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Telicity, durativity, and secondary imperfective verbs in Bulgarian

Abstract

The article argues against earlier treatments of Bulgarian secondary imperfective verbs in terms of atelicity and Viewpoint imperfectivity. Instead, it offers empirical evidence about telicity and durativity as the two core properties of this type of verbs in Bulgarian aspectual triplets. An analysis is proposed in terms of Rothstein's (2004) aspectual classes as properties of verbal predicates that captures the way secondary imperfective verbs differ from both their bare imperfective and perfective counterparts. At the same time, the analysis captures the intrinsic semantic relationship between the triplet members and accounts for the role of the aspectual morphology in terms of aspectual operators that shift the aspectual properties of verbal stems.

Keywords: aspectual triplets, accomplishments, homogeneity, progressive aspect, aspectual shift.

1. Introduction

The aspectual status of secondary imperfective (SI) verbs in Slavic in general and in Bulgarian in particular has been the subject of long-lasting debate. It has been argued that Bulgarian secondary imperfective verbs are atelic and that secondary imperfective morphology has a similar effect to that of the English progressive on telic verbs: to return the activity part of an accomplishment (Łazorczyk 2008, 2010). In this article, I show that Bulgarian SI verbs that are members of aspectual triplets are unambiguously telic and that this property, together with their property of denoting durative events, can be captured in terms of Rothstein's (2004) analysis of derived accomplishments. More specifically,

I argue that the semantic contribution of SI morphology in Bulgarian aspectual triplets can be described in terms of an operator modifying the aspectual class of the verb it is applied to. Inspired by Rothstein's shift operator that raises an achievement to an accomplishment in order for it to be able to combine with the progressive, I specify the semantic contribution of SI morphology in terms of a morphological operator that takes perfective achievement verbs and returns accomplishment verbs. Although the idea that the perfective/imperfective distinction in Slavic may be related to the Vendlerian aspectual classification is not new (cf. e.g., Brecht 1985, Filip 1999, Braginsky/Rothstein 2008), this issue has hardly ever been addressed with respect to Bulgarian, which differs from most Slavic languages in its inventory and use of aspectual morphology.

The paper is structured as follows. Section 2 specifies the basic notions of aspect assumed in the paper and provides some background on the Bulgarian aspectual system and earlier work on SI verbs in Slavic. In Section 3, I provide evidence that Bulgarian SI verbs that are members of aspectual triplets are telic predicates, while at the same time being durative, suggesting that these SI verbs can uniformly be mapped onto the aspectual class of accomplishments. Section 4 develops an account of SI morphology in terms of an operator that shifts achievements into accomplishments. Section 5 summarises and outlines issues which require further investigation.

2. Background

2.1. Aspect

Aspect is a concept intended to capture the internal temporal make-up of the events denoted by verbs and predicates headed by verbs (VPs), while tense indicates the temporal location of events (Comrie 1976, Rothstein 2016). In this paper, I assume an event semantics approach to aspect where verbs/VPs are predicates of events denoting sets of events (Rothstein 2004), or an event type (Landman 2000, Parsons 1990). I further assume the now standard 2-layered aspectual system proposed in Smith (1991): Situation (lexical, Aktionsart) and Viewpoint (grammatical) aspect.

Following Vendler (1957), we can distinguish between 4 major classes of verbs or predicates – states, activities, achievements and accomplish-

ments, based on properties of the denoted events¹ such as dynamicity, durativity and telicity, cf. Table 1.²

states	static	instantaneous	atelic	<i>desire, want, love, dominate</i>
activities	dynamic	durative	atelic	<i>run, walk, push (a cart)</i>
accomplishments	dynamic	durative	telic	<i>run a mile, grow up</i>
achievements	dynamic	instantaneous	telic	<i>recognize, find, win (the race)</i>

Table 1: Aspectual classes

Dynamic events are those that can be said to happen or occur. Activities, accomplishments and achievements are dynamic, while states cannot be said to happen or occur as they denote static situations that do not involve any change and that hold at a certain time (Mittwoch 2019), cf. (1a). States are therefore said to be completely homogeneous, i.e., any part of a state, down to even a moment, is like any other part (ibid.).³ Durative events are those that are inherently extended, involve progression and are true at intervals. Accomplishments and activities are durative and therefore typically do not combine with time point adverbials (1b, 1c), whereas achievements are not extended, do not involve progression and are true at instants and can therefore combine with time point adverbials (Rothstein 2004).

- | | | |
|-----|---|----------------|
| (1) | a. <i>Mary lived in New York in 1999.</i> | state |
| | b. <i>#John ran at noon.</i> | activity |
| | c. <i>#Mary grew up in 1999.</i> | accomplishment |
| | d. <i>John arrived at noon.</i> | achievement |

¹ But cf. Rothstein (2004:2): “much recent linguistic work has stressed that aspectual distinctions are distinctions between linguistic expressions and are not properties of events themselves”. Similarly, Krifka (1998:207) argues that “it is misleading to think that a particular event can be called telic or atelic. The distinction is in the description of the object – aspectual properties are properties of event descriptions”.

² A fifth class, that of semelfactives, has been assumed by Smith (1991). According to her understanding, this class involves instantaneous but atelic events. I follow Rothstein (2004) in assuming that semelfactives can be reduced to activities used in a minimal way (the minimal event parts of activities).

³ But see also Dowty (1979) who distinguishes between momentary states (true at single moments in time) and interval states (true at intervals and therefore compatible with the English progressive).

The a/telic property reflects whether an event is perceived as having an inherently predetermined endpoint (specified by the lexical content of the predicate) and can be tested by means of temporal adverbials of the type *in a time/for a time*, where telic predicates combine naturally with adverbials of the former type, cf. (2c), (2d), and atelic with the latter, (2a), (2b) (Rothstein 2016).

- (2) a. *John lived *in a short time/for a short time.* (state: atelic)
 b. *John ran *in a short time/for a short time.* (activity: atelic)
 c. *John grew up in a short time/*for a short time.* (accomplishment: telic)
 d. *John arrived in a short time/*for a short time.* (achievement: telic)

Further criteria distinguishing telic from atelic predicates that have been discussed in the literature are atomicity (telic predicates are atomic events, atelic are non-atomic) and homogeneity (atelic events are homogenous, telic events are non-homogenous) (cf. e.g. Rothstein 2004, Łazorczyk 2008).⁴

It has long been noticed that the a/telicity of English verbs is influenced by the properties of their direct objects. Thus, Verkuyl (1972) observes that “accomplishment verbs such as *build* differ in telicity depending on the properties of their direct objects”: they head an atelic VP when they have a bare plural or a mass nominal as direct object. This is why Verkuyl (among others) argues that it is VPs that should be classified into aspectual classes.⁵ At the same time, Rothstein (2004:4) notes that bare plural subjects affect the telicity of achievement VPs in the same way that bare plural direct objects affect the telicity of accomplishments, as in *Children have been discovering the secret room for generations*. She accounts for this “apparent movement between lexical classes” in terms of aspectual shifts.

The second aspectual layer, Viewpoint or grammatical aspect, reflects on the other hand the perspective the speaker takes on the event and is expressed by inflectional operators (affixes/auxiliaries) often related to tense. It is common to characterise perfective Viewpoint aspect (PF) as present-

⁴ Rothstein (2004:20) specifies moreover that activities are homogenous down to minimal events, or stages, where each minimal event is dynamic, whereas states are homogenous down to instants. I.e., activities have distinguishable stages, in contrast to states (and achievements).

⁵ Verkuyl even suggests that a/telicity should be assigned to sentences, cf. also Rothstein (2004:4): “telic/atelic are properties of VPs”.

ing an event as being bounded and viewed from the outside (including its initial and final endpoints), whereas in the imperfective Viewpoint aspect (IPF) it is presented as unbounded and viewed from the inside (excluding its initial and final endpoints), cf. e.g. Pancheva/von Stechow (2004). In more formal terms, PF aspect occurs when the reference time t is external to the event time $\tau(e)$ (and the event is perceived as complete or total or bounded), cf. (3a), whereas the IPF occurs when the interval at which the event holds surrounds the reference time t (and it is possible to focus on part of the situation or event), cf. (3b) (ibid.).

- (3) a. $[[PF]] = \lambda P \lambda t \exists e [\tau(e) \subset t \wedge P(e)]$
 b. $[[IPF]] = \lambda P \lambda t \exists e [t \subseteq \tau(e) \wedge P(e)]$

Cross-linguistically, aspectual operators interact with lexical aspect in different ways. In English, for instance, the application of the IPF (progressive) viewpoint to telic predicates returns an atelic interpretation, a phenomenon called “the imperfective paradox” (Dowty 1979) and demonstrated by the contrast between the goal-oriented (telic) predicate in the simple past which entails that the goal has been reached, (4a), and the same predicate in the past progressive, which does not have such an entailment, (4b), since it refers to an ongoing event in the past.

- (4) a. *John built a house.* \rightarrow *John finished building a house.* (PF)
 b. *John was building a house.* \nrightarrow *John finished building a house.* (IPF)

2.2. The Bulgarian aspectual system

Bulgarian encodes the common Slavic morphological distinction between perfective and imperfective verbs, traditionally called “vid” and described in terms of the intuitive notion of completion: imperfective verbs are assumed to refer to an (non-completed) activity, whereas perfective verbs are associated with a completed eventuality (Pašov 1999:134). Most morphologically nonderived verbs are imperfective and have prefixed perfective counterparts, cf. the pairs *piša-napiša* and *mija-izmija* in Table 2. There is a small group of about 50 morphologically nonderived, basic perfective verbs such as *dam* ‘give’, *kaža* ‘say’, *kupja* ‘buy’ (Nicolova 2017:350, Pašov 1999:350), cf. Table 3. Another means of deriving perfective verbs from simplex imperfective ones is *n*-suffixation (e.g. *sedja-sedna* ‘sit’). While some authors view pairs of simplex imperfective and derived perfective verbs as aspectual pairs (e.g. Nicolova 2017), others (e.g. Pašov 1999) argue that prefixation (and *n*-suffixation respectively) is a derivational process resulting in a different lexical meaning.

simplex imperfective verbs	prefixed perfective verbs	secondary imperfective verbs	English equivalents
<i>piš-a</i>	<i>na-piš-a</i>	<i>na-piš-va-m</i>	‘write’
<i>stro-ja</i>	<i>po-stro-ja</i>	<i>po-stro-ja-va-m</i>	‘build’
<i>mi-ja</i>	<i>iz-mi-ja</i>	<i>iz-mi-va-m</i>	‘wash’
<i>suš-a</i>	<i>iz-suš-a</i>	<i>iz-suš-a-va-m</i>	‘dry’

Table 2: Aspectual triplets

On the other hand, perfective verbs (prefixed, suffixed and basic ones) can serve as the basis for deriving imperfective ones by the morphological process of *imperfectivisation* using the suffix *-va* (and a number of allomorphs including theme vowel change), resulting in the so-called “secondary imperfective verbs” (henceforth *SI verbs*), cf. Table 2 and Table 3.⁶

basic perfective verbs	secondary imperfective verbs	English equivalents
<i>dam</i>	<i>da-va-m</i>	‘give’
<i>stana</i>	<i>sta-va-m</i>	‘get up/stand up’
<i>kupja</i>	<i>kupu-va-m</i>	‘buy’
<i>kaza</i>	<i>kaz-va-m</i>	‘say’

Table 3: Basic perfective and secondary imperfective verbs

The imperfectivisation process is productive in Bulgarian, as imperfective forms can be derived from nearly all perfective verbs, in contrast to most other Slavic languages, where this process is more constrained. Some authors argue that the distinction between (prefixed, suffixed or bare) perfective verbs and SI verbs should be seen as a genuine aspectual distinction and they use the term “aspectual pairs” exclusively to refer to this distinction (cf. e.g. Pašov 1999). On the other hand, a great number of SI verbs belong to aspectual triplets based on an imperfective verbal root and a prefixed perfective verb derived from the imperfective root by means of a so-called *empty prefix* that does not modify the lexical semantics of the basic imperfective verb, cf. Table 2.

⁶ Note that the term “secondary imperfectivisation” is used in Bulgarian grammars to refer to the process where a secondary perfective verb like *naljagam* ‘overcome’, which is built by the prefixation of the SI verb *ljagam* (a member of the aspectual triplet *leža–legna–ljagam* ‘lie’), is imperfectivised again, the result being the so-called “tertiary imperfective verb” *naljagvam*, cf. Nicolova (2017:360). This process, as well as secondary perfectivisation, is outside the scope of the current study.

Unlike most other Slavic languages (except for Macedonian), Bulgarian has a second aspectual system making a formal distinction between past tenses that involve morphologically marked Viewpoint aspect: Imperfect (IPF) and Aorist (AOR) (as well as present and past perfects, which I am not taking into consideration here), where IPF has both generic/habitual and progressive/ongoing readings (Rivero / Slavkov 2014). Table 4 shows partial paradigms of the verbs *piša* ‘write’, *mija* ‘wash’ and *suša* ‘dry’ in the 3rd person singular.

Aorist (AOR)			Imperfect (IPF)		
imperfective	perfective	SI	imperfective	perfective	SI
<i>pisa</i>	<i>na-pisa</i>	<i>na-pis-vá</i>	<i>piše-še</i>	<i>na-piše-še</i>	<i>na-pis-va-še</i>
<i>mí</i>	<i>iz-mi</i>	<i>iz-mi-vá</i>	<i>mie-še</i>	<i>iz-mie-še</i>	<i>iz-mi-va-še</i>
<i>suši</i>	<i>iz-suši</i>	<i>iz-suša-va</i>	<i>suše-še</i>	<i>iz-suše-še</i>	<i>iz-suša-va-še</i>

Table 4: Two layers of aspect in Bulgarian

Concerning the imperfective/perfective distinction in Bulgarian and Slavic in general, different views exist as to what its aspectual status is. One widespread position is that the distinction can be mapped into the Viewpoint distinction between PF and IPF aspect, i.e. perfective=PF, imperfective=IPF, cf. e.g. Smith (1991), Borik (2002). In the Bulgarian grammatical tradition, “vid” is viewed as a grammatical aspectual category as well, cf. e.g. Pašov (1999). Others like Łazorczyk (2010:79), however, point out that Slavic bare imperfectives cannot be tied to temporally unbounded interpretations as they can also have PF interpretations. For Bulgarian, Rivero/Slavkov (2014) note that tense morphology (Viewpoint aspect) and the imperfective/perfective verbal morphology make independent semantic contributions in the syntactic environments in which they occur, interacting in non-trivial ways. (This is also indicated by Table 4 which shows that the past Imperfect morphology by which IPF Viewpoint aspect in Bulgarian is expressed can combine with verbs of all 3 morphological classes, imperfective, perfective and SI). Similarly, Slabakova (2005:5-6) argues that “the Bulgarian telicity and boundedness markers cannot conceivably be checked in the same functional category, as there is a complex interaction between the two”. An alternative view that these authors advance is that the perfective/imperfective distinction is a lexical aspectual distinction and that prefixes, being word-formational morphology, mark lexical aspect distinctions (Situation aspect), where prefixed forms are telic (denoting ac-

accomplishments and achievements), while bare imperfective forms are atelic (denoting states and activities), cf. e.g. Brecht (1985), Babko-Malaya (1999), Slabakova (2005), Łazarczyk (2008, 2010), Rivero/Slavkov (2014). According to this view, prefixes in Bulgarian (and Slavic in general) mark telicity, thus turning atelic simple imperfective verbs into telic predicates. This holds in particular for empty prefixes and lexical prefixes.⁷ Thus, Slabakova (2005:5-6) argues that Bulgarian “perfective prefixes mark lexical aspect distinctions”, observing that there is a clear parallel between telicity and perfective prefixes on the one hand and the aorist/imperfect tenses and boundedness (in terms of Depraetere 1995) on the other. Moreover, she observes a specific correlation between prefixed verbs and aspectual classes, suggesting that prefixes derive accomplishments from activities, while treating unprefixed perfective verbs as achievements. Similarly, Babko-Malaya (2003:7) argues that perfectivising prefixes in Russian denote functions from processes to states and derive perfective verbs that characterise the result or a terminal point of the action denoted by a verbal root and are thus accomplishments, whereas prefixes like the inceptive *za-* ‘begin’ or *do-* ‘finish’ derive achievements, as starts are typically conceptualised as punctual. A different view is presented in e.g. Padučeva (1996), Filip (1999) and Braginsky/Rothstein (2008), who claim that lexical classes in Russian cut across the perfective/imperfective distinction, arguing that accomplishment and activity verbs in Russian have both perfective and imperfective realisations. Similarly, Nicolova (2017:349) argues that telic verbs in Bulgarian can be either perfective or imperfective (e.g. *stigna–stigam* ‘reach’), whereas atelic verbs are always imperfective, however without distinguishing between basic and secondary imperfective verbs.⁸

⁷ “Empty” (“purely perfectivizing”, “aspectual”) prefixes derive perfective forms from bare imperfectives without any lexical meaning change (such as *na-* in *napiša* ‘write’). For any given verb, there is one such prefix, the form of which is not predictable but has to be memorized in the process of language acquisition (Łazarczyk 2008). Lexical prefixes, on the other hand, contribute some idiosyncratic meaning in a non-compositional way (Gehrke 2008:161-162), as in *za-piša* ‘write down’, *pod-piša* ‘undersign’ and *nad-piša* ‘superscribe’, where the meanings contributed by the prefixes alter the original meaning of the root.

⁸ Nicolova (2017:353) points at the existence of prefixed verbs that are not perfective/telic but denote states and are thus atelic, such as *podleža* ‘be subject of’. A notorious example of atelic perfective verbs in Slavic in general are verbs derived by the delimitative prefix *po-*, as in *popiša* ‘write for a while’.

2.3. The aspectual status of SI verbs

Concerning the status of Slavic SI verbs, two different views are found in the literature, corresponding to the two main positions on the aspectual status of the general perfective/imperfective distinction in Slavic. One prominent view is that they express IPF Viewpoint aspect since their morphology is inflection-like (cf. e.g. Babko-Malaya 1999, Borer 2005, Jetchev/Bertinetto 2002). Consequently, SI verbs are frequently compared to the forms of the English progressive as a type of the IPF Viewpoint aspect. In particular, this seems to be the predominant view on Bulgarian SI verbs, whose imperfectivising suffixes are often viewed as inflectional devices and their imperfectivisation is seen as a grammatical process (cf. Nicolova 2017:357). The alternative view that SI verbs express Situation aspect is found in e.g. Łazorczyk (2008, 2010) and Rivero/Slavkov (2014), although no uniform aspectual class is assigned to them. Thus, Rivero/Slavkov (2014) categorise SI verbs as accomplishments or achievements depending on the aspectual class of the corresponding English verbs/predicates (e.g. *presičam* ‘cross the road’ as accomplishment, *pristigam* ‘arrive’ as achievement), although they do not explicitly dwell on possible systematic correspondences between the aspectual perfective/imperfective distinction and the Vendlerian aspectual classes. Similarly, Kuehnast (2008) seems to suggest that Bulgarian SI verbs correspond to accomplishments, noting that they are used in the actual present for the expression of processes aimed at a concrete goal. Łazorczyk (2008), on the other hand, argues that SI verbs in Bulgarian denote atelic, homogenous events, putting them on a par with activity verbs. Based on the claim that SI verbs pattern with simplex imperfective verbs in a number of properties (that I will briefly discuss in the next section), Łazorczyk (2008:88) proposes that the contrast between prefixed perfective and SI verbs is the same as between prefixed perfective verbs and the corresponding bare imperfective verbs, namely that of telic vs. atelic. More closely, she views the SI-morphology as a “partitive atelicising” operator, turning telic predicates into atelic/homogenous ones, thus “undoing” the contribution of the telic prefix, and she specifies the meaning of the operator as follows:

- (5) $[[SI]] = \lambda e \lambda P \lambda e' [P(e) \wedge e' \leq e \wedge HOM(e')]$ (where *HOM* is defined in terms of cumulativity and divisity as in Borer (2005), cf. also Section 3.1)

The definition in (5) assigns the following semantics to the SI-operator: SI takes a telic event *e* of which predicate *P* holds, and returns a homogenous subpart of that event, *e'*, that is, it returns the process portion of the event. As Łazorczyk herself notes, her partitive ateliser operator in (5)

is very similar to the treatment of the progressive/IPF Viewpoint aspect which is also often assumed to be a partitive operator, the difference being that the SI-operator in (5) selects a subpart of a telic event, whereas IPF selects a subinterval and thus makes reference to the temporal duration of the event (cf. (3b)). As a matter of fact, a mereological definition of the progressive like the one in (6) (from Krifka 1992:47) assigns the same semantics to the progressive form of an English verb as Łazorczyk's SI-operator to the Bulgarian SI morphology.

$$(6) \text{ PROG} = \lambda P \lambda e' \exists e [P(e) \wedge e' \leq e]$$

In the next section, I provide evidence that while SI-suffixes (as well as perfectivising prefixes) should be viewed as markers of Situation aspect, SI verbs cannot be reasonably treated as atelic, activity-like predicates and the SI-morphology cannot be viewed as a partitive operator, be it on events or intervals.

3. On the aspectual properties of SI verbs in triplets

3.1. SI verbs are not atelic/homogenous

Remember that according to Łazorczyk (2008, 2010), a Bulgarian (and Polish) SI verb denotes a homogenous and thus atelic event. According to (5), the partitive homogeniser operator SI selects homogenous sub-parts of a telic event to the effect that the SI operator returns the process portion of the event. Łazorczyk follows the position that “the nonhomogeneity of telic predicates translates into the existence of a culmination point (or goal), i.e., a point at which the event could naturally terminate because the intended change of state/result has been achieved”. Consequently, she defines homogeneity (following Borer 2005:147) as a property of atelic predicates which are both cumulative and divisive, where cumulativity and divisivity are defined as follows:⁹

- (7) A predicate P is homogenous iff P is cumulative and divisive.
 a. P is cumulative iff $\forall x [P(x) \wedge P(y) \rightarrow P(x \cup y)]$
 (Informally: whenever P holds of two arguments, it holds of their union as well.)

⁹ Note that as pointed out by Łazorczyk, Borer's cumulativity is similar to cumulativity in Krifka's (1998) terms, whereas divisivity is the opposite of Krifka's quantisation. Note also that Rothstein (2004:10-11) takes cumulativity as the defining property of atelicity and argues that homogenous predicates tend to be cumulative.

b. P is divisive iff $\forall x[P(x) \rightarrow \exists y(P(y) \wedge y < x)] \wedge \forall x, y [P(x) \wedge P(y) \wedge y < x \rightarrow P(x - y)]$

(Informally: For any argument that P is true of, there is a part of that argument that P is also true of, and for any argument and part of it P holds true of, P is true also of the difference between the argument and its part.)

If a predicate meets both the cumulativity and the divisivity requirements, that predicate is atelic. Conversely, a predicate which is neither cumulative nor divisive, is telic. Łazorzcyk (2008) tests these criteria on Polish SI verbs, but fails to apply them to the Bulgarian data she bases her analysis on – verbs of creation and consumption such as *write* and *drink*, as well as verbs like *read*. These are all incremental theme verbs which in Bulgarian regularly form triplets with basic imperfective verbs and perfective verbs derived by empty prefixes.

Applying the tests to this kind of data shows that while a bare imperfective verb like *četa* ‘read’ is homogenous according to the definition in (7), the corresponding SI verb *pročitam* is not homogenous and is thus telic.¹⁰ (Note that in contrast to the convention in the Slavic literature to use past forms in linguistic examples to illustrate verbal aspect, here I use sentences in the simple present to avoid complications with Viewpoint aspect; this is possible since Bulgarian SI verbs have both ongoing and habitual readings in the present tense.) (8a) shows that the imperfective verb *četa* is cumulative: If Ivan is reading a book, an event in the denotation of this predicate can be summed with another such event to make an extended event of reading a book. This predicate is also divisive: the event of reading a book has subparts that also count as events of reading a book, cf. (8b). Homogeneity translates into the requirement in (8c) that if Ivan is reading a book for an hour, then it is true that he is reading a book at any time during that hour (cf. Łazorzcyk 2008, Rothstein 2004:18).¹¹

- (8) *Ivan četé* *edna kniga.*
 Ivan read.IPFV.PRS a book
 ‘Ivan is reading a book’
 a. *Ivan četé 1 kniga + Ivan četé 1 kniga* (cumulative)
 = *Ivan četé 1 kniga*

¹⁰ This SI verb is derived from the prefixed perfective verb *pročeta* by means of a theme vowel change which is one of the -*va*-allomorphs mentioned in Section 2.2.

¹¹ This is also what activity verbs in the progressive entail, cf. Section 3.2. Note also that according to Rothstein (2004:20), cumulativity is the crucial property that distinguishes between telic and atelic predicates.

- b. A part of *Ivan četé edna kniga* (divisive)
 = *Ivan četé edna kniga*
 c. *Ivan četé edna kniga v prodälzenie na 1 čas.* → *Ivan četé knigata prez pärvite 30 minuti.*
 ‘Ivan is reading a book for an hour → Ivan is reading the book during the first 30 minutes’

On the other hand, the corresponding SI verb in (9) is not cumulative but additive, nor is it divisive, as (9a) and (9b) demonstrate. Homogeneity does not hold here, as also shown in (9c): If Ivan is reading through a book in an hour, then it is not true that he is reading a book in full at any time during that hour.

- (9) *Ivan pročita edna kniga.*
 Ivan read.SI.PRS a book
 ‘Ivan is reading through a book’
 a. *Ivan pročita 1 kniga + Ivan pročita 1 kniga* (non cumulative)
 ≠ *Ivan pročita 1 kniga*
 = *Ivan pročita 2 knigi.*
 b. A part of *Ivan pročita edna kniga* (non divisive)
 ≠ *Ivan pročita edna kniga*
 c. *Ivan pročita edna kniga za edin čas.* → *Ivan pročita edna kniga prez pärvite 30 minuti.*
 ‘Ivan is reading through a book for an hour → Ivan is reading through a book during the first 30 minutes’

Summing up so far, defining Bulgarian SI verbs as homogenous or atelic predicates is not adequate since applying the homogeneity definition in (7) to these verbs fails to derive the desired properties and shows instead that they are telic. Further evidence pointing in the same direction comes from applying the standard diagnostics used to distinguish telic from atelic predicates. According to one of these tests, telic predicates are compatible with time frame adverbials like *in an hour* which indicate an event completeness interpretation, while atelic ones are compatible with duration adverbials like *for an hour* instead. Applied to Bulgarian bare imperfective and SI verbs in triplets, the test shows that whereas the former are compatible with the durative adverbial *v prodälzenie na* (10a), SI verbs are not (10b). Instead, the SI verb patterns in this respect with its perfective triplet counterpart (10c):¹²

¹² Note that perfective verbs in Bulgarian can be used in the present tense, where they get a habitual/iterative interpretation, cf. the authentic examples below. Moreover, in contrast to most Slavic languages, Bulgarian perfective verbs do not have

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- (10) a. *Ivan se mie* #za/v *prodalženie na 15 min.* (atelic)
 Ivan REFL wash.IPFV.PRS in/in duration of 15 min
 ‘Ivan is washing himself in/for 15 min’
- b. *Ivan se izmiva* za /#v *prodalženie na 15 min.* (telic)
 Ivan REFL wash.SI.PRS in /in duration of 15 min
 ‘Ivan is washing himself (completely) in/for 15 min’
- c. *Ivan se izmie* za/#v *prodalženie na 15 min.* (telic)
 Ivan REFL wash.PFV.PRS in /in duration of 15 min
 ‘Ivan washes himself in/for 15 min’

On the other hand, there is empirical evidence, on which Łazarczyk (2008, 2010) largely bases her claims, suggesting that SI verbs pattern with simplex imperfective verbs with regard to a number of properties. Both have a present tense interpretation in present tense forms, in contrast to perfective verbs. The two types of imperfective verbs also pattern in terms of participle formation: perfective verbs do not have present active participles (**napišešt*) and gerunds (**napišejki*), whereas both bare imperfective and SI verbs do (*pišešt*, *napisvašt*; *pišejki*, *napisvajki*). Furthermore, only bare imperfective and SI verbs can form verbal nouns that refer to an activity (*pisane*, *napisvane* but **napišene*). Finally, negative imperatives can only be formed with bare or secondary imperfective verbs (*Ne piši/napisvaj/*napiši*, cf. Kuehnast 2008, Nicolova 2017:364).

The similar behaviour displayed by bare and secondary imperfective verbs need not however be rooted in the telicity/atelicity distinction. Instead, it could be related to the fact that both types of verbs denote extended/durative events involving an activity that may or may not be directed towards an end. This is also suggested by Nicolova’s (2017:363-364) explanation of the morphological restrictions of perfective verbs: The semantics of

future interpretations in the present tense and can be used in the analytic future tense.

- (i) *Nastane večer, mecez izgree, zvezdi obsipjat svoda nebesen*
 come.PFV.PRS night, moon rise.PFV.PRS, stars strew.PFV.PRS vault heavenly
 ‘Then night falls (again), the moon rises, stars cover the firmament’
 (Christo Botev, *Hadži Dimităr*)
- (ii) *Čete ot sutrin do večer, dokato sivata svetlina na kišavija den*
 read.IPFV.PRS from morning to evening until grey light of muddy day
se prevârne v mrak. (Rivero/Slavkov 2014)
 REFL turn.PFV.PRS to darkness
 ‘He reads from morning till evening, until the grey light of the slushy wintery day turns into darkness’

present active participles, gerunds and *na*-nominalisations is related to ongoing/continuative activities and is thus incompatible with the meaning of perfective aspect which is characterised (following Ivančev 1971:27) in terms of completeness/non-processuality. In contrast, imperfective aspect meaning is characterised (again following Ivančev) in terms of either (i) non-completeness/processuality (mainly in actual use) or (ii) completeness/nonprocessuality like the perfective aspect (in non-actual use such as historical present, habitual present and past imperfect). However, the above characterisation is done without distinguishing between bare and secondary imperfective verbs. Looking more closely at the two different types of imperfective verbs in Bulgarian triplets, it seems obvious that the completeness/non-processuality interpretation can only be seen to apply to SI verbs and to translate to telicity, whereas “non-completeness/processuality” translates to the property of durativity rather than atelicity and therefore applies to both types of imperfective verbs. Thus, while both (10a) and (10b) describe durative (hence “processual”) events, they differ in terms of telicity. At the same time, while the SI verb in (10b) gets a “completeness” interpretation, its bare imperfective counterpart in (10a) has a non-complete/ processual one. Also in the context of habitual present and past imperfect, the notion of telicity in terms of Ivančev’s completeness property can only be seen to apply to SI verbs rather than to the corresponding bare imperfective verbs. Thus, in the habitual present in (11a), each iterated event is atelic, whereas in (11b), each event is telic. The same holds for the Imperfect forms.

- (11) a. *Petâr čete/četeše* *njakolko* *knigi vseki den.*
 Peter read.IPFV.PRS/IPF several books every day
 ‘Peter is/was reading several books every day’
- b. *Petâr pročita/pročitaše* *njakolko* *knigi vseki den.*
 Peter read.SI.PRS/IPF several books every day
 ‘Peter is/was reading through several books every day’

Further cases discussed in Łazorczyk (2010) where SI verbs pattern with imperfective verbs involve the complementation of aspectual verbs and the interaction with temporal clauses. In the case of aspectual verbs, however, the similar behavior of bare and secondary imperfectives can be attributed to their durativity, rather than to the alleged atelicity of SI verbs: aspectual verbs are only compatible with durative predicates as they denote the start/end of an activity, and are incompatible with predicates that do not denote processes but states, including states resulting from a change of state. As for the interaction with temporal clauses, the examples in (12) show that

Bulgarian bare imperfective verbs differ from their SI counterparts in that they have a simultaneous interpretation of the temporal relation between the event denoted by the target verb and the one described in the matrix clause, cf. (12a), whereas the simultaneous interpretation is impossible for the verbs with perfective and SI morphology: in (12b) and (12c), each time the reading event has culminated, it is followed by a crying event.¹³

- (12) a. *Kogato ceté pismoto, toj plače.* ('while')
 when read.IPFV.PRS letter.DEF, he cry.IPFV.PRS
 'While he is reading the letter, he is crying'
- b. *Kogato pročeté pismoto, toj plače.* ('after')
 when read.PFV.PRS letter.DEF, he cry.IPFV.PRS
 'After he has read the letter, he cries'
- c. *Kogato pročita pismoto, toj plače.* ('after')
 when read.SI.PRS letter.DEF, he cry.IPFV.PRS
 'After reading the letter in full, he is crying'

Finally, a further case where Bulgarian SI verbs pattern with their perfective counterparts in incremental theme verb triplets, rather than with their bare imperfective counterparts, is related to the type of their direct object: both SI and their prefixed perfective counterparts are incompatible with bare plurals (which in Bulgarian have only generic interpretation, rather than being ambiguous between generic and existential interpretations like in English) and with mass nouns.¹⁴ In contrast, the bare imperfective coun-

¹³ With *dokato* 'until' on the other hand, SI verbs indeed pattern with imperfective ones (i), which can again be attributed to the durativity expressed by the two types of verbs, rather than attributing it to an alleged atelicity of the SI verb.

- (i) a. *Dokato četé pismoto, toj plače.* ('while')
 until read.IPFV.PRS letter.DEF, he cry.IPFV.PRS
 'While he is reading the letter, he is crying'
- b. *Dokato pročeté pismoto, toj plače.* ('until')
 until read.PFV.PRS letter.DEF, he cry.IPFV.PRS
 'Until he has read the letter, he is crying'
- c. *Dokato pročita pismoto, toj plače.* ('while')
 until read.SI.PRS letter.DEF, he cry.IPFV.PRS
 'While he is reading the letter in full, he is crying'

Note that in both (12) and (i), the sentences with bare and secondary imperfectives can also have a habitual reading next to the episodic one, while the perfective in (12) can only be interpreted habitually. In contrast, the perfective verb in *dokato*-sentences can in some cases be interpreted episodically.

¹⁴ This fact is acknowledged in Łazorzcyk (2010) for perfectives and SI verbs but without drawing further on this property.

terparts can have both generic plurals and mass nouns as direct objects, cf. (13) and (14).¹⁵

- (13) a. *Ivan pročeté/pročita* *knigi/edna kniga/knigata/knigite/mnogo knigi.
Ivan read.PFV/SI.PRS book.PL/IDEF.SG/DEF.SG/PL/many books
'Ivan read/reads through books/a book/the book/the books/many books'
- b. *Ivan četé* knigi/edna kniga/knigata/knigite/mnogo knigi.
Ivan read.IPFV.PRS book.PL/IDEF.SG/DEF.SG/PL/many books
'Ivan is reading books/a book/the book/the books/many books'
- (14) a. *Ivan izpie/izpiva* *voda/edna voda/vodata/mnogo voda.
Ivan drink.PFV/SI.PRS water/a water/water.DEF/lots of water
'Ivan drank/drinks up water/a (glass of) water/the water/lots of water'
- b. *Ivan pie* voda/edna voda/vodata/mnogo voda.
Ivan drink.IPFV.PRS water/a water/water.DEF/lots of water
'Ivan is drinking water/a (glass of) water/the water/lots of water'

3.2. SI verbs differ from English progressive verbs

We have already seen that assuming a partitive homogenous meaning for Bulgarian SI verbs is empirically unjustified. On the other hand, the notion of progressivity or durativity is a prominent feature of this type of verbs. Informal descriptions of the meaning contribution of SI verbs like the one given in Pašov (1999:134) stress the ability of SI verbs to focus on the activity part of an event. A similar property has also been ascribed to the English progressive, a periphrastic grammatical construction with the form *be+Verb+-ing* expressing that an event is in progress or ongoing at the time indicated by the tense, present or past (Portner 2011), as in *Mary is/was reading a book/running*. Portner (2011:1242) takes the "process property" to be a key property of the progressive sentence: "Whatever the basic aspectual properties of the clause under the scope of the progressive, the progressive sentence itself entails that some process was ongoing at the time described by the sentence." Thus, *Mary is running for an hour* entails that the activity of Mary's running was ongoing at that interval. This process reading arises also in cases of accomplishment (15a) and achievement verbs (15b).

- (15) a. *Mary was building a house.* → *a building process was ongoing
at some time*
- b. *We are now arriving at our destination.* → *an arrival process was
ongoing*

¹⁵ The compatibility with quantifiers like *mnogo* 'much', *njakakvi* 'some' shows that the distinction specific/nonspecific does not play a role here.

Cases of achievements in the progressive are of special interest since the ongoing reading is rendered with predicates that normally denote instantaneous changes. When an achievement verb like *arrive* is in the progressive, “we focus on what is going on before the moment of arrival, and this yields an appropriate process which may be ongoing” (ibid.). Bulgarian SI verbs also display this property, both in the present tense and in the Imperfective (cf. also Rivero/Slavkov 2014:239):

- (16) *Maria pročitǎ/pročitǎše edna kniga* → a reading process is/was ongoing
 Maria read.SI.PRS/IPF a book
 ‘Maria is/was reading through a book’

On the other hand, a habitual reading is possible in both cases as well. For comparison, simplex imperfective verbs in Bulgarian also have ongoing readings in the present and Imperfect (17a), next to habitual ones. However this is a property that only verbs denoting an activity share with the SI verbs. Bulgarian stative verbs obviously do not have ongoing readings (17b), and in this respect they behave similarly to English stative verbs, which usually cannot occur in the progressive, cf. **Mary is loving Peter*. English activity verbs, on the other hand, must be in the progressive in order to express an ongoing event, whereas they get a habitual reading in the simple present tense (17c). This in turn is similar to the way perfective verbs in Bulgarian behave in the present tense (as well as the Imperfect) where they only get a habitual/iterative interpretation (cf. examples in footnote 12). Finally, and crucially, SI verbs display the process property independently of the type of basic imperfective verb they are derived from, activity or state, cf. (17d), where the SI verb *zaobičvam* is derived from the stative verb *običam* ‘to love’.

- (17) a. *Maria čete/četeše.* → a reading process is/was ongoing
 Maria read.IPFV.PRS/IPF
 ‘Maria is/was reading’
 b. *Mia običa/običaše Ivan.* → a loving process is/was ongoing
 Mia love.IPFV.PRS/IPF Ivan
 ‘Mia loves Ivan’
 c. *Mary runs.* → a running process is ongoing
 d. *Maria zaobičva/zaobičvaše Ivan.* → a loving process is/was ongoing
 Maria love.SI.PRS/IPF Ivan
 ‘Mary is starting to love/used to start loving Ivan’

What these examples show is that Bulgarian SI verbs share the process property with English non-stative verbs in the progressive, both in the

present tense and in the Imperfect, independent of the aspectual type (activity or state) of the simple verb they incorporate. In order to express progressive meaning in the present tense (or the Imperfective), Bulgarian sentences need an SI verb or a basic imperfective verb denoting an activity (since, as already mentioned, perfective verbs cannot be used in the present tense with an ongoing interpretation). At the same time, while both SI and bare imperfective triplet members (and English progressive verbs) entail an ongoing process, they do not seem to refer to the same process. Thus, while the simple imperfective verb in (18b) entails that a process of building a house is ongoing, its SI counterpart in (18c) entails a process directed to a predetermined endpoint.

- (18) a. *Mary is building a house.* → a process of **building** a house is ongoing
 b. *Maria stroi edna kâšta.* → a process of **building** a house is ongoing
 Maria build.IPFV.PRS a house
 c. *Maria postrojava edna kâšta.* → a process of **building** an entire
 house is ongoing
 Maria build.SI.PRS a house

The intuition that SI verbs in Bulgarian entail a different kind of process than the corresponding basic imperfective and English progressive verbs is confirmed when we look at two further key properties of the Progressive (following Portner 2011:1243-1244) that do not seem to be paralleled by the behaviour of Bulgarian SI verbs.

The first such property (which Portner calls the “completion property”) is based on the observation made in Bennet/Partee (2004) that some present progressive sentences entail their perfect counterpart, whereas others do not. Thus, *John is walking* entails that John has walked, but *John is walking to Rome* does not entail that John has walked to Rome. The different entailments of the progressive are explained in terms of different properties of the VPs involved. Thus, *walk* is a subinterval VP, since whenever the sentence with that predicate is true at some interval *I*, then the sentence is true at every subinterval of *I* including every moment of time in *I*, and the entailment relation holds, i.e. when John starts walking, after a short time it is both true that he is walking and that he has walked. On the other hand, a VP like *walk to Rome* is a non-subinterval VP, and no such entailment follows therefrom: If *John is walking to Rome* is true at interval *I*, it is not true at every subinterval

that John is walking to Rome.¹⁶ In general, a present progressive sentence entails its perfect counterpart only if it is based on a clause with the subinterval property (Portner 2011:1243). Crucially, the subinterval property is shared by activities and states, whereas accomplishments and achievement do not possess this property and hence do not give rise to completion entailments (ibid.).¹⁷ We can see that while the completion entailment holds for a simple imperfective verbs in a present tense sentence, cf. (19a), it does not hold for its SI counterpart in the present ongoing reading (19b), suggesting that Bulgarian SI verbs behave like non-subinterval (telic) predicates: in (19b), if it is true at an interval of time I that John is building a house in full, then it is not true at every subinterval of I that John has built a house (in full), i.e. it cannot be true at I that he is both building the house and that he has built the house, and the progressive and the perfect sentence cannot hold at the same instant.

- (19) a. *Ivan stroi edna kâšta.* → *Ivan e stroil edna kâšta.*
 Ivan build.IPFV.PRS a house → Ivan is build.PST.PTCP a house
 b. *Ivan postrojáva edna kâšta.* ⇝ *Ivan e postrojaval edna kâšta.*
 Ivan build.SI.PRS a. house ⇝ Ivan is build.SI.PST.PTCP a house

On the other hand, the Bulgarian SI verbs differ from English non-subinterval predicates in at least one important respect. As Bennet/Partee (2004:73) observe, present progressive sentences based on the non-subinterval property fail to entail that the event is about to be completed or will be completed in the future, cf. (20). While Bulgarian sentences with a bare imperfective verb lack these entailments as well, cf. (21a), those with an SI counterpart do entail completion at some point in the present or future, cf. (21b).

¹⁶ This follows from the truth conditions of the progressive, since the progressive sentence does not require for its truth at interval I that there be any complete/past interval at which the non-progressive sentence is true. Bennet/Partee (2004:71) define the truth conditions of a progressive sentence in terms of interval semantics, where a progressive sentence is true at an interval I iff I is a moment of time, there exists an interval of time I' such that I contains I' , I is not an endpoint for I' , and the non-progressive form of the sentence is true at I' .

¹⁷ This is also noted by Krifka (1998) who states that the interval semantics analysis is related to telicity in the sense of boundedness: whenever atelic predicates (like *push a cart*) are true at a time interval, then they are true at any part of that interval, hence they have the subinterval property, whereas this does not hold for telic predicates (like *eat an apple*).

- (20) *John is building a house.* → *John is finishing building a house.*
 → *John will finish building a house at some time.*
- (21) a. *Ivan stroi edna kâšta.* → *Ivan is finishing building a house.*
 Ivan build.IPFV.PRS a house → *Ivan will finish building a house*
at some time.
- b. *Ivan postrojáva edna kâšta.* → *Ivan is finishing building a house.*
 Ivan build.SI.PRS a house → *Ivan will finish building a house*
at some time.

Similarly, it has been observed that English clauses for which the imperfective paradox arises (past progressive clauses based on non-sub-interval predicates), albeit not entailing the non-progressive counterpart, entail the existence of a process which, if not interrupted, would lead to the truth of the non-progressive counterpart (Portner calls this the “interruption principle”). Thus, the sentence *John was crossing the street* (discussed in Dowty 1977:56) “could be true even if John was hit by a truck when halfway crossing the street”. Under the assumption that the process described by the sentence was not interrupted, it does entail that John crossed the street.¹⁸ However, a sentence like (22) containing an SI verb does give rise to a completion entailment in the future without any additional non-interruption assumption, as the infelicitous continuation shows. For comparison, the sentence with the bare imperfective counterpart behaves the same way as the English verb in the progressive:

- (22) a. *Ivan izpušva dna tsigara, #no nikoga njama da ja izpuši.*
 Ivan smoke.SI.PRS a cigarette but never not to it smoke.SI.PRS
 ‘Ivan is smoking a cigarette in full but he will never finish it’
- b. *Ivan puši edna tsigara, no nikoga njama da ja izpuši.*
 Ivan smoke.IPFV.PRS a cigarette, but never not to it
 smoke.SI.PRS
 ‘Ivan is smoking a cigarette, but he will never finish it’

The second property is the culmination entailment, an entailment that has been associated with the imperfective paradox: a telic predicate in the past progressive does not entail that the goal denoted by the predicate has been reached (23a), as it does in the perfect (23b). Additionally, it does not entail near completion (23c):

¹⁸ Landman (1992) builds his intensional theory of the progressive (briefly discussed in section 4) around this observation.

- (23) a. *John was building a house.* → *John finished building the house.*
 b. *John built a house.* → *John finished building the house.*
 c. *John was building a house.* → *John was about to finish building the house.*

In contrast, a sentence with the corresponding SI verb in the Imperfect (on an episodic reading) gives rise to the near completion entailment that John was about to finish building the house, cf. (24a),¹⁹ while the Imperfect sentence with the bare imperfective counterpart (24b) behaves like the English past progressive verb. In contrast, the sentence with the bare imperfective verb in the Aorist (24c) differs from the English perfect sentence (23b) in that it does not entail completion.

- (24) a. *Ivan postrojjavaše edna kâšta.* → *Ivan was about to finish building the house.*
 Ivan build.SI.IPF a house
 b. *Ivan stroeše edna kâšta.* → *Ivan finished/was about to finish building the house.*
 Ivan build.IPFV.IPF a house
 c. *Ivan stroi edna kâšta.* → *Ivan finished building the house.*
 Ivan build.IPFV.AOR a house

Summing up, the evidence presented so far suggests that the durativity of the SI triplet members discussed cannot be accounted for in terms of the properties of the progressive Viewpoint aspect. While the effect of the progressive on telic verbs in English seems to be to “take away” the built-

¹⁹ In the repetitive/habitual interpretation in the IPF, cf. (ia), the sentence entails completion of each of the iterated events: it is clear that the house was finished each time before it was torn down. In contrast, the corresponding sentence with the bare imperfective verb in (ib) is odd since the second clause presupposes that there is a house, thus running against what the first clause entails.

- (i) a. *Ivan postrojjavaše edna kâšta (i posle pak ja sâbarjaše).* → *Ivan finished building the house each time.*
 Ivan build.SI.IPF a house (and then again it destroy.SI.IPF)
 b. *Ivan stroeše edna kâšta i/no posle pak ja sâbarjaše.*
 Ivan build.IPFV.IPF a house and/but then again it destroy.SI.IPF
 ‘Ivan used to build a house (and destroy it afterwards)’

A related property of the English progressive called the “failure of existence” entailment (Portner 2011:1244) arising with verbs of creation is that “the progressive sentence does not entail the ultimate existence of an individual of the kind described by the object”, cf. (iia). A failure of existence entailment arises with an imperfective verb in the Imperfect in Bulgarian, as suggested by the awkwardness of (ib), but not with its SI counterpart in (ia).

- (ii) a. *Mary was building a house.* → *there exists a house Mary built*
 b. *Mary built a house.* → *there exists a house Mary built*

in endpoint of the verb, SI verbs in ongoing (as well as habitual) readings remain telic. The question is then how to account for the properties of the events that the Bulgarian SI triplet members systematically denote.

4. SI triplet members as accomplishments

The properties of the Bulgarian SI triplet members discussed in the previous section suggest that they can be understood as accomplishment verbs, since accomplishments denote (sets of) events which are not cumulative, have a predetermined endpoint and express progression.²⁰ At the same time, the perfective triplet members that SI verbs are derived from and that are also telic, can be shown to not involve progression, thus denoting the type of events assumed for English achievement verbs: “genuinely near-instantaneous changes from $\neg\varphi$ to φ , consisting of a starting point, the final instant at which $\neg\varphi$ holds, and a stopping point, the adjacent instant at which φ holds (Rothstein 2004:185, cf. also Dowty 1979, Krifka 1998:230).²¹ Thus, while SI triplet members can occur under the scope of verbs and adverbs denoting a protracted event, their perfective counterparts are ungrammatical in this environment (independent of tense and Viewpoint aspect), cf. (25).

- (25) a. *Toj započna/prestana* *da napisva/*napiše knjigata.*
 He start/stop to write.SI/PFV book.DET
 ‘He started/stopped finishing writing the book’
- b. *Pazientât* *vse* *ošte umiraše/*umreše.*
 patient.det constantly still die.IPF.SI/PFV
 ‘The patient is/was still dying’

According to Rothstein (2016:27-28), *finish* occurs with dynamic eventualities that have a telic point, i.e. accomplishments, and since it requires its complement to denote an eventuality with duration, achievements cannot occur with it. When an accomplishment occurs with *stop*, there is an implication that the eventuality was interrupted and the telic point was not reached. Achievements occur with neither, as they are over as soon as they have begun and thus cannot be stopped or interrupted. In addition, accom-

²⁰ This is supported by Rothstein’s (2016:20) view on cumulativity as the crucial property that distinguishes activities from accomplishments (and thus between telic and atelic predicates).

²¹ Cf. also Pašov (1999:134) who characterises perfective verbs in Bulgarian as presenting the event punctually, comprising its beginning, the activity involved, and its end, suggesting that this property explains why they cannot be used in the actual present where an event is going on at the time of speaking.

plishments, being protracted events, can in contrast to achievements combine with durative adverbials like *a long time*, and this is precisely the contrast that we find between the SI verb and its perfective counterpart in (26) below.

- (26) *Ivan si izmivá/*izmi rāzete dālgo.*
 Ivan REFL wash.AOR.SI/PFV hand.PL.DET long
 ‘Ivan is washing/washed his hands for a long time’

One way to account for the meaning of Bulgarian SI triplet members is in terms of the effect the SI morphology has on the perfective triplet member it is applied to. In contrast to Łazorczyk (2008, 2010), however, I propose that this effect can be seen as an operation of adding durativity to the instantaneous event denoted by the perfective verb, turning the achievement into an extended, accomplishment-like predicate that is both durative and telic. Moreover, I suggest that this process can be captured in terms of an aspectual shift, similar to the one triggered by the progressive use of English achievement verbs accounted for in Rothstein (2004) which she defines in terms of a function from achievements to accomplishments. Rothstein (2004) bases her account on Landman’s (1992) view that a progressive sentence expresses that a stage of the eventuality given by the verb occurred or is occurring. The crucial notion is the notion of process stages of an event, where the relation stage-of an event is different from the part-of relation applied in other theories of the progressive. Process stages are stages of an event *e* which have the characteristics of activity events. Rothstein (2004) takes the property of having stages, together with the property of (a)telicity (in terms of the verb naturally heading an a/telic VP), as the defining properties of aspectual classes, cf. Table 5.²²

	[±stages]	[±telic]
States	–	–
Activities	+	–
Achievements	–	+
Accomplishments	+	+

Table 5: Aspectual classes (Rothstein 2004:12, 183)

²² Note that Rothstein (2004) points out that this classification reflects the properties of the events in the denotation of the verbs. These properties can be used to make predictions about how verbs from particular verb classes interact with arguments and modifiers, while (a)telicity is a property of VPs.

Since both activities and accomplishments have the property [+stages], they occur naturally in the progressive, which allows different stages of the events they describe to be distinguished. Thus, *Mary is running* asserts that a stage in a running event is going on, and *Mary is reading a book* that a stage of an event of reading a book is going on (Rothstein 2004:21). If e is an activity event, its process stages have the same properties as e itself. If however e is an accomplishment, then its process stages will be the stages which have the properties of the activity subevent of e , and these properties will be given by the lexical meaning of the verb (ibid.). That is, the process stages of a running event would be the stages in which someone runs, and the process stages of a building a house event will be the stages in which the house is getting built modulo the resultant state of the house being built, and it is this process stage that “serves as the warrant for a progressive assertion” (ibid.). Achievements, on the other hand, denote events that are too short for stages to be distinguished (ibid.). Consequently, Rothstein (2004:35) defines the semantics of these aspectual classes in terms of the templates in (27), adapting Dowty’s (1979) verbal templates to a neo-Davidsonian theory of verb representation where verbs are predicates of events and P is a variable over the idiosyncratic content of particular lexical items.²³

- (27) a. States: $\lambda e.P(e)$
 b. Activities: $\lambda e.(DO(P))(e)$
 c. Achievements: $\lambda e.(BECOME(P))(e)$
 d. Accomplishments: $\lambda e.\exists e_1\exists e_2[e=e^s(e_1 \sqcup e_2) \wedge (DO(P))(e_1) \wedge Cul(e)=e_2]$

Dowty’s *BECOME* operator is intended to capture the property of achievements as near instantaneous changes of state from a state in which x has the property $\neg P$ to a state in which x has the property P . Accomplishments on the other hand are complex event predicates constructed by summing an activity, expressed by Dowty’s *DO* operator, and a culmination point *Cul*, corresponding to a near-instantaneous event. The summing operation s is such that it forms a singular event out of the two subevents. (Cf. Rothstein 2004 for details.)

While the [–stages] property explains why achievements usually do not occur in the progressive, the fact that they sometimes do raises the question of how to account for the process stage of an event that does not have such a stage in its denotation.²⁴ Rothstein solves this problem in terms of a type

²³ Rothstein (2004:Ch. 4) redefines the accomplishment template introducing the notion of incrementality. This is however not crucial for the current purposes.

²⁴ Note that Łazarczyk’s SI operator in (5) would run into similar problems when applied to a perfective verb with an achievement meaning.

shifting operation (triggered by the progressive) which raises the achievement meaning of the verb into an accomplishment meaning and which enables the progressive to be combined with the original achievement. On this account, a progressive achievement like *Mary is arriving at the station* asserts that there is an event going on which if not interrupted will culminate in Mary's arrival. Since the activity which warrants this assertion cannot be part of an event in the denotation of the punctual verb *arrive at the station*, Rothstein postulates an abstract activity subevent α (a free variable) as the complement of the DO operator, whose properties are lexically unspecified, and whose telic point is the event in the denotation of the achievement verb, here an arrival-at-the-station event. The aspectual type shifting operator defined in (28) raises the achievement meaning into an abstract, derived accomplishment meaning denoting a set of events e which are the sum of an activity e_1 whose properties are lexically unspecified, and a culmination event e_2 which is in the denotation of the lexical achievement.

$$(28) \text{SHIFT}(\text{VP}_{\text{punctual}}): \lambda e. (\text{BECOME})(e) \rightarrow \\ \lambda e. \exists e_1 \exists e_2 [e = e_1 \sqcup e_2 \wedge (\text{DO}(\alpha))(e_1) \wedge (\text{BECOME}(\text{P}))(e_2) \wedge \text{Cul}(e) = e_2]$$

The output of the shift operation is then taken as the argument of the progressive operator PROG to yield the denotation of a progressive sentence (cf. Rothstein 2004:45ff. for details).²⁵

The semantics of the SI morphology (the imperfectivising suffix *-va* and its allomorphs) and its effect on the perfective verbs it is applied to can be accounted for in terms of a similar operator that shifts the aspectual value of a perfective achievement to that of an accomplishment verb, cf. (29). In order to account for the intrinsic relation between the members of aspectual triplets, where the activity subevent that leads to the culmination event specified by the perfective verb is in turn specified by the bare imperfective activity verb it is derived from, the complement of the DO operator is the bare imperfective triplet member, rather than a free variable.²⁶

²⁵ A similar idea is presented in Piñón (1997) who suggests that progressive achievements are derived by a lexical process deriving a new lexical item from the achievement. Thus, in *John is winning the race*, the new lexical item derived from the achievement will have the meaning 'do an activity which in short time leads to winning the race'.

²⁶ On the other hand, leaving the activity subevent unspecified makes it possible to account for SI verbs in aspectual pairs that lack a corresponding basic imperfective verb:

$$\text{SI}(\text{P}_{\text{perfective}}): \lambda e. (\text{BECOME})(e) \rightarrow \\ \lambda e. \exists e_1 \exists e_2 [e = e_1 \sqcup e_2 \wedge (\text{DO}(\alpha))(e_1) \wedge (\text{BECOME}(\text{P}))(e_2) \wedge \text{Cul}(e) = e_2]$$

$$(29) \text{SI}(P_{\text{perfective}}): \lambda e. (\text{BECOME})(e) \rightarrow \lambda e. \exists e_1 \exists e_2 [e =^s (e_1 \sqcup e_2) \wedge (\text{DO}(P_{\text{ipv}}))(e_1) \wedge (\text{BECOME}(P))(e_2) \wedge \text{Cul}(e) = e_2]$$

When applied to perfective achievement verbs, the operator in (29) returns complex events with an activity subevent specified by the corresponding bare imperfective verb and a culmination subevent specified by the corresponding perfective achievement verb. For illustration, applying the SI-operator to the perfective verb *postroja* ‘build’ yields the accomplishment verb denotation of the SI verb *postrojavam* in (30), and the activity that is introduced is lexically specified by the imperfective verb *stroja*, which is the root of the prefixed perfective verb *postroja*.

$$(30) \text{SI}(\lambda e. \text{POSTROJA}(e)) = \lambda e. \exists e_1 \exists e_2 [e =^s (e_1 \sqcup e_2) \wedge \text{STROJA}(e_1) \wedge \text{POSTROJA}(e_2) \wedge \text{Cul}(e) = e_2]$$

Following up on this approach, prefixed perfective triplet members could be defined as the result of a morphological operation that takes activities and returns achievements, and of perfectivising prefixes as functions from activities to achievements, cf. (32a) and its application to *četa–pročeta* ‘read’ (32b). A more elaborated account must however be left for future work.

$$(32) \text{ a. PFV}(P_{\text{imperfective}}): \lambda e. (\text{DO}(P))(e) \rightarrow \lambda e. (\text{BECOME}(P))(e) \\ \text{ b. PFV}(\lambda e. \text{ČETA}(e)) = \lambda e. \text{PROČETA}(e)$$

5. Summary and outlook

I have argued that SI verbs in Bulgarian aspectual triplets are best accounted for in terms of verbal predicates that belong to the aspectual class of accomplishments denoting sets of events that are telic and durative. The fact that SI verbs denote extended, durative events has been previously taken as evidence for treating them as activity predicates or as expressing Viewpoint progressive aspect. I have shown instead that SI triplet members differ from basic imperfective verbs in that they express that the denoted event has a predetermined endpoint, thus giving rise to different entailments as compared to English verbs in the Progressive. I have proposed an account of SI triplet members as derived by a morphological operation that shifts the perfective verbs to which the SI morphology is applied into accomplishments, and for the SI morphology as a function from achievements to accomplishments.

In addition to capturing the aspectual properties of SI verbs in aspectual triplets denoting events of creation and consumption, the proposed ap-

proach is potentially applicable to aspectual triplets and pairs of various other kinds, an issue that is however left for subsequent work. Moreover, it sheds more light on the way the two types of imperfective verbs in Bulgarian aspectual triplets differ from one another. Viewing the perfective/imperfective distinction in terms of a lexical aspectual one and treating it separately from the distinction between perfective and imperfective Viewpoint (grammatical) aspect turns out to be useful not only with respect to clarifying the aspectual status of SI verbs in Bulgarian, but it also potentially opens the way for an account of the interaction between the different aspectual dimensions involved in Bulgarian verbal morphology. Thus, effects similar to the imperfective paradox that arise with English accomplishment and achievement verbs in the progressive, typically arise in Bulgarian when SI verbs are used in the imperfective viewpoint aspect. A more in-depth exploration of the interaction between the two aspectual layers in Bulgarian is however a topic for subsequent research.

Abbreviations

ACC accusative	PL plural
DEF definite	PRS present tense
INDF indefinite	PTCP participle
IPF Imperfect	REFL reflexive
IPFV imperfective verb	SG singular
AOR Aorist	SI secondary imperfective verb
PFV perfective verb	

References

- Babko-Malaya Olga, 1999, Zero morphology: A study of aspect, argument structure, and case, Doctoral dissertation, Rutgers University.
- Babko-Malaya Olga, 2003, Perfectivity and prefixation in Russian, in: *Journal of Slavic Linguistics* 1(1), pp. 5-36.
- Bennet Michael / Partee Barbara, 2004, Toward the logic of tense and aspect in English, in: *Compositionality in Formal Semantics*, Oxford: Blackwell Publishing, pp. 59-109.
- Borer Hagit, 2005, *The normal course of events. Structuring sense vol. II*, Oxford, UK & New York: Oxford University Press.
- Borik Olga, 2002, Aspect and reference time, Doctoral dissertation, Utrecht.
- Braginsky Pavel / Rothstein Susan, 2008, Vendlerian classes and the Russian aspectual system, in: *Journal of Slavic Linguistics* 16(1), pp. 3-55.

- Brecht Richard, 1985, The form and function of aspect in Russian, in: Flier M.S./Brecht D. (eds.), *Issues in Russian morphosyntax*, Columbus, OH: Slavica Publishers, pp. 9-34.
- Comrie Bernd, 1976, *Aspect*, Cambridge: Cambridge University Press.
- Depraetere Ilse, 1995, On the necessity of distinguishing between (un)boundedness and (a)telicity, in: *Linguistics and Philosophy* 18, pp. 1-19.
- Dowty David R., 1977, Towards a semantic analysis of verb aspect and the English 'imperfective' progressive, in: *Linguistics and Philosophy* (1), pp. 45-77.
- 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.
- Filip Hana, 1999, *Aspect, eventuality types, and nominal reference*, New York: Garland publishing.
- Ivančev Svetomir, 1971, *Problemi na aspekualnostta v slavjanskite ezici* [Topics in Slavic aspectuality], Sofia: BAN.
- Jetchev Georgi / Bertinetto Marco, 2002, Lexical access in Bulgarian perfective vs. imperfective verbs, in: Bendjaballah S./Dressler W./Pfeiffer O./Voicikova M. (eds.), *Morphology 2000. Selected papers from the 9th morphology meeting*, Vienna, Amsterdam/Philadelphia: John Benjamins, pp. 161-173.
- Krifka Manfred, 1992, Thematic relations as links between nominal reference and temporal constitution, in: Sag I./Szabolcsi A. (eds.), *Lexical matters*, Chicago: Chicago University Press, pp. 29-53.
- Krifka Manfred, 1998, The origins of telicity, in: Rothstein S. (ed.), *Events in grammar*, Dordrecht: Kluwer, pp. 9-34.
- Kuehnast Milena, 2008, Aspectual coercion in Bulgarian negative imperatives, in: Abraham W./Leiss E. (eds.), *Modality-aspect interfaces: Implications and typological solutions*, Amsterdam: John Benjamins, pp. 175-196.
- Landman Fred, 1992, The progressive, in: *Natural Language Semantics* 1, pp. 1-32.
- Landman Fred, 2000, *Events and plurality*, Dordrecht: Kluwer.
- Łazarczyk Agnieszka, 2008, *Decomposing Slavic aspect*, Doctoral dissertation, University of Southern California.
- Łazarczyk Agnieszka, 2010, Secondary imperfective as an atelizer, in: Curtis M./Smirnova A. (eds.), *Issues in Slavic syntax and semantics*, Cambridge: Cambridge University Press, pp. 54-77.
- Mittwoch Anita, 2019, Aspectual classes, in: Truswell R. (ed.), *The Oxford handbook of event structure*, Oxford: Oxford University Press.
- Nicolova Ruselina, 2017, *Bulgarian grammar*, Berlin: Frank & Timme.

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- Padučeva Elena, 1996, *Semantičeskie issledovaniya* [Semantic studies], Moscow: Jaziki russkoj kul'tury.
- Pancheva Roumyana / von Stechow Armin, 2004, On the present perfect puzzle, in: Moulton K./Wolf M. (eds.), *Proceedings of the Annual meeting of the North Eastern Linguistic Society (NELS) 34*, Amherst: GLSA, pp. 469-484.
- Parsons Terence, 1990, *Events in the semantics of English. A study in subatomic semantics*, Cambridge, Mass: MIT Press.
- Pašov Petăr, 1999, *Bălgarska gramatika* [Bulgarian grammar], Plovdiv: Hermes.
- Piñón Christopher, 1997, Achievements in an event semantics, in: *Proceedings of SALT VII*, pp. 273-296.
- Portner Paul, 2011, Perfect and progressive, in: Maienborn C./von Heusinger K./Portner P. (eds.), *Semantics: An international handbook of natural language meaning*, vol. 1, Mouton de Gruyter, pp. 313-368.
- Rivero María Luisa / Slavkov Nikolay, 2014, Imperfect(ive) variation: The case of Bulgarian, in: *Lingua* 150, pp. 232-277.
- Rothstein Susan, 2004, *Structuring events*, Oxford: Blackwell Publishing.
- Rothstein Susan, 2016, Aspect, in: Aloni M./Dekker P. (eds.), *The Cambridge handbook of formal semantics*, Cambridge: Cambridge University Press, pp. 342-368.
- 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*, Ann Arbor, MI: Michigan Slavic Publications, pp. 324-341.
- Smith Carlota S., 1991, *The parameter of aspect*, Dordrecht: Kluwer.
- Vendler Zeno, 1957, Verbs and times, in: *The Philosophical Review* 66(2), pp. 143-160.
- Verkuyl Henk J., 1972, *On the compositional nature of the aspects*, Dordrecht: Reidel.