Telicity, boundedness and secondary imperfective verbs in Bulgarian

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1 Outline

- Background

  - Aspect
  - The Bg aspectual system and previous work on Bg secondary imperfective verbs (SIs)

- A novel approach (informal, work in progress):

  - SIs in Bg realize Situation aspect rather than Viewpoint IPF aspect and denote telic/non-homogenous events
  - Bg aspectual triplets (bare imperfective–prefixed perfective–prefixed secondary imperfective) can be seen as aspectual class triplets (state/activity–achievement–accomplishment)

- Summary and outlook

2 Aspect

- Internal temporal make-up of events denoted by verbs/VPs (Comrie 1976, Rothstein 2016)

- 2-layered aspectual system (Smith 1991): Situation (lexical, Aktionsart) and Viewpoint (grammatical) aspect

2.1 Situation aspect/Aktionsart

- Determined by the properties of the event type denoted by individual verbs/predicates

- Aspectual classes (Vendler 1957): classification of verbs based on properties of denoted events

states	static	instantaneous	atelic	*desire, want, love, dominate*
activities	dynamic	durative	atelic	*run, walk, swim, push (a cart)*
accomplishments	dynamic	durative	telic	*run a mile, paint a picture, grow up*
achievements	dynamic	instantaneous	telic	*recognize, reach, find, win (the race)*

  - dynamic: events that involve change (can be said to happen or occur)
  - durative: events that are inherently extended, involve progression, are true at intervals vs. those which are not extended, do not involve progression and are true at instants
  - telic/atelic: a predicate denoting a set of events having (or not) a fixed terminal point specified by the lexical content of the predicate (Rothstein 2016)

(1)   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)

2.2 Viewpoint (grammatical) aspect

- Reflects the perspective the speaker takes on the situation/event

- Expressed by inflectional operators (affixes/auxiliaries)

- Perfective viewpoint (PF): bounded, viewed from the outside, initial and final endpoints of event included (e.g. Pancheva&von Stechow 2004)

  (2) $[[PF]] = \lambda P \lambda t \exists e[\tau(e) \subset t \wedge P(e)]$

- Imperfective viewpoint (IPF): unbounded, viewed from the inside, initial and final endpoints not included

  (3) $[[IPF]] = \lambda P \lambda t \exists e[t \subseteq \tau(e) \wedge P(e)]$

- Interaction with lexical aspect in different ways in different languages, e.g the progressive (IPF) and the "imperfective paradox" in English (Dowty 1979b):

  (4) a. PF: John built a house. $\rightarrow$ John finished building a house
       b. IPF: John was building a house. $\not\rightarrow$ John finished building a house

3 The Bulgarian aspectual system

- Bg encodes the common Slavic overt morphological distinction between perfective and imperfective verbs ("vid")

- Most verbs have morphologically nonderived imperfective forms and prefixed perfective counterparts

- Prefixed perfective verbs can be turned into (prefixed) imperfective verbs by the morphological process of *secondary imperfectivization* (using suffix *-va* and allomorphs)

- Aspectual triplets:

simplex imperfective verb	prefixed perfective verb	secondary imperfective verb
piš-e	*na-piš-e*	*na-pis-va*
'he/she writes'	'he/she finishes writing '	'he/she is finishing writing'
mi-e	*iz-mi-e*	*iz-mi-va*
'he/she washes'	'he/she finishes washing'	'he/she is finishing washing'

- Unprefixed secondary imperfectives (SIs) built from bare perfectives:

da-va-m ('to give')	< *dam* (perf)
sta-va-m ('to get/stand up')	< *stana* (perf)
kupu-va-m ('to buy')	< *kupja* (perf)
kaz-va-m ('to say')	< *kaža* (perf)

- A second system of morphologically marked Viewpoint aspect in Bg (where IPF has generic/habitual and progressive/processual readings, Rivero&Slavkov 2008):

Aorist (PF)			Imperfect (IPF)		
imperfective	perfective	SI	imperfective	perfective	SI
pisa	*na-pisa*	*na-pis-vá*	*piše-še*	*na-piše-še*	*na-pis-va-še*
mí	*iz-mi*	*iz-mi-vá*	*mie-še*	*iz-mie-še*	*iz-mi-va-še*
'he/she V-ed'	'he/she finished V-ing'	'he/she repeatedly/ slowly finished V-ing'	'he/she was V-ing'	'he/she was repeatedly finishing V-ing'	'he/she was finishing V-ing'

- Different views on aspectual values of imperfective/perfective distinction in Bg/Slavic:

  (i) Viewpoint aspect: perfective=PF, imperfective=IPF (Smith 1991, Borik 2002)

  (ii) Situation aspect: bare imperfectives are atelic (i.e., denoting activities or states), prefixed forms are telic (i.e., denoting accomplishments and achievements) (e.g., Brecht 1984, Slabakova 2005, Babko-Malaya 1999, Rivero&Slavkov 2014, Łazorczyk 2008, 2010)

  (iii) lexical classes in Ru cut across the perfective/imperfective distinction (Braginski&Rothstein 2008, Kučera 1983, Padučeva 1996, Filip 1999): accomplishment and activity verbs have both perfective and imperfective realizations

  (iv) Different kinds of prefixes in Ru (lexical, resultative, superlexical): lexical prefixes (*pro-čitat', za-pisat'*) can form accomplishments, superlexical prefixes like inceptive *za-* yield achievements (Babko-Malaya 1999)

- Different views on secondary imperfectives in Bg/Slavic:

  (i) SI = Viewpoint aspect (IPF, progressive) (Babko-Malaya 1999, Borer 2005; Manova, 2004, Jetchev&Bertinetto 2000)

  (ii) SI = Situation aspect

     (a) Bg SIs are accomplishments (*presičam* 'cross the road') or achievements (*pristigam* 'arrive') (Rivero&Slavkov 2008).

     (b) Bg SI = activities (atelic/homogenous) (Łazorczyk 2008, 2010): SI-morphology as "partitive atelicizer" turning telic predicates into atelic/homogenous ones, thus "undoing" the contribution of the telic prefix

(5) $[[\text{SI}]] = \lambda e \lambda P \lambda e'[P(e) \wedge e' \leq e \wedge HOM(e')]$
(where HOM defined in terms of cumulativity and divisity as in Borer 2005)

(c) perfective verbs express a "qualitative change of state, a transitional process from a preparatory state to a result state" (achievements?), while SIs can be used in actual present for the expression of processes aimed to a concrete goal (accomplishments?) (Kuehnast 2008)

(6)   a. perf: Ne *nalej vino!
     b. SI: Ne nalivaj vino!
       'Don't pour wine!'

4   A novel proposal

1. SIs in Bg do not mark Viewpoint (IPF/progressive) aspect (contra view (i))

2. SIs in Bg mark Situation aspect, denoting telic/non-homogenous events (contra view (iib))

3. Bg aspectual triplets (bare imperfective–prefixed perfective–prefixed SI) form Aktionsart triplets (state/activity–achievement–accomplishment)

4.1   Bg SIs $\neq$ progressive/IPF

- Bg SIs do not behave like En past progressive forms (but Bg bare imperfectives do)

(7)   a. John was building a house. $\not\to$ John finished building the house.
     b. John stroeše (edna) kăšta. $\not\to$ John finished building the house (imp: IPF)
     c. John stroí (edna) kăšta. $\not\to$ John finished building the house (imp: PF)

(8)   a. John postrojavaše edna kăšta (po tova vreme). $\not\to$ John finished building the house (at that time).   (SI: IPF, episodic) $\to$ John was finishing building the house (at that time).
     b. John postrojavaše edna kăšta (i posle pak ja săbarjaše) $\to$ John finished building the house (each time)   (SI: IPF, repetitive)
     c. John postojavá edna kăšta (njakolko păti). $\to$ John finished building the house (each time)   (SI: PF, repetitive)

(9)　a.　John is building a house $\not\rightarrow$ John is finishing building a house/John will finish building a house at some time (Bennet&Partee 1972: 73)

　　b.　John postrojáva edna kăšta.　$\rightarrow$ John is finishing building a house/John will finish building a house at some time

- Truth conditions of the present progressive

(10)　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 is in contains I', I is not an endpoint for I', and the non-progressive form of the sentence is true at I' (Bennet&Partee 1972: 71)

(11)　a.　John is walking. $\rightarrow$ John has walked.
　　b.　John is pushing a cart. $\rightarrow$ John has pushed a cart.
　　c.　John is eating (bread). $\rightarrow$ John has eaten (bread).

(12)　a.　John is eating bread. $\rightarrow$ John has eaten bread.
　　b.　imp: John jadé hljab. $\rightarrow$ John e jal hljab.
　　c.　SI: John izjažda hljaba. $\not\rightarrow$ John e izjaždal hljaba.

- Łazorczyk's "partitive atelisizer" $\cong$ progressive/IPF Viewpoint aspect partitive operator (SI selects a subpart of the event, IPF selects a subinterval)

4.2　Bg SIs $\neq$ atelic

- Homogenity: a property of telic predicates which are both cumulative and divisive (Borer 2005:147)

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

(14)　Ivan četé edna kniga. ('John is reading a book')

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    a.   Ivan četé edna kniga + Ivan četé 1 kniga = Ivan četé 1 kniga (cumulative)

    b.   A part of "Ivan četé edna kniga" = Ivan četé edna kniga (divisive)

    c.   Ivan četé edna kniga v prodălženie na 1 čas. → Ivan četé knigata prez părvite 30 min.

(15)   Ivan pročita edna kniga. ('John is finishing reading a book')

    a.   Ivan pročita edna kniga + Ivan pročita 1 kniga ≠ Ivan pročita 1 kniga (= Ivan pročita 2 knigi.) (not cumulative)

    b.   A part of "Ivan pročita edna kniga" ≠ Ivan pročita edna kniga (non divisive)

    c.   Ivan pročita edna kniga za edin čas. ↛ Ivan pročita edna kniga prez părvite 30 min.

- The *in a period of time* vs. *for a period of time* test

(16)   a.   imp: Ivan se mie #za 15 min/v prodalženie na 15 min. (atelic)
        b.   SI: Ivan se izmiva za 15 min/#v prodalženie na 15 min. (telic)
            'Ivan is (finishing) washing himself in 15 min/for 15 min.'

- Temporal sequencing effects (Rivero&Slavkov 2014: 241)

(17)   a.   imp: Kogato ceté pismoto, toj plače.   (while)
        b.   perf: Kogato pročeté pismoto, toj plače.   (after)
        c.   SI: Kogato pročita pismoto, toj plače.   (after)
            'When he is (finishing) reading the letter, he is crying.'

- Bare plurals, genericity and the count/mass distinction (Bach 1986, Rothstein 2004)

(18)   a.   SI: Ivan pročita *knigi/edna kniga/knigata/knigite/mnogo knigi (njakolko păti).

        b.   perf: (Kogato) Ivan pročeté *knigi/edna kniga/knigata/knigite mnogo knigi (njakolko păti), …

        c.   imp: Ivan četé knigi/edna kniga/knigata/knigite/mnogo knigi (?njakolko păti).
            '(When) Ivan is (finishing) reading books/a book/the book/the books/many books (several times).'

(19)   a.   SI: Ivan izpiva *voda/edna voda/vodata/mnogo voda.

b.   perf: (Kogato) Ivan izpie *voda/edna voda/vodata/mnogo voda,
c.   imp: Ivan pie voda/edna voda/vodata/mnogo voda.
'(When) Ivan is drinking up water/a glass of water/the water/lots of water.'

4.3   SIs=accomplishments, prefixed perfectives=achievements

- In Bg aspectual triplets, bare imperfectives denote activities/states, prefixed perfectives denote achievements, and SIs denote accomplishments

bare imp: state/activity	prefixed perf: achievement	SI: accomplishment
spja 'to sleep'	zaspja 'to fall asleep'	zaspivam 'be falling asleep'
piša 'to write'	napiša 'to finish writing'	napisvam 'be finishing writing'
mija 'to wash'	izmija 'to finish washing'	izmivam 'be finishing washing '

- Achievements: denote sets of instantaneuos events of changing from a situation where $\neg\varphi$ holds to a situation where φ holds, 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)

- Accomplishments: denote sets of events with a predetermined endpoint, extended, express progression

- Accomplishments, achievements and durative adverbials ('a long time')

(20)   a.   SI: Ivan dălgo si izmíva/izmivaše/izmivá răzete.
b.   perf: #Ivan dălgo si izmie/izmieše/izmi răzete.
'Ivan is washing/was washing/was repeatedly washing his hands a long time.'

- En achievement verbs in Bg:

En achievements verbs	Bg equivalents
die	mra (imp)
	umra (perf)
	umiram (SI)
wake up	budja (imp)
	săbudja (perf)
	săbuždam (SI)
find	namerja (perf)
	namiram (SI)
notice	zabelježa (perf)
	zabeljazvam (SI)

(21)   mra   umra   umiram
         'to die'   'to drop dead'   'be (in the process of) dying'

- Progressive achievements in En are derived by a type shifting operation which raises the achievement meaning of the verb into an accomplishment meaning, so that, if the process runs its natural course, it culminates at a point where the achievement sentence is true (Rothstein 2004)

(22)   a.   Peter is dying. (achievement+progressive=accomplishment)
         b.   Peter umira. (SI)

- En achievements do not occur under the aspectual verbs *begin, continue, stop, finish*, or the aspectual adverb *still*, all of which presuppose that the predicate to which they apply denotes a protracted event (Mittwoch 1991)

(23)   #They finished reaching the top.
         a.   perf: Toj započna/prestana da *napiše knigata.
         b.   SI: Toj započna/prestana da napisva (SI) knigata.
              'He started/stopped finishing writing the book.'

(24)   #The patient is still dying.
         a.   perf: Pazientăt vse ošte *umre/*umrja/*umreše.
         b.   SI: Pazientăt vse ošte umira/umiraše.

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5 Summary and outlook

- SIs in Bulgarian aspectual triplets denote sets of events that have a predetermined endpoint, are extended and express progression (=accomplishments)

- prefixed perfective verbs in Bulgarian aspectual triplets denote sets of instantaneuos events of changing from a situation where $\neg\varphi$ holds to a situation where $\neg\varphi$ holds (=achievements)

- bare imperfective verbs in Bg aspectual triplets denote sets of events that are stative or dynamic but have no predetermined endpoint (=activities)

- SI-morphology does not "atelisize", it only introduces temporal progression/durativity

- unprefixed perf-SI pairs (*daja-dam-davam*), unprefixed triplets (*mălča-mlăkna-mlăkvam*), unprefixed imp-perf pairs (*padam-padna-*padvam*)

- differences related to verb classes (verbs of creation, consumption, psych verbs etc., cf. Ramchand 2008 on different telicity/quantizedness effects with different types of verbs)

  (25) a. SI: Te izpivat *voda/vodata. 'They drink up the water.'
        b. imp: Te pijat voda/vodata. 'They are drinking (the) water.'
        c. SI: Te namirat voda/vodata. 'The find (the) water.'

- interaction with Viewpoint aspect (PF, IPF):

  – imp/perf/SI+Imperfect=IPF (habitual or ongoing/progressive, but also conative readings with SI, cf. Rivero&Slavkov 2014)

    (26) SI+IPF: Kučeto presičaše pătja, kogato avtobusăt go blăsna. 'The dog was crossing the street when the bus hit it.'

  – imp+PF vs. perf/SI+PF: completion implicature (Rothstein 2016) vs. completion entailment (cf. also Gyramathy&Altshuler 2020:1379 on Ru)

    (27) a. perf+PF: Toj pročéte knigata, #no ne ja pročéte/dočéte/izčéte do kraja.
          b. SI+PF: Toj pročita knigata (njakolko pati), #no ne ja pročitaše/dočitaše/izčitaše do kraja.

     c.   imp+PF: Toj čéte knigata, no ne ja pročete do kraja.
         'He read/finished reading/was reading the book (several times), but didn't read it completely.'

(28)   Ru
     a.   perf+PF: Ja pročital poslednie stročki pisma, #hotja ne pročital ih do konza.
     b.   imp+IPF: Ja čital poslednie stročki pisma, hotja ne pročital ih do konza.
         'I (have) read the last lines of the letter, even though I did not finish them.'

6   References

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