

# ASPECTUAL MICROVARIATION: THE CASE OF SLAVIC IMPERFECTIVES.\*

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## 1. Introducing Imperfective Variation

Imperfectives (Impfs) may display multiple readings. Ongoing, habitual, iterative, generic, intentional/futurate readings are possible options for Impfs. However, languages vary as to the range of interpretations. Hindi Impfs have a generic reading, but lack the ongoing reading reserved for progressives (Bhatt 2006). In Spanish, Impfs have the readings listed above, but progressives lack futurate readings.

In our view, Slavic (Sl) Impfs display variation, which divides the family into two groups. South Sl languages that include Bulgarian, Macedonian, Croatian / Serbian, and Slovenian belong to one group. Russian and West Sl languages that include Czech, Polish, and Slovak belong to a group that differs from the first in three ways not related in the literature, which we outline next. A **first** contrast is in **intentional /futurate readings** for (past) Impf Vs reminiscent of the futurate progressive in *John was flying to London tomorrow*. In §2, we argue that such readings are available to (past) Impfs in South Sl, and unavailable to West Sl and Russian (past) Impfs. A **second** contrast in §3 is in **Involuntary States (ISs)**. These display a parallel syntax, but differ strikingly in truth conditions. In South Sl, ISs allude to dispositions. Thus, Slovenian *Janezu se je plesalo* - a past Impf IS - tells us that John was in the mood to dance, not that he danced. By contrast, West Sl and Russian ISs allude to eventualities in the 'real world'. Thus, Polish *Jankowi tańczyło się dobrze* - also a past Impf IS - tells us that John really danced. The **third** contrast in Futures (Fut) in §4 splits the languages into the same groups as IS semantics. South Sl forms both Impf and Perfective (Perf) Fut with Aux (or particles): Slovenian *On bo pisal pismo* 'He will be writing a letter', and *On bo na-pisal pismo* 'He will write a letter'. In West Sl and Russian, Impf Fut also contain Aux - Polish *Będę pisał list* 'I will be writing a letter', but Perf Fut must combine Presents with Perf prefixes - Polish *Na-piszę list* 'I will write a letter', and Aux with Perf Vs are ungrammatical: Polish *\*Będę na-pisal list*.

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In sum, South Sl displays (a) futurate Impfs, (b) desiderative ISs, and (c) Aux with both Fut. West Sl and Russian (a) lack futurate Impfs, (b) display factual ISs, and (c) Aux only in Impf Fut. In §5, we capture such differences via restrictions on Kratzerian modal bases (MBs) for an Imperfective Operator. The main idea is that Impfs in both groups may access MBs for ongoing, habitual, iterative, generic, and ‘imperfective-paradox’ readings. In addition, South Sl Impfs have access to a MB for events that have not yet begun we dub **Preparatory-inertia**, which is not available to West Sl and Russian Impfs. Thus, South Sl Impfs access P-Inertia so can have intentional readings, while West and Russian Impfs cannot. Desiderative readings in South ISs also depend on P-inertia, so are not found in West Sl and Russian. We suggest that Fut Aux with Impf Vs differ in denotation. The West Sl and Russian Aux accesses P-Inertia since Impf cannot. In South Sl, Aux are obligatory tense markers in Perf and Impf Fut, and Impf accesses P-inertia as in past contexts. In sum, the three differences that distinguish the two Sl groups derive from Impf microvariation.

## 2. Variation in Intentional / Futurate Imperfectives

Sl Impfs may display (a) ongoing, (b) habitual, (c) iterative, (d) generic readings, and (e) ‘imperfective-paradox’ readings<sup>1</sup>, as in equivalents of *John was crossing the street when a truck hit him*. Without illustrating such uses, we examine the first difference in our two groups. Namely, Sl Impfs differ as to intentional/futurate readings reminiscent of Italian (1)<sup>2</sup> and of futurate progressives. Those are available in South Sl, (2-3), but unavailable in Russian / West Sl, (4-5) and (7-8).

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|-----|---|--|
| (1) | <i>Mario partiva domani.</i><br>Mario leave.Past.Impf tomorrow<br>‘Mario was leaving tomorrow.’   | Italian<br><br>(Giorgi & Pianesi 2001) |
| (2) | <i>Dnes, po plan, Ivan leteše za Sofia.</i><br>Today, per plan, Ivan fly.Past.Impf to Sofia<br>‘Today, according to plan, Ivan was flying to Sofia.’  | Bulgarian                              |
| (3) | <i>Še včera smo jutri leteli v London,</i><br>Still yesterday Past.Aux.1pl tomorrow fly.Impf to London,<br><i>danes pa zvemo, da so vsi leti v London odpovedani.</i><br>today but find.out, that Aux all flights to London cancelled<br>‘Still yesterday we were flying to London tomorrow, but today we find out that all flights to London are cancelled.’ | Slovenian                              |

Types (2-3) (Rivero 2009 on Bulgarian, M. Sheppard (p.c.) for Slovenian) show

<sup>1</sup> See general grammars, Dickey 2000; for Russian: Borik 2006, Grønn 2003, Klimonov & Klimonov 2008, a.o.

<sup>2</sup> Cipria & Roberts 2000, Giorgi & Pianesi 1998, 2001, Ippolito 2004, a. o.

that South Sl Past Impf Vs may express plans for a future time/ be used prospectively. By contrast, Russian / West Sl Past Impf Vs cannot express plans for a future time, so (4-5) are ungrammatical. The absence of intentional Impfs is mentioned by Grønn (2008) for Russian, and Kučerová (2009) for Czech.

- (4) \* *Ivan uletal zavtra v Ispaniyu.* Russian  
 Ivan fly.Past.Impf tomorrow to Spain  
 Intended: ‘\*Ivan was flying to Spain tomorrow.’
- (5) \* *Jan leciał jutro do Hiszpanii.* Polish  
 Jan fly.Past.Impf tomorrow to Spain  
 Intended: ‘\*John was flying to Spain tomorrow.’

Impf presents known as *Praesens pro futuro / propheticum*, are grammatical with a prospective reading in both groups: (6). Many languages allow future time reference with presents, so we set them aside.

- (6) *Zavtra ja uezžaju v Moskvu.* Russian  
 Tomorrow I Pref.leave.Pres.Impf to Moscow  
 ‘Tomorrow I am leaving for Moscow.’

A situation opposing Russian / Polish to Bulgarian further illustrates the contrast in intentional Impfs. Grønn (2008) provides the Russian versions of (7a-c) to state that his informants find (8) similar to (7c) grammatical with the past Perf conditional V *vy-gnali by* ‘they would have thrown out’ in (8a), and deviant with the past (secondary) Impf *\*vy-gonjali* ‘they were throwing out’ in (8b). Thus, past Impf Vs cannot be used for future plans in the cited context.

- (7) a. *The exam is cancelled!* b. *What a relief!*  
 c. *In case of failure, I would have been thrown out of the university.*
- (8) *V slučae provala, menja* Russian  
 In case failure, I.dat (Grønn 2008)  
 {a. *vygnali by* / b. *\*vygonjali*} *iz universiteta.*  
 {a. throw.out.Cond.Perf / b. throw.out. Impf.Past} from univ.

Polish is similar to Russian. The sentence with the 3<sup>rd</sup> person plural subject counterpart of (7c) in (9) is grammatical with the past Perf conditional V *wyrzucili-by* ‘would have thrown’ in (9a), and deviant with the past Impf V *\*wyrzucali* ‘were throwing’ in (9b), which supports a lack of intentional Impfs.

- (9) *Gdybym nie zdał,* Polish  
 When.Cond not pass  
 {a. *wyrzucili-by* / b. *\*wyrzucali*}  
 {a. Pref.throw.Past.Perf-Cond / b. \*Pref.throw.Past.Impf}  
*mnie z uniwersytetu.*

me from university  
 ‘If I did not pass, they {a. would have thrown / \*were throwing} me  
 out of the university.’

Bulgarian, however, differs from Russian and Polish, with the counterpart of (7c) in (10) offering two options. Vs in a past conditional periphrastic form equivalent to Russian and Polish past Perf conditionals are well formed in (10a): *štjaxa da me izxvârljat* ‘they would have thrown me out’. Past Impf Vs are also licit in (10b): *izxvârljaxa* ‘they were throwing out’.

- (10) *Inače (v slučaj na proval na izpita), (utro)* Bulgarian  
 Otherwise (in case of failure at exam.def), (tomorrow)  
 {a. *štjaxa da me izxvârljat*/ b. *me izxvârljaxa*} *ot universiteta*.  
 {a.Past.Cond da me throw.out/ b. me throw.out.Past.Impf} of u.  
 ‘Otherwise, (in case of failing the exam), (tomorrow) they {a. would  
 have thrown/ b. were throwing} me out of the university.’

In sum, South Sl exhibits a prospective Impf absent from West Sl and Russian, which we relate to variation in MBs for the IMPF Operator in §5.

### 3. Involuntary States: Desideratives vs. Factuals

*Involuntary States* (ISs) are found in all the Sl languages with similar syntax, but different semantics (Rivero 2003, Rivero & Sheppard 2003). (11) has the typical reading of past affirmative ISs in South Sl, and (12-13) a meaning typical of past affirmative ISs in the other group. All contain Impf Vs.

- (11) *Janezu se je plesalo.* Slovenian  
 J.Dat Refl be.3Sg danced.Impf  
 ‘John was in the mood for dancing.’
- (12) *Jankowi tańczyło się dobrze.* Polish  
 J.Dat danced.Impf.Neut Refl well  
 ‘John danced, and could not help feeling well about his dancing.’
- (13) *Nam xorošo rabotalo-s’.* Russian  
 We.Dat well worked. Impf-Refl  
 ‘We worked well.’ (Whalen 1978)

The above ISs consist of (a) human dative subjects (*Janezu, Jankowi, nam*), (b) Vs without agreement (*plesalo, tańczyło, rabotalo*), and (c) reflexives (*se, się, -s’*). In spite of parallelisms, such ISs display readings dubbed *Desiderative* and *Factual* by Rivero & Arregui (2010), which contrast in truth conditions. *Desiderative ISs* in South Sl speak of impulses, not actions in the ‘real world’: (11) alludes to John’s past urge to dance, not his dancing. Datives in this group,

then, are reminiscent of experiencers. *Factual ISs* in Russian and West Sl speak both of ‘real’ events, and states: Polish (12) tells us about a past dancing event by John, and his joyful state indicated by *dobrze* ‘well’. In this way, datives in the factual group combine properties of both agents, and experiencers.

Desideratives are absent in West Sl and Russian: the affirmative past Impf ISs in (12-13) tell us that John really danced. The factual type is not found in South Sl: the affirmative past Impf IS in (11) only tells us about John’s disposition. In sum, the *Involuntary State* label is applied in Sl to constructions whose meaning separates the family into two distinct groups.<sup>3</sup>

Desiderative and Factual ISs differ in Viewpoint Aspect (Smith 1991) in ways relevant for this paper. Impf ISs maintain differences in semantic flavor: dispositions in the South, and ‘real eventualities’ in the West and Russian. In §5, we derive this difference from a prospective Impf in South Sl unavailable in West Sl and Russian. However, Desideratives are subject to an inherent aspectual restriction, so cannot be Perf (Rivero & Sheppard 2008, Rivero 2009): (14a) with an Impf V is fine, while (14b) with a Perf V is not.

- (14) a. *Janezu so se prepisovala pisma.* Slovenian  
 J.Dat Aux.3Pl Refl write. Impf letters.Nom  
 “John felt like rewriting (the) letters.”  
 (Rivero & Sheppard 2008)
- b. *\*Janezu so se prepisala pisma.*  
 J.Dat Aux.3Pl Refl write.Perf letters.Nom  
 “\*John felt like writing (the) letters.”

Primary Impfs (i.e. unprefixes Vs) in (11) and secondary Impfs (i.e. prefixed Vs and *-va-*) in (14a) both satisfy the aspectual restrictions of Desideratives, thus behaving like a uniform class. Rivero & Arregui (2010) dub South Sl ISs **Aspect-oriented**, and argue that Impf plays a crucial compositional role in their desiderative reading, as summarized in §5.

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<sup>3</sup> ISs have attracted attention under many labels: ‘dative disclosure’, ‘dative reflexive’, ‘dispositional (reflexive)’, ‘feel-like’, ‘impersonal’, ‘modal deagentive’, ‘non-bundling voice’, ‘passive-like’, ‘productive inversion’, and ‘propensity’. In addition to traditional grammars, for South Sl Desiderative ISs see, a. o., Franks 1995, Marušič & Žaucer 2004, 2006, Rivero 2003, 2009, Rivero & Sheppard 2003, 2008, Rivero & Arregui 2010, Stojanović 2003. Factual ISs in Polish known as ‘productive inversions’ in relational grammar (Dziwirek 1994 for references) are also discussed by Dąbrowska (1997), Fici (2008), Frąckowiak & Rivero (2008), Gołąb (1975), Jabłońska (2003), Kibort (2004), Rivero (2003), Rivero, Arregui & Frąckowiak (2009a-b), Rivero & Sheppard (2003), Wierzbicka (1988), a.o. For Czech ISs see (Fried 2007: §3.3) and (Rivero 2003, Rivero & Sheppard 2003). For Russian (Benedicto 1995, Fici 2008, Franks 1995, Markman 2003, Moore & Perlmutter 2000, Schoorlemmer 1994, Szucsich 2006, Whalen 1978). For Slovak, Ružičková (1971).

Factual ISs are not strictly aspect-oriented. In contrast with Desideratives, they (a) may be Perf, and (b) display various types of Impfs. Dziwirek (1994) finds Perf versions of ISs well-formed in Polish (Jabłońska 2003 for an opposing view), as in (15). Natural Perf ISs are also cited by, a.o., Wierzbicka (1988) and Rivero, Arregui & Frąckowiak (2009a-b), who mention a referee who suggests that Perf ISs are well-formed without a manner modifier.

- (15) *Trawę skosiło się nam szybko.* Polish  
 Grass.Acc mowed.Perf Refl we.Dat quickly  
 ‘We mowed the grass quickly.’

A preference for Impf, however, is noted in passing for some Factuals in Polish (Rivero & Sheppard 2003: §5.2.2), and Czech (Fried 2007: §3.3). For Fried, an IS with a transitive V ‘allows only Impf aspect, ... fully consistent with its communicative focus on expressing a general attitude/disposition toward an action or process’. Thus, factors in need of future study seem to make some Polish and Czech Impf Factuals more natural / felicitous than Perf versions.

A language-particular property of reflexives may be at the core of Impf restrictions in Russian ISs. Russian Perf passives are periphrastic with *be* and a participle, and Impf passives contain active Vs with impersonal/passive *-sja*. As noted above, the reflexive is an essential item in all ISs, and in Russian it corresponds to impersonal/ passive *-sja* (Rivero & Arregui 2010 and references therein). Thus, reflexive requirements may limit Factual ISs to Impf in Russian.

Factual ISs are not inherently constrained by aspect so can be composed of different types of Impf available in West Sl and Russian. To illustrate, in §5 we relate the episodic Factual ISs in (12-13) to the ‘ongoing’ reading of Impf. A ‘habitual’ Factual IS is (19) from the Russian corpus ([www.ruscorpora.ru](http://www.ruscorpora.ru)). We borrow this example from Fici (2008: (3) p. 60), and provide English glosses and translations. (19) lacks overt habitual modifiers, so we attribute its habitual reading to Impf *žilo(s)* ‘lived’.

- (19) *Naskol’ko slašče žilos’ putešestvennikam XIX veka!* Russian  
 How.much sweetly lived.Impf.Refl travellers.Dat 19<sup>th</sup> century  
 ‘How much easier was the life of 19<sup>th</sup> century travellers!’

In sum, Sl ISs with parallel Impf Vs and formal conditions may be Desiderative or Factual. South Sl affirmative ISs have a desiderative reading, and West Sl and Russian affirmative ISs a factual reading. We attribute this contrast to a prospective Impf available in South Sl and unavailable in the other group.

#### 4. Morphosyntactic Variation in Futures

A third difference tentatively assigned to Impf variation concerns Futures (Fut). It partitions Sl into the same groups as the Desiderative / Factual contrast in §3, which seems to have escaped notice. In South Sl - i.e where ISs are desiderative-

, both Impf and Perf Fut contain a Fut marker : Aux in Slovenian (16a-b) (also in Croatian/ Serbian), and a particle in Bulgarian / Macedonian, not illustrated.

- (16) a. *On bo pisal pismo.* Slovenian  
 He Fut write.Impf letter  
 ‘He will be writing a letter.’  
 b. *On bo na-pisal pismo.*  
 He Fut write.Perf letter  
 ‘He will write a letter.’

In West Sl and Russian, where ISs are factual, Impf Fut must contain Aux, (17a), Perf Fut must combine Present inflections with Perf prefixes, (17b), and Perf Vs with Aux are ungrammatical, (17c).

- (17) a. *Maša budet čitat’ Petinu statju.* Russian  
 M. Fut read.Impf P’s article  
 ‘M. will be reading P’s article.’  
 b. *Maša pro-čitaet Petinu statju.*  
 M. read.Pres. Perf P’s article  
 ‘M. will read P’s article.’  
 c. \**Maša budet pro-čitat’ Petinu statju.*

Futures are beyond the scope of this paper, but we make a suggestion for later research. Assuming that Impf Fut **constructions** have parallel semantics in both groups, we propose contrasting denotations for Impf and Aux items in each. In West Sl and Russian Impf Fut, Aux is the ‘prospective’ item (accesses a preparatory MB unavailable to Impfs in this group). In South Sl, Aux is a tense marker -so obligatory in all Fut-, and Impf is the ‘prospective’ item in Impf Fut like in past contexts (accesses the preparatory MB). Thus, all Sl Impf Fut contain Aux, but denotations for Aux and Impf differ in each group.

In sum, languages with (a) intentional Impfs are those with (b) Desiderative ISs, and (c) Aux for all Fut. Languages (a) without intentional Impfs are those with (b) Factual ISs, and (c) Aux for just Impf Fut. In §5, we assign such contrasts to MBs for IMPF.

## 5. A modal analysis of IMPF<sup>4</sup>

We begin with basic assumptions on the interpretation of IMPF. (a) Tense dominates Viewpoint Aspect containing IMPF, (b) primary and secondary Impf morphology both signal an IMPF aspectual operator, and (c) the external argument of V is in Voice, within the structure in (18). In Sl, IMPF may combine with various tenses, giving rise to past, present, or future Impfs. With

<sup>4</sup> For modal analyses of Impfs, Dowty 1979, Landman 1992, Portner 1998, Zucchi 1999, Copley 2002, Ippolito 2004, a.o.

VPs as properties of events, Aspect will map properties of events to properties of times, which then combine with tense for proposition-type meanings (along the lines proposed in Kratzer 1998).

$$(18) \quad [{}_{\text{TP}} \text{ T } [{}_{\text{AspP}} \text{ IMPF } [{}_{\text{vP}} \text{ Voice } [{}_{\text{VP}} \text{ V}]]]]$$

Our main concern is the modal dimension of IMPF in (18). Our proposal based on situations semantics (Kratzer 1989, 2002, 2009) is inspired by Cipria & Roberts's (C&R) (2000) for (past) Spanish Imperfects. C&P argue for a unified quantificational core for IMPF. We will follow their strategy, with accessibility relations we informally call 'modal bases' (MB) provided by context:<sup>5</sup>

$$(19) \quad [[\text{IMPF}]] = \lambda P_{\langle t, \langle s, t \rangle \rangle}. \lambda s. \forall s': \text{MB}_{\alpha}(s)(s') = 1, \exists e: P(e)(s') = 1.$$

Given (19), IMPF combines with a property of events P (a function from events to propositions), and has as output a proposition true in a situation  $s$  iff in all  $s'$  accessible to  $s$  by means of MB  $\alpha$ , there exists a P-event. Context determines the MB that identifies the domain of quantification of IMPF. Different choices of MB result in different domains of quantification, and thus flavors for IMPF.

Following Klein (1994, 1995), Aspect is often characterized via temporal relations involving Reference, Event and Speech times. English Progressives and Slavic Impfs, for example, may fall under a view where Reference time is contained in Event time (a. o. Paslawska & von Stechow 2003, Kratzer 2004). However, treating the semantics of IMPF as a relation between event and reference times is unsuitable for futurate / intentional Impfs, making them resist compositional analyses (most recently Deo 2009: §4.3.4). Inspired by C&R, (19) does not impose a constraint on the relation between event and reference times, allowing for a compositional account of intentional Impfs (the proposal could nevertheless be refined to include such constraints).

Impfs share a variety of readings, and (20-21) provide MBs for some of the readings in SI (also discussed by C&R for Spanish):

$$(20) \text{ MB}_{\text{ongoing}} = \lambda s. \lambda s'. s' < s \text{ (subparts of } s \text{)}.$$

$$(21) \text{ MB}_{\text{generic}} = \lambda s. \lambda s'. s' \text{ is a characteristic situation in } s \text{ (typical parts of } s \text{)}.$$

The MBs in (20-21) are *extensional*, i.e. identify a domain of quantification for IMPF within the evaluation world. (20) gives IMPF access to situations part of

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<sup>5</sup> Unlike C&R, we omit past in (19), and simplify homogeneity (for MBs mapped to accessibility relations (Kratzer 1991)). We use  $s$  as a variable ranging over situations (type  $s$ ). Situations may stand in a part-of relation:  $s \leq s' = s$  is part of  $s'$ . We follow Kratzer and assume that for any situation  $s$ , there is at most one world  $w$  such that  $s \leq w$  (i.e. situations are part of at most one world). Worlds are maximal situations, not proper parts of any other situation (we will use  $w$  as a specialized situation variable for worlds, type  $s$ ).

the input situation, resulting in an ongoing interpretation. If the input allows for more than one instantiation of the relevant property of events, the interpretation is iterative. With only one instantiation, (20) results in an episodic reading. (21) gives IMPF access to situations characteristic within the input. When the input is a world, the result is generic. On this view, IMPF projects in Aspect, but resembles modals, which display different flavors depending on contextually given MBs (Kratzer 1981, 1991).

*Intensional* interpretations of IMPF prove important for explaining variation in SI. C&R use an intensional relation giving IMPF access to **inertia situations** in worlds different from the evaluation world. C&R's idea of **inertia** embodies two different notions: (a) events that have already started, as in the imperfective paradox - *John was crossing the street when a truck hit him-*, or (b) purely preparatory stages, as in futurate progressives: *John was going to the movies tomorrow, but he changed his mind*. Our claim is that variation in SI Impfs provides support for the view that the two notions in (a) and (b) need to be formally distinguished. In other words, languages may differ with respect to the type of inertia MBs they allow for IMPF. As we have shown, in SI there are two distinct groups. SI suggests that (a) **incomplete** stages linked to the imperfective paradox differ from (b) **purely preparatory** stages linked to futurates. In other words, the preparatory phase of an event can give rise to an inertia relation that differs from the one for cases in which the event has started. Thus, we differentiate two types of MBs we label respectively Event Inertia (**E-Inertia**) in (22), and Preparatory Inertia (**P-Inertia**) in (23).

(22) **Event Inertia:**

$MB_{\text{event-inertia}} = \lambda s. \lambda s'. s'$  is an E-inertia situation for  $s$  (where  $s'$  is an E-inertia situation for  $s$  iff all the events that have actually started in  $s$  continue in  $s'$  in the way they would if there were no interruptions).

(23) **Preparatory Inertia:**

$MB_{\text{preparatory-inertia}} = \lambda s. \lambda s'. s'$  is a P-inertia situation for  $s$  (where  $s'$  is a P-inertia situation for  $s$  iff all the events that are in preparatory stages in  $s$  continue in  $s'$  in the way they would if there were no interruptions).

**P-inertia** in (23) appeals to the intuition that events may have preparatory phases during which wheels are set in motion for things to happen (a.o. Moens & Steedman 1988), before any change of state takes place. Context will affect what exactly counts as a preparatory phase. What is important is that in inertia situations corresponding to preparatory phases, the events set in motion continue as normal without interruptions.<sup>6</sup>

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<sup>6</sup> Inertia analyses of IMPF go back to Dowty (1979). Our proposal relativized to events is inspired by Landman (1992). The usual problems arise when explaining in what conditions an event that starts in one world 'continues' in another. We take this problem to be independent of the type of inertia.

Our claim is that Impfs in both SI groups may access MBs for ongoing and habitual/generic readings -(20) and (21) -, and also the MB for incomplete events in the ‘real’ world : (22). Contrasts are due to the MB for events that have not actually begun in (23), namely P-inertia. This MB is accessed by IMPF in the South, but not in the West and Russian.

Let us see how our proposal accounts for the Impf contrasts identified in §2 and §3. Beginning with intentional Impfs, these should be possible only if IMPF may be interpreted with respect to MBs with access to plans, since with other kinds, the event could be actual, whether complete or incomplete. Consider (2) partially repeated in (24). The ‘plan-in-the-past’ interpretation is possible in (24) given  $MB_{P-inertia}$  in (23), with the sentence receiving the truth-conditions in (25):

- (24) *Dnes, po plan, Ivan leteše za Sofia.* Bulgarian  
 ‘Today, according to plan, Ivan was flying to Sofia.’
- (25) Where  $s$  is a past situation,  $[[ (24) ]]$  ( $s$ ) = 1 iff  
 $\forall s'$ :  $MB_{P-inertia}(s)(s') = 1$ , there exists an event of Ivan flying to Sofia today in  $s'$  (we do not attempt to analyze past tense).

According to (25), (24) is true in a past situation  $s$  iff all situations  $s'$  in which the **preparations set in motion** in  $s$  bear fruit, there exists an event of Ivan flying to Sofia today. IMPF in Russian and West SI can access ongoing, generic, and ‘imperfective-paradox’ MBs just like in South SI, but the difference is that IMPF in this group cannot access  $MB_{P-inertia}$  in (23). Thus, intentional readings will not be available in Russian and West SI, and (4-5) are thus ungrammatical.

Now let us take a quick look at the semantic contrast in ISs in §3 (Rivero & Arregui (2010) for detailed analyses). Building on Rivero (2009) and Rivero, Arregui, & Frackowiak (2009a-b), Rivero & Arregui (2010) propose that Desideratives and Factuals have similar structures. Both consist of a High Applicative headed by a silent Circumstantial Modal (CM) with a dative subject, and a TP-complement with Aspect. The reflexive pronoun in TP (restricted to humans) functions as a variable for the dative. The structure in (26) is for Desideratives, and (27) is for Factuals, and they display two differences.

- (26)  $[_{AppIP} NP_{DAT} [_{AppI} CM [_{TP} i Tense [_{AspP} IMPF [_{VoiceP} Refl_i [VP]]]]]]]$
- (27)  $[_{AppIP} NP_{DAT} [_{AppI} [_{App} CM [_{TP} i Tense [_{AspP} Asp [_{VoiceP} Refl_i [VP]]]]]]] [MannerP]]]$

The two differences in (26) vs. (27) depend on CM. CM selects for (a particular) Impf in Desiderative (26), but not in Factual (27). CM selects for Manner in Factual (27), not in Desiderative (26). Desideratives and Factuals, then, both contain CM, and semantic variation in their truth conditions is due to the specialization of this modal, coupled to variation in IMPF, as discussed next.

The silent modal (CM) in Desideratives has the denotation in (28):<sup>7</sup>

- (28) For all properties P of type  $\langle e, \langle s, t \rangle \rangle$ , entities x and worlds w,  
 $[[\mathbf{CM}]]^{w, f\text{-circ}}(P)(x)(w) = 1$  iff  
 $\{w': w' \in \cap f\text{-circ}(w)\} \subseteq \{w': \exists s: P(x)(s) = 1 \ \& \ s \leq w'\}$

Desideratives convey an *urge* of the dative (this is not a desire or wish, but more of an imposition on the will of the individual). Their CM combines with one property [the visible argument TP]. The circumstantial restriction is hardwired in the denotation of CM: the domain of quantification is identified on the basis of contextually relevant facts. CM is interpreted in relation to a Kratzer-style circumstantial MB (f-circ). The claim made by the modal will be true given a property P, individual x, and world w iff all the worlds that fit the MB are also worlds in which there exists a situation in which P holds of x. This means that in all the worlds w' that are like the actual world with respect to some contextually identified features, P happens to x in w' = circumstances **force** P to happen to x.

In addition, CM in (26) selects for a specific IMPF. The interpretation of TP in (26) is (29) for Slovenian (11) *Janezu se je plesalo* 'John was in the mood for dancing', with IMPF interpreted with respect to **P-inertia** in (23).

- (29)  $[[_{\text{TP}} \mathbf{i} \text{ Past IMPF } \mathbf{se}_i \text{ dance}]] = \lambda x: x \text{ is human.} \lambda s. s \text{ precedes speech time.}$   
 $\forall s': \text{MB}_{\text{P-inertia}}(s)(s') = 1, \exists e: e \text{ is dancing by agent } x \text{ in } s'$

The property in (29) will be true of an entity x and (past) situation s iff in all situations s' that are **P-Inertia** situations for s, there exists an event of x dancing in s'. That is, in all situations s' that continue eventualities set in motion in s, there exists an event of x dancing in s'. P-Inertia MBs target events that have been set in motion, and what is important in Desiderative ISs is that, given the (relevant) actual world circumstances, the subject cannot help being in the preparatory phase for a certain event. The desiderative results from the 'inevitability' flavor of CM combined with P-inertia for IMPF (which removes the event from the 'real world'). Let us illustrate how all pieces fit. Given CM in (28), the denotation for TP in (29), and the structure in (26), Desiderative (30a), for Slovenian (11), receives the truth conditions in (30b):

- (30) a.  $[_{\text{AppIP}} \text{ John}_i [_{\text{App}} \mathbf{CM} [_{\text{TP}} \mathbf{i} \text{ Past} [_{\text{IMPF}} [_{\text{VoiceP}} \text{ Refl}_i [_{\text{VP}} \text{ dance}]]]]]]]$   
 b. For all worlds w,  $[[ (30a) ]](w) = 1$  iff  $\{w': w' \in \cap f\text{-circ}(w)\} \subseteq$   
 $\{w': \exists s: s \text{ precedes speech time.}$   
 $\forall s': \text{MB}_{\text{P-inertia}}(s)(s') = 1, \exists e: e \text{ is dancing by agent John in } s' \ \& \ s \leq w'\}$

According to (30b), (30a) will be true iff in all the worlds that fit the relevant circumstances, there is a past situation that is the **preparatory phase** for a dancing event by John. That is, in all the worlds that fit the relevant

<sup>7</sup> We have spelled out the denotations of modal statements with respect to worlds. The case for smaller situations remains for future research.

circumstances, things were set in motion for John to dance, so John just ‘had to’ / felt the urge to dance. The desiderative reading results from the interaction of CM and IMPF; CM imposes a P-inertia selectional restriction on IMPF, so a non factual interpretation results.

Now let us turn to the relevant contrast with Factuals, which convey that the manner of an actual eventuality is inevitable for the dative. CM in Factuals takes two overt arguments and has the denotation in (31).

- (31) For all properties P, Q of type  $\langle e, \langle s, t \rangle \rangle$ , entities x and worlds w,  
 $[[\mathbf{CM}]]^{w, f\text{-circ}}(P)(Q)(x)(w) = 1$  iff  
 $\{w' : w' \in \cap f\text{-circ}(w) \ \& \ \exists s. P(x)(s) = 1 \ \& \ s \leq w'\}$   
 $\subseteq \{w' : \exists s. Q(x)(s) = 1 \ \& \ s \leq w'\}$

According to (31), CM is interpreted relative to Kratzer-style circumstantial modal base, and gives rise to universal quantification over possible worlds. It combines with two properties, resulting in a property of individuals predicated of the dative. The ‘restrictor argument’ is TP, and the ‘nuclear scope’ is the selected Manner Phrase<sup>8</sup>. The claim is that in all the worlds in the salient circumstantial MB in which the restrictor property is true of the relevant individual, the nuclear scope property is also true of that individual. So, in all the worlds that fit the relevant circumstances in which the dative participates in an event that fits the restrictor -with a presupposition that there is such an event-, the manner of the event is as described, and thus inevitable.

CM in Factuals does not impose restrictions on Aspect, with the interpretation of Impf ISs depending on IMPF readings available in West Sl and Russian. One of them is based on the *ongoing* MB in (20) now illustrated in (32) for Polish (12) *Jankowi tańczyło się dobrze* ‘John danced, and could not help feeling well about his dancing.’ In (32) we have the denotation of the TP in (12):

- (32)  $[[ [_{TP} i \text{ Past } [IMPF [_{VoiceP} \text{ Refl}_i [_{VP} \text{ dance}]]]] ] ] =$   
 $\lambda x. x$  is human.  $\lambda s. s$  precedes the speech time.  
 $\forall s' : MB_{\text{ongoing}}(s)(s') = 1, \exists e. e$  is a dancing by agent x in  $s'$

This is a property of human entities and past situations. Given x and a situation s, the outcome will be true iff in all situations s' made accessible to s by the  $MB_{\text{ongoing}}$ , there is an event of x dancing (i.e. x is dancing throughout the past s). There is microvariation in Aspect, so in West Sl and Russian, IMPF does not

<sup>8</sup> The second property / manner adverb receives a ‘shifted’ interpretation as a property of individuals, as in (i).

(i)  $[[\mathbf{well}]] = \lambda x. \lambda s. s$  is good/enjoyable for x.

Wierzbicka (1988) notes that Factuals take the *eventualities* for granted. Here we simply assume that there is a presupposition that an event satisfying the VP property exists in the evaluation world (for event presuppositions, see a.o., Bhatt 2006, Hacquard 2006, Arregui 2005, 2007).

have access to the P-Inertia MB, and cannot receive an intentional reading. Putting the pieces of the Factual analysis together results in (33) for (12).

- (33) For all worlds  $w$ ,  
 $[[ [_{AppIP} \text{John-dat} [ [_{App} \text{CM} [ [ [_{TP} i \text{Past} [_{Impf} [_{VoiceP} \text{Ref}_i [_{VP} \text{danced}]]]]]]] [_{AdvP} \text{well}]]]]]] (w) = 1$  iff  
 $\{w': w' \in \cap f\text{-circ}(w) \ \& \ \exists s: s \text{ precedes speech time.}$   
 $\forall s': \text{MB}_{\text{ongoing}}(s)(s') = 1, \ \exists e: e \text{ is a dancing by agent John in } s' \text{ and}$   
 $s \leq w'\} \subseteq \{w': \exists s. s \text{ is good for John \& } s \leq w'\}.$

Sentence (12) is true iff all worlds that fit the circumstances in which there is a past dancing event by John, are also worlds in which there is a situation that is good for John. In all the worlds that fit the circumstances in which John danced, John felt good (we are not able to deal with temporal correspondence here).

Similar to Desideratives, the reading of Factuals derives from the interaction of CM and IMPF. Restrictions on MBs associated with IMPF in West Sl and Russian - the P-Inertia MB is not available – have as one consequence that in structures like (30a) for (12), the semantics of IMPF contributes to the factual interpretation of ISs. Intentional, non factual, interpretations are not possible for such constructions.

In sum, Intentional Impf readings in §2 depend on P-inertia, and so do Desiderative readings in §3. P-inertia available to IMPF in South Sl is unavailable in West Sl and Russian, so in these languages Impfs in sentences with nominative subjects lack intentional /furate readings, and ISs with dative subjects have factual readings.

## 6. Conclusions

Impfs are subject to microvariation in Sl, which divides the family into 2 groups distinguished by (a) intentional readings, (b) involuntary state readings, and (c) future morphology. All Sl Impfs share MBs for ongoing, generic/ habitual readings and for imperfective paradox readings dubbed here **Event-Inertia MB**. However, Sl Imps differ as to a preparatory MB we call **Preparatory-Inertia**. A **P-Inertia** MB is available in South Sl but not in West Sl/Russ, which accounts for the contrast in intentional readings for Impfs and involuntary state readings for ISs in the two groups. We have suggested that P-Inertia may also account for differences in future morphology. If our proposals are correct, Slavic supports a semantic as opposed to a pragmatic analysis of ‘intentional’ Impfs, and a subdivision of a traditional ‘inertia’ MB into two subvarieties of MBs: **E-Inertia** vs. **P-Inertia**.

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