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The verbal expression of events of change in Bulgarian

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The paper explores the verbal expression of events of change in Bulgarian, a Slavic language with a uniquely complex verbal system involving triplets of imperfective, perfective and secondary imperfective verbs and aspectual tenses like Aorist and Imperfect. It starts from the observation that English predicates involving events of change generally correspond to Bulgarian triplets of lexically related but aspectually differentiated verbs. It addresses this asymmetry by investigating the properties of the events in the denotation of the triplet members in terms of Rothstein's (2004) aspectual features [±stage] and [±change]. The paper provides evidence for a systematic mapping between the aspectual properties of the triplet members and Rothstein's event types and proposes an analysis of the event structure of the triplet members. The findings support both the assumption of independent event types denoted by verbal predicates and the notion of telicity as a VP-level phenomenon, and provide evidence for a strategy of expressing aspectual distinctions in which aspectual properties are not directly tied to the roots of verbal predicates but are partly morphologically and partly lexically encoded.

1 Introduction

The aim of this paper is to explore the verbal expression of events of change of state (CoS) in Bulgarian. In particular, it focuses on CoS predicates in the sense of Ryle (1949) who distinguishes between two kinds of predicates expressing CoS, achievements involving punctual, instantaneous change, and accomplishments involving gradual, incremental change. In a Slavic language like Bulgarian, the verbal expression of events in general (including events of change) is related to a choice between two or three semantically related but aspectually differentiated verbs. Thus, an event of writing a letter can be expressed by any of the three members of a so-called aspectual triplet *piša–napiša–napisvam* 'write', and an event of arriving at the station can be expressed by the so-called aspectual pair *pristigam–pristigna* 'arrive'. While much work has been devoted to exploring the relationship between Slavic verbal aspect and event structure, little agreement has been reached, partly due to diverging views on language specific data, and partly due to inner-Slavic differences. Little to no relevant work exists on Bulgarian, a Slavic language with a uniquely complex aspectual system comprising perfective, imperfective and secondary imperfective verbal forms and morphologically marked aspectual tenses (Aorist and Imperfect) while also differing from most Slavic languages in a number of further relevant respects. Consequently, a central objective will be to cast more light on the nature of CoS related verbal triplets in Bulgarian in terms of the relation between their morphological build-up and their lexical and aspectual properties.

Let us start with some theoretical assumptions related to the notions that the discussion will be centered around and that have been controversially discussed in the literature. In a broader sense, all dynamic predicates can be seen to involve some kind of change, as observed by Dowty (1979), who distinguishes between indefinite (activities) and definite change (achievements, accomplishments). On the other hand, Levin's (1993: 242–248) semantic class of change of state verbs in English (e.g. *break, bend, dry*) represents a narrower notion that naturally falls into the classes of achievements and accomplishments. I will be assuming that CoS predicates describe the temporal structure of events as involving a gradual or punctual change from a situation where a state does not hold to a situation where the state holds. More closely, I assume Rothstein's (2004) reanalysis of Vendler's (1957) classification of verbal predicates, where four basic types of events denoted by verbal predicates are distinguished based on two properties, [±stages] and [±event of change], cf. **Table 1** (from Braginsky & Rothstein 2008: 32).[1] The property [±stages] applies to verbal predicates denoting (sets of) events that can be seen as composed of distinguishable stages (defined as in Landman 1992). Due to this property, activities and accomplishments occur naturally with the progressive, in contrast to achievements (and states), which have the property

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[1] Note that these properties are thought of as properties of event descriptions, not of the events themselves, since events are individuated by a particular description rather than having inherent properties themselves, in line with e.g. Krifka (1998); Zucchi (1999) and contra e.g. Bach (1986).

[–stages]. Achievements denote (sets) of events which involve a direct transition between two successive moments: the last moment at which $\neg\phi$ holds and the first moment at which ϕ holds, where ϕ is a state determined by the lexical content of the verbal predicate. Like achievements, accomplishments involve a lexically specified change into a predefined culmination point. This change is however defined in terms of an incremental process the different stages of which are ordered by some lexically (or contextually) determined criterion (Rothstein 2004: 53). Activities differ from accomplishments in that their event stages are merely temporally ordered and lack any additional internal structure or inherent order. Thus *The child ran for an hour* describes an event of running consisting of a number of minimal running activities, while *The child read the story of Rapunzel* describes an event in which the minimal reading activities are ordered in a way that is determined by the necessary steps required to bring about the state of the story of Rapunzel becoming read (ibid.: 110).

Lexical class	[±stages]	[±event of change]	Examples
States	–	–	love, know, believe
Activities	+	–	run, walk, swim, play
Achievements	–	+	die, win, find, reach
Accomplishments	+	+	eat, write, read, build

Table 1: Lexical classes according to Rothstein (2004).

I further adopt Rothstein's view that while aspectual properties like [±stages] and [±change] are properties of verbs, (a)telicity is a property of VPs. This distinction accounts for the fact that in an English accomplishment VP like *build a house*, the meaning of the accomplishment verb determines the activity involved (a building activity) and what incremental process is associated with it (a building activity progressing gradually towards a state of a house becoming built), whereas its (a)telicity depends on the properties of the verb's direct object (cf. Verkuyl 1972; Dowty 1979 for a different view).

Let us look next at some data. As already mentioned, the verbal expression of events in Bulgarian is related to a choice among the members of aspectual triplets (or pairs).[2] **Table 2** shows some triplets corresponding to English verbal predicates involving events of change – achievements like *die, win* and accomplishments like *build, eat, read*. I call the triplets corresponding to Rothstein's lexical accomplishments "accomplishment triplets" and those corresponding to achievements "achievement triplets" for short.

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[2] Due to space restrictions, I concentrate on triplets but sketch an analysis of pairs corresponding to (degree) achievements in an Appendix.

CoS predicate	Simple ipfv verb	Prefixed pfv verb	Secondary ipfv verb
die	mra	umra	umiram
win	pečelja	spečelja	spečelvam
build (a house)	stroja	postroja	postrojavam
write (a letter)	piša	napiša	napisvam
eat (an apple)	jam	izjam	izjaždam
read (a book)	četa	pročeta	pročitam

Table 2: English CoS predicates and Bulgarian aspectual triplets.

Each triplet consists of a basic imperfective verb (ipfv), a perfective (pfv) one derived from the ipfv by means of prefixation, and a secondary imperfective (s-ipfv) verb derived from the pfv verb by means of suffixation (most commonly with the suffix *-va*), or phonetic change (as in *pročitam* 'read', *umiram* 'die'). Note that all Bulgarian verbs represented in the table are given in their 1st singular present indicative form, which is the verbal citation form due to the loss of the infinitive in Modern Bulgarian. Note also that the inflectional differences in the personal form of the verbs are due to their belonging to different conjugations (*a-, e-* or *i*-conjugation) depending on their thematic vowel (cf. e.g. Manova 2007). Importantly, the prefixes that participate in the formation of these triplets are "empty" or "purely perfectivizing", i.e. prefixes that change the aspect of the basic ipfv verb without substantially affecting its lexical meaning. (I will postpone some further important remarks on Slavic prefixes until section 2.) The imperfectivization process, i.e. the derivation of s-ipfv verbs from pfv ones, changes the aspect of a pfv verb into imperfective, while the lexical meaning of the derived verb remains unchanged (cf. e.g. Nicolova 2017: 357f). In Bulgarian, imperfectivization is a regular and productive process that applies to all pfv verbs derived by (all kinds of) prefixes.[3] This is in contrast to most other Slavic languages where defectivity with respect to imperfectivization affects a number of perfective verbs with empty prefixes that do not have secondary imperfective correlates, as in Russ. *pisat'–napisat'–Ø* 'write' and Polish *pisać–napisać–Ø* 'write' (Nicolova 2017: 361).[4]

The lexical/semantic correspondence between the English CoS verbs and aspectual triplets of the type described above raises the question of the aspectual characteristics of the triplet members with respect to the properties outlined in **Table 1**. Do all members of a triplet

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[3] Some rare exceptions are mentioned in Nicolova (2017: 361).

[4] According to Dickey (2000: 8), many cognitively basic verbs like *eat, drink, go, call, build, write* etc. form aspectual pairs of this type. Note also that imperfectivizing suffixes cannot be added to imperfective verbs in Bulgarian, unlike e.g. Russian (*sidet'–siživat* 'sit') or Czech (*nosit–nosívat* 'carry') (Nicolova 2017: 361).

corresponding to an accomplishment verb like *build* or achievement verb like *win* have the properties of accomplishments and achievements respectively? Especially the existence of two imperfective triplet members is somewhat puzzling. In the literature, the aspectual status of s-ipfv verbs in Bulgarian is far from settled, with views ranging from their expressing grammatical/Viewpoint aspectual distinctions (e.g. Jetchev & Bertinetto 2002), atelicity (e.g. Łazorczyk 2010), telicity (e.g. Slabakova 2005), or a special "iterative" aspectual kind as a middle ground between pfv and ipfv verbs (e.g. Ivančev 1971; Chakyrova 1998). At the same time, the temporal properties of the different members in a Bulgarian aspectual triplet have to my knowledge never been systematically studied. It has been widely assumed that basic ipfv verbs in general denote activities or states (and are thus atelic), cf. Nicolova (2017: 349); Slabakova (2005); Łazorczyk (2010); Rivero & Slavkov (2014), while prefixed forms are mostly telic, denoting accomplishments and achievements (cf. e.g. Rivero & Slavkov 2014), based on the common assumption that most Slavic prefixes are resultative and derive telic predicates, i.e. achievements and accomplishments, from the atelic ipfv ones (e.g. Brecht 1985; Arsenijević 2007; Gehrke 2008).[5] A tacit assumption that follows from this view is that while all ipfv verbs in **Table 2** denote activities, both the pfv and s-ipfv verb corresponding to an accomplishment like *read* would denote events with the properties [+stages, +change], and those corresponding to an achievement like *win* would denote the properties [–stages, +change].

Much work on Slavic languages like Russian, Polish and Czech has addressed the question about the relationship between Slavic verbal aspect in terms of the (im)perfectivity distinction and event structure in terms of Vendlerian classes explicitly, such as Padučeva (1996); Braginsky & Rothstein (2008); Filip (2008); Ramchand (2008); MacDonald (2008), among others. Thus Padučeva (1996) argues that activities and states in Russian are manifested by (basic and secondary) ipfv verbs and achievements are realized by pfv ones. Accomplishments are realized by both pfv and imperfective verbs forming "bounded pairs", where the perfective member denotes a process that was completed after reaching some inherent goal, cf. pfv *pročitat'* in *Ivan pročital knigu* ('Ivan read a book'), whereas the imperfective member denotes the same goal-oriented process that has however not yet reached its inherent goal but is still in progress, thus resembling progressive accomplishments in English, cf. *čitat'* 'read' in *Ivan čital knigu* ('Ivan was reading a book'). This view is supported in Braginsky & Rothstein (2008) who provide an analysis of the two types of accomplishments in the framework of Rothstein (2004).

As we shall see, this account is not applicable to Bulgarian, where ipfv verbs like *četa* 'read' do not entail completion even though they may be associated with an incremental theme. Besides, it does not account for the status of s-ipfv verbs in some Russian achievement and

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[5] It must be specified that the prefixes that are assumed to derive telic predicates belong to the group of prefixes called internal, cf. section 2.

accomplishment triplets, as in the case of the s-ipfv counterpart (*pročityvat'*) of the ipfv verb *čitat'*. Moreover, it is not clear how this analysis applies to lexical classes of verbs other than verbs of creation and consumption, such as verbs of movement like *run* and degree achievements like *warm*, which denote a change along a path or scale when heading telic VPs, and thus behave similar to verbs with incremental theme arguments (cf. e.g. Hay et al. 1999). As I will show, however, in a motion verb triplet like *tičam–iztičam–iztičvam* 'run', or a degree predicate triplet such as *toplja–stoplja–stopljam* 'warm', only the s-ipfv member can be seen to denote gradual change along a path or scale, whereas the basic ipfv member denotes an activity event without an inherent culmination point, and the pfv member denotes instantaneous change. The ipfv verbs *tičam* and *toplja* would immediately be accounted for by Braginsky & Rothstein (2008: 15) in terms of activities under the assumption that "non-stative imperfective verbs denoting events with duration can be divided into those which are incremental (by hypothesis, accomplishments) and those which are not (uncontroversially, activities)". However, it remains unclear how the respective s-ipfv triplet members (which are neither incremental nor plain activities) fit this distinction.

A different view is advocated in Filip (2008: 21ff.) who argues that most underived Slavic verbs are formally imperfective and semantically non-maximal (where most of them belong neither to the incremental nor the scalar class) and therefore have sets of unordered eventualities in their denotation. In contrast, Vendlerian accomplishments are realized by underived pfv verbs,[6] which have as part of their semantics a maximality operator requiring that the understood upper bound of the described event be reached. She further argues that only a few Slavic root verbs qualify as Vendlerian achievements, mentioning Ru. *najtí*/Cz. *najít* 'find' and Ru. *vstretit'*/Cz. *potkat* 'meet', which she claims are odd with incremental adverbials like *gradually,* while paradigm examples of English stem verbs denoting achievements are expressed by derived perfectives in Slavic, as in Czech *posnat* 'get to know' derived from *znát* 'know'. These Slavic achievement-like verbs are argued to be unable to shift from singular events into plural events when combined with indefinite plural or mass arguments. Instead, Filip contends, the corresponding ipfv verb must be used in order to express plurality of instantaneous events, thus effectively taking the stance that achievement verbs in Slavic have both pfv and ipfv realizations.

Although Filip potentially offers an account of the contrast between pfv and s-ipfv verbs in achievement tuples, it is not directly applicable to Bulgarian either. One problem is that the expression of plurality of instantaneous events in Bulgarian is not restricted to s-ipfv tuple members, since, as we shall see, also pfv verbs express plurality of events when used in the

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[6] This is a restricted class of verbs, among which Filip counts Czech *říci* 'to say', *obléci (se)* 'to dress' and their Russian counterparts *skazát'*, *obléč*, which according to her denote "events with some temporal extent", as well as verbs of transfer of possession entailing some transfer of goods culminating in a punctual change of possession, such as Ru./Cz. *dat'* 'give', Ru. *vzjat'*/Czech *vzít* 'take' and Ru. *kupit'*/Cz. *koupit* 'buy'.

present or imperfect tense.[7] A further challenge for Filip's account comes from Polish, where according to Młynarczyk (2004) underived perfective verbs like *kupić* 'buy' denote culminations (understood as instantaneous changes of state), thus corresponding to Vendler's achievements, whereas their s-ipfv "twins" refer to the culminating event in terms of the preparatory process that leads up to the culmination (both in episodic and iterative contexts).

I will propose that in Bulgarian aspectual triplets like those in **Table 2**, the empty prefixes mark the culmination, or the result state of an event, and that this is the case for both pfv and s-ipfv triplet members. This explains the fact that both the pfv and s-ipfv triplet members naturally head telic VPs. However, they differ in that while the pfv members denote an instantaneous change of state, their s-ipfv counterparts denote an event of change that is gradual. Basic imperfective triplet members on the other hand denote an activity and naturally head atelic VPs. I show that this distribution of aspectual properties holds independently of the lexical properties of the verbal roots, extending the analysis from accomplishment and achievement triplets to motion and scalar verb triplets. At the same time, I take into account the obvious parallels in the temporal properties of ipfv, pfv and s-ipfv verbs across the various semantic verbal classes, and capture both the aspectual and lexical properties of the triplet members in terms of Rothstein's (2004) event type templates. I further propose that the (a)telicity (in terms of Rothstein's atomicity) of the VP headed by each of the triplet members may vary depending on the aspectual tense operators (and possibly the temporal modifiers) the verb interacts with. Thus, while pfv verbs naturally head telic VPs, they head atelic VPs when used in the Present and Imperfect, where they get a habitual/iterative interpretation. Similarly, s-ipfv verbs which I argue to naturally head telic VPs in the Present historical and the Aorist, head atelic VPs on habitual and episodic readings in the Present and Imperfect. These results altogether support a view on which aspectual verbal triplets in Bulgarian (and the perfective/imperfective distinction in general) pertain to inner aspect (taking sides with e.g., Rivero & Slavkov 2014, among others) and pave the way for a future account of the complex interplay between the two levels of aspect in Bulgarian that still awaits a comprehensive in-depth analysis.

The paper is structured as follows. After providing some further background on the nature of the prefixes involved in the triplets, as well as on Bulgarian tense and its interaction with the perfective/imperfective distinction, in the next section I take a closer look at the triplets in **Table 2** in terms of the aspectual properties [±stages] and [±change]. In section 3, I present my proposal. Section 4 discusses how the distinction between the property of having (or not) an inherent endpoint relates to Rothstein's notion of telicity in the context of the Bulgarian verbal triplets investigated. Section 5 presents conclusions and open questions.

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[7] Cf. also Andrejčin (1944: 192–193) who rejects the idea of an alleged "frequentative" aspectual type purported by some authors of his time, arguing that s-ipfv verbs do not exclusively express iterativity, as they are also able to denote single actions, and since also pfv and basic ipfv verbs are able to express iterated actions.

2 The aspectual properties of CoS related triplets

After introducing some background on Slavic prefixes and on the relation between tense and aspect in Bulgarian, I will examine the aspectual properties of verbal triplets corresponding to lexical accomplishment and achievement verbs in English. I do this by applying standard tests that have been used in the literature, following essentially Rothstein (2004) and Mittwoch (1991; 2019). The tests show that the pfv members of both accomplishment and achievement triplets have the same temporal properties, and that also basic and s-ipfv triplet members behave uniformly independent of the lexical properties of the verbal roots. I subsequently look at triplets formed from verbal roots that belong to the classes of scalar and motion verbs and find the same pattern of distribution of temporal properties across the members of the verbal tuples.

2.1 Prefixes

In general, one and the same basic ipfv verb can receive a number of different prefixes, most of which are not empty but also modify the lexical meaning of the root in terms of the manner in which the denoted event is performed (e.g. *četa* 'read'–*dočeta* 'read to the end') or even derive an entirely different meaning (cf. *otčeta* 'report', *sčeta* 'consider').[8] In the Slavic literature, verbal prefixes are therefore seen as forming at least two different groups, internal and external (Di Sciullo & Slabakova 2005; Slabakova 2005; Gehrke 2008) (or, alternatively, lexical vs. superlexical, cf. Babko-Malaya 2003), where empty prefixes have been viewed as a subtype of internal prefixes. Thus, Di Sciullo & Slabakova (2005) and Slabakova (2005) argue that an internal prefix like *na-* in *napiša* 'write out in full' only contributes "an inherent endpoint to the eventuality" and represents "a pure telicity marker".[9] At the same time, most internal prefixes contribute some idiosyncratic meaning (Gehrke 2008: 161–162). For example, prefixation of the basic ipfv verb *piša* 'write' with internal prefixes, as in *podpiša* 'undersign' and *nadpiša* 'superscribe', contributes additional meanings which alter the meaning of the original root in a non-compositional way. In addition to marking telicity, internal prefixes have an effect on the argument structure of the verb, as argued by Slabakova (2005), who takes this fact as evidence for an account of perfective prefixes as pertaining to lexical aspect distinctions, rather than to grammatical aspect (contra Smith 1991 and Borik 2002, among many others). External prefixes, on the other hand, modify the eventuality denoted by the root in terms of adverbial

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[8] Note that there is no designated empty prefix. Rather, this prefix is different for each root. Wiemer & Seržant (2017: 266) suggest that the choice of an empty prefix in Slavic is motivated by a semantic component of the ipfv stem related to a boundary to the denoted activity with which the prefixes harmonize and thus emphasize.

[9] Gehrke (2008) argues that while empty prefixes behave more like internal prefixes than external ones, verbs with empty prefixes resist further imperfectivization in languages like Russian, Polish and Serbo-Croatian, which points at grouping them together with external prefixes. However, this cannot be true for Bulgarian, as the verbal triplets in **Table 2** show.

modification in a compositional manner, and do not have the effect of changing the telicity of the original ipfv verb (Di Sciullo & Slabakova 2005; Gehrke 2008), cf. the prefix *po-* in *popiša* 'to write for a while'.[10]

2.2 Tense and aspect in Bulgarian

Bulgarian is a Slavic language that differs from most other Slavic languages in possessing a far richer inventory of aspectual and temporal distinctions related to verbal morphology. Thus, Bulgarian is one of very few Slavic languages that, next to the perfective/imperfective distinction pertaining to verbal predicates, possess a second aspectual layer making a formal distinction between past tenses involving morphologically marked Viewpoint aspect: Aorist (AOR) expressing perfective Viewpoint aspect, and Imperfect (IPF) expressing imperfective Viewpoint aspect. **Table 3** shows the verbal triplets for the verbs *write* and *win* in their 3rd person singular forms (in order to avoid some synchretism effects involved in the 1st singular for s-ipfv verbs in AOR and IPF).[11]

	Aorist (AOR)			Imperfect (IPF)		
	ipfv	**pfv**	**s-ipfv**	**ipfv**	**pfv**	**s-ipfv**
'write'	pisa	napisa	napisva	pišeše	napišeše	napisvaše
'win'	pečeli	spečeli	spečelva	pečeleše	spečeleše	spečelvaše

Table 3: The two layers of aspect in Bulgarian for the verbs *write* and *win*.

I assume that grammatical or Viewpoint aspect reflects "different ways of viewing the internal temporal constituency of a situation" (Comrie 1976: 3). It is common to characterize the perfective viewpoint aspect as viewing a situation as (temporally) bounded, "from the outside", including the initial and final endpoints of the event, whereas the imperfective Viewpoint aspect is characterized as viewing it as unbounded in time, "from the inside", excluding the initial and final endpoints of the event. Crucially, a situation can be represented as temporally (un)bounded irrespective of whether the situation has an inherent endpoint or not (cf. e.g. Depraetere 1995: 3). In Bulgarian, this second aspectual layer makes an independent, non-trivial contribution to sentence meaning (cf. e.g. Andrejčin 1944; Slabakova 2005; Rivero & Slavkov 2014) and interacts with the perfective/imperfective distinction in complex ways.

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[10] Note that the number of external prefixes in Bulgarian is rather limited (Di Sciullo & Slabakova 2005).

[11] The forms for the Aorist sometimes differ from the ones for the present tense only in terms of accent placement which in Aorist is usually on the last syllable.

As indicated by **Table 3**, there are no restrictions in Bulgarian on the combination of the two layers of aspect, where pfv verbs may be used in the Imperfect, and imperfective verbs in the Aorist. While the combinations pfv/AOR and ipfv/IPF are viewed as the most 'natural' ones, expressing culminated bounded events and unbounded events in progress, respectively, the combinations pfv/IPF and ipfv/AOR have been argued to be more contextually constrained and to result in iterative or habitual (pfv/IPF) and bounded but not culminated (ipfv/AOR) interpretations (cf. also Sonnenhauser 2006: 127–128; Pitsch 2021: 9). Note, however, that in exploring the interaction between the two aspectual layers, no difference is usually made between basic and secondary ipfv verbs. This is unfortunate since, as we shall see in section 4, the two types of imperfective verbs behave radically differently under these operators with respect to telicity.

In contrast to Bulgarian, the verbal inflectional systems of languages like Russian, Polish and Czech have been extremely reduced as a consequence of diachronic change, resulting in a syncretic system in which lexical and grammatical aspect are conflated and the perfective/imperfective distinction has obtained the function of grammatically marking (un)boundedness, i.e. Viewpont aspect (cf. e.g. Bertinetto 2001; Wiemer & Seržant 2017). This explains a number of differences in the distribution and grammatical properties of perfective and imperfective verbs in Bulgarian compared to other Slavic languages. Thus, while imperfective but not pfv verbs in Russian and Polish are allowed in the analytical future, no such restriction holds for Bulgarian (cf. e.g. Manova 2007). Further, while pfv verbs in Russian and Polish have a future interpretation when used in the present tense, Bulgarian pfv verbs have generic, habitual and modal interpretations in the present tense. Finally, in languages like Russian and Polish where the Common Slavic Aorist and Imperfect did not survive and which synchronically possess only one past tense based on the *l*-participle, the perfective/imperfective opposition has been continually strengthened (cf. Wiemer & Seržant 2017: 241). Thus, Braginsky & Rothstein (2008: 17–18) discuss four different interpretations of the Russian ipfv verb *čitat'* in the past: (i) a "progressive focalized-processual" interpretation where the situation is described as occurring at the moment of observation, (ii) a "durative-processual" interpretation where a situation is described as holding at a time interval but is located before some point of reference, (iii) an iterative or habitual reading denoting the iteration of a situation, and (iv) a perfect reading denoting a "completed situation with some relevance for the present". In Bulgarian, these (and further) interpretations are rendered by particular aspectual combinations. Thus, while the progressive focalized-processual interpretation of Russian past ipfv verbs is rendered by the use of the basic ipfv verb *četa* in the Imperfect, the durative-processual one is expressed by using *četa* in the Aorist (or an analytical past tense such as past perfect/pluperfect, cf. e.g. Nicolova 2017 on the system of Bulgarian tenses). Since exploring the complex interaction between the two aspectual layers in Bulgarian is beyond the main scope of the paper, I will follow Pitsch (2021) in treating the Aorist as the default or unmarked simple past tense in Bulgarian and discuss the

aspectual properties of the Bulgarian triplet members mainly based on their aorist and present tense forms, drawing on their Imperfect uses when necessary.[12]

2.3 Accomplishment and achievement triplets

Recall that Rothstein describes lexical accomplishments as "culminating activities" or movements towards a lexically specified endpoint, arguing that "what characterizes an accomplishment is that it consists of an activity which is incrementally related to a gradual change of state" (Rothstein 2004: viii). The accomplishment eventuality has stages which are inherently ordered as part of the verb's description. Thus, based on the internal properties of the events denoted by the verb *build*, "it is reasonable to suppose that e will develop into an event in the denotation of BUILD A HOUSE, even though for reasons external to the event we can see that it is going to be interrupted" (ibid.: 140). The culmination property distinguishes accomplishments from activities and groups them together with achievements. Lexical accomplishments and activities on the other hand have a "characteristic activity" associated with them, and this is what distinguishes accomplishments from achievements (ibid.: 140).[13]

[±stages]

One way of testing for the property of having stages or being durative is testing for compatibility with aspectual verbs like *stop* and *start* and aspectual adverbs like *still*, since aspectual verbs and adverbs require a verb that denotes an eventuality of some duration and therefore naturally occur with activities and accomplishments.[14] Achievements, on the other hand, describing instantaneous changes of state, do not occur naturally with aspectual verbs and adverbs.[15] Applying this test to the Bulgarian triplet members shows that while both ipfv and s-ipfv verbs are compatible with the verbs *start* and *stop* and the adverb *still*,[16] pfv verbs are not.[17]

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[12] Note that historical evidence points in the same direction, suggesting that the Imperfect is a more recent innovation, as it was mainly derived from the aorist stem of the verb which was originally the default past stem (Wiemer & Seržant 2017: 274).

[13] This view differs from Rappaport Hovav (2008), among others, who argues that incrementality, understood as a scale, is not encoded in the meaning of creation/consumption verbs but is provided by the entity denoted by the verb's direct object. A similar view is put forward in Filip (2008: 7) and motivates her assumption that incremental verbs are inherently atelic and thus do not qualify as accomplishments.

[14] When the verb *stop* is complemented by an accomplishment, the sentence is interpreted as implicating that the activity was interrupted and the telic point was not reached, cf. Rothstein (2004: 28).

[15] Still, some achievements like *find* are acceptable as complements of these aspectual verbs if there is a "well-defined procedure" associated with the achievement, as in *Have you finished finding those books?* uttered by a librarian to her assistant (Dowty 1979).

[16] Note that while the traditional still-test often employs the present progressive, in (2) I use the Imperfect forms of the verbs instead since the present tense in Bulgarian does not provide ongoing interpretations for the pfv members of the triplets.

[17] Cf. also the authentic example with the s-ipfv verb *postrojava* 'build' (https://chitanka.info/text/42955-geomant/21, last accessed 17 July 2024):

(1)   a.   Maria   započna/prestana   da   čete/*pročete/pročita   knigata.
             Maria   start/stop.PFV.AOR   to   read.IPFV/PFV/S-IPFV   book.DEF
             'Maria started/stopped reading the book.'

        b.   Maria   započna/prestana   da   pečeli/*spečeli/spečelva   sâstezanieto.
             Maria   start/stop.PFV.AOR   to   win.IPFV/PFV/S-IPFV   race.DEF
             'Maria started/stopped winning the race.'

(2)   a.   Ivan   ošte   četeše/*pročeteše/pročitaše   knigata.
             Ivan   still   read.IPF.IPFV/PFV/S-IPFV   book.DEF
             'Ivan was still reading the book.'

        b.   Ivan   ošte   pečeleše/*spečeleše/spečelvaše   sâstezanieto.
             Ivan   still   win.IPF.IPFV/PFV/S-IPFV   race.DEF
             'Ivan was still winning the race.'

Testing for compatibility with aspectual verbs is usually applied in work on Slavic in order to differentiate between pfv and ipfv verbs, and, as we can see, it groups the ipfv and s-ipfv triplet members together in terms of durativity, while characterizing the pfv members as non-durative.[18] What is unexpected is that accomplishment and achievement triplet members behave in the same way, suggesting that the lexical properties of the verbal roots are not directly tied to the temporal properties of the different aspectual types.

    A further contrast between the pfv and s-ipfv (and basic ipfv) triplet members emerges when we look at their ability to express ongoing (progressive) events in the present. According to Rothstein (2004), the lexical classes that have the property [+stages], i.e. activities and accomplishments, naturally occur in the progressive, while achievements (and states) do not. As we can see from the examples in (3), both the basic and secondary ipfv members can be used in ongoing contexts, while their pfv counterparts cannot.[19] This is as expected, since pfv verbs in

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(i)   Za   da   zadovoli   žaždata   si   za   red,   tja   započna   da   postrojava   triizmerna
        for   to   satisfy   thirst.def   REFL   for   order,   she   start.PFV.AOR   to   build.S-IPFV   three-dimensional
        rešetka   na   sveta,   [...]
        grid   of   world.DEF
        'To satisfy her thirst for order, she began to construct a three-dimensional grid of the world.'

[18] A general puzzle posed by this test is related to pfv verbs formed with the delimitative external prefix *po-* like *početa* ('read a little') which denotes an event that lasts for a while. A solution proposed in Mehlig (2008) for Russian is that the corresponding verb *počitat'* is derived from a non-incremental use of the ipfv verb *čitat'*. This type of pfv verbs is however beyond the scope of the present study.

[19] Klimek-Jankowska & Simeonova (2022) argue that s-ipfv verbs derived by means of empty prefixes only allow for a habitual reading and are incompatible with punctual temporal adverbials like *at this moment*. When used in the present tense, they argue, such s-ipfv verbs have a future reference. However, note that it is equally natural to say (i) when pouring water into an electric kettle, when starting the kettle and when the water has almost cooked, where the s-ipfv verb *stopljam* is derived by means of an empty prefix, cf. *toplja–stoplja–stopljam* 'warm'.

general do not have episodic readings in the present tense. What is unexpected also in this case is that the accomplishment triplet members (3a) behave in the same way as the members of the achievement triplets (3b), irrespective of the lexical properties of the verbal roots.

(3) a. Ivan v momenta stroi/*postroi/postrojava kâštata.
         Ivan in moment   build.PRS.IPFV/PFV/S-IPFV house.DEF
         'Ivan is building the house at this moment.'

     b. Ivan v momenta pečeli/*spečeli/spečelva sâstezanieto.
         Ivan in moment   win.PRS.IPFV/PFV/S-IPFV   race.DEF
         'Ivan is winning the race at this moment.'

Further evidence pointing in the same direction is the fact that while the ipfv and s-ipfv members of a CoS triplet are compatible with a *while*-clause and a simultaneity reading with the activity in the matrix clause, their pfv counterparts are unacceptable in this context, both in the Present and Imperfect (note that in the present tense, the pfv verb is not acceptable even on a habitual/generic reading), and this is true for pfv verbs belonging both to accomplishment and achievement triplets:

(4) a. Dokato čete/*pročete/pročita   pismoto,   toj plače.
         while   read.PRS.IPFV/PFV/S-IPFV   letter.DEF he cry.PRS.IPFV
         'While reading the letter, he is crying/cries.'

     b. Dokato četeše/*pročeteše/pročitaše pismoto,   toj plačeše.
         while   read.IPF.IPFV/PFV/S-IPFV   letter.DEF he cry.IPF.IPFV
         'While he was reading the letter, he was crying.'

On the other hand, while the connective *kogato* 'when' gets a posteriority interpretation with the pfv verb, it gets a simultaneous interpretation with its ipfv and s-ipfv counterparts:

(5) a. Kogato četeše/pročitaše   pismoto, toj plačeše.
         when   read.IPF.IPFV/S-IPFV letter.DEF, he cry.IPF.IPFV
         'Every time when he was reading the letter, he was crying.'

     b. Kogato pročeteše   pismoto, toj plačeše.
         when   read.IPF.PFV letter.DEF, he cry.IPF.IPFV
         'Every time when he had read the letter, he cried.'

Consider also the authentic example (6)[20] where both the ipfv and s-ipfv counterparts of the English achievement verb *die* are interpreted as denoting an ongoing event that takes place

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(i) Stopljam   voda za čaj.
     warm.S-IPFV.PRS.1.SG water for tea
     'I am warming water for the tea.'

[20] https://dnes.dir.bg/comments/zadarzhanite-za-ubiystvoto-na-balgarskiya-politsay-drebni-kradtsi-s-psihichni-zabolyavaniya.

simultaneously with the matrix event, while the (modified) sentence with the pfv counterpart is only possible on a reading where the matrix event holds up to the point when the dying event has taken place.[21]

(6)   a. Toja dokato mre   (umira),   šefa   mu   vzima   rušvet

that while die.PRS.IPFV (die.PRS.S-IPFV), boss.DEF his   take.PRS.S-IPFV bribe

pod   masata.

under table.DEF

'While he is dying, his boss is taking bribes under the table.'

b. Toja dokato umre,   šefât   mu šte vzima   rušvet pod   masata.

that until   die.PRS.PFV boss.DEF his will take.IPFV bribe   under table.DEF

'Until he dies, his boss will be taking bribes under the table.'

Finally, we can test the stages-property by testing for compatibility with durational expressions like *a long time* and *spent a time*. We can see in (7a) that the pfv member of the accomplishment triplet is incompatible with these modifiers, independent of tense, and that a deverbal noun cannot be derived from it (in contrast to Russian), cf. (7b). The same holds also for achievement triplets like those corresponding to *win* and *die*.

(7)   a. Ivan dâlgo vreme stroi/stroeše   / *postroi/*postroeše / postrojava/

Ivan long   time   build.IPFV.AOR/IPF / PFV.AOR/IPF   / S-IPFV.AOR/

postrojavaše kâštata.

S-IPFV.IPF   house.DEF

'Ivan was building the house a long time.'

b. Ivan prekara dve godini v   stroene/*postroene/postrojavane na kâštata.

Ivan spent   two   years in building.IPFV/PFV/S-IPFV   of house.DEF

'Ivan spent two years building the house.'

[±change]

A way of testing for this property is suggested in Rothstein (2004: 22f.) where, discussing the properties of achievements, she observes that asking how long an eventuality took applies to accomplishments and achievements due to their property of determining a stopping point as part of their meaning. We can see in (8a) that such a question does not apply to the ipfv member of the *build*-triplet. At the same time, we can see that it is not possible to ask how much longer an event is going to last using the pfv triplet member in (8b). This points at a grouping between the ipfv and s-ipfv triplet member in terms of the property of having stages, and between pfv and s-ipfv verbs in terms of the property of having a predetermined culmination point.

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[21] Note that the connective *dokato* 'while, until' gets here an anteriority interpretation. Note also that in this particular context, the pfv verb is used in the present tense with a future interpretation.

(8) a. Kolko vreme   mu otne na Ivan da ??stroi/postroi/postrojava   kâštata?
         how   time   him took to Ivan to build.IPFV/PFV/S-IPFV   house.DEF
         'How long did it take Ivan to build the house?'

     b. Kolko vreme (ošte) šte   *postoi/postrojava Ivan kâštata?
         how   time   (more) will build.PFV/S-IPFV   Ivan house.DEF
         'How much longer will it take Ivan to build the house?'

More evidence pointing in this direction comes from testing the individual triplet members for culmination entailments. As the examples show, while the ipfv members of both achievement and accomplishment triplets do not entail culmination, their pfv and s-ipfv counterparts do.

(9) a. Ivan stroi   kâštata,   no ne ja dovârši.
         Ivan build.IPFV.AOR house.DEF   but not it finish.PFV.AOR

     b. Ivan postroi/postrojava   kâštata,   #no ne ja dovârši.
         Ivan build.AOR.PFV/S-IPFV house.DEF but not it finish.PFV.AOR
         'Ivan was building/built the house, but did not finish it.'

(10) a. Maria pečeli   sâstezanieto (do edno vreme), no   v krajna smetka
          Maria win.IPFV.AOR race.DEF   (til one   time)   but in final   account
          ne uspja   da se   naloži.
          not manage to REFL prevail.PFV

      b. Maria spečeli/spečelva   sâstezanieto, #no v krajna smetka ne   uspja
          Maria win.AOR.PFV/S-IPFV   race.DEF   but in final   account not manage
          da se   naloži.
          to REFL prevail.PFV
          'Maria was winning/won the race, but ultimately, she did not manage to prevail.'

Note that the result state entailed by the pfv and s-ipfv verbs in these examples can be specified in both cases in terms of a past passive participle that is based on the pfv triplet member, which is noteworthy since in principle, past passive participles can be formed by all three aspectual types:

(11) tja postroi/postrojava   kâštata   → kâštata   e   postroena/*postrojavana
      she build.AOR.PFV/S-IPFV house.DEF   → house.DEF is build.PTCP.PFV/S-IPFV
      'she built the house' → 'the house was built'

(12) tja spečeli/spečelva   igrata   → igrata   e   spečelena/*spečelvana
      she win.AOR.PFV/S-IPFV   game.DEF   → game.DEF is win.PTCP.PFV/S-IPFV
      'she won the game' → 'the game was won'

Summing up the discussion so far, we saw evidence that the ipfv and s-ipfv members of both accomplishment and achievement triplets denote durative events, while their pfv counterparts denote events that are not durative but rather instantaneous. While the durativity of the

imperfective verbs in accomplishment triplets is predicted by the generally assumed relation between imperfectivity and durativity in Slavic, this seems unusual for the achievement triplets, since achievements are expected to be instantaneous. On the other hand, the change of state property groups pfv and s-ipfv verbs together, both in the case of accomplishment and achievement triplets.

This result shows that Braginsky & Rothstein's (2008) treatment of both basic ipfv and pfv verbs like *čitat'* and *pročitat'* 'read' as lexical accomplishments is not applicable to the Bulgarian data. Braginsky & Rothstein build their argument on an observed contrast between verbs of creation and consumption on the one hand and activity verbs like *guljat'* 'walk' on the other, where only the former can be modified by incremental modifiers like *postepenno* 'gradually', based on the assumption that only incremental verbs can be modified by incremental modifiers. At the same time they argue that verbs like *umeret'* 'die', which they consider an achievement, cannot be modified by *postepenno*. It seems however that a modifier like *gradually* is not appropriate as a test bed for probing incrementality, considering that *gradually* is compatible with all members of an achievement triplet corresponding to the verb *die* in (13).[22]

(13) Toja dokato mre/umre/umira postepenno, …
     This while die.PRS.IPFV/PFV/S-IPFV gradually
     'While/Until he dies/is dying gradually, ….'

In what follows, I will present evidence that the distribution of aspectual features we found among members across accomplishment and achievement triplets is paralleled in triplets formed by scalar and motion verbs. These verb types differ in their lexical structure from both verbs of creation/consumption and achievement verbs but may head telic VPs depending on the availability of some (linguistic or contextual) information that provides a criterion for ordering the activity denoted by them in terms of an incremental process leading to a culmination point.

2.4 Motion and scalar verb triplets

Comparing her analysis of accomplishments with the one in Kennedy & Levin (2002) who distinguish three kinds of accomplishments – verbs of creation/consumption, verbs of motion, and verbs of scalar change – Rothstein (2004: 116ff) argues for a strict separation of telicity as a property of VPs from the lexical properties of verbs. Thus, she argues against Kennedy & Levin's assumption that in motion verbs, the extent of the event is measured by movement along a path

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[22] A possible explanation for the unreliability of *gradually* as a test bed for incremental change is that it does not necessarily refer to the stages of a process but can also refer to the period before a punctual change takes place. Cf. also the authentic English example (from https://www.washingtonpost.com/wp-srv/style/longterm/movies/videos/steppingrazorredxthepetertoshstorynrharrington_a0ab76.htm, last accessed 17 July 2024) where *gradually* modifies the achievement verb *find*: *Tosh left that group and gradually found his own identity as a sort of Malcolm X to Marley's Martin Luther King Jr.*

argument due to a difference variable that is part of the lexical argument structure of these verbs. She shows that the telicity of motion and scalar predicates depends on the nature of the direct object rather than on the boundedness of the difference variable as argued by Kennedy & Levin, and that when the direct object is a mass or bare plural nominal, it leads to an atelic reading. Rothstein argues instead that in telic VPs headed by these verbs, the activity is delimited by explicit measure phrases or directional/path phrases. A similar view is purported in Filip (2008), according to whom scalar verbs, in spite of their lexicalizing a scale that provides an ordering criterion on events, head VPs that shift between telic and atelic interpretations depending on the context.[23] We can see that no matter which theory of verbs of movement and scalar verbs in English we choose, the triplets lexically associated with these kinds of predicates behave the same way as in what we called achievement and accomplishment triplets.[24] Thus, while the ipfv triplet members are compatible with aspectual verbs and do not entail completion, the pfv and s-ipfv ones do entail completion but differ from one another in that only the s-ipfv ones can be combined with aspectual verbs.[25]

(14)   a. Ivan započna/prestana da topli/*stopli/stoplja   supata.
            Ivan started/stopped   to warm.IPFV/PFV/S-IPFV soup.DEF
            'Ivan started/stopped warming the soup.'

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[23] Note that Rothstein accounts for cases like *run a race*, where the activity verb *run* is used with a theme argument, in terms of a shift from an activity to a derived accomplishment with an incremental theme. Rothstein assumes that the same shift is involved in resultatives, where activity verbs like *wipe, polish* are modified by resultative predicates (like in *wipe clean*). The verb itself is not lexically associated with an incremental theme and no lexical information determines the nature of the incremental relation, but the resultative predicate triggers an aspectual shift which adds a culmination (a BECOME-event) to the activity, thus making it incremental. Cf. also Filip (2008) who classifies verbs like *wipe* and *polish* as belonging to the incremental theme class where an implicit measurable dimension or scale is associated with the event the verb describes but which does not necessarily lead to telicity.

[24] Note that this is the case even when the triplet is lexically associated with an open scale like in the case of *warm*. The same evidence comes from triplets corresponding to activities like *wipe* discussed in Filip (2008):

(i)   Ivan započna/prestana da bârše/*izbârše/izbârsva masata.
       Ivan started/stopped   to wipe.IPFV/PFV/S-IPFV   table.DEF
       'Ivan started/stopped wiping the table (clean).'

(ii) a. Ivan bârsa   masata,   no tja ostana   neizbârsana.
            Ivan wipe.AOR.IPFV table.DEF but it remained unwiped

        b. Ivan izbârsa/izbârsva   masata, #no tja ostana   neizbârsana.
            Ivan wipe.AOR.PFV/S-IPFV table.DEF but it remained unwiped
            'Ivan wiped the table (clean), but it remained unwiped.'

[25] Note that degree achievements in Bulgarian differ from those in Slavic languages like Russian and Czech where, depending on the prefix, degree achievements can be either telic or atelic (in terms of denoting an event with a specific endpoint), as argued in Dočekal et al. (2023), cf. e.g. Czech *dřevo vy-schlo* 'the wood dried completely' vs. *dřevo o-schlo* 'the wood dried slightly, but not completely'. In Bulgarian (at least in the case of the scalar verb triplets treated here), this alternation is achieved by stacking the delimitative prefix *po-* in front of the empty prefix, cf. *dârvoto iz-sâhna* 'the wood dried completely' vs. *dârvoto po-iz-sâhna* 'the wood dried slightly, but not completely'.

    b. Ivan započna/prestana da tiča/*iztiča/iztičva   do magazina.
          Ivan started/stopped   to run.IPFV/PFV/S-IPFV   to store.DEF
          'Ivan started/stopped running to the store.'

(15) a. Ivan topli   supata,   no tja ne   stana topla.
           Ivan warm.AOR.IPFV soup.DEF but it not get   warm

    b. Ivan stopli/stoplja   supata,   #no tja ne   stana topla.
           Ivan warm.AOR.PFV/S-IPFV soup.DEF but it   not get   warm
          'Ivan warmed the soup, but it did not get warm.'

(16) a. Ivan tiča   do magazina, no ne   stigna do nego.
           Ivan run.AOR.IPFV to store.DEF   but not reach at it

    b. Ivan iztiča/iztičva   do magazina, #no ne   stigna do nego.
           Ivan run.AOR.PFV/S-IPFV to store.DEF   but   not reach   at   it
          'Ivan ran to the store, but did not arrive there.'

2.5 Interim summary

The results of the discussion in this section are summarized in **Table 4** which shows that independently of the semantic class of the verbs in a triplet (verbs with incremental theme argument, lexical achievements, scalar verbs, or verbs of movement), verbal triplets in Bulgarian display a uniform distribution of aspectual features among the triplet members. Thus, simple ipfv members of all triplets denote events that are durative but do not have an inherent culmination. In contrast, the pfv and s-ipfv triplet members denote events of instantaneous and incremental change respectively, where the change is brought about by the activity denoted by the common root. This means that a simple ipfv verb like *četa* 'read' and its pfv and s-ipfv counterparts *pročeta* and *pročitam* have the properties of different aspectual classes, at the same time as they are lexically associated with the same activity denoted by the root.

	ipfv	pfv	s-ipfv
accomplishment triplets	+stages, –change	–stages, +change	+stages +change
achievement triplets	+stages, –change	–stages, +change	+stages +change
scalar verb triplets	+stages, –change	–stages, +change	+stages +change
movement verb triplets	+stages, –change	–stages, +change	+stages +change

Table 4: The aspectual properties of CoS triplets.

3 Proposal

I propose that both the aspectual and lexical properties of Bulgarian CoS triplets can be captured in Rothstein's (2004) framework in terms of her event type templates:

- the ipfv triplet members have the structure of Rothstein's activities independent of their semantic class
- the pfv members have the structure of Rothstein's achievements and denote a change of state brought about by the activity denoted by the ipfv root
- s-ipfv members have the structure of Rothstein's accomplishments and denote complex events consisting of a subevent of change, and an activity subevent denoted by the ipfv root

In order to spell out the proposal, let us look at the structure of an English lexical accomplishment like *read* which Rothstein (2004: 102) specifies in terms of the following template:

(17)   Accomplishment template (Rothstein 2004: 108):
$\lambda y \lambda e. \exists e_1, e_2 [e =^s (e_1 \sqcup e_2) \wedge \text{ACTIVITY}_{<X>}(e_1) \wedge \text{Arg}(e_1) = x \wedge \text{Th}(e_1) = y$
$\wedge \text{BECOME}_{<Y>}(e_2) \wedge \text{Arg}(e_2) = \text{Th}(e_1) \wedge \text{INCR}(e_1, e_2, C(e_2))]$

Informally, an accomplishment verb denotes a complex event (composed via a sum operation on events) consisting of an activity subevent e_1 and a temporally extended BECOME subevent e_2. Both the activity and the BECOME subevents are lexically specified by the verb, which is reflected in the subscripts $<X>$ and $<Y>$. The BECOME subevent is an event of change that is incremental in the sense that each of its stages has a distinguishable upper bound and the stages have an inherent order. This is formally implemented in terms of a contextually determined incremental chain $C(e_2)$ that is imposed on the event of change e_2 (via the stage-of relation that holds between its subevents defined in Landman 1992), to the effect that the incremental chain breaks down the event of change into its contextually relevant stages. Finally, the activity subevent e_1 is related to the incremental structure of the BECOME subevent e_2 via the incremental relation INCR which imposes the same incremental structure on the activity event. This is done by means of a function μ that maps each element of the incremental chain onto the part of the activity event that has the same running time. The incremental relation thus captures the intuition that the change of state event "measures out" the progress of the activity and thus of the event as a whole. Culmination is defined as the final minimal event in an incremental process, and more precisely, its final part or upper bound. The content of the BECOME event is derived from the structure of the incremental relation in the sense that it is "a change of state in which the participant "undergoes" the activity event" (ibid.: 109). In other words, the BECOME event associated with *build a house* will be BECOME-BUILT(e_2) $\wedge$ Arg(e_2) = Th(e_1), the BECOME event associated with *read a book* will be BECOME-READ(e_2) $\wedge$ Arg(e_2) = Th(e_1) (ibid.). Consequently, an accomplishment like *read* will have the interpretation below (cf. Rothstein 2004: 110):

(18) $\lambda y \lambda e. \exists e_1, e_2[e =^s (e_1 \sqcup e_2) \wedge \text{READ}(e_1) \wedge \text{Ag}(e_1) = x \wedge \text{Th}(e_1) = y$
$\wedge \text{BECOME-READ}(e_2) \wedge \text{Arg}(e_2) = \text{Th}(e_1) \wedge \text{INCR}(e_1, e_2, C(e_2))]$

In contrast, the ipfv verb *četa* 'read' has an incremental theme but this theme is not the argument of an incremental BECOME event. Rather, *četa* must be accounted for in terms of an activity, defined as in (19). I propose that the same structure can be assumed for ipfv triplet members with non-incremental theme arguments like *pečelja* 'win', *bârša* 'wipe' and *toplja* 'warm', cf. (20a), as well as for intransitive verbs like *mra* 'die', cf. (20b) and motion verbs like *tičam* 'run' which are intransitive but may be modified by measure phrases or goal arguments.[26]

(19) *četa*: $\lambda y \lambda e. [\text{ČETA}(e) \wedge \text{Ag}(e) = x \wedge \text{Th}(e) = y]$

(20) a. tr. ipfv triplet members: $\lambda y \lambda e. [\text{ACTIVITY}_{<X>}(e) \wedge \text{Ag}(e) = x \wedge \text{Th}(e) = y]$
      b. intr. ipfv triplet members: $\lambda e. \exists y [\text{ACTIVITY}_{<X>}(e) \wedge \text{Ag}(e) = x \wedge \text{Th}(e) = y]$

I further propose that the meaning of the pfv triplet members has the structure in (21) which is the structure Rothstein (2004) assigns to lexical achievements, where the instantaneous BECOME event will be determined by the lexical content of the verb.[27] This will result in the following representations of the events denoted by consumption/creation verbs like (21a), verbs with non-incremental themes like *spečelja* 'win', scalar predicates like (21c), and verbs like *umra* 'die' (where the theme argument experiencing the change is the subject):[28]

(21) pfv triplet members: $\lambda x \lambda e. (\text{BECOME}(P))(e) \wedge \text{Th}(e) = x$
      a. pročeta (pfv.'read'): $\lambda x \lambda e. (\text{BECOME-PROČETEN})(e) \wedge \text{Th}(e) = x$
      b. spečelja (pfv.'win'): $\lambda x \lambda e. (\text{BECOME-SPEČELEN})(e) \wedge \text{Th}(e) = x$
      c. stoplja (pfv.'warm'): $\lambda x \lambda e. (\text{BECOME-STOPLEN})(e) \wedge \text{Th}(e) = x$
      d. umra (pfv.'die'): $\lambda e \exists x (\text{BECOME-UMRJAL})(e) \wedge \text{Th}(e) = x$

Finally, I propose that the meaning of an s-ipfv verb like *pročitam* has the same structure as Rothstein's lexical accomplishment *read* defined in (18):.

(22) *pročitam*: $\lambda y \lambda e. \exists e_1, e_2[e =^s (e_1 \sqcup e_2) \wedge \text{ČETA}(e_1) \wedge \text{Ag}(e_1) = x \wedge \text{Th}(e_1) = y$
$\wedge \text{BECOME-PROČETEN}(e_2) \wedge \text{Arg}(e_2) = \text{Th}(e_1) \wedge \text{INCR}(e_1, e_2, C(e_2))]$

Intuitively, a *pročitam* ('finish reading') event is the sum of the activity *četa* 'read' and the BECOME-event *pročeten* ('become read'). Similarly, a *stopljam* ('finish warming') event is composed of the

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[26] I follow Rothstein's (2004: 113f.) analysis of the activity use of the lexical accomplishment *read* in its transitive and intransitive uses. Note that Rothstein accounts for the activity use of *read* in terms of an aspectual shift from an accomplishment to an activity.

[27] Cf. a similar claim in MacDonald (2008) on Russian.

[28] I propose to treat pfv members of motion verb triplets like *iztičam* 'run' in a similar way, where however the content of the BECOME-event will be determined by the content of the goal argument or the measure phrase, leaving the details out for now.

activity *topja* 'warm' and the BECOME-event *stoplen* ('become warmed'), and an *iztičvam* ('getting at a destination by running') event is the sum of the activity *tičam* 'run' and the BECOME-event of reaching the destination specified by the goal argument. Thus, a general template representing the structure of s-ipfv verbs will need to specify the semantic relation between the triplet members. I propose that this can be done as in (23), where the subscripts indicate that the activity is lexically specified by the root corresponding to the ipfv triplet member, and the event of change is lexically specified by the corresponding pfv member:

(23) s-ipfv triplet members: $\lambda y \lambda e. \exists e_1, e_2 [e =^s (e_1 \sqcup e_2) \wedge \text{ACTIVITY}_{<ipfv>}(e_1)$
$\wedge \text{Ag}(e_1) = x \wedge \text{Th}(e_1) = y \wedge \text{BECOME}_{<pfv>}(e_2) \wedge \text{Arg}(e_2) = \text{Th}(e_1)$
$\wedge \text{INCR}(e_1, e_2, C(e_2))]$

Summing up, I proposed that while ipfv triplet members describe a dynamic event without specifying its inherent endpoint, their pfv counterparts specify the event's inherent endpoint, and the s-ipfv members additionally specify the activity leading to the endpoint. An obvious suggestion is that in triplets, the BECOME event is encoded in the empty prefix. This has been proposed in Gehrke (2008: 163) who argues that internal prefixes in Russian and Czech represent resultativity markers that form a complex predicate with the verb they attach to, such that verbs with internal prefixes encode a BECOME event and thus fall into the classes of accomplishments and achievements. More specifically, she suggests that internal prefixes directly mark the culmination of a BECOME event in terms of the upper bound of Rothstein's incremental chain.[29] However, Gehrke's proposal (which remains at a general level as it is not worked out in detail) does not take into account that achievements, in contrast to accomplishments, are not complex predicates, and that their BECOME events do not involve incremental processes. A more specific proposal that would also account for the Bulgarian data is the following:[30]
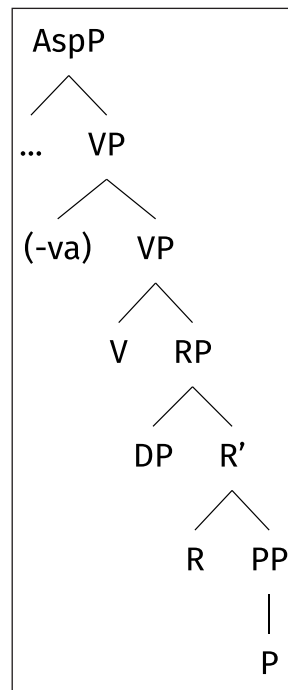
- empty prefixes in pfv triplet members mark an instantaneous BECOME event, and the activity denoted by the root is understood as a preparatory activity

- in combination with an imperfectivizing suffix, the empty prefix marks an incremental BECOME event, and the activity denoted by the root is the activity involved in the incremental BECOME event denoted by the s-ipfv triplet member

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[29] Similar proposals have been made also elsewhere. Thus, Babko-Malaya (2003: 28) argues that in pfv verbs with internal/lexical prefixes (among which she counts the empty ones), verbal roots like *eat, read* and *write* denote processes and the prefix maps the process onto a result state, adding the meaning of completion to the action. Dočekal & Vlášková (2020) show that prefixes with a goal or source denotation (like *do-* in *dohloubit* 'deepen') lead to a clearly telic behavior of degree achievements in Czech. Although they do not use that term, the prefixes they refer to seem to be empty prefixes, or at least this is what a comparison between their data with corresponding Bulgarian data suggests.

[30] This proposal accounts for the intuitions reflected in traditional grammar work that s-ipfv verbs take a middle ground between pfv and ipfv verbs, incorporating the "completeness" property of pfv aspect and the "durativity" property of the ipfv aspect, cf. e.g. Chakyrova (1998); Ivančev (1971).

In terms of morpho-syntax, a hierarchical representation of the relation between the internal prefix and the imperfectivizing suffix *-va* (and its allomorphs) could look like the one in **Figure 1**, where, following Rivero & Slavkov (2014); Svenonius (2004); Gehrke (2008); Žaucer (2009), I assume that the empty internal prefix heads a small clause complement of the verb and encodes resultativity, while the imperfectivizing suffix scopes over the prefix, modifying the prefixed pfv verb by introducing an activity subevent. An adequate morpho-syntactical account is however outside the scope of the present study.

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                    AspP
                   /\
                 ...   VP
                      /\
                (-va)   VP
                       /\
                      V   RP
                         /\
                       DP   R'
                            /\
                           R   PP
                               |
                               P
```

Figure 1: The morpho-syntax of Bulgarian CoS triplets.

This kind of proposal runs against more traditional assumptions that Slavic prefixes affect grammatical aspect. It also runs against proposals like Filip (2008) who argues that Slavic prefixes cannot be viewed as telic operators since they do not always enforce the maximal interpretation of the event, drawing on s-ipfv verbs which on her account denote non-maximal events in spite of being prefixed. She argues therefore for a separation between maximality as a culmination requirement and the "culmination condition" as an ordering criterion on events. While the former is covertly encoded in (underived and derived) perfective verbs, the latter comes from the prefixes. Thus, although predications with s-ipfv verbs like Czech *dopisovat* 'finish writing' derived from incremental verbs (as well as s-ipfv verbs derived from closed or open scale root adjectives like *vyprazdňovat* 'empty') have sets of partially ordered events in their denotation due to the contribution of the prefix, the imperfective suffix on the verb explicitly suspends

the requirement that the verb only has maximal events in its denotation. This view is however contradicted by the Bulgarian data presented in the previous sections, and also seems to run against data from Polish. Thus, comparing degree achievements with closed scales like *clean* and open scale ones like *bend* in Polish (among other languages), Martínez Vera (2021) concludes that culmination (in terms of event maximalization) is reached only in the case where the Polish verb has a prefix. Similarly, Kardos (2016) compares her findings on the role of Hungarian aspectual particles and resultative/locative expressions in marking telicity with data from Polish, suggesting that verbal prefixes play a similar role as means for morphologically encoding telicity.

4 Telicity

As pointed out in the introduction, I follow Rothstein (2004) in assuming that the temporal properties [±stages] and [±change] of events denoted by verbal predicates allow for predictions as to whether a verbal predicate can head a telic or atelic VP. Thus, Rothstein argues that while accomplishments naturally head telic VPs, they may also head atelic ones in case their direct object (or incremental theme) is a bare plural or mass noun. On the other hand, while activities naturally head atelic predicates, they may also head telic ones. They differ from accomplishments in that the telicity of VPs headed by activities does not depend on the properties of the direct object. Rothstein defines telicity in terms of atomicity, arguing that telicity has to do with counting, which in turn amounts to "picking out individuals according to a particular criterion for individuation" (ibid.: 167). In the domain of events this amounts to identifying atomic events. Thus a VP is telic if it provides criteria for individuating atomic events, and atelic otherwise. A sentence like *Mary ran* provides no criteria allowing to determine what counts as a single running event. On the other hand, in *Mary ran a mile* or *Mary ran to the store*, the measure phrase and the path argument of the running event provide a criterion for measuring the event, and the VP is telic. Accomplishments and achievements are naturally telic because of their association with (lexically specified) events of change, the BECOME events, which determine that the event is over when the change has taken place and thus provide criteria for atomicity.[31] However, when the direct object of an accomplishment is a bare plural or mass noun which does not specify how many singular BECOME events occurred, as in *Mary wrote magazine articles*, it is left open how long the plural event took and the VP is atelic, and the theme is not atomic. Rothstein argues further that the atomicity of a theme argument is overtly 'marked' in English in terms of a lexically realized determiner (ibid.: 156), assuming that when a determiner is complemented by a bare plural that denotes a set of singular entities, the denotation of the nominal is shifted to a set of entities that count as atoms, which she calls an atomic set, and the VP denotes sets of atomic events (ibid.: 173–174). Thus a predicate like *build 3 houses* on its plural (distributive)

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[31] Note that also contextual information can provide such criteria, as in *This morning Mary ran in half an hour*, where we know from the context how big the running event was (ibid.: 157).

reading denotes pluralities of singular events in which a house got built, involving a plural set the members of which are atomic events of building a house. Following Landman's (2000) theory of plurality, Rothstein derives a plural set from a singular set via the summing operation, and construes plural events as sums of singular events, assuming that if the events they are summed out of are atomic, they will be sums of atomic events. Since *3 houses* is a plural of a set of atomic houses, the predicate will distribute down to atomic accomplishments and thus atomic BECOME events, providing a measure for individuation or atomicity for the whole VP, and this in turn will result in a telic VP, in accordance with the telicity principle that Rothstein (2004: 158) defines as follows: "A VP is telic if it denotes a set of events X which is atomic, or which is a pluralization of an atomic set (i.e., if the criterion for individuating an atomic event in X are fully recoverable)."

Achievements, on the other hand, head telic VPs even when the argument to which the change happens is a bare plural or mass noun, since the atomicity of the BECOME event does not depend on the atomicity of its argument. This is due to the nature of the change lexicalized in an achievement, which is "the shortest possible change" and does not allow the event to be broken into smaller changes, thus making the BECOME event atomic.

Rothstein's account of the relation between aspectual classes and telicity leads to the following predictions for the Bulgarian verbal triplets: (i) pfv triplet members will always head telic VPs, (ii) ipfv ones will naturally head atelic VPs but may head telic ones in some contexts, where telicity will not hinge on the properties of the theme, and (iii) s-ipfv triplet members will head telic VPs provided that they have an incremental theme that is atomic, and otherwise head atelic VPs. However, we must also take into account that telicity in Slavic is widely assumed not to depend on aspectual composition but to be located on the verb (cf. e.g. Mittwoch 2019: 43). Thus, Filip (2008) argues that in languages like Russian, Czech and Polish, the aspectual properties of the verb determine the interpretation of the incremental theme object, and not vice versa. In these languages, which lack definite articles, bare plural and mass noun objects of imperfective verbs are interpreted as indefinite (*jel hleb* 'ate (some) bread'), whereas the ones of perfective verbs are interpreted as definite (*sjel hleb* 'ate the bread') (Mittwoch 2019: 13). Moreover, Filip (2008) argues that the direct object in telic Slavic verbs has a different role than in English, since the telic verb constrains the interpretation of its argument. Thus, if the argument of the pfv verb is a bare plural or mass noun, it is interpreted as referentially specific, as in Polish *On zjadł^P kaszę/ oliwki* 'He ate up all the porridge/olives', since, she argues, the only maximal interpretation available for bare plural and mass nouns is to view them as a definite group of objects.[32] In contrast, an imperfective verb does not constrain the interpretation of its direct object, as in *On jadł^I kaszę/oliwki*, where the direct object can be interpreted as a kind, as weak indefinite, or as definite, depending on the context. On the other hand, she argues that while incremental themes

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[32] I use here Filip's superscripts *P* for perfective and *I* for imperfective verbs for short.

realized as singular count nouns and quantified DPs are also constrained by pfv verbs to have a maximal interpretation, they are not constrained to a referentially specific interpretation, and that arguments that are non-incremental themes are not constrained by a perfective verb to a maximal interpretation. As for imperfective verbs, Filip argues, when the VPs they head contain some material specifying an ordering criterion, the VP is still atelic and the maximality effects that are sometimes observed are due to the linguistic context and/or world knowledge.

In Bulgarian, which (next to Macedonian) is the only Slavic language that possesses a definite article and a (singular and plural) indefinite determiner (Geist 2013), the situation is different. On the one hand, the aspect of the verb seems to constrain the incremental theme object in terms of its reference, quantized vs. cumulative (in the sense of Krifka 1998). Thus, pfv and s-ipfv verbs require quantized themes, realized by numerals or definite NPs (cf. *izjade^P/izjažda^{SI} (edna) jabâlka/*jabâlki/dve jabâlki/*hljab/hljaba* 'ate an apple/apples/two apples/bread/the bread'),[33] whereas basic ipfv verbs do not pose such requirements on their incremental theme which can be a count noun, a bare plural or a mass noun (cf. *jade^I (edna) jabâlka/jabâlki/hljab* 'ate an apple/ apples/bread').[34] On the other hand, a pfv or s-ipfv verb does not in general seem to constrain its non-incremental object in terms of maximality or referential specificity (cf. *Peter nameri^P/ namira^{SI} zlato/zlatoto.* 'Peter found gold/the gold'), and this holds independent of tense. In view of Rothstein's insight about the atomic nature of incremental theme arguments with lexically realized determiner, this would suggest that both pfv and s-ipfv verbs encode the requirement that their incremental theme is atomic, and in particular that pfv verbs will always have themes that are atomic. At the same time, it has been claimed in Slabakova (2005: 8) that pfv verbs with internal prefixes force a telic interpretation even in cases where the incremental theme is a bare plural noun, as in *Peter narisuva kartini za pet časa* ('Peter painted pictures in five hours'), while pfv verbs with external prefixes allow both a telic and atelic interpretation (cf. *Peter prerisuva kartini (za) pet časa* 'Peter repainted (some) pictures in/for five hours'). Moreover, s-ipfv verbs seem to behave differently than in Polish and Czech, since they do seem to require that their incremental themes are referentially specific.

In order to be able to arrive at a more in-depth account of the telicity facts with respect to the CoS related triplets under investigation, I next test the triplet members for compatibility with the time frame and time span adverbials *in α time* and *for α time*. These adverbials provide tests for distinguishing between telic and atelic VPs, where telic VPs can be modified by *in α time* and atelic by *for α time*. They are also related to Rothstein's theory of atomicity in the following way: *in α time* measures the length of atomic events, i.e. it assigns a time-frame within which an atomic event took place and thus modifies sets of atomic events, whereas *for α time* imposes

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[33] I use here the superscripts *P* for pfv and *SI* for s-ipfv verbs for short.

[34] Note that this difference in argument restrictions holds independent of tense.

a temporal measure criterion on singular events which are not already atomic (Rothstein 2004: e.g. 177, 181). On the other hand, while *in α time* does not usually modify atelic VPs (cf. *#Mary pushed the cart in half an hour*), if a contextually determined criterion for atomicity is provided, the adverbial forces a telic interpretation (as in *John ran in an hour*). In addition, the modifier may co-occur with bare plurals (as in *Mary built houses in 3 weeks*), where it forces the bare plural to be interpreted as the pluralization of an (contextually determined) atomic set. However, this shift occurs at the embedded level, while at the higher level, the plural predicate is atelic and can be modified by *for α time*, as in *Mary built houses in 3 weeks for three months.*

We start with the pfv triplet members which were claimed to have the properties of English lexical achievements, and which are predicted to lead to telic interpretations, while encoding the requirement that their incremental theme arguments are atomic. This prediction seems to be borne out, since both pfv verbs with incremental theme arguments like *postroja* 'build' and *stoplja* 'warm' and such with non-incremental theme arguments like *spečelja* 'win' and *iztičam* 'run to' in (24) are compatible with the time frame adverbial *in α time* and incompatible with the time span adverbial *for α time*.

(24) a. Ivan postroi   (edna) kâšta/kâštata   / ??(edni) kâšti/kâštite
Ivan build.PFV.AOR (a)   house.SG.INDF/DEF / (some) house.PL.INDF/DEF
za/??v prodâlženie na edna godina.
in/in course   of one   year
'Ivan built a house/the house/(some) houses/the houses in one year.'

b. Ivan stopli   (edna) supa/supata   / ??(edni) supi/supite
Ivan warm.PFV.AOR (a)   soup.SG.INDF/DEF / (some) soup.PL.INDF/DEF
za/??v prodâlženie na pet minuti.
in/in course   of five minutes
'Ivan warmed a/the soup / (some) soup/the soups in five minutes.'

c. Ivan spečeli   (edno) sâstezanie/sâstezanieto / ??(edni) sâstezanija /
Ivan win.PFV.AOR (a)   race.SG.INDF/DEF   / (some) race.PL.INDF /
sâstezanijata za/??v prodâlženie na pet minuti.
race.PL.DEF   in/in course   of five minutes
'Ivan won a race/the race/(some) races/the races in five minutes.'

d. ??(edni) Detsa/Detsata   iztičaha   do magazina za/??v
(some) children.PL.INDF/DEF run.PFV.AOR.PL to store.DEF in/in
prodâlženie na dve minuti.
course   of two minutes
'(Some) Children/The children ran to the store in two minutes.'

With respect to the properties of the arguments (both incremental and non incremental), we should note that while in all cases the pfv verb is in general compatible with both count

and mass nouns, bare plurals are awkward and seem to need the addition of the indefinite plural determiner *edni*, or a modifier.[35] This fact can be explained in terms of Rothstein, on the assumption that the determiner and the modifier contribute a criterion for specifying atomic sets and thus picking out atomic events.[36] Thus, the pfv triplet members seem to encode next to the BECOME event also the requirement that their themes are atomic, in the same way as achievements do on Rothstein's account.

Also when combined with the Present and Imperfect, where they yield an iterative/ habitual interpretation, the pfv triplet members are only compatible with the time frame adverbial and incompatible with the time span adverbial. However, at a higher level, the plural predicate becomes atelic, which is an effect that must be attributed to the interaction between the verbal temporal structure and the semantics of the habitual operator, which according to Verkuyl (1999: 151, 156) has the effect of universal quantification over instances.

(25) (Vseki pât kogato) Ivan postroi/postroeše (edna) kâšta/kâštata / ??(edni)
(every time when) Ivan build.PFV.PRS/IPF (a) house.SG.INDF/DEF / (some)
kâšti/kâštite za/??v prodâlženie na edna godina, …
house.PL.INDF/DEF in/in course of one year
'Every time Ivan builds/built a house/the house/(some) houses/the houses in one
year, …'

Turning to the ipfv triplet members, the prediction is that they will naturally head atelic VPs since they do not lexicalize a BECOME event, but may in some contexts head telic ones, where however telicity will not hinge on the properties of the theme. We can see that the prediction is borne out. Thus, in (present and past) episodic contexts, the ipfv incremental *četa* 'read' and the scalar *toplja* 'warm' head atelic VPs, cf (26).

(26) a. Ivan četé/čéte/četéše (edna) kniga/knigata / knigi/knigite v
Ivan read.IPFV.PRS/AOR/IPF (a) book.SG.INDF/DEF / book.PL.INDF/DEF in
prodâlženie na/??za edin čas.
course of/in one hour
'Ivan reads/read/was reading a/the book / (the) books for one hour.'

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[35] Cf. the authentic example below (https://www.tialoto.bg/a/66-dizain/57733-v-kitai-postroiha-kashti-s-ferma-na-pokriva/, last accessed 17. July 2024):

(i) V Kitaj postroiha kâšti s ferma na pokriva.
in China build.PFV.AOR houses with farm on roof
'In China they built houses with a farm on the roof.'

[36] Cf. also Mittwoch (2013) who argues that a DP with *some NPs* as a direct object is telic. Rothstein observes the same and notes that this is unexpected on Krifka's account since such DPs are non-quantized but cumulative. In the case of modifiers like in (i) in the previous footnote, it can be argued that the modifier shifts the interpretation of the bare plural to a kind-entity, which Rothstein (2004: 175) assumes to be atomic.

b. Ivan tópli/toplí/tópleše   (edna) supa/supata   / supi/supite   v
Ivan warm.IPFV.PRS/AOR/IPF (a)   soup.SG.INDF/DEF / soup.PL.INDF/DEF in
prodâlženie   of/in   one   hour
course   na/??za edin čas.
'Ivan warm/warmed/was warming a/the soup/ (the) soups for one hour.'

However, when used in the Present or Imperfect with a direct object that has a lexically realized determiner – a definite or indefinite[37] determiner or a numeral, the sentence gets a habitual or generic interpretation, while the VPs headed by the ipfv triplet members are telic at the level of the single events. This is predicted by Rothstein's assumption that the determiner provides a criterion for picking out atomic events. In addition, it seems that this interpretation is not possible without the time frame adverbial. This suggests that the telic interpretation at the level of the single events is forced by the adverbial, which serves as an external measure providing a criterion for individuation/atomicity and requiring an atomic theme. The same holds for a motion verb like *tičam* 'run', cf. (27). Note also that this reading is not available in the Aorist for these verbs, which suggests that interaction with tense also plays a crucial role in yielding the observed interpretation.

(27) a. Ivan (obiknoveno) četé/četeše   ??(edna) kniga   / ??(dve)
Ivan usually   read.IPFV.PRS/IPF a/one   book.SG.INDF / two
knigi/   knigata/knigite za edin čas.
book.PL.INDF/ book.DEF.SG/PL in one   hour
'Ivan usually reads/used to read a book/the books in one hour.'

b. ??(Edno) dete/   ??(edni/dve) detsa/detsata   (obiknoveno)
a/one kid.SG.INDF /some/two   kid.PL.INDF/DEF usually
tiča/   tičat/   tičaše/tičaha   do magazina za edin čas.
run.IPFV.PRS.SG/ run.IPFV.PRS.PL/ IPFV.IPF.SG/PL to store.DEF in   one   hour
'A/one kid / some/two kids / the kids usually run/runs/used to run to the store in one hour.'

Finally, we turn to the s-ipfv triplet members, where the prediction is that they should head telic VPs provided that they have an incremental theme that is atomic, and otherwise atelic. However, we can observe that the same restrictions that hold for the themes of the pfv triplet members hold also for their s-ipfv mates, cf. (28) where the s-ipfv verbs are not compatible with bare plural and mass nouns as themes. The examples also show that in present historic contexts, the s-ipfv triplet members head telic VPs, as the compatibility with the time frame adverbial shows.

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[37] Note that the indefinite determiner *edin* 'a' is homonymous to the numeral *edin* from which it has historically developed, cf. e.g. Geist (2013).

(28)   a.   V minaloto Ivan postrojava   (edna) kâšta/kâštata   / ??(edni)
            in past.DEF Ivan build.S-IPFV.PRS (a)   house.SG.INDF/DEF / (some)
            kâšti/kâštite   za edna godina.
            house.PL.INDF/DEF in one   year
            'In the past, Ivan built a house/the house/(some) houses/the houses in one year.'

      b.   V minaloto Ivan stopja   (edna) supa/supata   / ??(edni)
            in past.DEF Ivan warm.S-IPFV.PRS (a)   soup.SG.INDF/DEF / (some)
            supi/   supite   za pet   minuti.
            soup.PL.INDF/ soup.PL.DEF in five minutes
            'In the past, Ivan warmed a soup/the soup / (some) soups/the soups in five
            minutes.'

      c.   V minaloto Ivan spečelva   (edno) sâstezanie/sâstezanieto / ??(edni)
            in past.DEF Ivan win.S-IPFV.PRS (a)   race.SG.INDF/DEF   / (some)
            sâstezanija/sâstezanijata za pet   minuti.
            race.PL.INDF/DEF   in five   minutes
            'In the past, Ivan won a race/the race/(some) races/the races in five minutes.'

      d.   V minaloto ??(edni) detsa/detsata   iztičvat   do magazina
            in past.DEF (some) children.PL.INDF/DEF run.S-IPFV.PRS.PL to store
            za dve minuti.
            in two minutes
            'In the past, some/the children ran to the store in two minutes.'

Also when used in present and imperfect habitual contexts, the same restrictions hold for
the theme arguments,[38] and the s-ipfv triplet members are only compatible with time frame
adverbials, which indicates that at the level of the single events, they head telic VPs, cf. (29). At
the same time, it seems that the presence of the adverbial is crucial for the telicity to hold at the
level of the individual events.

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[38] Cf. also the following authentic examples (https://www.bgfermer.bg/article/9330633, last accessed 19. July 2024)
    where we can observe the same restriction to atomic (kind) themes as with pfv triplet members. Note that a Google
    search with the s-ipfv verb *postrojava* 'build' and the bare plural noun *kâši* 'houses' yielded no hits that were not
    modified in some way.

    (i)   a.   V Evropa holandzite sa pârvite, koito postrojavat   kâšti   za skortsi.
               in Europe Duch.DEF are first.DEF who build.S-IPFV.PRS houses for starlings
               'In Europe, the Dutch are the first who build houses for starlings.'

          b.   Pensioneri postrojavaha   kâšti na detsata si.
               retirees   build.S-IPFV.IPF houses to children REFL
               'Retirees were building houses for their children.'

(29) a. Ivan (obiknoveno) postrojava/postrojavaše (edna) kâšta/kâštata /
Ivan (usually) build.S-IPFV.PRS/IPF (a/one) house.SG.INDF/DEF /
??(edni) kâšti/kâštite za/??v prodâlženie na edna godina.
(some) house.PL.INDF/DEF in/in course of one year
'Ivan usually builds/used to build a house/the house/some/the houses in one year.'

b. Ivan (obiknoveno) stoplja/stopljaše (edna) supa/supata / ??(edni)
Ivan usually warm.S-IPFV.PRS/IPF (a/one) soup.SG.INDF/DEF / (some)
supi/supite za/??v prodâlženie na pet minuti.
soup.PL.INDF/DEF in/in course of five minutes
'Ivan usually warms/used to warm a soup/the soup/some soups/the soups in five minutes.'

c. Ivan (obiknoveno) spečelva/spečelvaše (edno) sâstezanie/sâstezanieto /
Ivan usually win.S-IPFV.PRS/IPF (a) race.SG.INDF/DEF /
??(edni) sâstezanija/sâstezanijata za pet minuti.
(some) race.PL.INDF/DEF in five minutes
'Ivan usually wins/used to win a race/the race/(some) races/the races in five minutes.'

d. ??(Edni) detsa/Detsata (obiknoveno) iztičvat/iztičvaha do magazina
(some) kid.PL.INDF/DEF usually run.S-IPFV.PRS/IPF to store.DEF
za/??v prodâlženie na dve minuti.
in/in course of two minutes
'Some/The children usually run/used to run to the store in two minutes.'

At the outer level, however, the predicate denotes a plural, non-atomic event. The VP headed by the s-ipfv verb is atelic and can be modified by a time span adverbial, cf. (30).

(30) V prodâlženie na 1 godina Ivan postrojavaše (edna) kâšta/kâštata /
In course of 1 year Ivan build.S-IPFV.IPF (a/one) house.SG.INDF/DEF /
??(edni) kâšti/kâštite za 2 sedmizi.
(some) house.PL.INDF/DEF in 2 weeks
'For one year, Ivan was building a/one house/some/the houses in 2 weeks.'

Also in present and imperfect episodic contexts, as well as in the Aorist, where the interpretation is episodic, the s-ipfv verbs are incompatible with bare plural and mass nouns, cf. (31) and (32), respectively. However, despite the atomicity of their arguments, in both cases they are only compatible with the time span adverbial and incompatible with time frame adverbials. At the same time, while the sentences in (31) are clearly atelic,[39] the predicates in (32) do not seem to

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[39] Cf. also Verkuyl (1999) who observes a "non-termination effect" in the examples below. Note that the s-ipfv verb *kupuva* 'buy', which is derived from a basic, unprefixed pfv verb with which it forms an aspectual pair and thus lacks

be atelic despite the presence of the time span adverbial, but entail completion, as indicated by the continuation sentences.

(31) a. Maria pročita/pročitaše knigata/??(edni) knigi ??za/veče (ot)
Maria read.S-IPFV.PRS/IPF book.SG.DEF/(some) book.PL.INDF in/already (since)
1 čas (i ošte ne ja/gi e/beše pročela).
1 hour and still not it/them is/was read
'Maria is/was reading the book/the books already 1 hour (but has/had not finished it/them yet).'

b. Maria postrojava/postrojavaše kâštata/??(edni) kâšti ??za/veče
Maria build.S-IPFV.PRS/IPF house.SG.DEF/(some) house.SG.INDF in/already
(ot) 10 godini (i ošte ne ja/gi e/beše postroila).
(since) 10 years and still not it/them is/was build
'Maria is/was building the house/the houses already 10 years (but has/had not finished it/them yet).'

(32) a. Ivan včera postrojava kâštite / ??(edni) kâšti ??za/v
Ivan yesterday build.S-IPFV.AOR house.PL.DEF / (some) house.PL.INDF in/in
prodâlženie na dva časa, #no ne gi dovârši vsičkite.
course of two hours but not them finish all
'Yesterday, Ivan built the/some houses for two hours but did not finish them all.'

b. Ivan včera stoplja supite/??(edni) supi ??za/v
Ivan yesterday warm.S-IPFV.AOR soup.PL.DEF/(some) soup.PL.INDF in/in
prodâlženie na dva časa #no te ne stanaha topli vsičkite.
course of two hours but they not get warm all
'Yesterday, Ivan warmed the/some soups for two hours but they did not all get warm.'

c. Ivan včera spečelva sâstezanijata/??(edni) sâstezanija ??za/v
Ivan yesterday win.S-IPFV.AOR race.PL.DEF/(some) race.PL.INDF in/in
prodâlženie na dva časa, #no ne moža da se naloži vâv vsičkite.
course of two hours but not could to REFL prevail in all
'Yesterday, Ivan won the race/races for two hours, but could not prevail in all of them.'

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a basic ipfv counterpart, does not constrain its object in the same way in which s-ipfv triplet members do, as *kupuva* also allows for bare plural arguments. The same can be observed for the achievement pairs discussed in the Appendix.

(i) a. Ivan kupuvaše kâšta/kâšti, kogato go vidjah.
Ivan buy.S-IPFV.IPF house.SG/PL.INDF when him see.PFV.1.SG
'Ivan was buying a house/houses when I met him.'

b. Po edno vreme, Ivan kupuvaše kâšta/kâšti (no ne znam dali ja/gi kupi).
at some time Ivan buy.S-IPFV.IPF house.SG/PL.INDF but not know if it/they buy.PFV.PF
'At some point, Ivan was buying a house/houses (but I don't know if he bought it/them).'

    d.   Detsata/??(Edni)   Detsa   včera   iztičvaha   do magazina ??za/v
        kid.PL.DEF/(some)   kid.PL.INDF yesterday run.S-IPFV.AOR to   store   in/in
        prodâlženie na dva časa, #no ne   stignaha dotam.
        course   of two hours but not got   there
        'Yesterday, the/some kids ran to the store for two hours, but did not get there all.'

Thus, while the sentences in (31) intuitively receive an interpretation of "unsuccessful attempt" on which the reading/building event did not reach its culmination, the ones in (32) yield what we could call a "success upon multiple attempts"-interpretation, on which the building/warming/ running event took a certain amount of time, possibly involving several attempts, but by the end of this period, all the houses/soups/children were completed/warm/at their destination. The former interpretation is not unexpected as it resembles the effect of the Progressive on accomplishment verbs in English (known as the imperfective paradox), and the atelicity in (31) must be attributed to a shift induced by the episodic Imperfect (since the adverbial is not necessary for the reading to arise), much in the same way in which the Progressive induces a shift from a telic to an atelic VP in English. The interpretation in (32) is more puzzling (although not entirely unexpected in view of the aspectual meaning of the Aorist), as it does not allow for a time frame adverbial in spite of the atomicity of the VP. A similar example where a time span adverbial applies to a telic VP is (33), which Rothstein (2004: 182) explains in terms of the linguistic context providing a temporal boundary for the habitual event.

(33)   Children ate an ice-cream here for twenty years before the corner shop closed.

It is conceivable that in (32), it is the Aorist that provides such a boundary. At the same time, it seems that the presence of the adverbial is also crucial for the multiple-attempt reading to arise. Rothstein (2016: 71) analyses the meaning of *for α time* in sentences like *John ran/ate apples for an hour* in terms of it applying to a predicate P to yield a set of events in P with running times specified by the adverbial, such that at all subintervals of the running times of these events, an event in the denotation of P was going on. A similar situation seems to apply to the sentences in (32), where at every relevant subinterval of the running time of e.g. the house building event, an attempt of building the houses was going on. Thus, while the predicates in (32) are homogenous at the embedded level, cf. (34), they are telic at the higher level, possibly due to the Aorist which closes off the event as a whole.

(34)   a.   Ivan postrojava   kâštata/kâštite   v prodâlženie na dva časa. → Ivan
         Ivan build.S-IPFV.AOR house.DEF.SG/PL in course   of two hours → Ivan
         postrojava   kâštata/kâštite prez   pârvite 10 minuti.
         build.S-IPFV.AOR house.DEF.SG/PL during first   10 minutes
         'Ivan attempted at building the houses for two hours (and eventually
         succeeded).' → 'Ivan attempted at building the houses during the first 10 minutes.'

b. Ivan postrojava   edna kâšta   + Ivan postrojava   edna
Ivan build.S-IPFV.AOR a   house.PL.INDF + Ivan build.S-IPFV.AOR a
kâšta   = Ivan postrojava   edna kâšta
house.PL.INDF = Ivan build.S-IPFV.AOR a   house.PL.INDF
'Ivan attempted at building a house + Ivan attempted at building a house = Ivan attempted at building a house.'

Summing up, we can conclude that Rothstein's generalization about the relationship between BECOME events, atomicity and telicity can in general account for the behavior of the Bulgarian CoS related triplets under investigation. The finding that pfv triplet members in general head telic VPs follows from the inherently atomic nature of the BECOME event they lexicalize, and atomicity is in addition required by them in terms of the selectional restrictions they pose on their theme arguments. At the same time, we saw that the telicity of a VP headed by a pfv triplet member can be shifted due to interaction with Viewpoint aspectual operators like the Bulgarian Imperfect. On the other hand, we saw that while ipfv verbs head atelic VPs and do not pose such selectional restrictions on their arguments, they may head telic VPs, requiring the presence of time frame adverbials and atomic themes and resulting in habitual interpretations.[40]

As for the s-ipfv triplet members which were argued to lexicalize an incremental BECOME event, we saw that while they seem to require atomic theme arguments just as their pfv counterparts, the telicity of the VP they head can be easily shifted due to interaction with Viewpoint aspectual operators and/or temporal modifiers.[41]

Taken altogether, these results suggest that telicity in Bulgarian, at least in the triplets investigated, does not hinge on the nature of the argument, but rather on the interaction with Viewpoint aspectual operators, and invites an account of this interaction in terms of aspectual shifts. Rothstein (2004) deals with shifts like the one involved in English progressive achievements in terms of shifts between aspectual classes (where the Progressive shifts the achievement to an accomplishment which then combines with the Progressive). A more adequate approach with view of the assumed morphological encoding of aspectual classes in Bulgarian would be one that locates such shifts at the level of Viewpoint aspect (AspP). A thorough account of the complex interaction between the two layers of aspect in Bulgarian must however be postponed for the future.

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[40] Note however that this is not counterevidence for analysing ipfv verbs like *četa* 'read' as activities rather than accomplishments, since such telic interpretations can be obtained also with scalar and motion verbs which in Rothstein's framework are viewed as activities.

[41] A question that has largely remained unaddressed is whether contextual information plays a role in the aspectual interpretation in Bulgarian the way it has been observed for Polish (Martínez Vera 2021). This seems unlikely however. Thus, while a sentence like *John swam in an hour* can get a telic interpretation in a context where the agent does this habitually (Dowty 1979: 61), its Bulgarian equivalent *Ivan obiknoveno pluva ??za 2 časa* is ungrammatical.

5 Conclusion

I argued that verbs in Bulgarian aspectual triplets formed with empty prefixes and expressing events of change can be characterized in terms of denoting Rothstein's basic event types representing constraints on the kinds of events that can be individuated by verbal predicates. More specifically, I argued that while the ipfv members of such triplets denote dynamic events of non-change, their pfv and s-ipfv counterparts denote events of change of different types: simple events of change (pfv) and events of change with a complex structure (s-ipfv). These correspondences between aspectual type and event type were shown to hold independent of the lexical semantics of the verbs which may equally belong to the classes of incremental, scalar and motion verbs. I proposed that simple events of change are marked in the triplets by means of empty prefixes, while complex events of change are marked by a combination of empty prefix and imperfectivizing suffix. I further showed that a distinction between a predefined endpoint as a property of verbal predicates and telicity as a property of VPs is useful also in view of Bulgarian data in spite of the different nature of the relation between the verb and its theme.[42]

Some cross-linguistic and theoretical consequences follow from this proposal. First of all, it shows that virtually the same constraints that underlie the distinction between event types in English hold for the division between aspectual types in Bulgarian CoS-triplets, and this is arguably quite different from the majority of the Slavic languages. On the other hand, it shows that in contrast to English accomplishments, the telicity of the VP headed by s-ipfv accomplishments does not depend on the type of its object but on the interaction with Viewpoint aspectual operators. This further suggests a division of labor between the members of the aspectual triplets investigated, where basic and secondary ipfv verbs denote different event types and behave in rather complementary ways in terms of argument constraints and interaction with aspectual tenses. Since this different behavior is intimately connected to the presence of definite articles and aspectual tenses that most other Slavic languages lack, it may offer an explanation of the productivity of the imperfectivization process in Bulgarian, which is unique among the Slavic languages. In addition, the account presented here provides evidence for a strategy of expressing aspectual distinctions in which aspectual properties are not directly tied to the roots of verbal predicates expressing events of change but are partly morphologically and partly lexically encoded. It also shows that a language employing this strategy may provide different conceptualizations of one and the same real world event, viewing it optionally as an unstructured activity, a resultant state, or an incremental process. At the same time, it provides cross-linguistic evidence for Rothstein's position on the independent status of aspectual classes as basic event types, as well as for her theory of telicity in the unique context of a Slavic language that possesses a definite article.

Some of the main issues that must be left open is the question of how (a)telicity at the VP-level interacts with Viewpoint aspectual operators introduced by the aspectual tenses in

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[42] I argue that similar considerations hold for verbal pairs expressing events of change that lack an ipfv counterpart, cf. the Appendix.

Bulgarian, as well as how the telicity shifts resulting from this interaction can be represented in semantic and morpho-syntactic terms. Further open issues are related to the empirical coverage of the proposal. Do other types of triplets, e.g. those formed by means of the perfectivizing suffix *-n*, such as *sedja–sedna–sjadam* 'sit (down)' involving basic ipfv verbs denoting states, or *čukam–čukna–čukvam* 'knock', involving semelfactives, behave differently? Do underived pfv and s-ipfv verbs forming aspectual pairs such as the ones dealt with in the Appendix behave in the same way when it comes to selectional restrictions or the interaction with tenses? A look at the pair *namerja–namiram* 'find' suggests that this may not be the case, as both verbs can take bare plural and mass nouns as their (non incremental) theme (as in *Ivan nameri/namira zlato/pari* 'Ivan found gold/money'). On the other hand, this only holds for the s-ipfv members of aspectual pairs with non-empty internal prefixes, such as *podpiša–podpisvam* 'sign', cf. *Ivan *podpisa/podpisva dokumenti tsjala nošt* ('Ivan was signing documents all night long'). These and further related issues must be left for future work.

Appendix: A note on pairs

Some (degree) achievements in Bulgarian come not in triplets but in pairs (cf. **Table 5**), where a basic ipfv verb is lacking due to one of the following reasons:

i. the pfv verb is underived. The group of underived pfv verbs comprises about 50 verbs, many of which denote transfer of posession, such as *dam* 'give', as well as verbs like *kaža* 'say' and *reša* 'decide' whose English counterparts count as achievement verbs

ii. the pfv verb is derived from a root that has lost its morphological independence or its transparency in the course of language change, as in *složa* 'put' < Proto-Slavic **lažiti* (causative form of **ležati* 'lie'), *stigna* 'reach' < Proto-Slavic **tegam* 'move in some direction', cf. Georgiev (1971–2010)

iii. the pfv verb is derived from a basic ipfv verb whose lexical meaning has been modified as a result of prefixation with a non-empty internal prefix, as in *namerja* 'find' < *merja* 'to measure/weigh' or inchoatives like *zaspja* 'fall asleep' (from *spja* 'sleep'), or by the suffix *-n*, as in *sedna* 'sit down' (from *sedja* 'sit'), *legna* 'lay down' (from *leža* 'lie')

iv. the pfv verb is derived by means of a secondary perfectivization process, as in *pristigna* 'arrive', which is derived from the pfv verb *stigna* 'reach'

v. the pfv verb is directly derived from a degree adjective, cf. **studja–izstudja–izstudjavam* 'to cool' (from adj. *studen* 'cold')[43]

ENGLISH PREDICATE	SIMPLE IPFV	PFV VERB	S-IPFV VERB
cool	–	izstudja	izstudjavam
find	–	namerja	namiram
arrive	–	pristigna	pristigam
reach	–	stigna	stigam
put	–	složa	slagam
say	–	kaža	kazvam
decide	–	reša	rešavam
sit down	–	sedna	sjadam
lay down	–	legna	ljagam

Table 5: English predicates and Bulgarian aspectual pairs.

It can be easily shown that the pfv and s-ipfv members of these verbal pairs display the same aspectual properties as those in the triplets discussed in section 2.

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[43] Note that in principle, nothing seems to prevent triplets from being derived from degree adjectives, cf. *suša–izsuša–izsušavam* 'to dry' (from adj. *suh* 'dry'), *toplja–stopja–stopljam* 'to warm' (from adj. *topâl* 'warm'). Why in some cases the basic ipfv verb is missing is a question that goes beyond the scope of this paper.

(35)   a.   Ivan započna/prestana da *nameri/namira knigite.
          Ivan started/stopped   to find.PFV/S-IPFV books.DEF
          'Ivan started/stopped finding the books.'

       b.   Ivan započna/prestana da *izstudi/izstudjava supata.
          Ivan started/stopped   to cool.PFV/S-IPFV   soup.DEF
          'Ivan started/stopped cooling the soup.'

       c.   Ivan započna/prestana da *sedne/sjada.
          Ivan started/stopped   to sit-down.PFV/S-IPFV
          'Ivan started/stopped sitting down.'

(36)   a.   Ivan nameri/namira   knigata, #no tja ostana   neotkrita.
          Ivan find.AOR.PFV/S-IPFV book.DEF but   it   remained undiscovered
          'Ivan found the book, but it remained undiscovered.'

       b.   Ivan izstudi/izstudjava   supata,   #no tja ne   stana studena.
          Ivan cool.AOR.PFV/S-IPFV soup.DEF but it   not   get   cold
          'Ivan cooled the soup, but it did not get cold.'

       c.   Ivan sedna/sjada,   #no ne   sedja.
          Ivan sit-down.AOR.PFV/S-IPFV but not sit.AOR.IPFV
          'Ivan sat down, but he did not sit.'

I propose to represent the meaning of the pfv members of the pairs in the same way as those in triplets:[44]

(37)   a.   namerja (pfv 'find'): $\lambda x \lambda e.(\text{BECOME-NAMEREN})(e) \wedge \text{Th}(e) = x$

       b.   izstudja (pfv 'cool'): $\lambda x \lambda e.(\text{BECOME-IZSTUDEN})(e) \wedge \text{Th}(e) = x$

       c.   sedna (pfv 'sit down'): $\lambda e \exists x.(\text{BECOME-SEDNAL})(e) \wedge \text{Th}(e) = x$

For s-ipfv verbs in pairs, where the pfv verb cannot be analysed as being derived from an activity denoting root, I propose a structure that is slightly different from the one suggested for s-ipfv triplet members. This structure corresponds to the one proposed in Rothstein for treating progressive achievements. According to this analysis, progressive achievements like in *Mary is arriving at the station* have the structure of accomplishments. However, the characteristics of the process stage are not lexically specified but must be contextually determined, in contrast to a lexical accomplishment (or activity) where the characteristics which identify its process stages are determined by the meaning of the verb (Rothstein 2004: 49):

(38) $\lambda e. \exists e_1 \exists e_2 [e =^s (e_1 \sqcup e_2) \wedge (\text{DO}(\alpha))(e_1) \wedge (\text{BECOME}(P))(e_2) \wedge \text{Cul}(e) = e_2]$

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[44] Note that a similar proposal is made by Babko-Malaya (2003) for underived pfv verbs in Russian which she assumes to describe a resultative state with a not specified manner or action. Thus in *Ivan rešil zadaču* ('Ivan solved the problem'), the verbal root denotes the target state.

The argument of the DO predicate in (38), α, is a free variable. Unlike the activity subevent, the culmination event is in the denotation of the lexical achievement. This raises the denotation of the VP into the structure of an accomplishment whose culmination is given by the lexical VP, cf. for instance, the structure of the derived accomplishment in *Marry is arriving at the station*, where the culmination is in the denotation of *arrive at the station*, Cul(e) is characterized as a near-instantaneous event part of e, and the argument of the culmination event is the incremental theme of the matrix verb:

(39) $\lambda e.\exists e_1 \exists e_2 [e =^s (e_1 \sqcup e_2) \wedge (\text{DO}(\alpha))(e_1) \wedge \text{ARRIVE-AT-THE-STATION}(e_2) \wedge \text{Th}(e_2) = x \wedge \text{Cul}(e) = e_2]$

In contrast, the culmination of an English lexical accomplishment is determined by what happens to its theme. Thus, *Mary built a house* culminates at the point at which a house becomes built. Note that progressive achievements result from a shift operation triggered when the progressive is applied to an achievement-headed VP. This shift converts the achievement into an accomplishment whose culmination is in the denotation of the achievement (Rothstein 2004).[45] A similar structure can be assumed for an s-ipfv verb like *namiram* 'find' or *pristigam* 'arrive', since the activity subevent involved in the complex event they denote is not lexically specified. At the same time, Rothstein (2004: 55) reasons that a progressive achievement is used "only to make an assertion about an event stage which is relatively close to the telic point". Whether or not similar considerations apply for the s-ipfv verbs, to which I attribute the same semantics, is a question that must be addressed on a different occasion.

In terms of selectional restrictions and their relation to telicity, achievement pairs seem to behave more ununiformly as compared to the triplets discussed in section 4. Thus while pairs like *pristigna–pristigam* 'arrive' seem to require a subject that has a lexically realized determiner, pairs like *namerja–namiram* 'find' seem to allow for bare mass nouns. At the same time, both pfv and s-ipfv members of pairs like *namerja–namiram* 'find' seem to be compatible with time span adverbials and to head VPs that are telic at the level of the singular events but atelic at the level of the plural event. A detailed exploration of the properties of such pairs is however a topic for future work.

(40) a. ??(edni)   detsa/Detsata   pristignaha/pristigaha   za dve minuti.
          (some)   children.PL.INDF/DEF   arrive.AOR.PL.PFV/S-IPFV   in two minutes
          '(Some) Children/The children arrived in two minutes.'

      b. Vseki pât kogato gostite   pristigneha/pristigaha v prodâlženie na 2 časa, ….
          every time when guest.PL.DEF arrive.PFV/S-IPFV.IPF in course   of 2 hours
          'Every time the guests arrived for 2 hours, …'

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[45] Note also that Rothstein (2004: 57) distinguishes progressive achievements as derived accomplishments from slow motion readings of achievements which are different in that the latter are not prone to the imperfective paradox. She illustates this by the contrast between *John is arriving at the station but he hasn't arrived yet* and *Mary is still arriving, don't talk to her,* where the latter is uttered in a context where Mary has just walked in the door but is still involved in the activities associated with arriving like taking off her coat. She accounts for this type of reading by assuming that the verb is treated as an activity usually associated with the achievement having occurred, due to a shift triggered by the achievement. Thus, the slow motion reading of *arrive* is represented as DO(BECOME(ARRIVE)), where the change is "from not being at x to being at x, followed by performing the actions normally immediately associated with such a change of state".

c. Ivan nameri/namiraše   zlato/zlatoto/   ??(edni) statii/statiite
   Ivan find.AOR.PFV/IPF.S-IPFV gold.SG.INDF/SG.DEF/ (some)   article.PL.INDF/DEF
   za pet minuti.
   in five minutes
   'Ivan found gold/the gold/(some) articles/the articles in five minutes.'

Abbreviations

1 = first person, DEF = definite, INDF = indefinite, IPF = Imperfect, IPFV = imperfective, AOR = Aorist, PFV = perfective, PL = plural, PRS = present tense, PTCP = participle, REFL = reflexive, SG = singular, S-IPFV = secondary imperfective

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Competing interests

The author has no competing interests to declare.

References

Andrejčin, Ljubomir. 1944. *Osnovna bâlgarska gramatika [Basic Bulgarian grammar]*. Sofija: Hemus.

Arsenijević, Boban. 2007. Slavic verb prefixes are resultative. *Cahiers Cronos* 17. 197–213. DOI: https://doi.org/10.1163/9789401204446_013

Babko-Malaya, Olga. 2003. Perfectivity and prefixation in Russian. *Journal of Slavic Linguistics* 1(1). 5–36. https://www.jstor.org/stable/24599703.

Bach, Emmon. 1986. The algebra of events. *Linguistics and Philosophy* 9. 5–16. https://www.jstor.org/stable/25001229. DOI: https://doi.org/10.1007/BF00627432

Bertinetto, Pier Marco. 2001. On a frequent misunderstanding in the temporal-aspectual domain: The "perfective-telic" confusion. In Cecchetto, Carlo & Chierchia, Gennaro & Guasti, Maria Teresa (eds.), *Semantic interfaces: Reference, anaphora and aspect*, 177–210. Stanford, CA: CSLI Publications.

Borik, Olga. 2002. *Aspect and reference time*. Utrecht: LOT. DOI: https://doi.org/10.1093/acprof:oso/9780199291298.001.0001

Braginsky, Pavel & Rothstein, Susan. 2008. Vendlerian classes and the Russian aspectual system. *Journal of Slavic Linguistics* 16(1). 3–55. DOI: https://doi.org/10.1353/jsl.0.0009

Brecht, Richard. 1985. The form and function of aspect in Russian. In Flier, Michael S. & Brecht, Richard D. (eds.), *Issues in Russian morphosyntax*, 9–34. Columbus, Ohio: Slavica Publishers.

Chakyrova, Krasimira. 1998. Za sâštnostta na vtoričnata imperfektivatsija v sâvremennia bâlgarski ezik [On the nature of secondary imperfectivization in Modern Bulgarian]. *Naučni trudove na PU* 36(1). 171–183.

Comrie, Bernard. 1976. *Aspect*. Cambridge: Cambridge University Press.

Depraetere, Ilse. 1995. On the necessity of distinguishing between (un)boundedness and (a)telicity. *Linguistics and Philosophy* 18. 1–19. DOI: https://doi.org/10.1007/BF00984959

Di Sciullo, Anna Maria & Slabakova, Roumyana. 2005. Quantification and aspect. In Verkuyl, Henk J. & de Swart, Henriette & van Hout, Angeliek (eds.), *Perspectives on aspect*, 61–80. Dordrecht: Springer. DOI: https://doi.org/10.1007/1-4020-3232-3_4

Dickey, Stephen M. 2000. *Parameters of Slavic aspect. A cognitive approach*. Stanford, CA: CSLI Publications.

Dočekal, Mojmír & Vlášková, Lucia. 2020. Telicity effects of prefixes on degree achievements in Czech. *Rivista di Grammatica Generativa* 3. 1–29.

Dočekal, Mojmír & Vlášková, Lucia & Onoeva, Maria. 2023. Degree achievements from a Slavic perspective. In Biskup, Petr & Börner, Marcel & Mueller-Reichau, Olav & Shcherbina, Iuliia (eds.), *Advances in formal Slavic linguistics*, 99–117. Berlin: Language Science Press. https://doi.org/10.5281/zenodo.10123633

Dowty, David R. 1979. *Word meaning and Montague grammar: The semantics of verbs and times in Generative Semantics and in Montague's PTQ*. Dordrecht: Reidel. DOI: https://doi.org/10.1007/978-94-009-9473-7

Filip, Hana. 2008. Events and maximalization: The case of telicity and perfectivity. In Rothstein, Susan (ed.), *Theoretical and crosslinguistic approaches to the semantics of aspect*, 217–256. Amsterdam: John Benjamins. DOI: https://doi.org/10.1075/la.110.10fil

Gehrke, Berit. 2008. *Ps in motion: On the semantics and syntax of P elements and motion events*. Utrecht: LOT.

Geist, Ljudmila. 2013. Bulgarian *edin*: The rise of an indefinite article. In Junghanns, Uwe & Fehrmann, Dorothee & Lenertová, Denisa & Pitsch, Hagen (eds.), *Formal description of Slavic languages 9*, 125–148. Frankfurt am Main: Peter Lang. https://api.semanticscholar.org/CorpusID:10173292.

Georgiev, Vladimir (ed.). 1971–2010. *Bâlgarski etimologičen rečnik [Bulgarian etymological dictionary]*. Bulgarian Academy of Sciences. http://ibl.bas.bg/lib/.

Hay, Jennifer & Kennedy, Christopher & Levin, Beth. 1999. Scalar structure underlies telicity in "Degree Achievements". In Matthews, Tanya & Strolovitch, Devon (eds.), *Semantics and linguistic theory 9*, 127–144. Ithaca: CLC Publications. DOI: https://doi.org/10.3765/salt.v0i0.2833

Ivančev, Svetomir. 1971. *Problemi na aspekualnostta v slavjanskite ezici [Topics in Slavic aspectuality]*. Sofia: BAN.

Jetchev, Georgi & Bertinetto, Pier Marco. 2002. Lexical access in Bulgarian perfective vs. imperfective verbs. In Bendjaballah, Sabrina & Dressler, Wolfgang U. & Pfeiffer, Oskar E. & Voeikova, Maria D. (eds.), *Morphology 2000. Selected papers from the 9th Morphology Meeting, Vienna*, 161–173. Amsterdam/Philadelphia: John Benjamins. DOI: https://doi.org/10.1075/cilt.218.14jet

Kardos, Éva. 2016. Telicity marking in Hungarian. *Glossa: A Journal of General Linguistics* 1(1): 41. 1–37. DOI: https://doi.org/10.5334/gjgl.52

Kennedy, Christopher & Levin, Beth. 2002. Telicity corresponds to degree of change. Talk presented at Georgetown University.

Klimek-Jankowska, Dorota & Simeonova, Vesela. 2022. Two types of secondary imperfectives: Evidence from Polish and Bulgarian. Paper presented at the FDSL 15.

Krifka, Manfred. 1998. The origins of telicity. In Rothstein, Susan (ed.), *Events in grammar*, 9–34. Dordrecht: Kluwer. DOI: https://doi.org/10.1007/978-94-011-3969-4_9

Landman, Fred. 1992. The progressive. *Natural Language Semantics* 1. 1–32. DOI: https://doi.org/10.1007/BF02342615

Landman, Fred. 2000. *Events and plurality*. Dordrecht: Kluwer. DOI: https://doi.org/10.1007/978-94-011-4359-2

Łazorczyk, Agnieszka. 2010. Secondary imperfective as an atelicizer. In Curtis, Matthew & Smirnova, Anastasia (eds.), *Issues in Slavic syntax and semantics*, 54–77. Cambridge: Cambridge University Press.

Levin, Beth. 1993. *English verb classes and alternations: A preliminary investigation*. Chicago, IL: University of Chicago Press.

MacDonald, Jonathan. 2008. *The syntactic nature of inner aspect: A minimalist perspective*. Amsterdam: John Benjamins. DOI: https://doi.org/10.1075/la.133

Manova, Stela. 2007. On derivation-inflection character of Bulgarian aspect. *Die Welt der Slaven* 52. 21–46.

Martínez Vera, Gabriel. 2021. Degree achievements and maximalization: a crosslinguistic perspective. *Glossa: A Journal of General Linguistics* 6(1): 94. 1–28. DOI: https://doi.org/10.16995/glossa.5883

Mehlig, Hans Robert. 2008. Aspect and bounded quantity complements in Russian. In Rothstein, Susan (ed.), *Theoretical and crosslinguistic approaches to the semantics of aspect*, 257–290. Amsterdam: John Benjamins. DOI: https://doi.org/10.1075/la.110.11meh

Mittwoch, Anita. 1991. In defence of Vendler's achievements. *Belgian Journal of Linguistics* 6. 71–85. DOI: https://doi.org/10.1075/bjl.6.05mit

Mittwoch, Anita. 2013. On the criteria for distinguishing accomplishments from activities, and two types of aspectual misfits. In Arsenijević, Boban & Gehrke, Berit & Marín, Rafael (eds.), *Studies in the composition and decomposition of event predicates*, 27–48. Dordrecht: Springer. DOI: https://doi.org/10.1007/978-94-007-5983-1_2

Mittwoch, Anita. 2019. Aspectual classes. In Truswell, Robert (ed.), *The Oxford handbook of event structure*, 30–49. Oxford: Oxford Academic. DOI: https://doi.org/10.1093/oxfordhb/9780199685318.013.4

Młynarczyk, Anna. 2004. *Aspectual pairing in Polish*. Utrecht: LOT.

Nicolova, Ruselina. 2017. *Bulgarian grammar*. Berlin: Frank & Timme.

Padučeva, Elena V. 1996. *Semantičeskie issledovaniya [Semantic studies]*. Moskow: Jaziki russkoj kul'tury.

Pitsch, Hagen. 2021. Die Aorist/Imperfekt-Distinktion im Bulgarischen: Form, Bedeutung, Markiertheit. In Ritter, Nelli & Henzelmann, Martin (eds.), *Linguistische Beiträge zur Slavistik: XXVIII. JungslavistInnen-Treffen*. Frankfurt am Main: Peter Lang. https://doi.org/10.13140/RG.2.2.17120.51207

Ramchand, Gillian. 2008. Perfectivity as aspectual definiteness: Time and the event in Russian. *Lingua* 118(11). 1690–1715. DOI: https://doi.org/10.1016/j.lingua.2007.03.008

Rappaport Hovav, Malka. 2008. Lexicalized meaning and the internal temporal structure of events. In Rothstein, Susan (ed.), *Theoretical and crosslinguistic approaches to the semantics of aspect*, 13–42. Amsterdam: John Benjamins. DOI: https://doi.org/10.1075/la.110.03hov

Rivero, María Luisa & Slavkov, Nikolay. 2014. Imperfect(ive) variation: The case of Bulgarian. *Lingua* 150. 232–277. DOI: https://doi.org/10.1016/j.lingua.2014.07.019

Rothstein, Susan. 2004. *Structuring events*. Oxford: Blackwell Publishing. DOI: https://doi.org/10.1002/9780470759127

Rothstein, Susan. 2016. Aspect. In Aloni, Maria & Dekker, Paul (eds.), *The Cambridge handbook of formal semantics*, 342–368. Cambridge: Cambridge University Press. DOI: https://doi.org/10.1017/CBO9781139236157.013

Ryle, Gilbert. 1949. *The concept of mind*. London: Barnes and Nobles.

Slabakova, Roumyana. 2005. Perfective prefixes: What they are, what flavors they come in, and how they are acquired? In *Formal approaches to Slavic linguistics 13: The South Carolina meeting*. 324–341. Ann Arbor, MI: Michigan Slavic Publications.

Smith, Carlota S. 1991. *The parameter of aspect*. Dordrecht: Kluwer. DOI: https://doi.org/10.1007/978-94-015-7911-7

Sonnenhauser, Barbara. 2006. Aspekt und Aorist/Imperfekt im Bulgarischen – eine intervall-basierte Analyse. *Die Welt der Slaven* 51. 116–140.

Svenonius, Peter. 2004. Slavic prefixes inside and outside VP. *Nordlyd* 32(2). 205–253. DOI: https://doi.org/10.7557/12.68

Vendler, Zeno. 1957. Verbs and times. *The Philosophical Review* 66(2). 143–160. DOI: https://doi.org/10.2307/2182371

Verkuyl, Henk J. 1972. *On the compositional nature of the aspects*. Dordrecht: Reidel. DOI: https://doi.org/10.1007/978-94-017-2478-4

Verkuyl, Henk J. 1999. Tense, aspect and aspectual composition. In Dimitrova-Vulchanova, Mila & Hellan, Lars (eds.), *Topics in South Slavic syntax and semantics*, 125–162. Amsterdam/Philadelphia: John Benjamins. DOI: https://doi.org/10.1075/cilt.172.07ver

Wiemer, Björn & Seržant, Ilja. 2017. Diachrony and typology of Slavic aspect: What does morphology tell us? In Bisang, Walter & Malchukov, Andrej (eds.), *Unity and diversity in grammaticalization scenarios*, 239–307. Berlin: Language Science Press. https://doi.org/10.5281/zenodo.823246

Žaucer, Rok. 2009. *A VP-internal/resultative analysis of 4 "VP-external" uses of Slavic verbal prefixes*: University of Ottawa dissertation.

Zucchi, Sandro. 1999. Incomplete events, intensionality and imperfective aspect. *Natural Language Semantics* 7. 179—215. DOI: https://doi.org/10.1023/A:1008310800632