira suffix (40-42). ***This holds for both verbs and nouns based on such verbs.*** Crucially, loan verbalizations (the –ira verbs) and nominalizations (the [-ira+–NE] nouns) represent a process of productive word formation which is taking place in Bulgarian. I assume that ***the productivity of these derivations is structurally-driven and due to the fact that the loan verbalizer itself is located in the intermediate syntactic domain (under Asp⁰).*** This explains why only intermediate-domain (e.g. quantificational inner prefixes) and higher-domain (e.g. **outer prefixes; the –NE nominalizer**) affixes are allowed within such derivatives, but not low-domain affixes (e.g. lexical prefixes, thematic vowels). **Again, this is true of both nouns and verbs.**

f. **Unify the treatment of aspectual prefixes and suffixes:** given that aspect drives syntax and interpretation, then all aspectual heads, be they prefixes or suffixes, should be treated alike. By the interaction of prefixes and aspectual suffixes (e.g. the Bulgarian theme vowels, the –va imperfectivizer, participial suffixes –N/T, the Voice nominalizer –IE, the –ira verbalizer, etc.) we have seen that these are linearized according to the aspectual hierarchy in (30), and always taking into account that **once nominalized, further aspectual affixation is blocked.** This explains why certain prefixes are blocked within a given derivative. Furthermore, this state of affairs also ***proves the postulation of a hierarchy of aspectual features according to which***

all aspectual affixes should be ordered and in which nominalizers should also merge.

g. **Indicate some lines of analysis regarding language variation:** recall that all languages calculate inner aspect with respect to the value assigned to Asp^o. In standard Bulgarian this is morphologically driven: the presence of morphological perfectivity at any level of derivation signals telicity; the absence of perfectivity gives rise to atelicity. Bearing in mind that prefixes are the perfectivizers *par excellence*, then these elements serve as direct range assigners to Asp^o. As we saw, any kind of prefix gives rise to telicity by virtue of its inherent [endpoint] feature. ***This holds for both verbs and nouns.*** Regarding languages like English, which are morphologically insensitive and lack productive prefixation, we have observed another tendency for Asp^o valuation, i.e. the indirect mode of range assignment. However, once a prefix-like element is present in the structure, like a particle, the direct mode is chosen and the event is marked as telic. In other words, ***the similar behavior of prefixed derivatives and particle-incorporating derivatives speaks of a shared means of Asp^o valuation by virtue of a shared property, i.e. the [endpoint] feature which both elements bear. In this way, cross-linguistic differences are explained and the importance of the feature [endpoint] for event structure confirmed.***

Now we are ready to close the discussion with some observations regarding language variation.

8.6. Some notes on language variation

Throughout this work I have followed the assumption that the functional hierarchy associated with grammar is uniform across languages, and universally given (Bore 2005b). Thus, all languages will in principle have D, T, Asp, Asp_Q, etc. In this respect, I have proposed that all languages, inasmuch as they have their own particular way of referring to (a)telicity, possess a universally available functional projection, AspP, which is responsible for the final aspectual interpretation of a given derivative. Furthermore, I have proposed

that the final interpretation of the derivative as either telic or atelic will depend on the value assigned to the head of AspP, which is open (hence, unvalued) in all languages.

Since functional categories are universal, then variation related to the functional domain can only be attributed not to the presence or absence of a given category within a particular language but to the mode in which a given functional head (e.g. AspP) is assigned value, i.e. is valued. This, on the other hand, will be further dependent on the morphological means a language has to value a particular head (e.g. prefixation in Slavic and particles in English are direct range assigners to Asp°; [-q] theme arguments in English, but not in Slavic, is a strong candidate for marking the event as atelic, etc.).

REGARDING VARIATION IN THE FUNCTIONAL DOMAIN, we have seen that English and biaspectual Bulgarian make use of a ***syntactic-functional range assignment*** to the open value of Asp° (e.g. an Agree relation is established between the Asp head and the feature specification of the theme argument or a goal P). This is due to fact that verbs in these languages are underspecified (else, doubly specified) for aspect (e.g. $V_{[_\]}$), where $[_\]$ refers to aspectual ambiguity. In the absence of an [endpoint] feature in the structure, the base remains ambiguous with respect to (a)telicity and can therefore give rise to both telic and atelic interpretations. Since Asp° also lacks an aspectual value ($Asp_{[_\]}$), the language abides to a compositional way of valuation. Arguably, this will hold for all morphologically insensitive languages. Standard Bulgarian, on the other hand, marks aspect (i.e. values Asp°) ***morphologically***, where morphological perfectivity at any level of derivation equals telicity and primary imperfectivity equals atelicity. Again this is related to the feature specification of the base verbs: perfective verbs, in the same way as perfectivizing prefixes, enter at the syntactic component marked as [endpoint] which, upon merger, telicizes the structure, whereas primary imperfectives enter with their default unmarked $[_\]$ value (e.g. $V_{[_\]}$), which, in the absence of an additional [endpoint] feature in the structure, receives a default atelic value (alternatively, we can assume that primary imperfectives enter as $V_{[IMPF]}$, which will be consequently interpreted as atelic).

Bearing this in mind, it then follows that language variation is associated with the morpho-phonological properties of the functional elements, as Borer (2005b) suggests. Thus, if a language lacks prefixes (or particles) which, by virtue of their telicizing feature [endpoint] could assign value to Asp^o, then this language may adopt indirect ways of valuing Asp^o (e.g. the object-to-event-mapping, goal Ps, adverbs of quantification, etc.). In fact, this is the only remaining option. Crucially, however, the range-assigning mode a language opts for may have a further impact on the relevant syntactic derivations inasmuch as suffixes will require the additional mechanism of head movement. As for prefixes, I have claimed that they do not move in syntax, but rather stack to the preceding constituent under their scope. As for whether head movement takes place in syntax or at PF, I will not take any stand here as it is not theoretically relevant for my proposals (see Chomsky 1999 et seq. for a view where head movement is considered to be phonological in contrast to Borer 2005b who, taking into account that head movement may affect interpretation, considers it a syntactic operation).³¹

If the above observations are on the right track, it will then follow that a child, ***when acquiring a particular language, will have to simply match the morphological means and their phonological properties her language has with the particular functional heads associated with these morphological items.*** In the absence of positive evidence for the ***morphological*** mode of aspectual calculation (i.e. if the language is not like Slavic where morphological perfectivity equals telicity regardless of the surrounding environment), the child will apply the universally available and unmarked computational principles of compositional calculation of inner aspect. Thus, the child will search for some aspectually relevant feature in the nearby syntactic environment with which the Asp head could Agree and be consequently valued (e.g. [-q] feature on an NP internal argument, an [endpoint] feature on a goal P, etc.). **THIS WILL BE THE CASE OF AN ENGLISH SPEAKING CHILD.** In this respect, it has been shown that Slavic children comprehend aspect earlier

³¹ In this respect, Borer (2005b: 346) claims that when cardinals move to D and assign range to its open value <e>_D, the interpretation we have is of strong indefinites. If, on the other hand, the cardinals do not move, then we have an interpretation associated with existential, weak indefinites.

than English children (Slabakova 2005 and references therein), and that children at the age of 2;6 have already acquired the semantics of perfectivity and consistently associate it with completion, i.e. telicity (see van Hout 2005; see chapter 6, fn.89). Viewed from the perspective of this thesis, this implies that morphological markers of perfectivity and hence telicity are easily acquired and correctly applied from an early age.

Nevertheless, ***the situation for the Bulgarian children is slightly more complicated inasmuch as there are two available modes of aspect calculation: the standard morphological one and the English-biaspectual functional-compositional one.*** Hence, a question arises as to how the child will recognize whether she is dealing with a native base, and will therefore abide to the standard mode of valuation, or whether the base is non-native, which will require the compositional mode of Asp^o valuation. Crucially, however, loan formations (i.e. –ira derivatives) are acquired quite late in age, due to the fact that they belong to a different higher register, in contrast to native lexical and functional items. Therefore, I assume that the standard morphological mode of Asp^o calculation is set up early in age, and that all children are aware that prefixation, for example, telicizes the structure, irrespective of the surrounding features.

However, **WHEN THE CHILD IS FIRST FACED WITH A BIASPECTUAL DERIVATIVE** (which is later in age), she observes that such elements behave differently inasmuch as they can be used in both telic and atelic contexts. Another fact which the child observes is that all of these non-native-like items incorporate specific morphology (e.g. the –ira or –tsija suffixes), so a generalization is made: whenever the suffix –ira occurs, the item is biaspectual. Yet, what we also observe is a strong tendency, for both children and adults, to nativize, i.e. standardize such items, i.e. to prefix them in telic context and to suffix them (by –va) in their non-telic durative uses. ***This state of affairs confirms the deeply embedded native way of aspect valuation, which is arguably set at the earliest stages of acquisition.***

Finally, regarding loan derivatives, another tendency is also observed for the Bulgarian children. Such a tendency is in fact **A COMMUNICATIVE STRATEGY ON BEHALF OF BILINGUAL CHILDREN** which consists in generalizing the –ira suffixation to all loan lexemes: whenever a child is incapable of remembering a given native word (e.g. standard Bulgarian *ljuleja* ‘swing’), she takes another word with the same semantic value from her language 2 (e.g. Spanish *columpiar*), adds the suffix –ira (*colump-ira*), thus making it a (Bulgarian biaspectual) verb, and confidently uses it in the particular context. Such a state of affairs confirms the consciousness on part of the child that there are two existing systems with two particular syntactic rules and morphological properties which co-exist in her language, and which the child has already acquired. Thus, we can conclude that any difference between inter- and intra-linguistic variation is to be demolished, inasmuch as ***variation is just variation.***

CHAPTER 9: CONCLUDING REMARKS

The thesis tries to show that aspect is the basic determinant of argument structure and interpretation. By postulating a universally available aspectual projection (AspP) in relation to which the inner aspect of a derivative, be it verbal or de-verbal, is determined, we have concluded that there are just three types of entities relevant to inner aspect: (atelic) states, atelic events (activities, processes) and telic events. The type of entity is thus calculated by assigning range to the open value heading Asp^0 , which is language-specific. Given that syntactic structure is universal, variation is attributed to the morphological means a language possesses in order to value Asp^0 , and the features of the lexical items. By examining the two co-existing but aspectually distinct paradigms of Bulgarian (the standard and the biaspectual ones), and by observing the striking similarities between the Bulgarian biaspectual derivatives and the English derivatives, which in turn substantially differ from those of the standard (Slavic) paradigm, we have arrived at the conclusion that inter- and intra-linguistic variation is the same kind of variation.

In order to explain the variation attested between the three languages we have suggested that morphology, being syntactically reflected, plays a significant role for the determination of inner aspect. The morphological sensitivity of the standard verbs in Bulgarian assures a direct mapping from morphological (im)perfectivity to semantic (a)telicity. This morphological way of valuation represents a direct mode of assigning range to Asp^0 . English and biaspectual Bulgarian, on the other hand, are morphologically insensitive in this sense, so they compute aspect according to the whole functional environment. This is a syntactic-functional mode of valuation and represents an indirect mode of range assignment to Asp^0 .

Within the domain of morphology we have also observed that a distinction should be made between native and non-native lexicon, which may additionally influence the aspectual behavior of a derivative. Since a language is insensitive to the principles governing other languages, then borrowings, once they enter the language, are assigned no relevant interpretation except for their conceptual baggage. It is then in relation to the functional environment that interpretation is assigned, which explains why loan derivatives obey the principles governing the indirect mode of valuation, being this the unmarked option. However, since loan derivatives do have access to the available morphological means within the language, they start a process of standardization by picking up some of these native elements in order to express meaning. This state of affairs indicates the superior status of a syntactic-based approach to argument structure and interpretation, which, as we have seen, is additionally confirmed by data on acquisition and the behavior of bilingual children.

I have started writing this thesis with the profound belief that aspect governs argument structure and interpretation, and that de-verbal nouns mirror verbs in their internal make-up by virtue of a shared functional structure. Empirical evidence shows that, to a great extent, this is indeed the case. However, certain facts contradicting such a claim could not have been left unnoticed, which is reflected by the existence of idioms cross-linguistically. This is the case for certain lexical items which, by virtue of some inherent feature, seem to instruct into syntax. Here we can include the reduced list of (true) stative and achievement predicates, a topic which I leave for further investigation.

Other issues which call for additional investigation are: the relation between v^0 and Asp^0 ; a more precise analysis of both causative and spatial prefixes; a comparison between v^0 -causation and causative prefixes; a better understanding of the role of the pure central-coincidence relation prefixes and the principles guiding their interaction with eventive and stative bases; the precise relationship between the two process nodes postulated in this study (the intermediate-domain Aspect Process Phrase and the higher-domain Aspect Durative Phrase); a deeper understanding of what is it that determines the way aspectual features are ordered along the fixed hierarchy defended here; a deeper analysis of the combinatorial possibilities between the Bulgarian verbal prefixes and the forces underlying the (un)available combinations, among others. It would be also interesting to test our claim that syntactically active grammatical gender in a language is a *bona fide* nominalizer, whereas languages in which gender is syntactically inactive will make use of different strategies in order to nominalize the structure, which will consequently affect the aspectual behavior of the derivative. Additional comparison between loan derivatives across languages is also necessary in order to better understand the way loan and native morphology interact. It is no accident that loan nouns are never true argument takers. In this respect a twofold distinction should be made between loan categorizers (e.g. -ira, -tion, -tsija) and loan listemes (e.g. *√blok* 'block'). Although loan listemes tend to take loan categorizers (e.g. loan verbs allow loan prefixes more freely than native prefixes and never allow native verbalizers in Bulgarian), these listemes may further obey native principles of interpretation, which constitutes a process of standardization of the loan lexicon. Crucially, it is the functional items that make this standardization possible, indicating the prevailing role of syntax in both category assignments and interpretation. In this respect it will be interesting to compare the behavior of the Bulgarian loan prefixes with the prefixes in English in order to see whether and how these shared elements contribute to the aspectual behavior of the derivative.

After pondering on these issues (and some more) during the elaboration of this volume, I have finally communicated what I actually consider to be the most intuitive way of accounting for the major concerns of this study. I hope this to be on the right track and, if not, further research will indicate the contrary.

APPENDIX A: TRANSLITERATION AND TRANSCRIPTION KEY

<i>Bulgarian Letters</i>	<i>Transliteration¹</i>	<i>Transcription IPA²</i>
Аа	Aa	/a/
Бб	Bb	/b/
Вв	Vv	/v/
Гг	Gg	/g/
Дд	Dd	/d/
Ее	Ee	/ɛ/
Жж	Žž	/ʒ/
Зз	Zz	/z/
Ии	Ii	/i/
Йй	Jj	/j/
Кк	Kk	/k/
Лл	Ll	/l/
Мм	Mm	/m/
Нн	Nn	/n/
Оо	Oo	/ɔ/
Пп	Pp	/p/
Рр	Rr	/r/
Сс	Ss	/s/

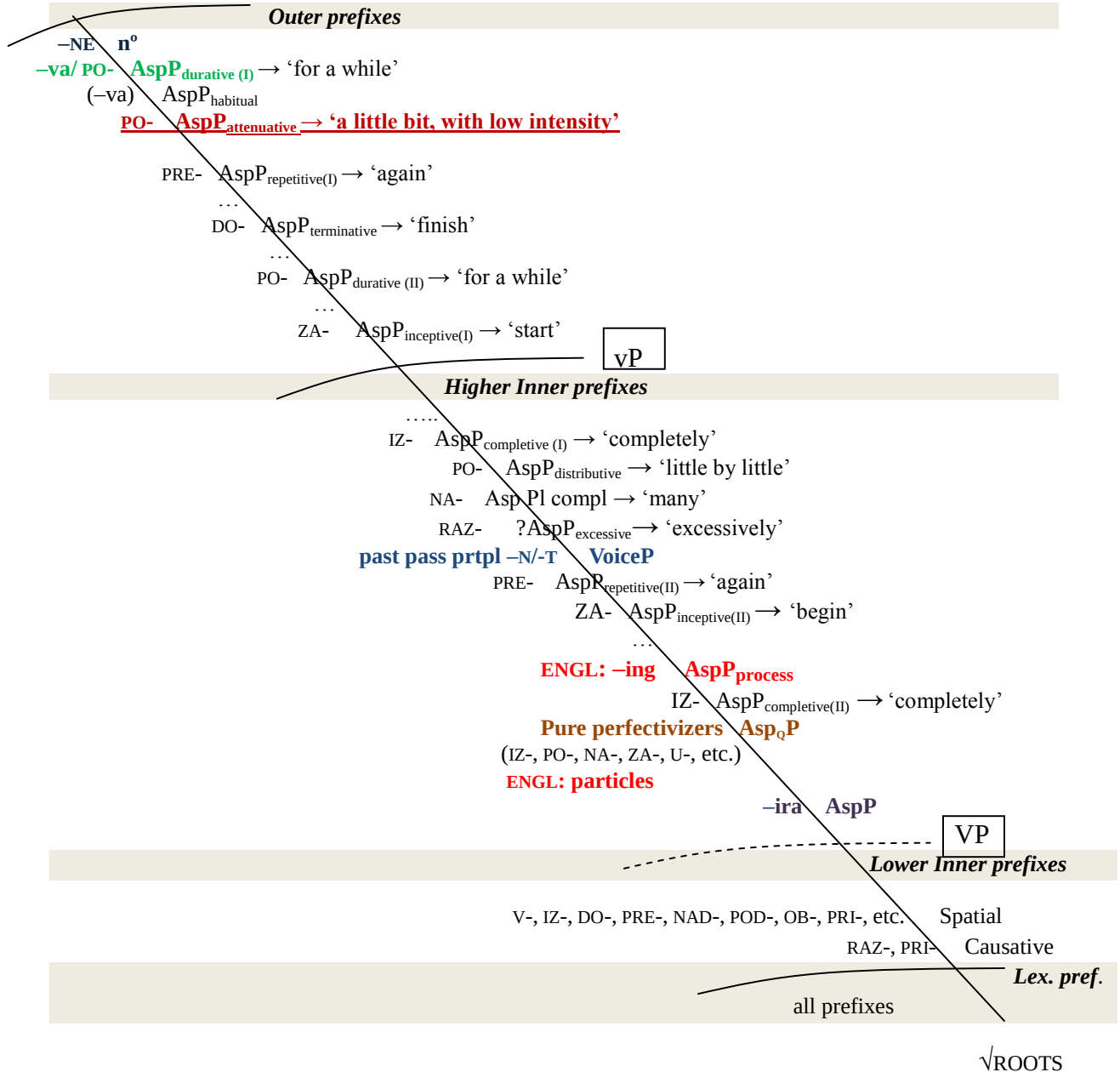
¹ There are several transliteration systems used for the Romanisation of Bulgarian Cyrillic. However, the system used by each has disadvantages. Here, I follow the United Nations and [BGN/PCGN](#).

² I use the International Phonetic Alphabet (IPA) for the phonetic transcription.

Тт	Tt	/t/
Уу	Uu	/u/
Фф	Ff	/f/
Хх	Hh	/x/
Цц	Ts, ts	/ts/
Чч	Ch, ch	/tʃ/
Шш	Sh, sh	/ʃ/
Щщ	Sht, sht	/ʃt/
Ъъ	Ŭŭ	/ɤ/
Ьь³	Jj	/j/
Юю	Ju, ju	/ju/
Яя	Ja, ja	/ja/

³ Softens consonants before /ɔ/.

APPENDIX 1.1: THE HIERARCHY OF FUNCTIONAL PROJECTIONS HEADED BY THE BULGARIAN AKTIONSART PREFIXES



APPENDIX 1.2: BULGARIAN VERBAL INFLECTION

(MANOVA 2007: 23)

Conjugation	e-type				i-type			a-type
PRESENT	1.	2.	3.	4.	1.	2.	3.	1.
1SG	<i>četa</i> '(I) read'	<i>pijna</i> '(I) drink- SEMELF'	<i>igrája</i> '(I) play'	<i>lája</i> '(I) bark'	<i>visjá</i> '(I) hang'	<i>strojá</i> '(I) build'	<i>mislja</i> '(I) think'	<i>organizíram</i> '(I) organize'
2SG	<i>četíš</i>	<i>píjmeš</i>	<i>igráeš</i>	<i>láeš</i>	<i>visíš</i>	<i>stroíš</i>	<i>mislíš</i>	<i>organizíraš</i>
3SG	<i>četé</i>	<i>píjme</i>	<i>igráe</i>	<i>láe</i>	<i>visí</i>	<i>stroí</i>	<i>mislí</i>	<i>organizíra</i>
1Pl	<i>četém</i>	<i>píjnem</i>	<i>igráem</i>	<i>láem</i>	<i>visím</i>	<i>stroím</i>	<i>mislím</i>	<i>organizírame</i>
2Pl	<i>četéte</i>	<i>píjnete</i>	<i>igráete</i>	<i>láete</i>	<i>visíte</i>	<i>stroíte</i>	<i>mislíte</i>	<i>organizírate</i>
3Pl	<i>četát</i>	<i>píjnat</i>	<i>igrájat</i>	<i>lájat</i>	<i>visját</i>	<i>stroját</i>	<i>misljat</i>	<i>organizírat</i>
AORIST								
1SG	<i>četoх</i>	<i>píjmax</i>	<i>igráx</i>	<i>lájax</i>	<i>visjáx</i>	<i>stroíx</i>	<i>mislíx</i>	<i>organizírax</i>
2SG	<i>čete</i>	<i>píjna</i>	<i>igrá</i>	<i>lája</i>	<i>visjá</i>	<i>stroí</i>	<i>mislí</i>	<i>organizíra</i>
3SG	<i>čete</i>	<i>píjna</i>	<i>igrá</i>	<i>lája</i>	<i>visjá</i>	<i>stroí</i>	<i>mislí</i>	<i>organizíra</i>
1Pl	<i>četoхme</i>	<i>píjmaxme</i>	<i>igráxme</i>	<i>lájaxme</i>	<i>visjáxme</i>	<i>stroíxme</i>	<i>mislíxme</i>	<i>organizíraxme</i>
2Pl	<i>četoхte</i>	<i>píjmaxte</i>	<i>igráxte</i>	<i>lájaxte</i>	<i>visjáxte</i>	<i>stroíxte</i>	<i>mislíxte</i>	<i>organizíraxte</i>
3Pl	<i>četoха</i>	<i>píjmaxa</i>	<i>igráxa</i>	<i>lájaxa</i>	<i>visjáxa</i>	<i>stroíxa</i>	<i>mislíxa</i>	<i>organizíraxa</i>
IMPERFECT								
1SG	<i>četjájx</i>	<i>píjnex</i>	<i>igráex</i>	<i>láex</i>	<i>visjáx</i>	<i>strojáx</i>	<i>mislex</i>	<i>organizírax</i>
2SG	<i>četěše</i>	<i>píjneše</i>	<i>igráeše</i>	<i>láeše</i>	<i>visěše</i>	<i>stroěše</i>	<i>misleše</i>	<i>organizíraše</i>
3SG	<i>četěše</i>	<i>píjneše</i>	<i>igráeše</i>	<i>láeše</i>	<i>visěše</i>	<i>stroěše</i>	<i>misleše</i>	<i>organizíraše</i>
1Pl	<i>četjájxme</i>	<i>píjnexme</i>	<i>igráexme</i>	<i>láexme</i>	<i>visjáxme</i>	<i>strojáxme</i>	<i>mislexme</i>	<i>organizíraxme</i>
2Pl	<i>četjájxte</i>	<i>píjnexte</i>	<i>igráexte</i>	<i>láexte</i>	<i>visjáxte</i>	<i>strojáxte</i>	<i>mislexte</i>	<i>organizíraxte</i>
3Pl	<i>četjájxa</i>	<i>píjnexa</i>	<i>igráexa</i>	<i>láexa</i>	<i>visjáxa</i>	<i>strojáxa</i>	<i>mislexa</i>	<i>organizíraxa</i>
IMPERATIVE								
SG	<i>četi</i>	<i>píjní</i>	<i>igráj</i>	<i>láj</i>	<i>visí</i>	<i>stroj</i>	<i>misli</i>	<i>organizíraj</i>
PL	<i>četéte</i>	<i>píjnéte</i>	<i>igrájte</i>	<i>lájte</i>	<i>viséte</i>	<i>strojte</i>	<i>misléte</i>	<i>organizírajte</i>

APPENDIX 1.3: BULGARIAN VERBAL INFLECTION BASED ON IMPERFECTIVIZATION

	1.		2.		3.
1 SG PRES	<i>-(j)a</i>		<i>-(j)-a</i>		<i>-(j)a-m</i> [<i>-v-a-m, -(j)av-a-m, -uv-a-m</i>]
2 SG PRES	<i>-e-sh</i>		<i>-i-sh</i>		<i>-a-sh</i>
3 SG PRES	<i>-e</i>		<i>-i</i>		<i>-a</i>
1 SG AORIST	1.1. <i>-o-h</i>	1.2. <i>-(j)a-h</i>	2.1. <i>-i-h</i>	2.2. <i>-(j)a-h</i>	<i>-(j)a-h</i>
1 SG IMPERFECT	<i>-(j)a-h</i>	<i>-e-h</i>	<i>-e-h</i>	<i>-(j)a-h</i>	<i>-(j)a-h</i>

Table 1: Bulgarian verbal inflection (based on Andrejchin 1978); from Manova (2005: 240)

APPENDIX 1.4: BULGARIAN NOMINAL INFLECTION

	1a. (monosyllables)	1b. (polysyllables)	2.	3.	4.
SG	<i>–Ø</i>	<i>–Ø</i>	<i>–a</i>	<i>–o</i>	<i>–e</i> , LWS: <i>–i</i> , <i>–(j)u</i>
SG DEF	<i>–ŭt</i>	<i>–ŭt</i>	<i>–ta</i>	<i>–to</i>	<i>–to</i>
PL	<i>–ove</i>	<i>–i</i>	<i>–i</i>	<i>–a</i>	<i>–ta</i>
PL DEF	<i>–te</i>	<i>–te</i>	<i>–te</i>	<i>–te</i>	<i>–te</i>

Table 1: Bulgarian nominal inflection (productive classes), cf. Manova and Dressler (2001); taken from Manova (2005: 236).

APPENDIX 3.1: PRIMARY PERFECTIVE VERBS IN BULGARIAN (MASLOV 1956: 183-184)

(1) Simplex perfectives⁴

- a. **I conjugation:** *dam* 'give', *sūzdam* 'create',⁵ *reka* 'tell', *osnova* 'found; base' (from the noun *osnova* 'a base'), *vūrža* 'tie', *kaža* 'say; tell', *hariža* 'give away', *chuja* 'hear'
- b. **II conjugation, class IV** (the majority): *blagoslovja* 'bless', *vestja se* 'appear', *glavja* 'head', *godja* 'betroth', *globja* 'fine', *darja* 'give a present; donate', *izobretja* 'invent', *katurja* 'overturn', *kacha (se)* 'lift; heave', *lisha* 'deprive', *kupja* 'buy', *obadja* 'tell; notify; call', *obikolja* 'go about; walk around; circle', *platja* 'pay', *plenja* 'capture; captivate', *pratja* 'send', *pobedja* 'win', *prostja* 'forgive', *pūrzolja se* 'slide', *ranja* 'hurt', *resha* 'decide; solve', *skocha* 'jump', *rodja* 'give birth', *setja se* 'think; it occurs to me', *spasja* 'save', *storja* 'do', *sūjuzja se* 'ally, make allies', *turja* 'put; place', *tūrkolja* 'roll', *tūrþja* 'bear', *stūþja* 'step', *udarja* 'hit', *užasja* 'horrify', *chestitja* 'congratulate', *tūtrja* 'drag, hawl', *hvūrlja* 'throw', *javja se* 'appear'
- c. **II conjugation, class V:** *vidja* 'see'

⁴ Manova (2005: 239) cites Stojanov (1993: 335) and claims that there are some 80 primary perfective verbs in Bulgarian.

⁵ SŪ- is not considered a prefix any more though before the verb *sūz-dam* 'suz-give' (create) was derived from *dam* 'give'.

APPENDIX 3.2: P-ELEMENTS IN BULGARIAN: PREFIXES AND PREPOSITIONS

(1) The inventory of prepositions (see Pashov 1999: 246-247).⁶

a. **Location:** *v/viŭv* (in), *vsred* (amid, amidst), *viŭz* (on, upon), *viŭhu* (on, upon), *do* (by; to; till), *zad* (behind), *iz* (out), *izviŭn* (out of, outside), *izmeždu* (from among; amongst), *prez* (through; via; across; during; at intervals of), *pri* (at, near, by, close to; with; to; during), *kraj* (along, beside), *meždu* (between, among), *na* (of; to; on, upon; for; at; by), *nad* (over, above), *nakraj* (at the end of), *nasred* (in the middle of), *niz* (through, across), *o* (against; on, to, onto), *okolo* (round, around), *pokraj* (along, close to, by; around), *pomeždu* (between, in between), *posred* (in the middle of), *pred* (in front of; before; at), *svrŭh* (over, above), *sred* (among; amidst; in), *sreshtu* (against; in front of; for; before), *u* (at; to; with; about, in; among)

b. **Direction:** *do* (to; till), *iz* (out), *izviŭn* (out of), *izzad* (from behind), *izpod* (from under, from beneath), *kŭm* (towards), *okolo* (round, around), *pokraj* (along, around), *ot* (from)

b'. Goal P: *do* 'to, till'

b". Source P: *ot* 'from'

c. **Others:** *bez* (without), *vmesto* (instead), *viŭpreki* (despite), *zaradi* (for the sake of; because of), *kato* (like, as), *namesto* (instead of, in place of), *osven* (except), *poradi* (because of), *predi* (before, prior to), *protiv* (against), *prjako* (straight; crosswise), *spored* (according to), *sprjamo* (toward, towards; in relation to), *chrez* (through, by)

⁶ There are about 50 prepositions in Bulgarian (both simple and derived) and the majority of them are inherited from Ancient Bulgarian and are common to the other Slavic languages.

(2) The inventory of prefixes (from Manova 2007: 30-32)⁷

PREFIX	MEANING
V(ŭV)-	movement into (literally and figuratively), e.g. <i>karam</i> '(I) drive' → <i>vkaram</i> '(I) drive into' PREP: <i>v/vŭv</i> 'in, into' (spatially) or 'at, on' (temporally).
VUZ-	a) direction upwards (literal & figurative), e.g. <i>hvalja</i> '(I) praise' → <i>vŭzhvalja</i> '(I) elevate with praise' b) beginning, e.g. <i>protivja se</i> '(I) oppose' → <i>vŭzprotivja se</i> '(I) be against, oppose'
DO-	action to the very end, to definite limit, e.g. <i>cheta</i> '(I) read' → <i>docheta</i> '(I) finish reading (something)' PREP: When used as a preposition, <i>do</i> usually means 'next to', 'as far as', 'approximately (no more than)' or 'before'
ZA-	a) movement or location behind, e.g. <i>dŭrŭža</i> '(I) hold' → <i>zadŭrŭža</i> '(I) hold back, restrain' b) beginning of action or state, e.g. <i>peja</i> '(I) sing' → <i>zapeja</i> '(I) begin to sing' c) result, e.g. <i>pisha</i> '(I) write' → <i>zapisha</i> '(I) note' d) change, e.g. <i>mestja</i> '(I) move' → <i>zamestja</i> '(I) substitute' PREP: The preposition <i>za</i> means 'for' (goal, use, purpose, intention of; consideration), 'to be, as' (selecting, appointing), 'about', 'to' (direction) or 'by'.
IZ-	a) movement, motion out of, e.g. <i>bjagam</i> '(I) run' → <i>izbjagam</i> '(I) escape' b) action done to completion, exhaustion, e.g. <i>pija</i> '(I) drink' → <i>izpija</i> '(I) drink up' c) complete change of state characterized by loss of some quality, e.g. <i>krivja</i> '(I) twist' → <i>izkrivja</i> '(I) twist, contort' PREP: <i>iz</i> 'from, out of', 'throughout'
NA-	a) large amount or accumulation, great extent, e.g. <i>trupam</i> '(I) pile' → <i>natrupam</i> '(I) pile up' b) to the satiation of the subject-object (always reflexive), e.g. <i>jam</i> '(I) eat' → <i>najam se</i> '(I) eat to satiation' c) limited effect on object, e.g. <i>jam</i> '(I) eat' → <i>najam</i> '(I) eat a little' d) accomplishment of result of gradual development, e.g. <i>debeleja</i> '(I) become fat' → <i>nadebeleja</i> '(I) finally become fat'

⁷ The definitions are based on Andrejchin (1978) and Stojanov (1993) and the translations of the semantics of the prefixes, with few exceptions, are those found in Scatton (1983). In order to illustrate the semantic relations between the prefixes and their respective prepositions, after the definition of each prefix, the definition of its respective preposition, if any, is also provided.

	e) action in a specific, appropriate place, to a specific, appropriate place, e.g. <i>mestja</i> '(I) move' → <i>namestja</i> '(I) move, place in the appropriate spot' PREP: <i>na</i> 'of', 'on, onto' 'to, at'
NAD-	a) action on or over, e.g. <i>stroja</i> '(I) build' → <i>nadstroja</i> '(I) build over' b) excess, surpassing, e.g. <i>peja</i> '(I) sing' → <i>nadpeja</i> '(I) out-sing' PREP: <i>nad</i> 'over, above'
O-	remove covering of object or quantity of something, e.g. <i>striža</i> '(I) cut hair' → <i>ostriža</i> '(I) shear' PREP: <i>o</i> 'on, against'
OB-	action touching all sides of object, e.g. <i>vija</i> '(I) wind' → <i>obvija</i> '(I) wrap up completely'
OT-	a) motion away from, e.g. <i>živeja</i> '(I) live' → <i>otživeja</i> '(I) become obsolete' b) undoing, e.g. <i>krija</i> '(I) hide' → <i>otkrija</i> '(I) discover' c) to the satiation of subject-object (always reflexive), the action being done with pleasure, e.g. <i>živeja</i> '(I) live' → <i>otživeja si</i> '(I) linger on' PREP: <i>ot</i> 'from, of', 'by', 'of, from', 'than'
PO-	a) activity about surface, e.g. <i>leja</i> '(I) pour out' → <i>poleja</i> '(I) pour over surface; water' b) limited motion, action, e.g. <i>peja</i> '(I) sing' → <i>popeja</i> '(I) sing a little' c) enter new state finally, e.g. <i>gubja</i> '(I) lose' → <i>pogubja</i> '(I) destroy' PREP: <i>po</i> 'upon', 'by'
POD-	a) activity under, e.g. <i>chertaja</i> '(I) draw, line' → <i>podchertaja</i> '(I) underline' b) limited motion action, e.g. <i>kanja</i> '(I) invite' → <i>podkanja</i> '(I) urge' c) hidden, reprehensible action, e.g. <i>kupja</i> '(I) buy' → <i>podkupja</i> '(I) bribe' PREP: <i>pod</i> 'under'
PRE-	a) through definite space, time or across boundary (literally and figuratively), e.g. <i>kracha</i> '(I) step' → <i>prekracha</i> '(I) step over' b) division in two, e.g. <i>reža</i> '(I) cut' → <i>prereža</i> '(I) cut in two' c) repeated or drawn out, e.g. <i>pisha</i> '(I) write' → <i>prepisha</i> '(I) copy out'
PRED-	location before in time or space, e.g. <i>pazja</i> '(I) guard' → <i>predpazja</i> '(I) protect, preserve' PREP: <i>pred</i> 'before, in front of'
PRI-	a) direction toward definite goal, object, e.g. <i>spja</i> '(I) sleep' → <i>prispija</i> '(I) put to sleep' b) attachment, addition, e.g. <i>shija</i> '(I) sew' → <i>prishija</i> '(I) sew on' c) limited action, e.g. <i>bolja</i> '(I) ache' → <i>pribolja</i> '(I) ache a little' PREP: <i>pri</i> 'to', 'at'

PRO-	a) through medium, object, e.g. <i>bija</i> '(I) beat' → <i>probija</i> '(I) break through' b) thoroughness, e.g. <i>přtuvam</i> '(I) travel' → <i>propřtuvam</i> '(I) travel throughout' c) sudden onset, beginning (after absence), e.g. <i>govorja</i> '(I) speak' → <i>progovorja</i> '(I) speak out, begin speaking (after being quiet)'
RAZ-	a) in various directions, places, e.g. <i>gonja</i> '(I) chase' → <i>razgonja</i> '(I) drive in different directions, disperse' b) to high degree, e.g. <i>vikam</i> '(I) call' → <i>razvikam se</i> '(I) burst into loud screams' c) reverse, undo, e.g. <i>krija</i> '(I) hide' → <i>razkrija</i> '(I) uncover'
S(Ů)-	a) gathering into one place, joining, simultaneity, e.g. <i>bera</i> '(I) pick' → <i>sŮbera</i> '(I) gather, collect' b) from the top or surface, e.g. <i>tovarja</i> '(I) load' → <i>stovarja</i> '(I) unload' <i>sŮ-</i> is generally used before <i>s</i> , <i>z</i> , <i>sh</i> , <i>ž</i> , but also in other places where <i>s-</i> normally occurs PREP: <i>s/sŮs</i> 'with'
U-	completion of action, e.g. <i>shija</i> '(I) sew' → <i>ushija</i> '(I) finish the job of sewing' PREP: <i>u</i> 'around, by, at'

Table 1: The inventory of the Bulgarian prefixes

APPENDIX 3.3: BULGARIAN BIASPECTUAL VERBS

(1) **–ira/–izira biaspectuals:** *operiram* ‘operate’, *reagiram* ‘react’, *harakteriziram* ‘characterize’, *instaliram* ‘install’, *depozitiram* ‘deposit’, *stimuliram* ‘stimulate’, *remontiram* ‘repair’, *aboniram* ‘inscribe in sth’, *stabiliziram* ‘stabilize’, *instaliram* ‘install’, *parfuimiram* ‘perfume’, *blokiram* ‘block’, *organiziram* ‘organize’, *asimiliram* ‘assimilate’, *bronziram* ‘bronze’, *gariram* ‘park a car’, *baziram* ‘base’, *afektiram* ‘affect’, *asfaltiram* ‘to put asphalt’, *arhaiziram* ‘to make archaic’, etc. (Pahsov 1999: 138).

(2) **–uva biaspectuals:** *publikuvam* ‘publish’, *kormuvam* ‘drive’, *kritikuvam* ‘criticize’, *atakuvam* ‘attack’, *arestuvam* ‘arrest’, *gostuvam* ‘visit’, *denuvam* ‘spend the day’, *kostuvam* ‘cost’, *pūtuvam* ‘travel’, *kontraatakuvam* ‘contra attack’, *brakuvam* ‘scrab’, *diktuvam* ‘dictate’, *kontaktuvam* ‘contact’, *glasuvam* ‘vote’, *kostuvam* ‘cost’, *pūtuvam* ‘travel’, *komanduvam* ‘command’, *imenuvam* ‘name’, *interesuvam* ‘interest’, waste’, *vūlnuvam* ‘move- ‘it moves me to see you cry’, *vražduvam* ‘be enemy of s.o.’, *pazaruvam* ‘buy’, *vekuvam* ‘live eternally’, etc.

(3) Special cases of biaspectuals

a. Lexical biaspectuals: homonymous verbs, i.e. PF/IMPF depending on the lexical meaning

Verb	IMPF use	PF use
I conj: <i>ida</i> ‘go’	‘come near the speaker’	‘separate from the speaker’
II conj:		
<i>broja</i> ‘count’	consider, count	render an account; count 100 euros
<i>krūstja (se)</i> ‘christian; cross o.s (+se)’	cross o.s. (with a hand)	disown
<i>pazarja (se)</i> ‘bargain’	deal	end a deal
<i>stroja</i> ‘build’	build	construct
<i>teglja</i> ‘drag’	drag; haul	in idiomatic expressions: <i>shte mu teglja edin boj</i> will him drag one brubbing ‘I will give him a sound drubbing’

Table 1: Lexical biaspectuals

b. Dependent on Tense: usually imperfective but sometimes perfective

Verb	IMPF use	PF use
I conj: <i>moga</i> 'can'	Present tense <i>moga</i> 'I can'	Aorist: <i>možah</i> 'I was able'
<i>pija</i> 'drink'	All tenses	Future: <i>shte može</i> 'He will be able'
II conj:		
<i>klasja</i> 'ear'	ear	come into ear, form ears
<i>cherpja</i> 'treat'	treat	treat with (wine)

Table 2: Tense-sensitive biaspectuals

APPENDIX 3.4: THE FUNCTIONAL PROJECTIONS HEADED BY QUANTIFICATIONAL INNER AND OUTER PREFIXES

(1) Quantificational inner prefixes and their functional projections

Distributive	DSTR	PO-	ASPDSTRP
Cumulative	CMLT	NA-	ASPCMLTP

(2) Outer prefixes and their functional projections

Inceptive	INCP	ZA-	ASPINCP
Terminative	TRMN	DO-	ASPTRMNP
Completive	CMPL	IZ-	ASPCMPLP
Delimitative	DLMT	PO-	ASPDLMTP= ASPDURP
Attenuative	ATTN	PO-	ASPATTNP
Repetitive	RPET	PRE-	ASPRPETP
Excessive	EXCS	RAZ-	ASPEXCSP

APPENDIX 3.5: PREFIXES AS TELIC MARKERS

(1) Prefixes and telicity

a. Lexical prefixes

Ivan [PRO-dade] *kafe-to* **dva chasa/za dva chasa*

Ivan sold.PF *coffee-the* *two hours/in two hours

‘*Ivan* sold the coffee *for two hours/in two hours’

b. Inner prefixes: cumulatives

Ivan NA-gotvi *supi(-te)* **dva chasa/za dva chasa*

Ivan NA-cooked.PF *soups(-the.PL)* *two hours/in two hours

‘*Ivan* cooked a lot of soups/(all the soups) *for two hours/in two hours’

b'. Inner prefixes: pure perfectivizers

Ivan IZ-pi *kafe-to* **dva chasa/za dva chasa*

Ivan IZ-drunk.PF *coffee-the* *two hours/in two hours

‘*Ivan* drank the coffee *for two hours/in two hours’

c. Outer prefixes: phasal (inceptives)

Ivan ZA-plaka **dva chasa/za dva chasa*

Ivan ZA-cried.PF *two hours/in two hours

‘*Ivan* started to cry *for two hours/in two hours’

c¹. Outer prefixes: temporal (repetitives)

Ivan PRE-[PRO-dade] *kafe-to* **dva chasa/za dva chasa*

Ivan PRE-sold.PF *coffee-the* *two hours/in two hours

‘*Ivan* sold the coffee again *for two hours/in two hours’

c². Outer prefixes: degree (high degree)

Ivan PRE-jade **dva chasa/za dva chasa*

Ivan PRE-ate.PF *two hours/in two hours

‘*Ivan* ate enough/had enough of eating *for two hours/in two hours’

c³. Outer prefixes: manner (reversives)

Ivan OT-vŭrza vŭzel-a **dva chasa/za dva chasa*

Ivan OT-tied.PF *knot-the* *two hours/in two hours

‘*Ivan* untied the knot *for two hours/in two hours’

APPENDIX 3.6: LEXICAL, INNER, AND OUTER PPREFIXES IN ENGLISH⁸

(1) Lexical prefixes: *re-move*

(2) Inner Prefixes

- a. **Directional prefixes:** *over-shadow, down-shift, down-load*
- b. **Locative prefixes:** *under-lie, under-cut, under-line, over-write*
- c. **Causative prefixes:**⁹ *en-lighten, en-liven, en-tangle, en-trust*
- d. **The *out*-construction** (productive unselected object construction): *out-run, out-do, out-grow, and out-last*. Nature of *out-*: not clear.

(3) Outer Prefixes

a. Temporal prefixes

- (i) Anterior action: *pre-destine, pre-pay, fore-tell, pre-heat*
- (ii) Posterior action: *post-date, post-pone*

b. Manner prefixes

- (i) **High degree:** *over-estimate, over-sleep, over-cook*
- (ii) **Low degree:** *under-develop, under-value, under-cook*
- (iii) **Iteration:** *re-read, re-paint, re-use, re-do*
- (iv) **Reversion:** *un-bind, de-centralize, un-do*

c. Adverbial function:

- (i) ‘wrongly’: *mis-guide, mis-use, mis-speak*
- (ii) ‘jointly’: *co-operate, co-work, co-edit*

⁸ See Markova and Padrosa-Trias (2008) for further details on the prefix typology within English and Catalan in comparison with Bulgarian.

⁹ The postulation of causative prefixes in English is debatable since the verbal base is already causative.

APPENDIX 4.1: EVIDENCE FOR THE [ENDPOINT] FEATURE ON PREFIXES

(1) Testing [endpoint] on prefixes: ‘it took X time’

a. Inner prefixes: cumulatives

Otne mu dva chasa da na-gotvi supi-te
took him two hours to na-cook.PF soups-the.PL
‘It took him two hours to cook a lot of/all the soups’

b. Outer prefixes: temporal (repetitives)

Otne mu dva chasa da PRE-[PRO-dade] kafe-to
took him two hours to PRE-sell.PF coffee-the
‘It took Ivan 2h to resell the coffee’

b'. Outer prefixes: manner (reversives)

Otne mu dva chasa da OT-vŭrže vŭzel-a
took him two hours to OT-tie.PF knot-the
‘It took him two hours to untie the knot’

(2) Testing [endpoint] on prefixes: ‘yesterday s/he V-ed and is still V-ing now’

a. Inner prefixes: cumulatives

*Vchera Ivan na-gotvi supi(-te) *i sega prodŭlžava da gi gotvi*
Yesterday Ivan na-cooked.PF soups(-the.PL) *and now continues to them cook
‘Ivan cooked a lot of soups/(all the soups) yesterday *and is still cooking them now’

b. Outer prefixes: phasal (terminatives)

*Vchera Ivan DO-pja pesen-ta *i sega prodŭlžava da ja pee*
Yesterday Ivan DO-sang.PF song-the *and now continues to it sing
‘Ivan finished singing the song yesterday *and is still singing it now’

b'. Outer prefixes: repetitives

*Vchera Ivan PRE-[PRO-dade] kafe-to *i sega prodŭlžava da go prodava*
Yesterday Ivan PRE-sold.PF coffee-the *and now continues to it sell
‘Ivan resold the coffee/sold the coffee again yesterday *and is still selling it now’

b''. Outer prefixes: degree (high degree)

Vchera Ivan PRE-jade #i sega prodůlžava da jade

Yesterday Ivan PRE-ate.PF #and now continues to eat

‘Ivan had enough of eating/ate enough yesterday #and is still eating now’

APPENDIX 4.2: STANDARD PREFIXED PERFECTIVES: TELICITY INDEPENDENT ON THE NATURE OF THE INTERNAL ARGUMENT (NO OBJECT-TO-EVENT MAPPING)

(1) Incremental theme verbs: [+/-q]NP →telic

- a. *toj iz-pja pesen(-ta) *dve minuti/za dve minuti*
 he iz-sang song(-the) *two minutes/in two minutes
 ‘He sang (the) song *for two minutes/in two minutes’
- b. *toj iz-tantsuva horo(-to) *pet minuti/ za pet minuti*
 he iz-danced horo(-the) *five minutes/ in five minutes.
 ‘He danced (the) horo¹⁰ *for five minutes/in five minutes’
- c. *toj iz-pi zaplata(-ta) *edin den/za edin den*
 he iz-drunk salary(-the) *one day/in one day
 ‘He drank (up) a/(the) salary *for one day/in one day’
 (‘He spent all his salary on drinking *for one day/in one day’)
- d. *toj iz-pi malko/mnogo kafe *dve minuti/za dve minuti*
 he iz-drunk little/much coffee *for two minutes/in two minutes
 ‘He drank up little/much coffee *for two minutes/in two minutes’
- e. *toj iz-jade malko/mnogo hljab *dve minuti/za dve minuti*
 he iz-ate little/much bread *for two minutes/in two minutes
 ‘He ate up little/much bread *for two minutes/in two minutes.’
- f. *mishkta-ta iz-jade sinjo(-to) sirene*
 mouse-the iz-ate blue(-the) cheese
 ‘The mouse ate up (the) blue cheese.’
- g. *toj s-vari chaj(-a) *dve mintui/za dve minuti*
 he s-boiled tea(-the) *two minutes/in two minutes
 ‘He boiled up (the) tea *for two minutes/in two minutes’

¹⁰ ‘horo’ is a national round dance.

- h. *toj na-pravi kafe(-to) *dve mintui/za dve minuti*
 he na-made coffee(-the) *two minutes/in two minutes
 ‘He made (the) coffee *for two minutes/in two minutes’
- i. *toj s-gotvi mljako(-to) s oriz *dve mintui/za dve minuti*
 he s-cooked milk(-the) with rice *two minutes/in two minutes
 ‘He cooked (the) milk with rice *for two minutes/in two minutes’

(2) Non-incremental theme verbs: [-q]NP →telic

- a. *toj raz-bŭrka smes *dve minuti/za dve minuti*¹¹
 he raz-stirred mixture *two minutes/in two minutes
 ‘He stirred a mixture *for two minutes/in two minutes.’
- b. *toj na-troshi hljab *dve minuti/za dve minuti*
 he na-crumbed bread *two minutes/in two minutes
 ‘He crumbed bread *for two minutes/in two minutes.’
- c. *toj do-nese brashno v staja-ta *dve minuti/za dve minuti*
 he do-carried flour in room-the *two minutes/in two minutes
 ‘He carried flour into the room *for two minutes/in two minutes.’
- d. *toj za-nese hljab na baba si *dve minuti/za dve minuti*
 he za-carried bread to grandmother his *two minutes/in two minutes
 ‘He carried bread to his grandmother *for two minutes/in two minutes.’

¹¹ Slabakova (2001:89) also observes the following data in which an incremental theme verb with prefix takes a bare noun:

*Tja s-gotvi jadene *tri časa/za tri časa i go iz-jade za pet minuti.*
 she PV-cook-3sg/aor food *for three hours/in three hours and it PV-eat-3sg/aor in five minutes
 ‘‘She cooked food in three hours and ate it up in five minutes.’’

APPENDIX 4.3: BIASPECTUAL VERBS: (A)TELICITY DEPENDENT ON THE INTERNAL ARGUMENT (SHOW THE OBJECT-TO-EVENT MAPPING PROPERTY)

(1) General pattern: [+q]NP →ambiguous (a)telic; [-q]NP →atelic

a. [+q]NP → (a)telic

toj analizira tŭkan-ta dve minuti/za dve minuti

he analyzed tissue-the two minutes/in two minutes

‘He analyzed the tissue for two minutes/in two minutes’

b. [-q]NP →atelic

*toj analizira tŭkan dve minuti/*za dve minuti*

he analyzed tissue two minutes/*in two minutes

‘He analyzed tissue for two minutes/*in two minutes’

c. BPs →atelic

*toj analizira tŭkan-i dve minuti/*za dve minuti*

he analyzed tissue-PL two minutes/*in two minutes

‘He analyzed tissues for two minutes/*in two minutes’

(2) General pattern: [+q]NP →ambiguous (a)telic; [-q]NP → atelic

a. [+q] NP → (a)telic

toj degustira vino-to dva chasa /za dva chasa

he tasted wine-the two hours/in two hours

‘He tasted the wine for two hours/in two hours’

b. [-q]NP (Mass nouns) →atelic

*toj degustira vino dva chasa /*za dva chasa*

he tasted wine two hours/*in two hours

‘He tasted wine for two hours/*in two hours’

c. BPs → atelic

*toj degustira vin-a dva chasa /*za dva chasa*

he tasted wine-PL two hours/*in two hours

‘He tasted wines for two hours/*in two hours’

(3) General pattern: [+q]NP →ambiguous (a)telic; [-q]NP → atelic

a. [+q]NP → (a)telic

toj diagnostira bolest-ta dva chasa/za dve minuti

he diagnosed illness-the two hours/in two minutes

‘He diagnosed the illness for two hours/in two minutes’

b. [-q] NP →atelic

*toj diagnostira bolest dva chasa (veche)/ *za dve minuti*

he diagnosed illness two hours (now)/ *in two minutes

‘He diagnosed illness for two hours (now)/ *in two minutes’

c. BPs →atelic

*toj diagnostira bolest-i dva chasa/*za dve minuti*

he diagnosed illness-PL two hours/*in two minutes

‘He diagnosed illnesses for two hours/*in two minutes’

(4) General pattern: [+q]NP →ambiguous (a)telic; [-q]NP →atelic

a. [+q]NP → (a)telic

toj kopira uchebnik-a dva chasa /za dva chasa

he copied book-the two hours/in two hours

‘He copied the book for two hours/in two hours.’

b. [-q]NP → atelic

*toj kopira uchebnik dva chasa /*za dva chasa*

he copied book two hours/*in two hours

‘He copied a book for two hours/*in two hours.’

c. BPs → atelic

*toj kopira uchebnits-i dva chasa /*za dva chasa*

he copied book-PL two hours/*in two hours

‘He copied books for two hours/*in two hours.’

(5) General pattern: [+q]NP → ambiguous (a)telic; [-q]NP → atelic

a. [+q]NP → (a)telic

toj imitira prezident-a dve minuti/za dve minuti

he imitated president-the two minutes/in two minutes

‘He imitated the president for two minutes/in two minutes’

b. [-q]NP → atelic

*toj imitira prezident dve minuti/*za dve minuti*

he imitated president two minutes/*in two minutes

‘He imitated a president for two minutes/*in two minutes’

c. BPs → atelic

*toj imitira prezident-i dve minuti/*za dve minuti*

he imitated president-PL two minutes/*in two minutes

‘He imitated presidents for two minutes/*in two minutes’

(6) General pattern: [+q]NP → ambiguous (a)telic; [-q]NP → atelic

a. [+q]NP → (a)telic

toj prožektira film-a dva chasa/za dva chasa

he projected film-the two hours/in two hours

‘He projected the film for two hours/in two hours.’

b. [-q]NP → atelic

*toj prožektira film dva chasa/*za dva chasa*

he projected film two hours/*in two hours

‘He projected film for two hours/*in two hours.’

c. BPs → atelic

*toj prožektira film-i dva chasa/*za dva chasa*

he projected film-PL two hours/*in two hours

‘He projected films for two hours/*in two hours.’

(7) General pattern: [+q]NP → ambiguous (a)telic; [-q]NP → atelic

a. [+q]NP → (a)telic

toj agitira tŭlpa-ta dva chasa/za dva chasa

he agitated crowd-the two hours/in two hours

‘He agitated the crowd for two hours/in two hours.’

b. [-q]NP → atelic

*toj agitira tŭlpa dva chasa/*za dva chasa*

he agitated crowd two hours/*in two hours

‘He agitated a crowd for two hours/*in two hours.’

c. BPs → atelic

*toj agitira tŭlp-i dva chasa/*za dva chasa*

he agitated crowd-PL two hours/*in two hours

‘He agitated crowds for two hours/*in two hours.’

(8) Occasional pattern: [+q]NP → telic; [-q]NP → atelic

a. [+q]NP → telic

*toj konsumira bira-ta *dve minuti/za dve minuti*

he consumed beer-the *two minutes/in two minutes

‘He consumed the beer *for two minutes/in two minutes’

b. [-q]NP → atelic

*toj konsumira bira dve minuti/*za dve minuti*

he consumed beer two minutes/*in two minutes

‘He consumed beer for two minutes/*in two minutes’

c. BPs → atelic

*toj konsumira bir-i dva chasa/*za dva chasa*

he consumed beer-PL two hours/*in two hours

‘He consumed beers for two hours/*in two hours.’

(9) Occasional pattern: [+q]NP → telic; [-q]NP → atelic

a. [+q] NP → telic

*toj anulira konferentsija-ta *dve minuti/za dve minuti*

he annulled conference-the *two minutes/in two minutes

‘He annulled the conference *for two minutes/in two minutes’

b. [-q] NP → atelic

*toj anulira konferentsi-i dva chasa/*za dva chasa*

he annulled conference-PL two hours/*in two minutes

‘He annulled conferences for two hours/*in two hours’

APPENDIX 4.4: THE BEHAVIOR OF THE BULGARIAN STATIVE VERBS

APPENDIX 4.4.1: BULGARIAN STATIVES AS COMPLEMENTS OF PERCEPTION VERBS

STANDARD STATIVES	BIASPECTUAL STATIVES
1. [teža 'weigh'] <i>*Vidjah krushite da težat dva kilograma</i> *'I saw the pears weigh two kilograms'	[bituva 'exist'] <i>*Vidjah v Evropa da bituva mnenieto, che bŭlgarinŭt e mŭrzeliv</i> *'I saw in Europe to exist the opinion that Bulgarians are lazy'
2. [trjabvam 'need, be of need'] <i>*Vidjah v kŭshkata da trjabvat pari</i> *'I saw in the house to be needed money'	[kostvam 'cost'] <i>?Vidjah krizata da kostva života na 30000 detsa</i> ?'I saw the crisis to cost the life of 30000 children'
3 [znacha 'mean'] <i>*Vidjah krŭsta da znachi vjara</i> *'I saw the cross to mean faith'	[kvartiruvam 'lodge'] <i>Vidjah chetiri polka da kvartiruvat v Radomir</i> 'I saw four regiments to have their lodgings in Radomir'
4. [ima 'there is'] <i>?Vidjah v garaža da ima dŭrva</i> ?'I saw in the garage to be there wood'	[ministerstva 'be a minister'; kmetuva 'be a mayor'] <i>?Vidjah moshenikŭt da ministerstva</i> ?'I saw the scoundrel to be a minister'
5. [imam 'have'] <i>*Vidjah Maria da ima pari</i> *'I saw Maria to have money'	[postojanstvam 'persevere, persist'] <i>Vidjah ja da se nadjava na Boga i da postojanstva v molbi i molitvi</i> 'I saw her to hope in God and persist in supplications and prayers'
6. [moga 'can, be able to'] <i>*Vidjah Maria da može da kara kolelo</i> *'I saw Maria to be able to ride a bicycle'	[rimuva 'rhyme'] <i>*Vidjah tova, koeto kazvashe, da se rimuva</i> *'I saw this, which he was saying, to rhyme'
7. [prilicham 'resemble'] <i>*Vidjah Maria da prilicha na majka si</i> *'I saw Maria to resemble her mother'	[sŭshtestvuva 'exist'] <i>*Vidjah Djado Koleda da sŭshtestvuva</i> *'I saw Santa Claus to exist'
8. [strahuvam se 'have fear'] <i>*Vidjah Meri da se strahuva ot kucheta</i> *'I saw Mary to fear dogs'	[sŭsedstvam 'be a neighbour'] <i>*vidjah konfliktŭt da sŭsedstva sŭs strastite</i> *'I saw the conflict to be a neighbor of the passions'
9. [znaja 'know'] <i>*Vidjah Meri da znae otogvora</i> *'I saw Mary to know the answer'	[chlenuvam 'be a member of; belong to'] <i>*Vidjah go da chlenuva vŭv fen kluba na FC Barselona</i> *'I saw him to be a member of the fan club of FC Barcelona'
10. [sŭstoja se 'consist of'] <i>*Vidjah produktŭt da se sŭstoia ot voda</i> *'I saw the product to consist of water'	[preziram 'despise'] <i>*Vidjah go da prezira žena si</i> *'I saw him to despise his wife'
11. [sladnej/sladnja 'have a sweet taste, taste sweet'; gorcha 'taste bitter'] <i>*Vidjah hljaba da sladnee</i> *'I saw the bread to taste sweet'	[dominiram 'dominate; predominate, prevail'] <i>Vidjah sinjoto da dominira na podiumite v Pariž</i> 'I saw the blue (color) to prevail on the podia (stages) in Paris'
12. [tsenja 'value'] <i>*Vidjah Maria da tseni majka si</i> *'I saw Maria to value her mother'	[harakteriziram 'characterize'] <i>*Vidjah Bŭlgarija da se karakterizira s otlichna bankova sistema</i> *'I saw Bulgaria to be characterized with an excellent banking'

	system'
13. [vjarvam 'believe'] <i>*Vidjah Maria da vjarva v Gospod</i> *'I saw Maria to believe in God'	[simvolizira 'symbolize'] <i>*Vidjah go da simvolizira bułgarskata mehta</i> *'I saw him to symbolize the Bulgarian dream'
14. [traja 'last'] <i>*Vidjah ljubovta im da trae 3 godini</i> *'I saw their love to last for 3 years'	[lipsvam 'lack'] <i>*Vidjah da mu lipsvat pari</i> *'I saw him to lack money'
15. [pritežavam 'possess'] <i>*vidja go da pritežava kolelo</i> *'I saw him possess a bicycle'	[egzistira 'exist'] <i>*Vidjah starija fakultet po geografija vse oshte da egzistira</i> *'I saw the old faculty of Geography to still exist'
16. [zavisja 'depend (on)'] <i>*Vidjah Meri da zavisi ot muža si</i> *'I saw Mary depending on her husband'	[kandidatiram 'run, stand, put up, be a candidate (for)'] <i>?Vidjah go da se kandidatira za kmet na Varna</i> I saw him to be candidate for a mayor of Varna'
17. [prinadleža 'belong (to)'] <i>*Vidjah koleloto da prinadleži na Meri</i> *'I saw the bicycle belong to Mary'	[podoziram 'suspect, be suspicious of'] <i>*Vidjah go da ja podozira v izmama</i> *'I saw him being suspicious of her lying'
18. [podkrepijam 'support, back up'] <i>*Vidjah go da prodrepja FC Barcelona</i> *'I saw him to support FC Barcelona'	[favoriziram] 'favor' <i>?Vidjah go da favorizira FC Barcelona</i> ?'I saw him favoring FC Barcelona'

APPENDIX 4.4.2: BULGARIAN STATIVES AND THE PSEUDO-CLEFT CONSTRUCTION

STANDARD STATIVES	BIASPECTUAL STATIVES
1. [teža ‘weigh’] <i>*Tova, koeto krushite napraviha beshe da težat dva kg</i> *‘What the pears did was weigh two kilograms’	[bituva ‘exist’] <i>*Tova, koeto mnenieto (che bŭlgarinŭt e mŭrzeliv) napravi beshe da bituva v Evropa</i> *‘What the opinion (that Bulgarians are lazy) did was to exist in Europe’
2. [trjabvam ‘need, be of need’] <i>*Tova, koeto parite napraviha beshe da mi trjabvat</i> *‘What the money did was to lack to me’	[kostvam ‘cost’] <i>*Tova, koeto krizata napravi beshe da kostva života na 30000 detsa</i> *‘What the crisis did was cost the life of 30000 children’
3. [znacha ‘mean’] <i>*Tova, koeto krŭstŭt napravi beshe da znachi vjara</i> *‘What the cross did was mean faith’	[kvartiruvam ‘lodge’] <i>??Tova, koeto chetirite polka napraviha beshe da kvartiruvat v Radomir</i> ‘What the 4 regiments did was have their lodgings in Radomir’
4. [ima ‘there is’] <i>*Tova, koeto dŭrvata napraviha beshe da gi ima v garaža</i> *‘What the wood did was to be there in the garage’	[ministerstva ‘be a minister’; kmetuva ‘be a mayor’] <i>??Tova, koeto moshenikŭt napravi beshe da ministerstva oshte chetiri godini</i> ‘What the scoundrel did was to be a minister for four years more’
5. [imam ‘have’] <i>*Tova, koeto Maria napravi beshe da ima pari</i> *‘What Maria did was have money’	[postojanstvam ‘persevere, persist’] <i>Tova, koeto toj napravi beshe da se nadjava na Boga i da postojanstva v molbi i molitvi</i> ‘What he did was hope in/to? God and persist in supplications and prayers’
6. [moga ‘can, be able to’] <i>*Tova, koeto Maria napravi beshe da može da kara kolelo</i> *‘What Maria did was to be able to ride a bicycle’	[rimuva ‘rhyme’] <i>*Tova, koeto dumite mu napraviha beshe da se rimuvat</i> *‘What his words did was rhyme’
7. [prilicham ‘resemble’] <i>*Tova, koeto Maria napravi beshe da prilicha na majka si</i> *‘What Maria did was resemble her mother’	[sŭshtestvuva ‘exist’] <i>*Tova, koeto Djado Koleda napravi beshe da sŭshtestvuva</i> *‘What Santa Claus did was exist’
8. [strahuvam se ‘have fear’] <i>*Tova, koeto Meri napravi beshe da se strahuva ot kucheta</i> *‘What Mary did was fear dogs’	[sŭsedstvam ‘be a neighbour’] <i>*Tova, koeto konfliktŭt napravi beshe da sŭsedstva sŭs strastite</i> *‘What the conflict did was to be a neighbor of the passions’
9. [znaja ‘know’] <i>*Tova, koeto Meri napravi beshe da znae otogvora</i> *‘What Mary did was know the answer’	[chlenuvam ‘be a member of; belong to’] <i>??Tova, koeto toj napravi beshe da chlenuva vŭv fen kluba na Michael Jackson</i> ‘What he did was be a member of the fan club of MJ’
10. [sŭstoja se ‘consist of’] <i>*Tova, koeto produktŭt napravi beshe da se sŭstoi ot voda</i> *‘What the product did was consist of water’	[preziram ‘despise’] <i>?Tova, koeto toj napravi beshe da prezira žena si</i> ?‘What he did was despise his wife’

11. [sladneja/sladnja 'have a sweet taste, taste sweet'; gorcha 'taste bitter'] <i>*Tova, koeto hljaba napravi beshe da sladnee</i> *‘What the bread did was taste sweet’	[dominiram 'dominate; predominate, prevail'] <i>*Tova, koet sinjoto napravi beshe da dominira na podiumite v Pariž</i> *‘What the blue (color) did was prevail on the podia (stages) in Paris’
12. [tsenja 'value'] <i>?(*)Tova, koeto Maria napravi beshe da tseni majka si</i> *‘What Maria did was value her mother’	[harakteriziram 'characterize'] <i>*Tova, koeto Bŭlgarija napravi beshe da se karakterizira s otlichna bankova sistema</i> *‘What Bulgaria did was characterize/be characterized with an excellent banking system’
13. [vjarvam 'believe'] <i>??(*)Tova, koeto Maria napravi beshe da vjarva v Gospod</i> *‘What Maria did was believe in God’	[simvolizira 'symbolize'] <i>*Tova, koeto toj napravi beshe da simvolizira bŭlgarskata mechta</i> *‘What he did was symbolize the Bulgarian dream’
14. [traja 'last'] <i>*Tova, koeto ljubovta im napravi beshe da trae tri godini</i> *‘What their love did was last for three years’	[lipsvam 'lack'] <i>*Tova, koeto parite napravi beshe da mu lipsvat</i> *‘What the money did was lack him’
15. [pritežavam 'possess'] <i>*Tova, koeto toj napravi beshe da pritežava kolelo</i> *‘What he did was possess a bicycle’	[egzistira 'exist'] <i>*Tova, koeto starijat fakultet po geografija napravi beshe da egzistira</i> *‘What the old faculty of Geography did was exist’
16. [zavisja 'depend (on)'] <i>*Tova, koeto Meri napravi beshe da zavisi ot mŭža si</i> *‘What Mary did was depend on her husband’	[kandidatiram 'run, stand, put up, be a candidate (for)'] <i>Tova, koeto toj napravi beshe da se kandidatira za kmet na Varna</i> ‘What he did was be candidate for a mayor of Varna’ Reading: ‘apply as a candidate for a mayor of Varna’
17. [prinadleža 'belong (to)'] <i>*Tova, koeto koleloto napravi beshe da prinadleži na Meri</i> *‘What the bicycle did was belong to Mary’	[podoziram 'suspect, be suspicious of'] <i>*Tova, koeto toj napravi beshe da ja podozira v izmama</i> *‘What he did was be suspicious of her lying’
18. [podkrepijam 'support, back up'] <i>?Tova, koeto toj napravi beshe da podkrepija FC Barselona</i> *‘What he did was support FC Barcelona’	[favoriziram 'favor'] <i>?Tova, koeto toj napravi beshe da favorizira FC Barcelona</i> ‘What he did was favor FC Barcelona’

APPENDIX 4.4.3: BULGARIAN STATIVES AND THE PHASE VERB ZAPOCHNA 'STARTED'

STANDARD STATIVES	BIASPECTUAL STATIVES
1. [teža 'weigh'] <i>*krushite zapochnaha da težat dva kilograma</i> * 'the pears started to weigh two kg'	[bituva 'exist'] <i>v Evropa zapochna da bituva mnenieto, che bŭlgarinŭt e mŭrzeliv</i> 'In Europe the opinion that Bulgarians are lazy started to exist'
2. [trjabvam 'need, be of need'] <i>?v kŭshkata zapochnaha da trjabvat pari</i> ?'in the house money started to be needed'	[kostvam 'cost'] <i>?krizata zapochna da kostva života na vse poveche i poveche hora</i> 'the crisis started to cost the life of more and more people'
3 [znacha 'mean'] <i>krŭstŭt zapochna da znachi vjara</i> 'the cross started to mean faith'	[kvartiruvam 'lodge'] <i>chetiri polka zapochnaha da kvartiruvat v Radomir</i> 'Four regiments started to have their lodgings in Radomir'
4. [ima 'there is'] <i>?v garaža zapochna da ima dŭrva</i> ?'in the garage there started to be there wood'	[ministerstva 'be a minister'; kmetuva 'be a mayor'] <i>moshenikŭt zapochna da ministerstva</i> 'the scoundrel started to be a minister'
5. [imam 'have'] <i>Marija zapochna da ima pari</i> 'Maria started to have money'	[postojanstvam 'persevere, persist'] <i>Tja zapochna da se nadjava na Boga i da postojanstva v molbi i molitvi</i> 'She started to hope in/to? God and persist in supplications and prayers'
6. [moga 'can, be able to'] <i>*Marija zapochna da može da kara kolelo</i> * 'Maria started to be able to ride a bicycle'	[rimuva 'rhyme'] <i>Dumite mu zapochnaha da se rimuvat</i> 'His words started to rhyme'
7. [prilicham 'resemble'] <i>Marija zapochna da prilicha na majka si</i> 'Maria started to resemble her mother'	[sŭshtestvŭva 'exist'] <i>Za men Djado Koleda zapochna da sŭshtestvŭva sled publikatsiata na тази статия</i> 'For me Santa Claus started to exist after the publication of this article' <i>*Djado Koleda zapochna da sŭshtestvŭva</i> * 'Santa Claus started to exist'
8. [strahuvam se 'have fear'] <i>Meri zapochna da se strahuva ot kucheta</i> 'Mary started to fear dogs'	[sŭsedstvam 'be a neighbor'] <i>konfliktŭt zapochna da sŭsedstva sŭs strastite</i> 'the conflict started to be a neighbor of the passions'
9. [znaja 'know'] <i>(?) *Meri zapochna da znae otogvora</i> (?) * 'Mary started to know the answer'	[chlenuvam 'be a member of; belong to'] <i>Toj zapochna da chlenuva vŭv fen kluba na Michael Jackson</i> 'He started to be a member of the fan club of MJ= HE BECAME A MEMBER OF'
10. [sŭstoja se 'consist of'] <i>*produktŭt zapochna da se sŭstoi ot voda</i> * 'the product started to consist of water'	[preziram 'despise'] <i>Toj zapochna da prezira žena si</i> 'He started to despise his wife'
11. [sladneja/sladnja 'have a sweet taste, taste sweet'; gorcha 'taste bitter'] <i>hljabŭt zapochna da sladnee</i> 'the bread started to taste sweet'	[dominiram 'dominate; predominate, prevail'] <i>sinjoto zapochna da dominira na podiumite v Pariž</i> 'the blue (color) started to prevail on the podia (stages) in Paris'
12. [tsenja 'value'] <i>Marija zapochna da tseni majka si</i> 'Maria started to value her mother'	[harakteriziram 'characterize'] <i>Bŭlgarija zapochna da se karakterizira s otlichna bankova sistema</i> 'Bulgaria started to characterize/be characterized with an excellent banking system'

13. [vjarvam 'believe'] <i>Marija započna da vjarva v Gospod</i> 'Maria started to believe in God'	[simvolizira 'symbolize'] <i>Toj započna da simvolizira bŭlgarskata mečta</i> 'He started to symbolize the Bulgarian dream'
14. [traja 'last'] <i>*Ijubovta im započna da trae tri godini</i> *'their love started to last for 3 years'	[lipsvam 'lack'] <i>Zapochnaha da mu lipsvat pari</i> 'He started to lack money'
15. [pritežavam 'possess'] <i>*Ivan započna da pritežava aktsii</i> *'Ivan started to possess shares'	[egzistira 'exist'] <i>??(*)tozi universitet započna da egzistira prez 2000-ta godina</i> 'This university started to exist in the year 2000'
16. [zavisja 'depend (on)'] <i>Meri započna da zavisi ot mužā si</i> 'Mary started to depend on her husband'	[kandidatiram 'run, stand, put up, be a candidate (for)'] <i>toj započna da se kandidatira za kmet na Varna</i> 'He started to present himself as a candidate for a mayor of Varna' (repetitive reading: 'every year')
17. [prinadleža 'belong (to)'] <i>*koleloto započna da prinadleži na Meri</i> *'the bicycle started to belong to Mary'	[podoziram 'suspect, be suspicious of'] <i>Toj započna da ja podozira v izmama</i> 'He started to suspect her of lying'
18. [podkrepjam 'support, back up'] <i>toj započna da prodkrepja FC Barselona</i> 'He started to support FC Barcelona'	[favoriziram 'favor'] <i>Toj započna da favorizira FC Barselona</i> 'He started favoring FC Barcelona'

APPENDIX 4.4.4: BULGARIAN STATIVES AND THE PHASE VERB *SPRJA/PRESTANA* 'STOP' AND *SVŮRSHI* 'FINISH'

STANDARD STATIVES	BIASPECTUAL STATIVES
1. [teža 'weigh'] <i>krushite ?sprjaha/prestanaha/*svŭrshiha da težat dva kilograma</i> 'the pears stopped/*finished weighing two kg'	[bituva 'exist'] <i>v Evropa sprja/*svŭrshi da bituva mnenieto, che bŭlgarinŭt e mŭrzeliv</i> 'In Europe the opinion that Bulgarians are lazy stopped/*finished to exist'
2. [trjabvam 'need, be of need'] <i>v kŭshata ?sprjaha/?prestanaha/*svŭrshiha da trjabvat pari</i> 'In the house money ?stopped/*finished to be needed'	[kostvam 'cost'] <i>??(*)krizata sprja/*prestana/*svŭrshi da kostva života na horata</i> <i>??(*) 'the crisis stopped/*finished to cost the life of the people'</i>
3 [znacha 'mean'] <i>*krŭstŭt sprja/prestana/svŭrshi da znachi vjara</i> <i>*'the cross stopped/finished to mean faith'</i>	[kvartiruvam 'lodge'] <i>chetirite polka ?sprjaha/prestanaha/*svŭrshiha da kvartiruvat v Radomir</i> 'The four regiments ?stopped/*finished to have their lodgings in Radomir'
4. [ima 'there is'] <i>v garaža sprja/prestana/*svŭrshi da ima dŭrva</i> 'In the garage stopped/*finished to be there wood'	[ministerstva 'be a minister'; kmetuva 'be a mayor'] <i>Moshenikŭt *sprja/?prestana/*svŭrshi da ministerstva</i> 'the scoundrel *stopped/ceased/*finished to be a minister' Reading: gave up being a minister (repetitive)
5. [imam 'have'] <i>Marija ?sprja/prestana/*svŭrshi da ima pari</i> 'Maria stopped/*finished to have money'	[postojanstvam 'persevere, persist'] <i>Tja sprja/*svŭrshi da se nadjava na Boga i da postojanstva v molbi i molitvi</i> 'She stopped/*finished to hope in/to? God and persist in supplications and prayers'
6. [moga 'can, be able to'] <i>*Marija sprja/prestana/svŭrshi da može da kara kolelo</i> <i>*'Maria stopped/finished to be able to ride a bicycle'</i>	[rimuva 'rhyme'] <i>Dumite mu sprjaha/*svŭrshiha da se rimuvat</i> 'His words stopped/*finished to rhyme'
7. [prilicham 'resemble'] <i>Maria sprja/prestana/*svŭrshi da prilicha na majka si</i> 'Maria stopped/*finished to resemble her mother'	[sŭshtestvŭva 'exist'] <i>Djado Koleda ?sprja/prestana/*svŭrshi da sŭshtestvŭva</i> 'Santa Claus stopped/*finished to exist'
8. [strahuvam se 'have fear'] <i>Meri sprja/prestana/*svŭrshi da se strahuva ot kucheta</i> 'Mary stopped/*finished to fear dogs'	[sŭsedstvam 'be a neighbor'] <i>*Konfliktŭt sprja/prestana/svŭrshi da sŭsedstva sŭs strastite</i> <i>*'the conflict stopped/finished to be a neighbor of the passions'</i>
9. [znaja 'know'] <i>*Meri sprja/prestana/*svŭrshi da znae otogvora</i>	[chlenuvam 'be a member of; belong to'] <i>Toj sprja/*svŭrshi da chlenuva vŭv fen kluba na</i>

‘Mary stopped/*finished to know the answer’	<i>Michael Jackson</i> ‘He stopped to be a member of the fan club of MJ’
10. [sũstoja se ‘consist of’] <i>*produktũt sprja/prestana/svũrshi da se sũstoi ot voda</i> *‘the product stopped/finished to consist of water’	[preziram ‘despise’] <i>Toj sprja/prestana/*svũrshi da prezira žena si</i> ‘He stopped/*finished despising his wife’
11. [sladneja/sladnja ‘have a sweet taste, taste sweet’; gorcha ‘taste bitter’] <i>hljabũt sprja/prestana/*svũrshi da sladnee</i> ‘the bread stopped/*finished to taste sweet’	[dominiram ‘dominate; predominate, prevail’] <i>sinjoto sprja/prestana/*svũrshi da dominira na podiumite v Pariž</i> ‘the blue (color) stopped/*finished to prevail on the podia (stages) in Paris’
12. [tsenja ‘value’] <i>Marija sprja/prestana/*svũrshi da tseni majka si</i> ‘Maria stopped/*finished to value her mother’	[harakteriziram ‘characterize’] <i>Bũlgaria sprja/prestana/*svũrshi da se karakterizira s otlichna bankova sistema</i> ‘Bulgaria stopped/*finished to be characterized with an excellent banking system’
13. [vjarvam ‘believe’] <i>Marija sprja/prestana/*svũrshi da vjarva v Gospod</i> ‘Maria stopped/*finished to believe in God’	[simvolizira ‘symbolize’] <i>Toj sprja/prestana/*svũrshi da simvolizira bũlgarskata mehta</i> ‘He stopped/*finished to symbolize the Bulgarian dream’
14. [traja ‘last’] <i>*ljubovta im sprja/prestana/svũrshi da trae 3 godini</i> *‘their love stopped/finished to last for 3 years’	[lipsvam ‘lack’] <i>sprjaha/*svũrshiha da mu lipsvat pari</i> ‘He stopped/*finished to lack money’
15. [pritežavam ‘possess’] <i>Ivan sprja/prestana/*svũrshi da pritežava aksii</i> ‘Ivan stopped/*finished to possess shares’	[egzistira ‘exist’] <i>tozi universitet sprja/prestana/*svũrshi da egzistira</i> ‘This university stopped/*finished to exist’
16. [zavisja ‘depend (on)’] <i>Meri sprja/prestana/*svũrshi da zavisi ot mũža si</i> ‘Mary stopped/*finished to depend on her husband’	[kandidatiram ‘run, stand, put up, be a candidate (for)’] <i>toj sprja/prestana/*svũrshi da se kandidatira za kmet na Varna</i> ‘He stopped/*finished to present himself as a candidate for a mayor of Varna’ (repetitive reading: ‘every year’)
17. [prinadleža ‘belong (to)’] <i>Meri ?sprja/prestana/*svũrshi da prinadleži na sektata</i> ‘Mary stopped/*finished to belong to the sect’	[podoziram ‘suspect, be suspicious of’] <i>Toj sprja/prestana/*svũrshi da ja podozira v izmama</i> ‘He stopped/*finished to suspect her of lying’
18. [podkrepiam ‘support, back up’] <i>Toj sprja/prestana/*svũrshi da prodkrepja FC Barselona</i> ‘He stopped/*finished supporting FC Barcelona’	[favoriziram ‘favor’] <i>Toj sprja/prestana/*svũrshi da favorizira FC Barcelona</i> ‘He stopped/*finished favoring FC Barcelona’

APPENDIX 4.4.5: BULGARIAN STATIVES AND THE PHASE VERB *PRODŪLŽI* 'CONTINUE'

STANDARD STATIVES	BIASPECTUAL STATIVES
1. [teža 'weigh'] <i>krushite prodŭlžiha da težat dva kilograma</i> 'the pears continued to weigh two kg'	[bituva 'exist'] <i>v Evropa prodŭlži da bituva mnenieto, che bŭlgarinŭt e mŭrzeliv</i> 'In Europe the opinion that Bulgarians are lazy continued to exist'
2. [trjabvam 'need, be of need'] <i>v kŭshata prodŭlžiha da trjabvat pari</i> 'In the house money continued to be needed'	[kostvam 'cost'] <i>krizata prodŭlži da kostva života na vse poveche i poveche hora</i> 'the crisis continued to cost the life of more and more people'
3 [znacha 'mean'] <i>krŭstŭt prodŭlži da znachi vjara</i> 'the cross continued to mean faith'	[kvartiruvam 'lodge'] <i>chetirite polka prodŭlžiha da kvartiruvat v Radomir</i> 'The four regiments continued to have their lodgings in Radomir'
4. [ima 'there is'] <i>v garaža prodŭlži da ima dŭrva</i> 'In the garage there continued to be there wood'	[ministerstva 'be a minister'; kmetuva 'be a mayor'] <i>moshenikŭt prodŭlži da ministerstva</i> 'the scoundrel continued to be a minister'
5. [imam 'have'] <i>?Marija prodŭlži da ima pari</i> 'Maria continued to have money'	[postojanstvam 'persevere, persist'] <i>tja prodŭlži da postojanstva v molbi i molitvi</i> 'She continued to persist in supplications and prayers'
6. [moga 'can, be able to'] <i>*Marija prodŭlži da može da kara kolelo</i> <i>*'Marija continued to be able to ride a bicycle'</i>	[rimuva 'rhyme'] <i>Dumite mu prodŭlžiha da se rimuvat</i> 'His words continued to rhyme'
7. [prilicham 'resemble'] <i>Marija prodŭlži da prilicha na majka si</i> 'Maria continued to resemble her mother'	[sŭshtestvŭva 'exist'] <i>Djado Koleda prodŭlži da sŭshtestvŭva</i> 'Santa Claus continued to exist'
8. [strahuvam se 'have fear'] <i>Meri prodŭlži da se strahuva ot kucheta</i> 'Mary continued to fear dogs'	[sŭsedstvam 'be a neighbor'] <i>?konfliktŭt prodŭlži da sŭsedstva sŭs strastite</i> 'the conflict continued to be a neighbor of the passions'
9. [znaja 'know'] <i>*Meri prodŭlži da znae otogvora</i> <i>*'Mary continued to know the answer'</i>	[chlenuvam 'be a member of; belong to'] <i>Toj prodŭlži da chlenuva vŭv fen kluba na Michael Jackson</i> 'He continued to be a member of the fan club of MJ'
10. [sŭstoja se 'consist of'] <i>*produktŭt prodŭlži da se sŭstoi a ot voda</i> <i>*'the product continued to consist of water'</i>	[preziram 'despise'] <i>Toj prodŭlži da prezira žena si</i> 'He continued to despise his wife'
11. [sladneja/sladnja 'have a sweet taste, taste sweet'; gorcha 'taste bitter'] <i>Hljabŭt prodŭlži da sladnee</i> 'the bread continued to taste sweet'	[dominiram 'dominate; predominate, prevail'] <i>sinjoto prodŭlži da dominira na podiumite v Pariž</i> 'the blue (color) continued to prevail on the podia (stages) in Paris'
12. [tsenja 'value'] <i>Marija prodŭlži da tseni majka si</i> 'Maria continued to value her mother'	[harakteriziram 'characterize'] <i>Bŭlgarija prodŭlži da se karakterizira s otlichna bankova sistema</i> 'Bulgaria continued to characterize/be characterized with an excellent banking system'
13. [vjarvam 'believe'] <i>Marija prodŭlži da vjarva v Gospod</i> 'Maria continued to believe in God'	[simvolizira 'symbolize'] <i>Toj prodŭlži da simvolizira bŭlgarskata mechta</i> 'He continued to symbolize the Bulgarian dream'
14. [traja 'last'] <i>*ljubovta im prodŭlži da trae</i> <i>*'their love continued to last'</i>	[lipsvam 'lack'] <i>*prodŭlžiha da mu lipsvat pari</i> <i>*'He continued to lack money'</i>

15. [pritežavam ‘possess’] <i>??Ivan prodūlži da pritežava kūštata</i> ‘Ivan continued to possess the house’	[egzistira ‘exist’] <i>?tozi universitet prodūlži da egzistira</i> ‘This university continued to exist’
16. [zavisja ‘depend (on)’] <i>Meri prodūlži da zavisī ot mūža si</i> ‘Mary continued to depend on her husband’	[kandidatiram ‘run, stand, put up, be a candidate (for)’] <i>*toj prodūlži da se kandidatira za kmet na Varna</i> *‘He continued to present himself as a candidate for a mayor of Varna’ (OK if repetitive: ‘every year’)
17. [prinadleža ‘belong (to)’] <i>?koleloto prodūlži da prinadleži na Meri</i> ‘the bicycle continued to belong to Mary’	[podoziram ‘suspect, be suspicious of’] <i>Toj prodūlži da ja podozira v izmama</i> ‘He continued to suspect her of lying’
18. [podkrepijam ‘support, back up’] <i>toj prodūlži da podgrepija FC Barselona</i> ‘He continued to support FC Barcelona’	[favoriziram ‘favor’] <i>Toj prodūlži da favorizira FC Barcelona</i> ‘He continued favoring FC Barcelona’

APPENDIX 4.4.6: BULGARIAN STATIVES AND THE PURE PERFECTIVIZERS

STANDARD STATIVES	BIASPECTUAL STATIVES
1. [teža ‘weigh’]	[bituva ‘exist’]
2. [trjabvam ‘need, be of need’]	[kostvam ‘cost’]
3. [znacha ‘mean’]	[kvartiruvam ‘lodge’]
4. [ima ‘there is’]	[<i>ministerstva</i> ‘be a minister’; <i>kmetuva</i> ‘be a mayor’]
5. [imam ‘have’]	[postojanstvam ‘persevere, persist’]
6. [moga ‘can, be able to’] <i>S-mog-n-a</i> (s-can-semf-aor) ‘manage’	[rimuva ‘rhyme’]
7. [prilicham ‘resemble’]	[süshtestvuva ‘exist’]
8. [strahuvam se ‘have fear’]	[süsedstvam ‘be a neighbor’]
9. [znaja ‘know’] <i>U-znaja</i> ‘get to know; find out, realize’	[chlenuvam ‘be a member of; belong to’]
10. [süstoja se ‘consist of’]	[preziram ‘despise’]
11. [sladneja/sladnja ‘have a sweet taste, taste sweet’; <i>gorcha</i> ‘taste bitter’]	[dominiram ‘dominate; predominate, prevail’]
12. [tsenja ‘value; appreciate’] <i>O-cenja</i> ‘evaluate, come to appreciate’	[<i>harakteriziram</i> ‘characterize’] <i>O-harakteriziram</i> ‘characterize’
13. [vjarvam ‘believe’] <i>PO-vjarvam</i> ‘believe, come to believe’	[simvolizira ‘symbolize’]
14. [traja ‘last’]	[lipsvam ‘lack’]
15. [pritežavam ‘possess’]	[egzistira ‘exist’]
16. [zavisja ‘depend (on)’]	[kandidatiram ‘run, stand, put up, be a candidate (for)’]
17. [prinadleža ‘belong (to)’]	[podoziram ‘suspect, be suspicious of’]
18. [podkrepijam = poddūržam= favoriziram]	[favoriziram ‘favor’]

APPENDIX 4.4.7: STATIVES AND THE REST OF THE INNER PREFIXES

STANDARD STATIVES	BIASPECTUAL STATIVES
1. [teža ‘weigh’]	[bituva ‘exist’]
2. [trjabvam ‘need, be of need’]	[kostvam ‘cost’]
3. [znacha ‘mean’]	[kvartiruvam ‘lodge; rent’] <i>NA-kvartiruva se</i> ‘He had A LOT OF/ENOUGH of renting’ (CUMULATIVE/SATURATIVE NA-)
4. [ima ‘there is’]	[ministerstva ‘be a minister’; kmetuva ‘be a mayor’] <i>NA-ministerstva se</i> ‘He had A LOT OF/ENOUGH being/working as a minister’ (CUMULATIVE/SATURATIVE NA-) <i>RAZ-ministerstva se</i> ‘He dedicated himself to being a minister IN EXCESSIVE WAY ’ (EXCESSIVE RAZ-)
5. [imam ‘have’] <i>NA-imah se na problemi</i> ‘I had A LOT OF/ENOUGH problems’ (CUMULATIVE/SATURATIVE NA-)	[postojanstvam ‘persevere, persist’]
6. [moga ‘can, be able to’]	[rimuva ‘rhyme’]
7. [prilicham ‘resemble’]	[süshtestvüva ‘exist’]
8. [strahuvam se ‘have fear’]	[süsedstvam ‘be a neighbor’]
9. [znaja ‘know’]	[chlenuvam ‘be a member of; belong to’] <i>NA-chlenuva se vüv vsjakakvi klubove</i> ‘He had A LOT OF/ENOUGH participation as a member in all kinds of clubs’ (CUMULATIVE/SATURATIVE NA-)
10. [süstoja se ‘consist of’]	[preziram ‘despise’]
11. [sladneja/sladnja ‘have a sweet taste, taste sweet’; gorcha ‘taste bitter’]	[dominiram ‘dominate; predominate, prevail’]
12. [tsenja ‘value; appreciate’]	[harakteriziram ‘characterize’]
13. [vjarvam ‘believe’] <i>?NA-vjarvah se na glupost-i</i> ‘I’ve had ENOUGH of believing in nonsense/I believed A LOT OF/ENOUGH nonsense’ (CUMULATIVE/SATURATIVE NA-)	[simvolizira ‘symbolize’]
14. [traja ‘last’]	[lipsvam ‘lack’]
15. [pritežavam ‘possess’]	[egzistira ‘exist’]
16. [zavisja ‘depend (on)’]	[kandidatiram ‘run, stand, put up, be a candidate (for)’]
17. [prinadleža ‘belong (to)’]	[podoziram ‘suspect, be suspicious of’]
18. [podkrepjam ‘support, back up’]	[favoriziram ‘favor’]

APPENDIX 4.4.8: STATIVES AND OUTER PREFIXES

STANDARD STATIVES	BIASPECTUAL STATIVES
1. [teža 'weigh'] <i>DO-teža mi</i> 'I STARTED to feel tired; it started to weigh on me' <i>ZA-teža</i> 'STARTED to weigh' <i>PO-teža mi (malko)</i> 'It weigh to me A LITTLE BIT/FOR A WHILE '	[bituva 'exist'] <i>Mnenieto PO-bituva za izvestno vreme</i> 'the opinion existed FOR A WHILE ' <i>ZA-bituva mnenieto</i> 'The opinion STARTED to exist'
2. [trjabvam 'need, be of need'] <i>DO-triabva mi</i> 'I STARTED to need it' <i>PRI-triabvaha mi pari</i> 'I suddenly STARTED to need money'	[kostvam 'cost'] (difficult to be tested)
3. [znacha 'mean']	[kvartiruvam 'lodge; rent'] <i>ZA-kvartiruva</i> 'He STARTED to live on rent' <i>PO-kvartiruva</i> 'He lived on renting FOR A WHILE '
4. [ima 'there is']	[ministerstva 'be a minister'; kmetuva 'be a mayor'] <i>RAZ-ministerstva se</i> 'He dedicated himself to being a minister IN EXCESSIVE WAY ' <i>ZA-kmetuva</i> 'He STARTED to work as a mayor' <i>PO-ministerstva</i> 'He worked as a minister FOR A WHILE '
5. [imam 'have'] <i>DO-ima mi se bebe</i> 'I STARTED to want to have a baby'	[postojanstvam 'persevere, persist'] <i>PO-postojanstvah</i> 'I persisted FOR A WHILE '
6. [moga 'can, be able to']	[rimuva 'rhyme']
7. [prilicham 'resemble'] <i>ZA-prilicha mi na Ivan</i> 'He STARTED resembling Ivan to me'	[süshtestvüva 'exist']
8. [strahuvam se 'have fear']	[süsedstvam 'be a neighbor']
9. [znaja 'know']	[chlenuvam 'be a member of; belong to'] <i>ZA-chlenuva</i> 'He STARTED to be/participate as a member' <i>PO-chlenuvah</i> 'I was a member FOR A WHILE '
10. [süstoja se 'consist of']	[preziram 'despise'] <i>ZA-prezirah ja</i> 'I STARTED to despise her'
11. [sladneja/sladnja 'have a sweet taste, taste sweet'; gorcha 'taste bitter'] <i>PRI-sladnja mi</i> 'It SUDDENLY STARTED to taste sweet' <i>ZA-sladnja mi</i> 'It STARTED to taste sweet'	[dominiram 'dominate; predominate, prevail'] <i>V modata ZA-dominira sinioto</i> 'The blue STARTED to dominate/gain dominance in fashion'
12. [tsenja 'value; appreciate']	[harakteriziram 'characterize']
13. [vjarvam 'believe']	[simvolizira 'symbolize'] <i>ZA-simvolizira</i> 'START to symbolize'
14. [traja 'last'] <i>DO-traja</i> 'managed to survive= FINISHED lasting'	[lipsvam 'lack'] <i>DO-lipsva mi</i> 'I STARTED to lack him'
15. [pritežavam 'possess']	[egzistira 'exist']

	<i>?ZA-egzistira</i> ‘He STARTED to exist’
16. [zavisja ‘depend (on)’]	[kandidatiram ‘run, stand, put up, be a candidate (for)’] <i>PRE-kandidatirah se</i> ‘I stood up for a candidate AGAIN ’
17. [prinadleža ‘belong (to)’]	[podoziram ‘suspect, be suspicious of’]
18. [podkrepjam ‘support, back up’] <i>PO-poddkrepjah go</i> ‘I support him A LITTLE BIT/FOR A WHILE ’	[favoriziram ‘favor’]]

APPENDIX 4.4.9: BULGARIAN STATIVES AND THE START-GIVE UP CONSTRUCTION (HE STARTED V-ING BUT THEN GAVE IT UP)

STANDARD STATIVES	BIASPECTUAL STATIVES
1. [teža 'weigh'] <i>*krushite zapochnaha da težat dva kilograma, no posle se otkazaha</i> *‘the pears started to weigh two kg, BUT THEN GAVE IT UP’	[bituva 'exist'] <i>*v Evropa zapochna da bituva mnenieto, che bŭlgarinŭt e mŭrzeliv, no posle se otkaza</i> *‘In Europe the opinion that Bulgarians are lazy started to exist , BUT THEN GAVE IT UP’
2. [trjabvam 'need, be of need'] <i>*v kŭshkata zapochnaha da trjabvat pari, NO...</i> ¹² *‘In the house money started to be needed, BUT...’	[kostvam 'cost'] <i>*krizata zapochna da kostva života na vse poveche i poveche hora, NO...</i> *‘The crisis started to cost the life of more and more people, BUT...’
3 [znacha 'mean'] <i>*krŭsta zapochna da znachi vjara, NO...</i> *‘the cross started to mean faith, BUT...’	[kvartiruvam 'lodge'] <i>*chetirite polka zapochnaha da kvartiruvat v Radomir, NO...</i> *‘The four regiments started to have their lodgings in Radomir, BUT...’
4. [ima 'there is'] <i>*v garaža zapochna da ima dŭrva, NO...</i> *‘In the garage started to be there wood, BUT...’	[ministerstva 'be a minister'; kmetuva 'be a mayor'] <i>moshenikŭt zapochna da ministerstva, NO...</i> ‘the scoundrel became a minister, BUT...’
5. [imam 'have'] <i>*Marija zapochna da ima pari, NO...</i> *‘Maria started to have money, BUT...’	[postojanstvam 'persevere, persist'] <i>??Tja zapochna da postojanstva v molbi i molitvi, NO...</i> ??She started to persist in supplications and prayers
6. [moga 'can, be able to'] <i>*Marija zapochna da može da kara kolelo, NO...</i> *‘Maria started to be able to ride a bicycle BUT...’	[rimuva 'rhyme'] <i>*Dumite mu zapochnaha da se rimuvat, NO...</i> *‘His words started to rhyme BUT...’ <i>Toj zapochna da rimuva dumite, NO...</i> ‘He started to rhyme the words BUT...’ (ACTIVITY READING HERE)
7. [prilicham 'resemble'] <i>*Marija zapochna da prilicha na majka si, NO...</i> *‘Maria started to resemble her BUT...’	[sŭshtestvŭva 'exist'] <i>*Djado Koleda zapochna da sŭshtestvŭva, NO...</i> *‘Santa Claus started to exist BUT...’
8. [strahuvam se 'have fear'] <i>*Meri zapochna da se strahuva ot kucheta, NO...</i> *‘Mary started to fear dogs BUT...’	[sŭsedstvam 'be a neighbor'] <i>*konfliktŭt zapochna da sŭsedstva sus strastite, NO...</i> *‘the conflict started to be a neighbor of the passions
9. [znaja 'know'] <i>*Meri zapochna da znae otogvora, NO...</i> *‘Mary started to know the answer BUT...’	[chlenuvam 'be a member of; belong to'] <i>Toj zapochna da chlenuva vŭv fen kluba na Michael Jackson, NO...</i> ‘He started to be a member of the fan club of MJ BUT...’ (He became a member of MJ fan club BUT...)

¹² NO... ‘BUT...’ substitutes for ‘but then gave it up’. All the sentences considerably improve when the second part 'but then gave it up' is substituted by 'but then ceased (to do so)'.

10. [sūstoja se ‘consist of’] <i>*produktūt zapochna da se sūstoi ot voda, NO...</i> *‘the product started to consist of water BUT...’	[preziram ‘despise’] <i>*Toj zapochna da prezira žena si, NO...</i> *‘He started to despise his wife BUT...’
11. [sladneja/sladnja ‘have a sweet taste, taste sweet’; gorcha ‘taste bitter’] <i>*Hljabūt zapochna da sladnee, NO...</i> *‘the bread started to taste sweet BUT...’	[dominiram ‘dominate; predominate, prevail’] <i>*sinjoto zapochna da dominira na podiumite v Pariž, NO...</i> *‘the blue (color) started to prevail on the podia (stages) in Paris BUT...’
12. [tsenja ‘value’] <i>*Marija zapochna da tseni majka si, NO...</i> *‘Maria started to value her mother BUT...’	[harakteriziram ‘characterize’] <i>*Būlgarija zapochna da se karakterizira s otlichna bankova sistema, NO...</i> *‘Bulgaria started to characterize/be characterized with an excellent banking system BUT...’
13. [vjarvam ‘believe’] <i>Maria zapochna da vjarva v Gospod, NO...</i> ‘Maria started to believe in God	[simvolizira ‘symbolize’] <i>*Toj zapochna da simvolizira būlgarskata mechta, NO...</i> *‘He started to symbolize the Bulgarian dream BUT...’
14. [traja ‘last’] <i>*Ijubovta im zapochna da trae, NO...</i> *‘their love started to last BUT...’	[lipsvam ‘lack’] <i>*Zapochnaha da mu lipsvat pari, NO...</i> He started to lack money BUT...’
15. [pritežavam ‘possess’] <i>*Ivan zapochna da pritežava kolelo, NO...</i> *‘Ivan started to possess a bicycle BUT...’ <i>?Ivan zapochna da pritežava aksii, NO...</i> ?‘Ivan started to possess shares BUT...’ (Ivan became a share-holder but then gave it up)	[egzistira ‘exist’] <i>*tozi universitet zapochna da egzistira, NO...</i> *‘This university started to exist BUT...’
16. [zavisja ‘depend (on)’] <i>*Meri zapochna da zavisi ot mūža si, NO...</i> *‘Mary started to depend on her husband BUT...’	[kandidatiram ‘run, stand, put up, be a candidate (for)’] <i>toj zapochna da se kandidatira za kmet na Varna, NO...</i> ‘He started to present himself as/apply for a candidate for a mayor of Varna BUT...’
17. [prinadleža ‘belong (to)’] <i>*koleloto zapochna da prinadleži na Meri, NO</i> *‘the bicycle started to belong to Mary BUT...’	[podoziram ‘suspect, be suspicious of’] <i>*Toj zapochna da ja podozira v izmam, NO...</i> *‘He started to suspect her of lying BUT...’
18. [podkrepjam ‘support, back up’] <i>toj zapochna da prodkrepja FC Barselona, NO...</i> ‘He started to support FC Barcelona, BUT...’ (OK: ACTIVITY READING: do something to support it)	[favoriziram ‘favor’] <i>Toj zapochna da favorizira FC Barcelona, NO</i> ‘He started favoring FC Barcelona BUT...’ (ACTIVITY READING: do something to favor it)

APPENDIX 5.1: CRANBERRY ROOTS IN BULGARIAN

(1) √-LOŽA

- a. *po-loža* ‘rest; place, put’
- b. *pred-loža* ‘offer; suggest; propose’
- c. *raz-loža* ‘decompose; expand; demoralize, corrupt’
- d. *pred-po-loža* ‘suppose, assume; figure; imagine, guess’
- e. *pred-raz-po-loža* ‘predispose’
- f. *ot-loža* ‘put off, postpone’

(2) √-LUCHA

- a. *u-lucha* ‘hit; guess, hit it’
- b. *s-lucha* ‘run across, find; catch’

(3) √-VEDA

- a. *po-veda* ‘lead; conduct; drive’
- b. *ot-veda* ‘lead away; take away’
- c. *pre-veda* ‘lead/take over/across; transfer; send; remit; translate’
- d. *pri-veda* ‘bend; quote, cite; adduce’
- e. *do-veda* ‘bring, fetch’
- f. *za-veda* ‘take (s.o.) somewhere, lead, take along; manage, run, be in charge of’
- g. *na-veda* ‘bow down, bend, incline’

(4) √-VAR

- a. *pre-vara* ‘outstrip, outdistance, leave behind; outwalk, outrun; overtake; overhaul; anticipate, forestall’
- b. *s-vara* ‘find; catch; surprise’
- c. *za-vara* ‘find; surprise, catch unawares’

APPENDIX 5.2: ENGLISH STATIVES LACK EVENT STRUCTURE PROPERTIES; BULGARIAN STANDARD VERBS DO NOT.

A. Interpretation of *almost* and *pochti*

A.1. Bulgarian Imperfectives: counterfactual interpretation → event almost begins.

- (1) a. *toj pochti pravi kolata* b. *toj pochti vlachi dŭrva v garaža*
he almost made the car he almost dragged wood in the garage
'He almost repaired the car.' 'He almost dragged wood in the garage.'

A.2. Bulgarian Perfectives: incomplete interpretation → event almost ends

- (2) a. *toj pochti na-pravi kolata* b. *toj pochti za-vleche dŭrva v garaža*
he almost PF-made the car he almost pf-dragged wood in the garage
'He almost got the car done up/repaired.' 'He almost got the wood dragged into
the garage.'

A.3. English statives show no relevant interpretation.

- (3) a. The pitcher *almost* contained beer.
b. The situation *almost* entailed that we needed to react.
c. John *almost* owned a bicycle.

B. Tense entailments.

B.1. Bulgarian perfectives express that the event has an end; thus, the event cannot continue to utterance time.

(4) a. **Petŭr na-risuva kartina v parka i oshte ja risuva tam.*

*Peter drew a picture in the park and is still drawing it there.

b. **toj na-pisa pismoto i oshte go pishe*

*He wrote the letter and is still writing it

B.2. English statives never express that there is an end to the event

(5) a. *John owed money to the bank last week. In fact, he still owes money to the bank.*

b. *Yesterday, the pitcher contained beer. In fact, it still contains beer.*

APPENDIX 6.1: NOMINALIZATIONS IN ENGLISH

(1) Telicity: –ing and –tion (examples from Borer 2009: 11-12)

- a. –tion is aspectually neutral (Borer 2007a): allows the ‘in X time’ expression¹³
- (i) *Pat’s (gradual) formation of many committees twice¹⁴/in two minutes*
 - (ii) *Robin’s (gradual) dissolution of these chemicals twice¹⁵/in two hours*
- b. –ing is atelic (see also Snyder 1998, Alexiadou 2001, Borer 2005b): allows ‘for X time’ expression only (examples from Borer 2009: 9)
- (i) *Pat’s (*gradual) forming of many committees {for three month/*in three months/??twice}*
 - (ii) *Robin’s (*gradual) dissolving of these chemicals {for three hours/*in three hours/??twice}*
 - (iii) *Inny’s (*gradual) writing of the letter {for three month/*in three months/??twice}*

(2) Aktionsart: –ing and –tion

a. –ing and unergatives: yes

- (i) *the sinking of the ship (under intransitive reading)*
- (ii) *the slipping of standards*
- (iii) *the laughing of the boys*

b. –ing and achievements: not

- (i) **/#Pat’s ending of the flood*
- (ii) **/#The bulldozer’s hitting of (the) bedrock*
- (iii) **/#The balloon’s noisy exploding*
- (iv) **/#The rabbit’s mysterious appearing (cf. with appearance)*
- (v) **/#The erupting of Vesuvius*
- (vi) **/#The exploding of the balloon*
- (vii) **/#Vesuvius’ sudden erupting*

¹³ Note that I will go against this claim assuming that –tion is indeed compatible with ‘in X time’ but not with ‘for X time’, meaning that it is not aspectually neutral.

¹⁴ There is speaker variation regarding the acceptability of *twice* here, where some allows it but others do not.

¹⁵ There is speaker variation regarding the acceptability of *twice* here, where some allows it but others do not.

(viii) */#*The balloon's noisy exploding*

c. –ing and achievements: some exceptions (from Borer 1999: 10)

- (i) *The sinking of the ship* (intransitive reading)
- (ii) *The falling of the leaves*
- (iii) *The arriving of the guests* (iterative, hence allowing a process)

d. –tion and achievements: yes → *the rabbit's appearance*

(3) a. Pluralization: –tion nouns can pluralize versus –ing nouns, which cannot

- (i) *the (gradual) promotions/*promotings of these incompetent functionaries (by their superiors)*
- (ii) *the (frequent) replacements/*replacings of many humans with few machines in thirty years*
- (iii) *the appointments/*appointings of three musicians to permanent positions (by the management)*
- (iv) *the arrivals/*arrivings of the trains*

b. Indefinite determiners: –tion nouns can take indefinite determiners in contrast to –ing nominals

- (i) *a promotion/*promoting of an incompetent functionary (by his superior)*
- (ii) *a replacement/*replacing of a worker with machines*
- (iii) *an appointment/*appointing of a musician to a permanent position (by the management)*
- (iv) *an arrival/*arriving of a train*

(4) On –ing R-nominals

- a. *'Women are reared not to feel competent or gratified by the questing, the competing, the outbidding that collecting...demands.'* (S. Sontag, *Volcano Lover* taken from Borer 2009: 9, (86b)).
- b. This kind of fighting, fraternizing, parenting, writing, etc. cf. this kind of picture/story/destruction (*of a city)

(5) On the interpretation of statives (from Borer 2009a: 12)

- a. *Jenny smelled the stew* (stative reading; eventive-agentive reading)
- b. *Corrine touched Gil* (stative reading; eventive-agentive reading)
- c. *The wall touched the fence* (stative reading only, under normal circumstances)

(6) Stative verbs and –ing: eventive-agentive reading only (from Borer 2009a: 13)

- a. *the smelling of the stew (by Jenny)* (eventive-agentive reading only)
- b. *the touching of Gil (by Corrine)* (eventive-agentive reading only)
- c. *the touching of the fence (#by the wall)* (eventive-agentive, abnormal under normal circumstances)

(7) Ø-derived nouns

- a. Alternate freely with verbal forms:

(i) *a/to walk, a/to ride, a/to dance, a/to turn, a/to twist, a/to smoke, a/to smile, a/to laugh, a/to frown, a/to love, a/to hate, a/to kiss, a/to lift, a/to roll, a/to rock, a/to hold, a/to climb, a/to descent, a/to kill, a/to raid, an/to arrest, a/to follow-up, a/to chase, an/to export, an/to import, a/to think*, etc. (from Borer 2009c: 12);

(ii) *a/to proposition, an/to audition, a/to ration, a/to question, a/to motion, an/to air condition*.

- b. They may not function as AS-nominals

Mary's question(ing) of John*

(8) On the position of adverbs within process nouns (the same holds for –ing nouns)

- a. **The promptly arrival of the trains at the station*
- b. **The arrival promptly of the trains at the station*
- c. [*The arrival of the trains at the station*] *promptly* Fu et al. (2001: 560-561)

(9) On the position of adjectives within process nouns

- a. *The prompt arrival of the trains at the station*
- b. **The arrival prompt of the trains at the station*
- c. **[The arrival of the trains at the station] prompt* Fu et al. (2001: 561)

(10) Possible word orders inside nominals (Fu et al. 2001: 569)

a. N-Subject-Adverb

The collaboration of the witness swiftly

b. N-Object-Adverb

The removal of the garbage immediately

c. N-PP-Adverb (assuming right adjunction to VP)

The arrival of the trains at the station promptly

The arrival of the trains at the station from morning till noon

d. *N-Adverb-Subject

**The collaboration swiftly of the witness*

e. *N-Adverb-Object

**John's removal immediately of the garbage*

**The removal immediately of the garbage*

f. N-Adverb-PP

The arrival of the trains promptly at the station

The arrival of the trains from morning till noon at the station

APPENDIX 6.2: NOMINALIZATIONS IN BULGARIAN

Aorist Stem	Verbal Noun	Meaning
<i>gled-a-</i>	<i>gled-a-ne</i>	<i>see → seeing</i>
<i>hvŭrl-ja-</i>	<i>hvŭrl-ja-ne</i>	<i>throw → throwing</i>
<i>kŭp-a-</i>	<i>kŭp-a-ne</i>	<i>bath → having/giving a bath</i>
<i>lež-a</i>	<i>lež-a-ne</i>	<i>lie → lying</i>
<i>misl-i-</i>	<i>misl-e-ne</i>	<i>think → thinking</i>
<i>chet-o-/chet-e-</i>	<i>chet-e-ne</i>	<i>read → reading</i>
<i>sjak-o-/sech-e-</i>	<i>sech-e-ne</i>	<i>cut → cutting</i>
<i>let-ja-</i>	<i>let-e-ne</i>	<i>fly → flying</i>
<i>la-ja-</i>	<i>la-e-ne</i>	<i>bark → barking</i>
<i>pi-ø-</i>	<i>pi-e-ne</i>	<i>drink → drinking</i>
<i>igra-ø-</i>	<i>igra-e-ne</i>	<i>play → playing</i>

Table 1: Formation of -ne verbal nouns (Manova in progress)

(1) Process –NE nouns in Bulgarian

a. Activity predicates (atelic primary imperfectives): atelic nouns

(i) *igra-e-ne-to* *na kart-i* *pet chasa/*za pet chasa* (*go umori*)

play-TH.VOW-NE-the.NEUT.SG of card-PL five hours/*in five hours (him tired)

‘The playing of cards for five hours/*in five hours tired him’

(ii) *stro-e-NE-to* *na kŭšta-ta* *dve godini/*za dve godini*

build-TH.VOW-NE-the.NEUT.SG of house-the.FEM.SG two years/*in two years

‘The building of the house for two years/*in two years’

(iii) *harch-e-NE-to* *na pechalba-ta* *dva chasa/*za dva chasa*

spend-TH.VOW-NE-the.NEUT.SG of profit-the.FEM.SG two hours/*in two hours

‘The spending of the profit *for two hours/in two hours’

b. Achievement predicates (telic prefixed perfectives; (cf. (1a: iii)): telic nouns

IZ-/PO-harch-va-ne-to *na zaplata-ta* **dva chasa/za dva chasa*

IZ-/PO-spend-IMPF-NE-the.NEUT.SG of salary-the.FEM.SG *two hours/in two hours

‘The spending of the (whole) salary *for two hours/in two hours’

(2) Achievement predicates (no primary imperfective pair)

- a. [OT-kri]–va-ne-to na novo-to lechenie *dve godini/za dve godini

[OT-hide]-IMPF-NE-the.NEUT.SG of new-the.NEUT.SG treatment *two hours/in two hours

‘The discovering of the new treatment *for two years/in two years’

- b. [NA-mir]¹⁶–a-ne-to na neobhodim-i-te dokazatelstv-a *dve sedmitsi/za dve edmitsi

[NA-measure]-IMPF-NE-the.NEUT.SG of necessary-PL-the.PL proof-PL *two weeks/in two weeks

‘The finding of the necessary proofs *for two weeks/in two weeks’

(3) The suffixes –va and –ira within –NE nouns

a. Outer phasal: terminative

DO-kop-ir–va-ne-to na dokument-i-te

DO-copy–ira.BIASP-IMPF-NE-the.NEUT.SG of document-PL-the. PL

‘finishing the copying of the documents’

b. Outer temporal: repetitive

PRE-grup-ir–va-ne-to

PRE-group–ira.BIASP-IMPF-NE-the.NEUT.SG

‘the regrouping’

c. Outer manner: reversive

OT-abonir–va-ne-to

OT-subscribe–ira.BIASP-IMPF-NE-the.NEUT.SG

‘the unsubscribing’

¹⁶ Note that imperfectivization here is accompanied by a vowel change: *na-mErja* ‘PF’ vs. *na-mIr-am* ‘IMPF’ (‘find’).

(4) Prefix types and –NE nominals: telicity preserved (even in the presence of a [-q]NP internal argument (4a: ii, c: ii, g: ii, j: ii)).¹⁷

a. Lexical (idiosyncratic) prefixes:

(i) [+q]NP= telic

[PRO-d]-ava-ne-to na kafe-to *dva chasa/za dva chasa

[sell]-IMPF-NE-the.NEUT.SG of coffee-the.NEUT.SG *two hours/in two hours

‘The selling of the coffee *for two hours/in two hours’

(ii) [-q]NP= ?atelic (extended duration)

[PRO-d]-ava-ne-to na zahar ?dva chasa/*za dva chasa

[sell]-IMPF-NE-the.NEUT.SG of sugar two hours/*in two hours

‘The selling of sugar for two hours/*in two hours’

b. Inner prefixes: causative: [+/-q]NP= telic

RAZ-plak-va-ne-to na bebe(-to) *dve minuti/za dve minuti

MAKE-cry-IMPF-NE-the.NEUT.SG of baby(-the.NEUT.SG) *two minutes/in two minutes

‘Making the baby cry *for two minutes/in two minutes’

c. Inner prefixes: locative

(i) [+q]NP: telic¹⁸

V-gražd-a-ne-to na subtitr-i-te vŭv film-a *dva
chasa/za dve minuti (mu donese slava)

IN-build-IMPF-NE.the.NEUT.SG of subtitle-PL-the.PL in movie-the.MASC.SG *two
hours/in two minutes (him brought fame)

‘The integrating of the subtitles into the movie *for two hours/in two minutes’ (brought
him fame)

¹⁷ Recall that there are few locative prefixes which participate in the formation of stative verbs (ZA-visja ‘depend’, POD-leža ‘be subject to’, PRI-NAD-leža ‘belong to’, etc. (see (37))). Since the final derivative (i.e. the stative verb) is atelic, then these prefixed verbs will give rise to an atelic –NE nominal.

¹⁸ Some locatively prefixed –NE nouns are ambiguous between a telic and an atelic interpretation when the internal argument is [+q].

(i) OB-liv-a-ne-to na tjalo-to sŭs studena voda ?dva chasa/?za dve minuti

AROUND-pour-IMPF-NE.the.NEUT.SG of body-the.NEUT.SG with cold water ?two hours/?in two minutes

‘The bathing of the body with cold water ?for two hours/?in two minutes’

(ii) [-q]NP: ?atelic (extended duration); telic

v-gražd-a-ne-to *na subtitr-i* *všv film-a* *?dva chasa/za dve minuti (mu donese slava)*

IN-build-IMPf-NE.the.NEUT.SG of subtitle-PL in movie-the.MASC.SG two hours/in two minutes (him brought fame)

‘The integrating of subtitles into the movie for two hours/in two minutes’ (brought him fame)

d. Inner prefixes: cumulatives: [+/-q]NP= telic

NA-gotvja-ne-to *na supi(-te)* **dva chasa/za dva chasa*

NA-cook-NE-the.NEUT.SG of soups(-the.PL) *two hours/in two hours

‘The cooking of a lot of soups/(all the soups) *for two hours/in two hours’

e. Inner prefixes: pure perfectivizers: [+/-q]NP= telic

IZ-pi-va-ne-to *na kafe?(-to)* **dva chasa/za dva chasa*

IZ-drik-IMPf-NE-the.NEUT.SG of coffee-(the.NEUT.SG) *two hours/in two hours

‘The drinking (up) of ?(the) coffee *for two hours/in two hours’

f. Outer prefixes: phasal (inceptives): [+/-q]NP= telic

ZA-pja-va-ne-to *na pesen(-ta)* **dve minuti/za dve minuti*

ZA-sing-IMPf-NE.the.NEUT.SG of song(-the.FEM.SG) *two minutes/in two minutes

‘The starting of the singing of the song *for two minutes/in two minutes’

g. Outer prefixes: temporal (repetitive)

(i) [+q]NP: telic

PRE-[PRO-d]-ava-ne-to *na kafe-to* *dva chasa¹⁹/za dva chasa*

AGAIN-[sell]-IMPf-NE-the.NEUT.SG of coffee-the.NEUT.SG two hours/in two hours

‘The re-selling of the coffee for two hours/in two hours’

(ii) (!!) [-q]NP= atelic (extended duration)

?PRE-[PRO-d]-ava-ne-to *na kafe dva chasa/*za dva chasa*

AGAIN-[sell]-IMPf-NE-the.NEUT.SG of coffee two hours/*in two hours

‘The re-selling of coffee for two hours/*in two hours’

¹⁹ It should be noted that ‘for X time’ is allowed on a repetitive reading of event denoted by the nominal, i.e. we interpret that the same coffee is being resold over and over again, indicating that we have a telic event.

h. (!) Outer prefixes: durative PO-: not allowed within a –NE noun

**PO-pja–va-ne-to* *na pesen-ta*

PO-sing-IMPF-NE-the.NEUT.SG of song-the.FEM.SG

*‘The singing of the song for a while’

i. Outer prefixes: high degree²⁰

PRE-jažd-a-ne-to **dva chasa/?za dve minuti*

PRE-eat-IMPF-NE-the.NEUT.SG *two hours/in two hours

‘The eating enough/excessively *for two hours/in two hours’

j. Outer prefixes: manner (reversive):

(i) [+q]NP: telic

OT-vŭrz–va-ne-to *na vŭzel-a* ??(*)*dva chasa*²¹/*za dve minuti/mu*
otne dva chasa

OT-tie-IMPF-NE-the.NEUT.SG of knot-the.MASC.SG ??(*)two hours/in two minutes/him
took two hours

‘The untying of the knot ??for two hours/in two minutes/took him two hours’

(ii) [-q]NP: atelic (extended duration)

OT-vŭrz–va-ne-to *na vŭzl-i* ??*dva chasa/*za dve minuti/*mu* *otne dva chasa*

OT-tie-IMPF-NE-the.NEUT.SG of knot-PL ??two hours/*in two minutes/*him took two hours

‘The untying of knots ??for two hours/*in two minutes/*took him two hours’²²

²⁰ Note that though *dva chasa* ‘for two hours’ is rejected, *v prodŭlženie na dva chasa* ‘in duration of two hours’/‘during two hours’ is allowed. However, the interpretation we get is of repeated events of *eating excessively* in the duration of two hours, which confirms the telic nature of the underlying event.

²¹ Some speakers accept the for-adverbial; however, we still have a telic event shown by the fact that ‘take X time’ measures the end of the event (i.e. the interpretation we get is that ‘it took him two hours to have the knot untied’).

²² Note that the combinations [+q] theme with ‘for X time’, or a [-q] theme with ‘in X time’, are relatively unnatural. In fact, in the cases where the for-adverbial is allowed by some speakers there is a preference to use the temporal measure phrase ‘during’ (*v prodŭlženie na* ‘in duration of’); however, ‘during’ is unable to test the telicity character of the nominal so I exclude it from the discussion.

(5) Bulgarian eventive “other-suffix” nouns: Primary imperfectives: aspectless/?telic

- a. *shestv-IE-to* *na glasuvash-t-i-te* **pet chasa/??(*)za pet chasa/prodълži*
pet chasa
march-IE-the.NEUT.SG of voter-PL-the.PL *five hours/??(*)in five hours/lasted five
hours
‘The procession of the voters *for five hours/??(*)in five hours/lasted five hours’
- b. *grab-EŽ-ūt* *na naroda* ??*tseli* *sto* *godini/*za pet godini/*
prodълži sto godini
rob-EŽ-the.MASC.SG of people-the ??whole hundred years/*in five years/
lasted hundred years
‘The robbery of the people ??for a hundred years/*in five years/lasted a hundred
years’

(6) Voice –IE nominals with primary imperfective bases: atelic events, but the result (telic) reading is always available

- [*Sveti mŭchenitsi Timotej i Mavra postradali v 286 godina v Egipet*] *po vreme na*
gon-e-n-IE-to *pri imperator Diokletian*²³
[Holy Martyrs Timothy and Maura got injured in 286 year in Egypt] during of
persecute-TH.VOW-N.PASS.PRT-IE-the.NEUT.SG at Emperor Diocletian
‘Holy Martyrs Timothy and Maura got injured in 286 in Egypt during the persecution
under Emperor Diocletian’

²³ An extract from ‘Gates of Orthodoxy: Short Lives of Saints. May 1 to 8’ online resource, available at:
<http://www.dveri.bg/content/view/269/151/>.

APPENDIX 6.3: NOMINALIZATIONS IN BULGARIAN AND ENGLISH

(1) Temporal measure phrases ‘in/for X time’

a. English nominalizations

(i) AS-nouns: usually atelic; ‘for X time’

*Kim’s formulating of several procedures for the past few weeks/*in few weeks*

*Kim’s writing up of the letter *for the past few weeks/in few hours*

(ii) PS nouns: aspectually neutral; both

Pat’s formation of many committees twice/in two minutes

[but! *the event in three hours]

(iii) R-R nouns: aspectless; none

**John’s drawing in/for two hours*

**Mat’s form in/for two hours*

**The destruction/construction in a day*

b. Bulgarian nominalizations

(i) AS-nouns: telic base: ‘in X time’; atelic base: ‘for X time’

1. Telic (perfective bases): ‘in X time’

*s-chup–va-ne-to na chash-i-te *dva chasa/za dva chasa*

*s-break-IMPF-NE-the.NEUT.SG of glass-PL-the.PL *two hours/in two hours*

*‘the breaking of glasses *for two hours/in two hours’*

2. Atelic (primary imperfective bases): ‘for X time’

*chup-e-ne-to na chash-i-te dva chasa/*za dva chasa*

*break-TH.VOW-NE-the.NEUT.SG of glass-PL-the.PL two hours/*in two hours*

*‘the breaking of glasses for two hours/*in two hours’*

(ii) PS nouns: ‘in X time’ is marginal; ‘for X time’ is disallowed

1. Telic (perfective bases):

*[PRO-d]-a-žBA-ta na stok-i-te *dva chasa/??za dva chasa*

*[sell]-TH.VOW-žBA-the.FEM.SG of goods-PL-the.PL *two hours/??in two hours*

*‘the sale of the goods *for two hours/??in two hours’*

2. Atelic (primary imperfective bases):

kra(ǵ)-Ž-BA-ta *na stok-i-te* **dva chasa/*za dva chasa*
steal-TH.VOW-BA-the.FEM.SG of goods-PL-the.PL *two hours/*in two hours
‘the theft of the goods *for two hours/*in two hours’

(iii) R-R nouns: aspectless; none

1. Telic (perfective bases):

chup-KA-ta **dva chasa/*za dva chasa*
break-KA-the.FEM.SG *two hours/*in two hours
‘the bend/twist/crease/angle/corner *for two hours/*in two hours’

2. Atelic (primary imperfective bases):

belež-KA-ta **dva chasa/*za dva chasa*
mark-KA-the.FEM.SG *two hours/*in two hours
‘the note/message *for two hours/*in two hours’

(2) Aspectual adjectives within Bulgarian nominalizations

a. AS nouns: Atelic (primary imperfective bases): PL is marginal; SG is allowed

PL: ??(*)*chest-i-te* *chup-e-N(E)-ija* *na nokt-i-(??te)*
frequent-PL-the.PL break-TH.VOW-NE-PL of nail-PL-(??the.PL)
??(*)‘The frequent breakings of the nails’

b. R-R nouns: disallow such adjectives

(i) Telic (perfective bases): *SG; */??PL

1. “Other-suffix” nouns

PL: ??*chest-i-te* *glo-B(A)-i*
frequent-PL-the.PL tax-B(A)-PL
??‘the frequent taxes’
SG: **chest-a-ta* *glo-BA*
frequent-FEM.SG-the.FEM.SG tax-BA
*‘the frequent tax’

(ii) Atelic (primary imperfective) bases

2. Voice –IE nouns: *SG; *PL

PL: *chest-*i-te* *tvor-e-n-I(E)-ja*

frequent-PL-the.PL create-TH.VOW-N.PASS.PRT-IE-PL

*‘the frequent creations’

SG: *chest-*o-to* *tvor-e-n-IE*

frequent-NEUT.SG-the.NEUT.SG create-TH.VOW-N.PASS.PRT-IE

*‘the frequent creation’

List of Abbreviations

1	first person	IMPF	imperfective
2	second person	INCP	Inceptive
3	third person	ISUFF	inflectional suffix
A	adjective	MASC	masculine
ACC	accusative	N	noun
AOR	aorist	NEUT	neuter
ASP	aspect	NON-FIN	non-finite
ASUFF	aspectual suffix	NUM	numeral
ATTN	attenuative	NZ	nominalizer
BG	Bulgarian	PASS	passive
BIASP	biaspectual	PF	perfective
BS	biaspectual stative	PL	plural
CAT	Catalan	POSS	possessive
CAUS	causative	PRT	participle
CL	clitic	PS	person
CMLT	cumulative	SP	Spanish
CMPL	completive	Q	quantity
COUNT	countable	REFL	reflexive
DAT	dative	RPET	repetitive
DEM	demonstrative	S	subject
DEF	definite	SEM	semelfactive
DIM	diminutive	SG	singular
DLMT	delimitative	SS	standard stative
DSTR	distributive	STND	standard
ENG	English	TH.VOW	thematic vowel
EXCS	excessive	TM	thematic marker
FEM	feminine	TRANS	transitive
FIN	finite	TRMN	terminative
GEN	genitive	VOW	vowel

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