

## Building Involuntary States in Slavic.

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### 1. Introduction<sup>1</sup>

Based on English, Vendler (1957) proposed that terms divide into the classes in (1), an influential source of inspiration for debates on event structure.

- (1) a. States: *love, know*  
b. Activities: *run, work, push a cart*  
c. Achievements: *notice, recognize, die*  
d. Accomplishments: *build a house, eat an apple, write a letter*

In later literature, it has been debated whether the division in (1) and subsequent modifications are meant to characterize Vs / roots, or Vs once they compose at the VP-level with arguments and modifiers. Nevertheless, there seems to be agreement that the syntactic domain of event composition is VP, which Chomsky (1995) calls vP, Hale & Keyser (2002) l-syntax (lexical-syntax), and Ramchand (2008) First Phase Syntax. A common view is that event syntactic / semantic composition relevant for (1) often stops at such a level, identified as the domain of Aktionsart / Situation Aspect (Smith 1991).

Within the above perspective, this paper examines constructions known in Slavic as *Involuntary States*, with two related aims: (a) to explore the contribution to event structure of constituents that are not arguments of V, or included in the verb's template, but arguably external to VP, and (b) to contribute to a better understanding of crosslinguistic variation affecting building blocks in the representation of eventualities.

A common idea is that the linguistic representation of Vendlerian states lacks, or is poor in, internal event structure, in contrast with the other classes. Slavic *Involuntary States* are interesting from this perspective, as they display a *stative* nature that, arguably, is not determined by V / VP, and instead involves structures that dominate VP. In addition, Involuntary States exist in two semantic varieties in Slavic, pointing to microvariation within one family, and lack exact counterparts in at least Germanic and Romance, indicating crosslinguistic macrovariation.

*Involuntary States* (ISs) are found in all the Slavic languages with a similar syntax, but different semantics, as (2a-b) for West Slavic and Russian vs. (3a-b) for South Slavic illustrate.

- (2) a. *Jankowi tańczyło się dobrze.* Polish  
J<sub>DAT</sub> danced<sub>NEUT</sub> REFL well  
'John {danced/was dancing} with pleasure.'  
b. *Mne xorošo rabotaet -sja.* Russian

- |     |    |                  |  |                         |                       |                         |
|-----|----|------------------|--|-------------------------|-----------------------|-------------------------|
|     |    | I <sub>DAT</sub> | well   | work <sub>PRES.3S</sub> | -REFL                 |                         |
|     |    |                  | 'I am feeling well in my working.'               |                         |                       | (Benedicto 1995: (32c)) |
| (3) | a. | <i>Janezu</i>    | <i>se</i>  | <i>je</i>               | <i>plesalo.</i>       | Slovenian               |
|     |    | J <sub>DAT</sub> | REFL   | be <sub>3S</sub>        | danced <sub>NEU</sub> |                         |
|     |    |                  | 'John {was in the mood for/ felt like} dancing.' |                         |                       |                         |
|     | b. | <i>Na</i>        | <i>decata</i>                                    | <i>im</i>               | <i>se</i>             | <i>raboteše.</i>        |
|     |    | P                | children.the                                     | 3 <sub>PL.DAT</sub>     | REFL                  | work <sub>IMP.3S</sub>  |
|     |    |                  | 'The children felt like working.'                |                         |                       | (Rivero 2009: (2))      |

The comparison of (2a-b) with (3a-b) suggests that ISs share form, but may differ in meaning. In syntax and morphology, ISs may minimally consist of (a) a human or personified (Dziwirek 1994:119, a.o.) dative subject, (b) a verb without agreement, and (c) a reflexive. However, they display readings with contrasting truth conditions (Rivero 2003, Rivero & Sheppard 2003), dividing the family into two groups we label *Factual* and *Desiderative* respectively. Factual ISs in Russian<sup>ii</sup> and West Slavic (Polish, Czech, Slovak) as in (2a-b) speak (a) of eventualities (i.e. activities, accomplishments, achievements, states) named by their verb that happen in the actual world, and (b) of psychological states related to those actual actions/events, etc. Polish (2a), for instance, tells us about a past dancing eventuality with John as agent, and about his mental state; that is, dancing placed John in a joyful state indicated by *dobrze* 'well', so he felt well about his dancing. In this way, datives in Factuals combine the role traditionally related to the verb in the construction -agent for *dance-*, with an experiencer-like role. Desiderative ISs characteristic of South Slavic illustrated in (3a-b) contrast with Factuals since they speak of just impulses of the dative participant, not of actual-world eventualities corresponding to the verb. More precisely, (3a) alludes to John's past urge to dance, not his actual dancing. Thus, datives in Desideratives are reminiscent of experiencers, independently of the role usually associated with the external argument of their verb (i.e. agent for *dance*).

The *Involuntary State* label, then, is applied in Slavic to constructions with similar syntax, but different semantics/ truth conditions. Nevertheless, both types allude to an uncontrollable *state* of the dative, which can thus be called *involuntary*. Since Factuals relate such a state to an action (or similar) of the dative in the actual world, (2a) closely corresponds to English *John danced, and could not help feeling good about his dancing*, with the adverb naming the quality of the state. Since Desideratives speak of a state / disposition not paired to an action (or similar) of the dative in the actual world, Slovenian (3a) has a close paraphrase in English *John felt the urge to dance*, which does not imply actualization.<sup>iii</sup> The desiderative type of South Slavic is absent from West Slavic and Russian, and the factual type is not found in South Slavic, so the two types fail to coexist in one language. An important goal in this paper is to develop an analysis that captures similarities and differences between Factuals and Desideratives, including their essential contrast in truth conditions.

Factuals and Desideratives share two characteristics supporting the hypothesis that their *stative* nature (i.e. an uncontrollable state/attitude), does not derive from V / VP, but from additional morphology. A first property illustrated later is that all ISs may contain Vs in the Vendlerian classes in (1). Irrespective of V-class, however, readings remain factual in the West, and desiderative in the South. Thus, we propose that the *stative* nature of such constructions depends on syntactic composition closely tracked by

morphology. A second characteristic of ISs is to productively alternate with constructions with nominative subjects, agreeing Vs, and no reflexive. Thus, Factual (2a) and Desiderative (3a) alternate with (4a) and (4b) respectively, with the nominative as agent.

- (4) a. *Janek tańczył dobrze.* Polish  
 J<sub>NOM</sub> danced<sub>MASC</sub> well  
 ‘John danced/was dancing well.’
- b. *Janez je plesal.* Slovenian  
 J<sub>NOM</sub> be<sub>3S</sub> danced<sub>MASC</sub>  
 ‘John danced/was dancing.’

ISs display a more complex structure than their ‘regular’ counterparts. That is, (4a-b) contain the same lexical items as (2a-3a), but no reflexive and dative markers, and lack the relevant *stative* / ‘out-of-control’ dimension. This supports our contention that stativity in ISs does not depend on V/VP, but on additional morphology/syntax.

In sum, Factuals and Desideratives are *Complex States* that involve semantic/syntactic composition. In this paper, we capture this state of affairs by arguing that reflexive and dative morphology each signals a distinct level of structure above VP. Updating (Rivero 2003, Rivero & Sheppard 2003), we maintain that all ISs contain a so-called impersonal/passive reflexive core: *Tańczyło się* ‘{Someone, people} danced’ in (2a), and *Plesalo se je* ‘{Someone, people} danced’ in (3a). Following (Rivero & Frąckowiak 2008, Rivero, Arregui & Frąckowiak 2009, 2010), we consider that the reflexive stands for the external (or only) argument of V in a Voice Phrase linked to a Tense Phrase, so is indicative of *Second Phase Syntax*. Last, we follow Rivero (2009), and place dative subjects in a High Applicative Phrase above the Tense Phrase, which thus signals *Third Phase Syntax*, resulting in (5).

- (5) [Third Phase=AppIP Dat<sub>i</sub> [Second Phase=TP  $\bar{1}$  [VoiceP Refl<sub>i</sub> [First Phase=VP V ]]]]  
 In our view, (5) is shared by Factual and Desiderative ISs, capturing their formal similarities: (a) a dative as notional subject, (b) an obligatory reflexive as ‘resumptive’ pronoun for the dative<sup>iv</sup>, and (c) an (intransitive) V with default morphology.

Factuals and Desiderative ISs both involve a mental state in the dative viewed as uncontrollable. The notion ‘uncontrollable’ speaks of a modal flavor (something happens regardless of the circumstances). We propose to capture the shared modal flavor by means of an analysis that appeals to an implicit universal Circumstantial Modal CM (understood as in Kratzer 1981, 1991), which heads the High Applicative in both cases, with the structure in (6) common to both types.

- (6) [AppIP Dat<sub>i</sub> [App’ CM<sup>0</sup> [TP  $\bar{1}$  [VoiceP Refl<sub>i</sub> [VP V ]]]]]

Factual and Desiderative ISs, however, are not identical. In this paper we address two of their differences. A first one is that Factuals usually require a manner phrase, while Desideratives do not, as (2a-b) vs. (3a-b) illustrate. For this, we assume that in Factuals CM takes a manner phrase as argument within the structure in (7) (Rivero, Arregui & Frąckowiak 2009, 2010), which is not the case in Desideratives. On this view, Factuals make a claim about the dative subject’s lack of control *over the manner of the eventuality* indicated by their verb, which is taken for granted.

- (7) [AppIP [Dat<sub>i</sub>] [AppIP [App’ CM<sup>0</sup> [TP  $\bar{1}$  [VoiceP Refl<sub>i</sub> [VP V ]]]]] [Manner Phrase] AppIP] AppIP]

A second crucial difference concerns the contrast in truth conditions not satisfactorily addressed in the past. Why is it that similar past affirmative imperfective ISs with the verb *dance* such as Factual (2a) and Desiderative (3a) differ so radically in

interpretation? Factual (2a) reports both a dancing activity in the actual world and an attitude, while Desiderative (3a) reports just an urge to dance, not a dancing activity. In this paper, we derive such a contrast from variation in Imperfectives in Viewpoint Aspect (Smith 1991) in the High Applicative structure of Factuals and Desideratives in (8).

(8) [AppIP Dat<sub>i</sub> [App' CM<sup>0</sup> [TP<sub>i</sub> Tense [AspP Viewpoint [VoiceP Refl<sub>i</sub> [VP V ]]]]]]

We argue that Viewpoint Imperfectives display microvariation in Slavic, with a consequent effect on the interpretation of ISs. Our core idea is that South Slavic Desideratives, which must be Imperfective, are restricted to a subtype of Imperfective unavailable in West Slavic and Russian. By contrast, Factuals are not inherently restricted to a particular type of Viewpoint aspect. Let us illustrate the aspectual contrast between the two types of ISs. Factuals are often imperfective, (2a-b), but they may also be perfective: (9) from the Internet, with an IS shown in bold (see §2.2 for why Factual ISs may lack a manner phrase).

(9) *Powie, że chciał napisać 1000.00 zł*  
 Say<sub>PRES.3S</sub> that want<sub>PAST.3S</sub> write<sub>PERF.INF</sub> 1000.00 zł  
*a mu się napisało 1.00 czy coś takiego.*  
 but he<sub>DAT</sub> REFL write<sub>PERF.PAST.NEU</sub> 1.00 or something like.that  
 ‘He will say that he wanted to write 1000 zloty,  
 but **(somehow it happened that) he wrote 1 or something like that.**’

Like their imperfective counterparts, perfective Factuals allude to eventualities in the actual world, so (9) speaks of an individual who claims to have mistakenly written 1 instead of 1000.

By contrast with Factuals, South Slavic ISs are ungrammatical if perfective (Rivero & Sheppard 2008, Rivero 2009 for a detailed morphological discussion), so must be imperfective: (10a) vs. (10b).

(10) a. *Janezu se je umiralo doma.* Slovenian  
 J<sub>DAT</sub> REFL be<sub>3S</sub> die<sub>IMPF.NEU</sub> at.home  
 ‘John felt like dying at home.’ (Rivero & Sheppard 2008)  
 b. *\*Janezu se je umrlo samo enkrat.*  
 J<sub>DAT</sub> REFL be<sub>3S</sub> die<sub>PERF.NEU</sub> only once.  
 ‘\*John felt like dying only once.’ (Rivero & Sheppard 2003)

In particular, Rivero (2009: §3) notes that in South Slavic, well-formed constructions with the syntactic ingredients of ISs cannot receive a desiderative reading when perfective, so do not count as ISs. To illustrate, perfective (11a) formally comparable to Factual (9), and (11b) both lack the desiderative reading notated 1. However, these sentences are grammatical under the different reading (and syntactic structure) notated 2: a so-called impersonal reflexive passive with the dative as a benefactive.<sup>v</sup>

(11) a. *Na Ivan mu se napisa pismo.* Bulgarian  
 P Ivan 3<sub>DAT</sub> REFL write<sub>PERF.AOR.3S</sub> letter.the  
 Reading 1: (unavailable) ‘Ivan felt like writing the letter in full.’  
 Reading 2: OK ‘The letter was written in full for Ivan.’ (Rivero 2009: (43b))  
 b. *Janezu so se napisala pisma.* Slovenian  
 J<sub>DAT</sub> be<sub>3PL</sub> REFL write<sub>PERF.PPLE</sub> letters  
 Reading 1: (unavailable) ‘John felt like writing (the) letters.’  
 Reading 2: OK ‘(The) letters were written to John.’ (Rivero 2009: (61))  
 In sum, Desideratives are aspectually restricted in a way that Factuals need not be.

In our view, the reliance of South Slavic ISs on imperfectivity provides an essential clue to the different truth conditions of Factuals and Desideratives. In §4, we argue that Imperfectives display semantic variation in Slavic, dividing the family into two groups. Slavic Imperfectives share ongoing, habitual, and generic readings, but in addition, South Slavic Imperfectives may also display an intentional reading absent in West Slavic and Russian. Our claim is that Desideratives are specialized for such an intentional Imperfective not found in West Slavic and Russian. Thus, ‘bare’ West Slavic and Russian ISs cannot have a desiderative reading, while ‘bare’ South Slavic ISs are restricted to a desiderative reading.

We capture Imperfective variation in Slavic via restrictions on Kratzerian modal bases for an Imperfective Operator. We propose that South Slavic Imperfectives may access a **purely preparatory modal base** we dub **P-inertia MB** unavailable to West Slavic and Russian Imperfectives, which thus remain factual.

The paper is organized as follows. Section 2 discusses some features in Factuals relevant for the Viewpoint hypothesis we just outlined. Section 3 deals with features of Desideratives also relevant for the same hypothesis. Section 4 develops an account of the interpretation of the Imperfective Operator, and section 5 offers a semantic account of Factuals and Desideratives involving the values of such an Imperfective Operator.

## 2. Factual Involuntary States: West Slavic and Russian

Involuntary States divide into two semantic types in Slavic: Factuals topic of this section, and Desideratives in §3.<sup>vi</sup> In §2.1, we informally introduce some characteristics of Polish, Czech, Slovak, and Russian Factuals relevant for our proposals. In §2.2, we recall the analysis of Polish ISs in (Rivero, Arregui, & Frąckowiak 2009, 2010), extending its essential points to other West Slavic languages, and to Russian.

### 2.1. Characterizing Factual Involuntary States

Factual ISs were illustrated in (2a) partially repeated in (12a) and now in (12b-d), all with activity Vs. Such constructions share a verb describing the action performed by the dative in the actual world, and an adverb indicating the dative’s attitude towards such an action.

- (12) a. *Jankowi tańczyło się dobrze.* Polish  
‘John danced/was dancing with pleasure.’
- b. *Janovi se pracovalo hezky.* Czech  
J<sub>DAT</sub> REFL worked<sub>NEUT</sub> nicely  
‘John worked with pleasure.’ (Rivero & Sheppard 2003)
- c. *Nam xorošo rabotalo -s’.* Russian  
We<sub>DAT</sub> well worked<sub>NEUT</sub> -REFL  
‘We worked well.’ (Whalen 1978)
- d. *Dnes sa mi spalo dobre.* Slovak  
today REFL I<sub>DAT</sub> slept<sub>NEU</sub> well  
‘I slept well today.’

Sentence (13), an interesting IS from the Russian corpus ([www.ruscorpora.ru](http://www.ruscorpora.ru)) cited by Fici (2008: (3)) can be used to further illustrate parallelisms in the factual group.

- (13) *Naskol’ko slašče žilos’ putešestvennikam XIX veka!* Russian

How.much sweetly lived<sub>IMPF.NEU.REFL</sub> travellers<sub>DAT</sub> 19<sup>th</sup> century  
‘How much better travellers lived in the 19<sup>th</sup> century!’

The ISs in (13) through (16) all share dative subjects, reflexives, stative verbs, and adverbs, and allude to a past living eventuality that was pleasurable for the dative. By contrast, the Slovenian desiderative in (10a) alludes to a past disposition to die.

(14) *Jak pječně se žilo Jankovi v XIX století.* Czech  
How beautifully REFL lived<sub>IMPF.NEU</sub> J<sub>DAT</sub> in XIX century  
‘How beautifully John lived in the 19th century!’.

(15) *O ile łatwiej żyło się podróżnikom w 19. wieku!* Polish  
About much easier lived<sub>IMPF.NEU</sub> REFL travellers<sub>DAT</sub> in 19th century  
‘How much easier 19th century travellers lived!’

(16) *Ako ľahšie sa žilo putujúcim v 19. storočí!* Slovak  
How easier REFL lived<sub>IMPF.NEU</sub> travellers<sub>DAT</sub> in 19th century.  
‘How much easier travellers lived in the 19th century!’

We formalize meaning in §5, but we informally repeat that all the above *affirmative* ISs share the *Factual Property* that crucially distinguishes them from South Slavic Desideratives: they take for granted in the actual world the action or state corresponding to the verb. By contrast, affirmative Desideratives are dispositions, and *do not* take for granted the eventuality corresponding to the verb.

The fundamental semantic contrast between ‘bare’ Factuals and Desideratives may be neutralized by the compositional effect of overt modal items, and, more intriguingly, by a negation. First, a modal verb such as *want*, for instance, has the effect of making (17) resemble a Desiderative, that is, a past disposition to sing, not a singing activity. As expected, Factuals may derivatively acquire a dispositional reading when appended with constituents with modal properties.

(17) *Chciało mi się śpiewać.* Polish  
Want<sub>NEUT</sub> I<sub>DAT</sub> REFL sing  
‘I felt like singing’ (Wierzbicka 1988)

Second, negation has some intriguing effects on Factuals in need of future study. On the one hand, in some instances negation falls on the adverb and the eventuality is taken for granted, so the contrast with Desideratives persists. To illustrate, for Dziwirek (1994) the quality of the action is negated in (18): *I cannot think well*. Likewise, (19) cited by Fried (2007) from the Czech corpus seems to negate *pohodlně* ‘comfortably’.

(18) *Nie myśli mi się dzisiaj.* Polish  
NEG think<sub>PRES.3SG</sub> I<sub>DAT</sub> REFL today  
‘I can’t think today.’ (Dziwirek 1994)

(19) *Jestli se vám v týhle neseď.* Czech  
if REFL 3Pl<sub>DAT</sub> in this NEG.sit<sub>IMPF.PRES.3S</sub>  
*pohodlně, (sedněte si do jiný).*  
comfortably, (sit REFL into another) (Fried 2007)  
‘If it isn’t comfortable for you to sit in this one, (sit down in another one).’

A natural interpretation of Slovak (20) and counterparts in other languages is that Eve works on Friday, but with difficulty (i.e. *dobře* is negated).

(20) *Eve sa v piatok nepracuje dobre.* Slovak  
Eve<sub>DAT</sub> REFL on Friday NEG.work<sub>PRES.3S</sub> well  
‘On Fridays Eve doesn’t work well.’

Interpretations in (18-20), then, are compatible with the idea that the eventuality ‘taken for granted’ is presupposed, which maintains the essential contrast with Desideratives.

In some instances, however, negation makes Factuals resemble Desideratives to a larger degree, as the eventuality seems not to be taken for granted: (21-23).

- (21) *Nam ne rabotalo -s’.* Russian  
 We<sub>DAT</sub> NEG work<sub>NEUT</sub> -REFL  
 ‘We just couldn’t work.’ (Whalen 1978)
- (22) *Mne ne čitaet- sja.* Russian  
 I<sub>DAT</sub> NEG read<sub>PRES.3S</sub> REFL (Benedicto 1995)  
 ‘I don’t feel like reading. I’m not in the mood for reading.’
- (23) *Marine ne poet- sja.* Russian  
 M<sub>DAT</sub> NEG sing<sub>PRES.3S</sub> REFL (Szucsich 2006)  
 ‘Marina doesn’t feel like singing /doesn’t manage to sing.’

In (21-23), negation could be ‘metalinguistic’, with the IS structure, and thus the Modal, under its scope. Alternatively, the eventuality could be asserted instead of presupposed, which also maintains the fundamental difference with Desideratives.

The different effects of negation require study, but for our purposes, bare/simple past affirmative patterns such as those in (12a-d) and (13-16) establish that West Slavic and Russian lack *inherent* desiderative ISs of the South Slavic type, the crucial point.

ISs may contain Vs in all classes identified by Vendler<sup>vii</sup> with a double semantic character, which shows that their {*Stative Property* / attitude of the dative} does not derive from V/VP, but from a morphology indicative of a complex syntactic structure. With activity Vs as in (12a-d), Factuals speak of ‘real’ actions by an agent - *Factual Property*-, and an attitude of such an agent: *Stative Property*. Ružičková (1971) noted this double character when stating that in Slovak ‘the agent is at the same type the experiencer, who subjectively “feels through” his own action, always evaluating it.’ In our terms, ISs with activity Vs take for granted the action named by V, and tell us how the agent feels about such an action.

Factual ISs with stative Verbs illustrated in (13-16) and (24-27) are particularly interesting for our purposes.

- (24) *Jankovi se bidlí dobře u sestry.* Czech  
 J<sub>DAT</sub> REFL live<sub>3S</sub> well at sister.  
 ‘John enjoys living at his sister’s.’
- (25) *Basi dobrze mieszka się u swojej siostry.* Polish  
 B<sub>DAT</sub> well live<sub>3S</sub> REFL at her sister’s  
 ‘Barbara enjoys living at her own sister’s.’ (Dziwirek 1994)
- (26) *Janikovi sa býva dobre u sestry.* Slovak  
 J<sub>DAT</sub> REFL live<sub>3S</sub> well at sister.  
 ‘John enjoys living at his sister’s.’
- (27) *Mne xorošo zivet-sja.* Russian  
 I<sub>DAT</sub> well live<sub>3S</sub> -REFL (Whalen 1978)  
 ‘I live well.’

Comparing (27) to *Ja xorošo zivu* with a nominative subject and no reflexive, Whalen (1978) states that the first ‘implies a general state in which the experiencer finds himself’; this additional state is our *Stative Property*. Namely, (27) speaks of living by the dative as

taken for granted –*Factual Property*-, and an attitude of the dative - *Stative Property*-, so could be freely translated as *I live and enjoy it*, close to Dziwirek’s gloss for Polish (25).

ISs with accomplishment Vs are as in (28-30), and also allude to an eventuality in the actual world coupled to a state of the dative towards such an eventuality.

- (28) *Ta kniha se Janovi četla dobře.* Czech  
 This book<sub>NOM.FEM</sub> REFL John<sub>DAT</sub> read<sub>FEM.</sub> well  
 ‘John read this book with ease.’ (Rivero & Sheppard 2003)
- (29) *Jankowi czytało się tę książkę z przyjemnością.*  
 John<sub>DAT</sub> read<sub>NEUT</sub> REFL this book<sub>ACC</sub> with pleasure  
 ‘(Somehow), John read this book with pleasure.’ Polish
- (30) *Eve sa svoja izba upratala rýchlo.*  
 E<sub>DAT</sub> REFL her.own room<sub>NOM.FEM</sub> cleaned<sub>3S.FEM</sub> quickly  
 ‘Eve quickly cleaned her own room.’ Slovak

Russian ISs, however, are subject to a syntactic restriction: they cannot contain transitive Vs. As a result, constructions with accomplishment Vs of type (31) in the sense of ‘It is difficult for me to write the article / I write the article with difficulty’ are ungrammatical (Franks 1995, Fehrmann, Junghanns & Lenertová 2010, a.o.).

- (31) *\*Stat’ja mne pišet-sja ploxó.* Russian  
 Article<sub>NOM</sub> I<sub>DAT</sub> write<sub>3S-REFL</sub> badly  
 (Fehrmann, Junghanns & Lenertová 2010: (72a))

Achievements are illustrated in (32-33). Vs with an inherent accidental /involuntary dimension such as *sneeze* allow Factual ISs to be well formed without adverbs, for reasons given in §2.2.

- (32) *Pčiklo se mi.* Czech  
 Sneezed<sub>NEU.3S</sub> REFL I<sub>DAT</sub>  
 ‘I sneezed accidentally.’
- (33) *Kýchlo sa mi.* Slovak  
 Sneezed<sub>NEU.3S</sub> REFL I<sub>DAT</sub>  
 ‘I sneezed accidentally.’

We just noted that Vs are restricted in Russian ISs, but we consider such restrictions syntactic (Franks 1995, a.o.), and place this language in the same IS typological group as West Slavic. The literature reports considerable verb limitations, and variation with respect to the acceptability of ISs in Russian (Benedicto 1995, Franks 1995, Moore & Perlmutter 2000, Markman 2003, Szucsich 2006, Fehrmann, Junghanns & Lenertová 2010, a.o.). One such restriction is that transitive Vs with overt logical objects do not form ISs - (31)-, and a second one is a near absence of prepositional complements<sup>viii</sup>. However, the comparison of (34) and (35) suggests important parallelisms of Russian with West Slavic. On the one hand, in both an eventuality with the dative as agent is taken for granted – the *Factual Property*-, and both allude to a state of the dative whose quality is signaled by the adverb: *Stative Property*. On the other hand, in both sentences datives behave as ‘subjects’, serving as controllers for the adjunct clause, which is often mentioned in the syntactic literature.

- (34) *Mne udobno čitalo- s’, [sidja pod lampoj.]* Russian  
 I<sub>DAT</sub> comfortably read<sub>NEU-REFL</sub> seat<sub>GER</sub> next lamp (Benedicto 1995)  
 Our translation: ‘I somehow read comfortably sitting next to the lamp.’
- (35) *Jankowi najlepiej myśli się [siedzac w fotelu.]* Polish

John<sub>DAT</sub> best think<sub>3S</sub> REFL seat<sub>GER</sub> in armchair  
‘John thinks best sitting in an armchair.’ (Dziwirek 1994)

In sum, Factual ISs may contain V<sub>s</sub> in all Vendlerian classes, but Russian is subject to some syntactic restrictions. Such ISs combine (a) a *Factual Property* related to the lexical content of V / VP (an eventuality taken for granted), and (b) a *Stative Property* (an attitude usually related to a manner expression).

To understand the combined effects of dative and manner expression in Factuals, recall that ISs such as (12a) partially repeated in (36) and counterparts in Czech, Slovak, and Russian alternate with ordinary sentences like (4a) repeated in part in (37).

(36) *Jankowi tańczyło się dobrze*. ‘John danced with pleasure.’

(37) *Janek tańczył (dobrze)*. ‘John danced (well).’

Factual (36) contrasts in syntax and semantics with (37), which contains a nominative *Janek*, an agreeing V *tańczył*, an (optional) adverb, and no reflexive. The sentence with the IS frame tells us that there was a past dancing event with John as agent, and reports on John’s state: he could not help enjoying dancing. Sentence (37) tells us about a past dancing event by John, and reports that the quality of the dance was good. Thus, if John danced horribly, (36) could be true, but (37) would be false.

The ‘out-of-control’ reading of the IS dative in (36) underlies the *Involuntary State* label, and has been noted repeatedly in Polish (Gołąb 1975, Dąbrowska 1997, Dziwirek 1994, Wierzbicka 1988, Frąckowiak & Rivero 2008, a.o.). As to Russian, Benedicto (1995), Moore & Perlmutter (2000), and Markmann (2003) also note that the event is beyond the control of the dative in ISs. Views on Polish seem particularly insightful to understand why the dative of Factuals with activity V<sub>s</sub> may be called both ‘agent’ and ‘experiencer’. For Gołąb (1975), the dative ‘... does not cause the quality of the action...[which] results from circumstances independent of him.’ Wierzbicka (1988:219) tells us that ‘sentences of this kind mean that the agent experiences his own action as proceeding well (or not well) for reasons independent of him and unspecifiable.’ Wierzbicka adds (1988: 426) that ‘[the] “goodness” of the experience is attributed... to the environment in which the action took place (...).’ In §5 we provide an analysis with the dative as the subject of a Circumstantial Modal with universal force, which brings about a flavor of ‘out-of-control’ or inevitability.

The adverb of ISs is consistently interpreted *relative to the dative subject*, and also contributes to our *Stative Property*. The sentence with a nominative tells us that the manner of dancing was good, while in the IS dancing brought pleasure to John. Manner in ISs, then, is shifted to a property of individuals and events, and thus relativized to an entity, which has not escaped notice in the literature. Ružičková (1971) treats adverbs as higher predicates of an evaluative clause that embeds the remainder of the construction. In her insightful discussion, Benedicto (1995) proposes that the dative-oriented adverb functions like a second order evaluative predicate. In §2.2, we treat Manner Adverbs in Factuals as syntactic constituents and semantic arguments of the Modal with the dative subject. On this view, the *Stative Property* in Factuals does not depend on operations shifting V / VP from activity/ accomplishment/ achievement /state into a (different) state, but on a Modal combined with a manner expression as argument.

Manner phrases may be absent in some situations mentioned in our earlier work briefly recalled here. Factuals do not require a manner expression when its content is (a)

recoverable from V, or (b) the context. In (38) we see an IS with a manner recoverable from V, and Czech (32) and Slovak (33) with *sneeze* are parallel.

- (38) *Zaproszyło mi się ogień w łóżku.* Polish  
 PREF.set.on.fire<sub>NEU</sub> I<sub>DAT</sub> REFL fire<sub>ACC</sub> in bed  
 ‘I accidentally started a fire in my bed.’ (Rivero, Arregui & Frąckowiak 2010)

The Polish PWN corpus (<http://korpus.pwn.pl>) defines *zaproszyć ogień* in (38) as *niechcący spowodować pożar* ‘to cause a fire involuntarily’. Manner in the denotation of the VP allows (38) to count as complete, and the same can be said of (32-33).

In (39a-c) we see three (perfective) ISs that resemble our earlier (9). These are instances where manner may be recovered in context. Czech, Polish, and Slovak informants agree that such sentences could be uttered in a context where the speaker is drawing with a blindfold on, and discovers that he/she accidentally wrote his/her name.

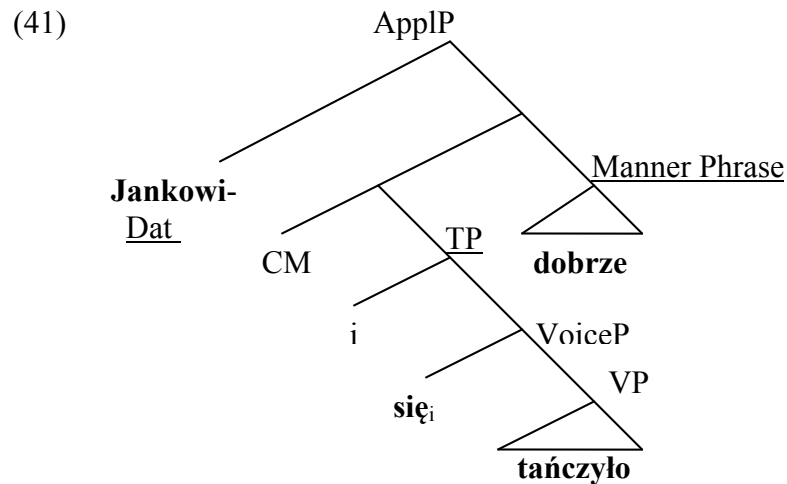
- (39) a. *Napsalo se mi moje jmeno.* Czech  
 Wrote<sub>PERF.NEU.3S</sub> REFL I<sub>DAT</sub> my name<sub>NOM</sub>  
 b. *Napisalo mi się własne imię.* Polish  
 Wrote<sub>PERF.NEU.3S</sub> I<sub>DAT</sub> REFL own name<sub>ACC</sub>  
 (Rivero, Arregui & Frąckowiak 2010)  
 c. *Napísalo sa mi vlastné meno.* Slovak  
 Wrote<sub>PERF.NEU.3S</sub> REFL I<sub>DAT</sub> own name<sub>NOM</sub>  
 ‘I wrote my own name by accident.’

## 2.2. The structure of Factual ISs

In this section, we outline some basic features of the structure we assume for Factuals, and provide supporting evidence. The semantic analysis will be presented in §5. The current syntactic proposal builds on Rivero, Arregui & Frąckowiak (2009, 2010), following Rivero (2003, 2009) and Rivero & Sheppard (2003). Rivero, Arregui & Frąckowiak (2009, 2010) propose that Polish ISs consist of a High Applicative (AppIP) headed by a silent Circumstantial Modal (CM), which dominates three obligatory constituents. We summarize this analysis to adopt it with some modifications in §5, and propose that it is suitable for Czech, Slovak, and Russian ISs.

Abstracting from Viewpoint Aspect, Factual (36) now repeated in (40) has the (simplified) structure in (41) corresponding to (7).

- (40) *Jankowi tańczyło się dobrze.* ‘John danced with pleasure.’  
 AppIP headed by CM dominates the total structure, takes a human dative specifier (Dat), and includes both arguments of CM as embedded clauses: a Tense Phrase (TP) serving as restrictor, and a Manner Phrase serving as the Modal’s nuclear scope. In this syntactic skeleton, dative and manner phrase are both treated as Specifiers dominated by a recursive AppIP. *i* in TP is an index abstracting over the reflexive pronoun in Voice Phrase, which is treated as a variable.



**2.2.1. The Dative Subject as Specifier of the Applicative.** ISCs are oriented towards the dative in the specifier of the High Applicative. The dative is not an argument of V, VP, or Voice Phrase (also Benedicto 1995), and like other applicative arguments, is optional. If the dative is removed from an IS, the result is a reflexive construction (i.e. an ‘impersonal reflexive passive’) that can function as an independent sentence.

The dative is presented as unable to control the way the eventuality develops, with the pleasure derived from the activity not under its control. Similar comments apply to ISs with activity verbs in Czech, Russian and Slovak, as we saw: they all identify an agent unable to control some dimension of a past action. §5 provides a denotation of CM in (41) that captures the precise semantic role of the dative.

**2.2.2. TP as an ‘Impersonal Passive Reflexive’ Construction.** Tense Phrase as first argument of CM in (41) consists of a reflexive construction (also Ružičková 1971, Benedicto 1995) of the type commonly known as an ‘impersonal passive reflexive’. Without dative and manner phrase, TP is the sentence in (42), with (a) reflexive ‘someone’, and (b) a default V. Mutatis mutandis, the same analysis holds for parallel reflexives in ISs in Czech, Russian and Slovak, and for Desideratives in §3.

(42) *Tańczyło się*. ‘One/people/someone danced.’

Polish

TP in (41) is similar to Romance impersonal passive reflexive constructions: Italian *Si canta* ‘People sing.’ (Chierchia 1995, a. o), etc. In the IS in (41), the reflexive introduces a variable for a participant in a Voice Phrase (Kratzer 1996, Frąckowiak & Rivero 2008), *i* within TP above VoiceP is an index abstracting over the reflexive variable (see Heim and Kratzer 1998 for indices as abstractors) (also Benedicto 1995). In other words, the reflexive introduces a variable bound by a freely generated index *i* to create a property of individuals at the level of TP. The Modal in (41) takes such a property as an argument, and once the meaning of the manner phrase is computed, the result is a property of individuals predicated of the dative.

Both Factual and Desiderative ISs are restricted to human or personified dative subjects. Dziwirek (1994: 119), for instance, tells us that non-human and inanimate subjects are possible in Factuals if ‘imbued with an ability to perceive pleasure and hardship, good and evil’. In our analysis, the human/personified restriction derives from the reflexive in both types of ISs. Rivero, Arregui & Frąckowiak (2009, 2010) follow Chierchia (1995) and Rivero & Sheppard (2003), and equip the variable introduced by

the reflexive in (41) with a human presupposition. For Chierchia, *si* in *Si canta* ‘People sing.’ binds off a property, and quantifies over the nominative subject position. In ISs, impersonal reflexives also introduce a variable bound by a freely generated index *i* to create a property of individuals. This property is the right argument to feed Modal CM in ApplP. More precisely, CM in (41) combines with the TP and the manner phrase and the interpretation is a property of individuals predicated of the dative, thus ‘identifying’ the dative in the High Applicative with the ‘subject’ of VP/TP. In §3, we use the same analysis for reflexives in Desideratives.

**2.2.3. The role of the Manner Phrase.** A manner phrase is usually obligatory in Factuals, not in Desideratives. Rivero, Arregui & Frąckowiak (2009, 2010) give three arguments to support the claim that it is a constituent of ApplP, not TP in Factual (41). The first is that impersonal reflexive constructions, i.e. TPs, do not *require* manner, as the Polish copular sentence in (43) illustrates.

(43) *Kiedy się było młodym, było się szczęśliwym.* Polish  
When REFL was young, was REFL happy

‘When one was young, one was happy.’ (adapted from Rivero & Sheppard 2003)

Czech, Slovak, and Russian disallow copular impersonal reflexives, but Russian (44) leads to the same conclusion: the main V with *sja* takes an infinitive complement, and there is no manner phrase. If manner was a constituent of TP in Factual ISs, it would be unclear why it is obligatory.

(44) *Po trawie xodit’ vosprešżaet- sja* Russian  
On grass walk forbids- REFL (Whalen 1978)  
‘It is forbidden to walk on grass.’

A second argument for manner in ApplP is that there may be more than one manner phrase in Factual ISs. In (45a-b), the first adverb combines with CM, and the second describes the quality of the dancing.

(45) a. *Dobrze Jankowi tańczyło się fatalnie.* Polish  
Well J<sub>DAT</sub> danced<sub>NEU</sub> REFL terribly  
b. *Jankovi se dobře tančilo bylbye.* Czech  
J<sub>DAT</sub> REFL well danced<sub>NEU</sub> badly.  
‘John could not help enjoying his awful dancing.’

A third argument is that Manner adverbs that do not easily modify some stative Vs are quite natural in ISs with such Vs. Such is the case of Polish (25) partially repeated as (46a). As shown in (46b), the parallel nominative pattern with the same V does not tolerate the manner adverb found in the IS.

(46) a. *Basi dobrze mieszka się u swojej siostry.* Polish  
‘Barbara enjoys living at her own sister’s.’ (Dziwirek 1994)  
b. *\*Basia dobrze mieszka u swojej siostry.*  
B<sub>NOM</sub> well live<sub>3S</sub> at her.own sister  
(Rivero, Arregui, & Frąckowiak 2010)

The contrast in (46a-b) also suggests that Manner is under ApplP in Factual (41).

CM in Factuals resembles modals in teleological constructions such as *You must/ought to take the train to go to Harlem*, which take goal clauses as *arguments* that can remain implicit with contextual support (von Stechow & Iatridou 2005, a. o.). In the proposed analysis, the manner clause may also remain implicit.

In sum, in the Factual group, ISs consist of a High Applicative headed by a null CM relativized to a dative subject linked to a human reflexive pronoun functioning as a variable inside a finite TP complement. The IS Modal takes two arguments: TP with the reflexive variable, and a Manner Phrase. CM requires manner, so as we show in detail in §5, the manner of the eventuality with the dative participant is inevitable.

### 3. Desiderative Involuntary States: South Slavic

*Desideratives* are ‘inherent’ dispositions found in South Slavic, but not West Slavic / Russian, with some of their key features discussed in this section, and a semantic analysis provided in §5. Essentially, Desideratives share the skeleton for Factuals in (41) minus the Manner Phrase, and are specialized for a particular type of Imperfective: the intentional type.

#### 3.1. Characterizing Desideratives

In examining Desideratives, we concentrate on dimensions relevant for their comparison with Factuals<sup>ix</sup>. Consider Slovenian (4b) vs. (3a) repeated in (47a-b).

- (47) a. *Janez je plesal.* Slovenian  
 J<sub>NOM</sub> be<sub>3S</sub> danced<sub>IMPF.MASC</sub>  
 ‘John danced/was dancing.’
- b. *Janezu se je plesalo.*  
 J<sub>DAT</sub> REFL be<sub>3S</sub> danced<sub>IMPF.NEU</sub>  
 ‘John was in the mood for dancing. John felt like dancing.’

Sentence (47a) alludes to a past dancing activity with nominative *Janez* as agent, and imperfective V *plesal* ‘danced’. By contrast, *Desiderative* (47b) with a dative subject, a reflexive, and a similar imperfective V with default morphology speaks of John’s past disposition to dance, not of his past dancing activity. This shows that South Slavic ISS differ from ISS in West Slavic and Russian in lacking the *Factual Property*: they **do not** take for granted in the actual world the eventuality indicated by their V/VP.

Desideratives exist in all South Slavic languages, as Bulgarian (48a) and Serbocroatian (48b) further illustrate.

- (48) a. *Na Ivan mu se raboti mnogo.* Bulgarian  
 P Ivan he<sub>DAT</sub> REFL work<sub>3SG</sub> much  
 ‘John feels like working a lot. John is in the mood to work a lot.’
- b. *Jovanu se spava.* Serbocroatian  
 J<sub>DAT</sub> REFL sleep<sub>3SG</sub>  
 ‘John feels like sleeping/ is sleepy.’

Desideratives share with Factuals (a) human/personified dative subjects, (b) default Vs, and (c) reflexives. They also productively alternate with constructions with nominative subjects. Bulgarian *Ivan raboti mnogo* ‘Ivan works a lot’, for instance, is the agentive counterpart of dispositional (48a), and so on and so forth.

Parallel to Factuals, Desideratives may contain Vs/VPs in all Vendlerian classes: activities, (48a-b), accomplishments, (49), achievements, (50), and states, (51).

- (49) *Na Ivan mu se četeše knjigata.* Bulgarian  
 P Ivan 3<sub>SG.DAT</sub> REFL read<sub>IMP.3SG</sub> book.the

- ‘John felt like reading the book.’
- (50) *Janezu se je umiralo doma.* Slovenian  
 J<sub>DAT</sub> REFL be<sub>3SG</sub> die<sub>NEU</sub> at.home  
 ‘John felt like dying at home.’
- (51) *Na men mi se živee.* Bulgarian  
 P 1<sub>SG</sub> 1<sub>SG.DAT</sub> REFL live<sub>3SG</sub>  
 ‘I feel like living.’

For Factuals, we concluded that what we dub the *Stative Property* – the attitude of the dative towards the eventuality - does not derive from V/VP. We can now extend the same idea to Desideratives. That is, irrespective of the nature of V/VP, Desideratives are dispositions, and such a reading does not result from a shifting rule applying to V / VP, but from the additional compositional effect of their morphology and syntax.

Parallel to Factuals, Desideratives display a dative in a state *not under control*, so both constructions may be unified under the *Involuntary State* label. In this paper, we capture the ‘out-of-control’ dimension all ISs share by proposing that Factuals and Desideratives alike contain a phonologically null Circumstantial Modal.

In spite of all the above morphological, syntactic, and semantic similarities, Factuals and Desideratives are not identical, and two of their differences play a central role in the semantic proposals in §5. First, Desideratives contrast with Factuals in not requiring manner, as the above examples illustrate. Second, Desideratives speak of impulses/urges, not eventualities in the actual world, which affects truth conditions.

To our view, the crucial difference in truth conditions in Factuals vs. Desideratives resides in Viewpoint Aspect. As stated in §1, Desideratives are ungrammatical if perfective (Rivero 2009, Rivero & Sheppard 2008 for detailed discussion). The Slovenian pair in (52a-b) illustrates the contrast: the sentence with perfective *napisala* is deviant with an IS reading, while (secondary) Imperfective *prepisovala* allows the construction to be well formed under such a reading.

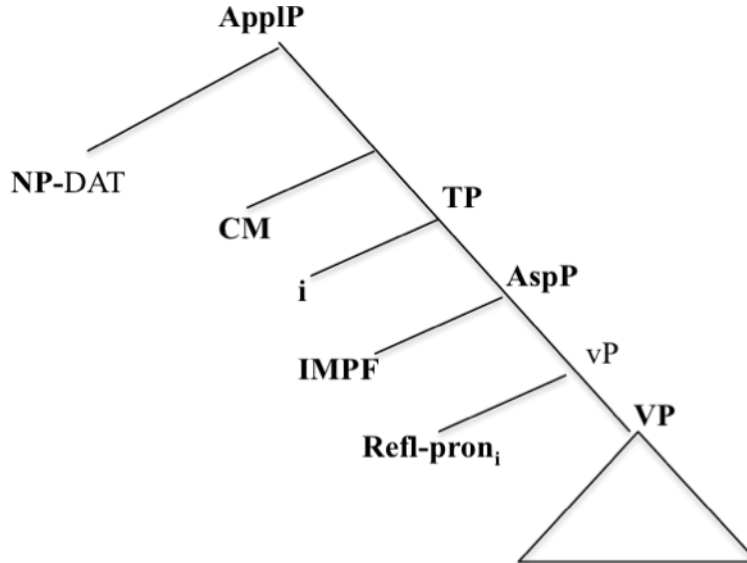
- (52) a. \**Janezu so se napisala pisma.*  
 J<sub>DAT</sub> Aux<sub>3PL</sub> REFL write<sub>PER</sub> letters<sub>NOM</sub>  
 ‘\*John felt like writing up (the) letters.’
- b. *Janezu so se prepisovala pisma.*  
 J<sub>DAT</sub> Aux<sub>3PL</sub> REFL write<sub>IMPF</sub> letters<sub>NOM</sub>  
 ‘John felt like rewriting up (the) letters.’ (Rivero & Sheppard 2008)

By contrast, Factuals do not bear an essential relation to Viewpoint Aspect. They may often be imperfective, but may also be perfective as Polish (9), (38), and the West Slavic triplet in (39a-c) all illustrate. In §5, we relate the core difference in the reading of ISs in the two Slavic groups to differences in the interpretation of imperfectives, and thus speak of Imperfective **microvariation**.

**3.2. The structure of Desideratives.** We conclude this brief overview of Desideratives by introducing the syntactic skeleton we adopt for them, closely based on Rivero (2009). Rivero proposes that South Slavic ISs consist of High Applicatives with dative subjects as Specifiers, and Tense Phrase complements. The Tense Phrase contains an Imperfective Operator as an essential ingredient, as in (53).

- (53) [<sub>AppIP</sub> NP<sub>DAT</sub> [<sub>Appl</sub> Appl [<sub>TP</sub> Tense [<sub>AspP</sub> IMPF<sub>VP</sub> [<sub>V</sub> VP]]]]]]  
 Rivero endows the head of the High Applicative with a [-Control] feature, but

does not further specify its nature. In this paper, we propose that the High Applicative of both Factuals and Desideratives is headed by a parallel universal Circumstantial Modal CM. Thus, the skeleton we assume for Desideratives is (54), once the reflexive variable with the analysis proposed for (41) is added. We consider vP equivalent to Voice Phrase. (54)



For the sake of comparison, Factual (41) corresponds to (55) with Viewpoint Aspect added. In sum, Desideratives lack the Manner argument of Factuals.

(55) [<sub>ApplP</sub> NP<sub>DAT</sub> [<sub>Appl'</sub> [<sub>App</sub> CM [<sub>TP</sub> i Tense [<sub>AspP</sub> Aspect [<sub>VoiceP</sub>Refl<sub>i</sub> [<sub>VP</sub>]]]]]]  
[MannerP]]

In our view, then, Factuals and Desideratives have very similar structures, which captures their considerable morphosyntactic similarities. They display parallel VPs, reflexives in vP/VoiceP treated as variables, and TPs complementing a High Applicative headed by a Circumstantial Modal with the dative as Specifier, which is identified with the ‘subject’ of the verb. A first difference is that Factuals are manner-oriented, while Desideratives are not. A second difference is that Aspect must be Imperfective in Desideratives, while Factuals need not be imperfective.

Thus, Factuals and Desideratives differ in **two** factors we encode in CM in terms of semantic selection. One, CM in Factual (55) selects for Manner, but CM in Desiderative (54) does not. Two, CM in Desiderative (54) selects for a kind of Imperfective unavailable in West Slavic and Russian – the intentional type-, while CM in Factual (55) is not aspectually restricted. In sum, **Factuals** are **Manner-oriented** while Desideratives are not, and **Desideratives** are **Aspect-oriented** while Factuals are not. The contrast in **Manner** vs. **Aspect orientation** resides in the requirements of the Applicative Modal. After we discuss the type of Imperfective variation relevant for IS contrasts in §4, in §5 we turn to the semantic analysis of ISs, based on the two factors that differentiate Factuals from Desideratives.

#### 4. The semantics of the Imperfective Operator

Factual ISs in (55) and Desiderative ISs in (54) are syntactically constructed states via parallel High Applicatives, but display micro-variation in semantics. In this section, we argue that there is variation in the interpretation of imperfectives in Slavic, and in §5 we develop a compositional account for ISs, locating their variation in the syntax-semantic interface of the Modal heading the Applicative Phrase and IMPF in Viewpoint Aspect.

In §4.1, we discuss Imperfective variation in Slavic, which proves to be the clue to the different truth values of Factuals vs. Desideratives. In §4.2, we make a proposal for IMPF to account for such a variation.

##### 4.1. Imperfective variation in Slavic

Imperfectives (Impfs) may display multiple readings depending on the language: ongoing, habitual, iterative, generic, intentional, etc. However, languages vary as to the range of interpretations. Hindi Impfs have a generic reading, but lack an ongoing reading, which is reserved for progressives (Bhatt 2006). In Spanish, Impfs have ongoing and intentional readings, and progressives have ongoing but no intentional readings.

In our view, Slavic Impfs are interesting because they display variation dividing the family into two groups. Following many, we adopt the standard position that Slavic Imperfectives share ongoing, habitual, iterative, and generic readings.<sup>x</sup> However, we propose that they differ as to the availability of the intentional kind. That is, **Intentional Impfs** reminiscent of Spanish *Juan llegaba mañana* ‘John was arriving tomorrow’ (Cipria & Roberts 2000, Ippolito 2004, a.o.) are found in South Slavic, but not Russian and West Slavic. Thus, South Slavic (56-57) with past imperfective Vs to indicate past plans made for some future time are fine. By contrast, similar Russian and West Slavic examples in (58-60) are all deviant, because Intentional Impfs are unavailable in this second group.

- (56) *Dnes, po plan, Ivan leteše za Sofia.* Bulgarian  
 Today, per plan, Ivan fly<sub>PAST.IMPF</sub> to Sofia  
 ‘Today, according to plan, Ivan was flying to Sofia.’
- (57) *Še včera smo jutri leteli v London,*  
 Still yesterday Aux<sub>IPL</sub> tomorrow fly<sub>IMPF</sub> to London  
 (*danes pa zvemo, da so vsi leti v London odpovedani.*) Slovenian  
 (today but find.out that Aux all flights to London cancelled)  
 ‘Still yesterday we were flying to London tomorrow, (but today we find out that all flights to London are cancelled).’
- (58) \**Ivan uletal zavtra v Ispaniju.* Russian  
 Ivan fly<sub>PAST.IMPF</sub> tomorrow to Spain  
 Intended: ‘\*Ivan was flying to Spain tomorrow.’<sup>x1</sup>
- (59) \**Jan leciał jutro do Hiszpanii.* Polish  
 Jan fly<sub>PAST.IMPF</sub> tomorrow to Spain  
 Intended: ‘\*Ivan was flying to Spain tomorrow.’
- (60) \**Marie odjížděla zítra.* Czech  
 Mary leave<sub>PAST.IMPF</sub> tomorrow (Kučerová 2009)  
 Intended: ‘\*Mary was leaving tomorrow.’

We propose in §4.2 that South Slavic displays a variety of IMPF unavailable in Russian and West Slavic. This variety is behind the intentional readings above, and also the desiderative interpretation of ISs, which as we know must be imperfective. Thus, we conclude that the Slavic languages that display Desiderative IS are also the ones that allow for Intentional imperfectives. By contrast, the Slavic languages that display Factual ISs are the ones where intentional Impfs are not available.<sup>xii</sup>

#### 4.2. The modality of IMPF

In Slavic, IMPF may combine with a variety of tenses, giving rise to past, present, or future imperfectives. In this section we discuss its interpretation, assuming that Tense dominates Aspect, and the external argument of V is in Voice, as in (61). With VPs characterized as properties of events (Kratzer 1998), Aspect will map properties of events to properties of times, which then combine with tense for proposition-type meanings.

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

Our main concern is the modal dimension of IMPF, and its different impact on Desideratives vs. Factuals. Our proposal is inspired by Cipria and Roberts (2000)<sup>xiii</sup> based on situations semantics (Kratzer 1989) for Spanish imperfectives (always oriented towards the past). Situations as parts of worlds, with temporal, spatial, and world coordinates are ideal for the analysis of imperfective morphology, which may encode both temporal and modal information.

Cipria and Roberts argue for a unified quantificational core for the semantics of IMPF, with accessibility relations we call ‘modal bases’ (MB) provided by context. Our proposal in (62) embodies a parallel strategy:<sup>xiv</sup>

(62)  $[[IMPf]] = \lambda P_{\langle I, \langle s, t \rangle \rangle}. \lambda s. \forall s': MB_{\alpha}(s)(s') = 1, \exists e: P(e)(s') = 1.$

Given (62), 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.<sup>xv</sup> Context determines the accessibility relation MB that identifies the domain of quantification of IMPF. Different choices of MB result in different domains of quantification, and thus flavors for IMPF. Two examples of MBs associated with IMPF in Slavic and elsewhere (also mentioned by Cipria and Roberts in the context of Spanish) are in (63a-b):

- (63) a.  $MB_{ongoing} = \lambda s. \lambda s'. s' < s$   
(access to subparts of a s, results in an *ongoing* interpretation)
- b.  $MB_{generic} = \lambda s. \lambda s'. s' \text{ is a characteristic situation in } s$   
(access to typical parts of s, results in a *generic* interpretation)

The modal bases in (63a-b) are *extensional*: they both identify a domain of quantification for IMPF within the evaluation world. (63a) may give rise to so-called ongoing, iterative, and episodic readings, which as noted in §4.1 are shared by past imperfectives in Slavic, and the modal base in (63b) is for generic readings, also generally available in that family.

In more detail, (63a) gives IMPF access to situations part of the input situation, resulting in an ongoing interpretation. If the input situation has parts large enough to accommodate more than one instantiation of the relevant property of events, it gives rise to an iterative interpretation. Some properties of events, such as states, have very fine granularity - can be true in very small situations-, with (63a) resulting in homogeneity: the property will be true both of large and smaller subparts. With the input

accommodating only one instantiation of the relevant property, (63a) gives rise to a single-event/episodic reading. As to the MB in (63b), it gives IMPF access to situations that are typical /characteristic within the input situation. When the input is a world, for example, the result is a standard generic reading (Kratzer 1989 on genericity in a situations framework). The views in (63a-b), then, clearly link IMPF to modals, which display different flavors depending on contextually given modal bases (Kratzer 1981, 1991). IMPF projects in Aspect, but resembles modals whose flavors derive from different accessibility relations in various contexts.<sup>xvi</sup>

In addition to extensional readings, we are also interested in *intensional* interpretations where IMPF quantifies over situations in other worlds, which prove particularly important for variation in Slavic. Cipria and Roberts use an intensional accessibility relation giving IMPF access to *inertia situations* found in worlds different from the evaluation world. For Cipria and Roberts the notion of inertia includes two different kinds of cases. On the one hand, inertia may embody purely preparatory stages of events as in English futurate progressives: *John was going to the movies tomorrow, but he changed his mind*. On the other hand, inertia may embody events that have already started and may or may not finish (giving rise to the progressive paradox: *John was crossing the street when a truck hit him*). The idea that a single notion of inertia may cover both cases makes sense given Cipria and Roberts' focus on imperfectives in Spanish, which display both readings. However, our claim in this paper is that the variation in the use of imperfectives in Slavic languages discussed in §4.1 provides support for the view that accessibility in terms of inertia needs to be more fine-grained. A comparison of the interpretation of imperfectives in Slavic leads us to conclude that there is more than one notion of inertia that needs formalization, and that languages may differ with respect to the type of inertia MBs they allow for IMPF. In Slavic there are two distinct groups.

The division in Slavic suggests that purely preparatory stages should be distinguished from incomplete stages, and thus that the preparatory phase of an event can give rise to an inertia-style accessibility relation that differs from the one for cases in which the event has already started. To capture this distinction, we propose to differentiate two types of 'inertia' accessibility relations that we label Preparatory Inertia (**P-Inertia**), as in (64), and Event Inertia (**E-Inertia**), as in (65).

(64) **Preparatory Inertia:**

$MB_{\text{prep inertia}} = \lambda s. \lambda s'. s'$  is a P-inertia situation for  $s$  (where  $s'$  is a preparatory 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).

(65) **Event Inertia:**

$MB_{\text{event inertia}} = \lambda s. \lambda s'. s'$  is an E-inertia situation for  $s$  (where  $s'$  is an event-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).

**P-inertia** in (64) appeals to the intuition that events may have preparatory phases before any culmination or change of state takes place, which are situations during which wheels are set in motion for things to happen that have not yet happened (see a.o. Moens & Steedman 1988). The nature of preparatory phases can vary. Plans, for example, may count as a preparatory phase for an event. The preparatory phase will hold during the period when one has the intentions corresponding to the plans. If those intentions bear

fruit as planned, an event of the appropriate kind will occur. But preparatory phases are not necessarily tied to an agent's plans, and may be associated with events without agent, like the sun coming up. 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. This is the modal base responsible for intentional imperfectives.<sup>xvii</sup>

With these pieces in place, let us briefly return to intentional imperfectives in §4.1, as in (56) partially repeated in (66). These should be possible only in languages that allow IMPF to be interpreted with respect to MBs that give access to plans.

(66) *Dnes, po plan, Ivan leteše za Sofia.* Bulgarian  
'Today, according to plan, Ivan was flying to Sofia.'

The 'plan-in-the-past' interpretation is possible in (66) given the availability of MB<sub>P-inertia</sub> in (64), with the sentence receiving the truth-conditions in (67):

(67) Where *s* is a past situation,  $[[ (66) ]]$  (*s*) = 1 iff  
 $\forall s'$ : MB<sub>P-inertia</sub> (*s*)(*s'*) = 1, there exists an event of Ivan flying to Sofia today in *s'*  
(we do not attempt to analyze past tense, and see footnote 3).

According to (67), (66) is true in a past situation *s* iff in 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 Slavic can access ongoing, (63a), generic, (63b), and 'imperfective-paradox' MBs (MB<sub>E-inertia</sub>) (65), but not MB<sub>P-inertia</sub> in (64). Thus, intentional readings will not be available. In West Slavic and Russian, the imperfective cannot describe plans for a future time that held in the past, as we illustrated in (58) through (60).

## 5. On the interpretation of Factual and Desiderative Involuntary States

In this section, we propose a compositional account of the semantics of Factuals and Desideratives, locating variation in the syntax-semantic interface of the Modal in the Applicative, and IMPF in Aspect.

### 5.1 Factual Involuntary States: West Slavic and Russian

Factual ISSs contain a TP embedded within an Applicative Phrase with a dative specifier a modal head and a manner phrase, and convey that the manner of the eventuality is inevitable for the dative subject, as in (68a-b) where (68a) repeats (2a). In this section, we spell out a compositional analysis of Factuals that captures semantic properties by the interaction of Modal CM and IMPF in Viewpoint Aspect.

(68) a. *Jankowi tańczyło się dobrze.* 'John danced with pleasure.'  
b. [<sub>AppIP</sub> John [<sub>App</sub> CM<sup>0</sup> [<sub>TP</sub> *i* Past [<sub>AspP</sub> IMPF [<sub>VoiceP</sub> Refl<sub>i</sub> [<sub>VP</sub> dance]]]]] [<sub>MP</sub> well]]]

**5.1.1 On the interpretation of CM in Factuals.** As discussed in §2, Rivero, Arregui & Fraćkowiak (2009, 2010) characterize CM in Factuals as a circumstantial modal; our proposal in this paper builds on this analysis, elaborating on the role of IMPF. Under the assumption that both Factuals and Desideratives contain CM, we propose that semantic variation arises from (a) the specialization of this Modal, coupled to (b) variation in the interpretation of IMPF.

Recall that the modality associated with ISSs is the modality of inevitability:

circumstances conspire to make things happen. Factuals make a claim about the *inevitability* of the manner of the eventuality for the subject given the circumstances. Both the type of modality and the quantificational force of our Modal appear fixed, so CM has universal force, and selects a manner phrase as argument. On this view, CM resembles English modals in having hard-wired force as part of its lexical meaning: it is a universal quantifier, such as *must*, or *have to*. It differs from English modals in having also a hard-wired modal base. English modals have modal flavors usually determined by context (e.g. *have to* can be epistemic, as in the most salient reading of *It has to be snowing*, or circumstantial, as in the preferred reading of *I have to sleep*, or deontic as in *You have to be quiet*). This type of contextual variation in meaning is absent from Factual ISs, which always have a circumstantial interpretation oriented towards manner.

Wierzbicka (1988) notes that Factuals take the *eventualities* themselves for granted. The IS in (2a), for example, makes us understand that John has actually danced. This property distinguishes Factuals in Polish, Czech, Slovak, and Russian from Desideratives in South Slavic, where the eventualities are not taken for granted. Rivero, Arregui & Frąckowiak (2009, 2010) do not examine this aspect of the meaning of Factuals. Here we simply assume that there is a presupposition that an event satisfying the VP property projected in the restrictor of the Modal exists in the evaluation world without commitment to a specific analysis (for event presuppositions, see a.o. Bhatt 1999, 2006, Hacquard 2006, Arregui 2005, 2007, 2009).<sup>xviii</sup> With these ingredients in place, we propose the denotation in (69) for CM in Factuals:

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

According to (69), the Modal is interpreted relative to a contextually-provided circumstantial modal base *f-circ* -a function from worlds to sets of propositions (Kratzer 1991)-, and gives rise to universal quantification over worlds that match the actual world with respect to certain facts/circumstances. It combines with two properties, giving rise to an output that is a property of individuals. Given (68b), this property is predicated of the dative. The ‘restrictor argument’ to the Modal is TP, and the ‘nuclear scope’ is the selected Manner Phrase. The claim is that in all the worlds in the salient circumstantial modal base in which the restrictor property is true of the relevant individual in some situation, the nuclear scope property is also true of that individual in some situation (the universal quantification over worlds ensures the link between situations). 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. This means that, given the circumstances, the manner of the event is INEVITABLE.

**5.1.2. On the arguments of the Modal in Factuals.** Given (69), the arguments of CM are TP (restrictor), and manner phrase (nuclear scope). We examine their interpretations in turn. ISs embed an impersonal construction, which in Factuals serves as restrictor to CM. The subject position within Voice is saturated by an impersonal pronoun. Abstraction over this variable leads to a property of individuals that is a suitable argument for CM.

In the structures of interest, Aspect is in the embedded clause. As noted, there is

microvariation in the interpretation of IMPF in Slavic: in West Slavic and Russian, IMPF does not have access to the preparatory MB we call P-Inertia, so cannot receive an intentional reading. We tentatively propose that in this language group, the factual interpretation of ISs is tied to non-intentional interpretations of IMPF, in particular the *ongoing* MB proposed in (63a), and now illustrated in (70) for (68a-b):

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

This is a property true of entities that are human (presupposition introduced by reflexive) and situations that are past (past tense in (70)). Given a human  $x$  and a past situation  $s$ , the outcome will be true iff in all situations  $s'$  that are made accessible to  $s$  by the  $MB_{\text{ongoing}}$ , there is an event of  $x$  working (i.e.  $x$  is working throughout in past  $s$ ).

Given (68b), the second property associated with CM is provided by the manner adverb. In order to fit into the argument frame of CM, the adverb receives a 'shifted' interpretation according to which it is a property of individuals, not simply a property of events, as in (71).

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

(71) says that a situation/event was good/enjoyable for someone, not that the situation/event in itself was good. With this denotation, the truth conditions for (68a) claim that the sentence is true iff in all the worlds quantified over, there exists a situation that is good for the (dative) subject.

Given our proposal for IMPF, CM, and the structure in (68b), (68a) receives the truth condition in (72b):

(72) a.  $[_{AppIP} \text{ John } [[_{App} \text{ CM}^0 [_{TP} i \text{ Past } [IMPF [_{VoiceP} \text{ Refl}_i [_{VP} dance]]]]]] [_{MP} \text{ well}]]$   
 b. For all worlds  $w$ ,  $[[ (68a) ]](w) = 1$  iff  
 $\{w': w' \in \cap f\text{-circ}(w) \ \& \ \exists s: s \text{ precedes the speech time.}$   
 $\forall s': MB_{\text{ongoing}}(s)(s') = 1, \exists e: e \text{ is a dancing by agent John (human) in } s' \text{ and}$   
 $s \leq w'\} \subseteq \{w': \exists s. s \text{ is good for John } \& \ s \leq w'\}$

(72b) shows the interaction between the interpretations of CM and IMPF. The Modal quantifies over all worlds that match the evaluation world with respect to contextually relevant circumstances in which there is a past situation in which the imperfective is true. As noted in § 4.2, an ongoing modal base available to past Imperfectives in all Slavic languages may give rise to an episodic interpretation. Thus, IMPF in (72a) can quantify over worlds in which there is a past situation  $s$  such that in all situations  $s'$  made accessible to  $s$  by the contextually given MB (the situations that are part of  $s$ ), there is an event of John working. This can be true if there exists an event of John working.

A concern about (72b) could be that nothing ties the event associated with the dative subject to the situation good for that subject. However, quantification takes place over all the worlds that satisfy the circumstances corresponding to the modal base, so as noted earlier the possibility of an accidental link between the two situations is ruled out.

**5.1.3 Summary of Factual ISs.** Our compositional account of Factuals in West Slavic and Russian treats them as quantificational claims over possible worlds that are true in a world  $w$ , given properties  $P$  and  $Q$  and an individual  $x$ , iff all the worlds that are like  $w$  with respect to some (contextually relevant) circumstances in which  $P$  is true of  $x$ , are also worlds in which  $Q$  is true of  $x$ . Since  $Q$  corresponds to a *manner* and quantification is universal, this means that the subject had no control over  $Q$ ; circumstances forced the

manner on the subject, which thus was out of the subject's control.

We derive the reading of Factuals from the interaction of the interpretations of CM and IMPF. Restrictions on the modal bases associated with IMPF in West Slavic and Russian - the MB we called P-Inertia is not available – have as one consequence that in structures like (68b), the semantics of IMPF contributes to the factual interpretation of ISs. Intentional, non factual, interpretations are not possible for such constructions.

## 5.2. Desiderative ISs: South Slavic

The Desiderative in Slovenian (3a) partially repeated as (73a) conveys that the dative could not help feeling like dancing, was in the mood for dancing, or had an out-of-control/involuntary urge to do so. That is, what is inevitable in this instance is the subject's urge to carry out some eventuality corresponding to the state of being in the purely preparatory phase for an event.

We noted earlier numerous structural parallelisms between Factuals and Desideratives, but let us recall key differences: Factuals are headed by a circumstantial Modal that selects a manner phrase **-Manner Orientation-**, while Desideratives are headed by a Circumstantial that selects an imperfective with a preparatory modal base **-Aspect Orientation-**. In Factuals, CM generates the interpretation of a *manner* out of control, while in Desideratives, CM generates the interpretation of an *urge* out of control.

We begin our account with the structure of Desideratives in (73b):

- (73) a. *Janezu se je plesalo.* 'John was in the mood for dancing.'  
 b. [<sub>AppIP</sub> John [<sub>App</sub> CM<sup>0</sup> [<sub>TP</sub> i Past [IMPF [<sub>VoiceP</sub> Refl<sub>i</sub> [<sub>VP</sub> dance]]]]]]]

Given (73b), CM has only one syntactically articulated argument, so its restrictor remains implicit, provided by context. The argument of the Modal is TP as impersonal clause. The result of combining CM and TP is a property of individuals that applies to the dative.

**5.2.1 On the interpretation of CM in Desideratives.** In Desideratives and Factuals alike, CM has a lexically encoded universal quantificational force, and a circumstantial flavor, so this is a modality that pays attention to relevant facts in the evaluation world. The Modals differ with respect to selectional properties. In Desideratives, CM selects a complement clause with an IMPF operator that is interpreted relative to a preparatory modal base P-Inertia, which is intentional. A proposal for the denotation of CM in Desideratives is provided in (74):

- (74) 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  
 $\{w' : w' \in \cap f\text{-circ}(w)\} \subseteq \{w' : \exists s: P(x)(s) = 1 \ \& \ s \leq w'\}$

Formula (74) characterizes CM in a Kratzerian framework. Again, CM is interpreted in relation to a contextually supplied circumstantial MB, but combines with only one property, and the claim it makes will be true given a property P, individual x, and world w, iff all the worlds that fit the modal base 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' (i.e. the circumstances force P to happen to x).

**5.2.2. On the argument of CM in Desideratives.** Given (74), CM in Desideratives combines with only one property. The restriction for the Modal is hardwired in the denotation of CM itself. Its domain of quantification will be identified on the basis of the facts relevant in the context. The syntactically visible argument of CM, that is TP,

corresponds to its nuclear scope. The claim is that CM selects for an IMPF with a particular interpretation in the embedded clause: IMPF must be interpreted with respect to the **P-inertia Modal Base**. The interpretation of TP sister to the Modal is given in (75) for Slovenian (73a):

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

Again, the denotation in (75) is restricted to humans/personified entities due to the presupposition of the impersonal pronoun, and past situations due to past tense in (73a). The property in (75) will be true of a (human) entity  $x$  and a (past) situation  $s$  iff in all situations  $s'$  that are **P-Inertia** situations for  $s$ , there exists an event of  $x$  dancing in  $s'$ . This means that in all the situations  $s'$  that continue the eventualities set in motion in  $s$ , there exists an event of  $x$  dancing in  $s'$ .

The Preparatory interpretation of IMPF does not give rise to a factual reading: (73a) does not claim that an event of John dancing actually takes place. The claim is that the wheels have been set in motion for such an event to happen. If things had continued in accordance with the events set in motion in the past, John would have danced.

**P-Inertia** modal bases target events that have been set in motion. Different kinds of processes can set events in motion (i.e. events may have different preparatory phases): the agent may have a plan, laws of nature may conspire to make something happen, etc. 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. Given absence of control, it seems more accurate to characterize the interpretation of desiderative ISs as urges, not wishes or decisions.

Let us illustrate how all pieces fit. Given CM in (74), the denotation for TP in (75) and structure (73b), (76a) receives the truth conditions in (76b):

- (76) a.  $[_{AppP} \text{ John } [_{App} \text{ CM}^0 [_{TP} \text{ i Past } [_{IMPF} [_{VoiceP} \text{ Refl}_i [_{VP} \text{ dance}]]]]]]]$   
 b. For all worlds  $w$ ,  
 $[[ (76a) ]](w) = 1$  iff  
 $\{w': w' \in \cap f\text{-circ}(w)\} \subseteq \{w': \exists s: s \text{ precedes the speech time.}$   
 $\forall s': MB_{P-inertia}(s)(s') = 1, \exists e: e \text{ is dancing by the agent John (human) in}$   
 $s' \ \& \ s \leq w'\}$

According to (76b), (76a) 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 agent John (human/personified). This means that in all the worlds that fit the relevant circumstances, things were set in motion for John to dance, so John just 'had to' dance, which is what happens when he feels the urge to do so.

**5. 2. 3. Summary of Desideratives.** In our compositional analysis of Aspect-oriented Desideratives, CM selects for a particular type of IMPF in the embedded clause. Desiderative flavors arise because IMPF is exclusively interpreted in relation to a **P-inertia** MB, with CM and IMPF combining to make this preparatory phase inevitable, giving rise to urge-type interpretations (amongst others!). Given the link between desiderative interpretations and intentional MBs for IMPF, we correctly predict the absence of desiderative readings in ISs in West Slavic and Russian. In these languages, **P-Inertia** MBs are not available for IMPF, and impersonal constructions embedded under CM only give rise to factual interpretations in perfective and imperfective Factuals.

## 6. Conclusions

In this paper, we have provided an analysis of Involuntary States in Slavic. The difference between such constructions and regular sentences in Slavic is made visible by specialized morphological patterns: regular sentences carry standard verb agreement and nominative marking on the subject, while Involuntary States show neutral agreement, a reflexive pronoun, and dative marking on the subject. We have argued that this morphology corresponds to profound differences in the syntax, with Involuntary States dominated by a Modal heading a High Applicative that takes the dative as its subject, and imposes selectional restrictions on its arguments, with manner or aspect orientation.

The typology of ISs clearly expands our knowledge of applicative constructions, identifying a type of applicative not found in Romance or Germanic. But it also expands our knowledge of the parameters of variation in the interaction between aspect and modality. In our comparative study of ISs in Slavic we have seen that differences in the interpretation of IMPF have an impact not only on the interpretation of ordinary imperfective sentences, but also on the range of interpretations available in ISs. To account for variations in the interpretation of IMPF, it has been necessary to go beyond the standard view of inertia in progressives and imperfectives in order to distinguish two subtypes: Preparatory inertia and Event inertia. These subtypes divide the Slavic family in two: Russian and West Slavic do not have access to Preparatory inertia, whereas South Slavic does. Variation in IMPF has been modeled on variation in the interpretation of modals: like modals, IMPF associates with contextually restricted modal bases, with some hard-wired language-specific restrictions that account for microvariation. The study of ISs across Slavic allows us to see how variation at the level of the interpretation of IMPF can have compounded effects in more encompassing structures involved in the interpretation of ISs.

The paper began by recalling Vendler's verb classes, expanded in the literature to take into account combinations of verbs and arguments as VPs. The study of ISs shows that event composition can result from the interaction of syntactic elements projected very high in the clause, above tense and aspect. ISs recombine large structures that are tensed clauses into applicative configurations that compose into new complex states.

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## Notes

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<sup>ii</sup> We do not examine Ukrainian and Bielorrussian. Mentioning the Bielorrussian IS in (i) in passing, Fehrman, Junghanns and Lenertová (2010) pair it semantically with Polish ISs.

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- (i) *Sěnnja (nam) dobra pracavalasja.* Bielorussian  
 today us<sub>DAT</sub> well work<sub>PAST.SG.N.REFL</sub>  
 ‘It was possible to work well today (for us).’

iii The contrast extends to present / future contexts. The Polish Factual in (i.a) and the Slovenian Desiderative in (ii.b) share imperfective futures, but the first alludes to an actual reading activity, and the second to a predisposition to write.

- (i) a. *Jankowi będzie czytało się tę książkę z przyjemnością.* Polish  
J<sub>DAT</sub> will read REFL this book with pleasure.  
 ‘John will read this book, (somehow) with pleasure.’  
 b. *Janezu se bodo jutri pisala pisma.* Slovenian  
J<sub>DAT</sub> REFL will tomorrow write letters.  
 ‘Janez will feel like writing letters tomorrow.’ (Rivero 2009)

Tense, then, does not appear to be the crucial element in the truth-conditional difference between Factuals and Desideratives, and we do not discuss it in this paper.

iv Advancing technical ideas in §2.2 for Factuals and in §3 for Desideratives, the reflexive in (5-6) introduces a variable with a human presupposition bound by a freely generated index *i* to create a property of individuals. CM in (6) takes such a property as an argument, and results in a property of individuals predicated of the dative. This ensures that dative and ‘subject’ of the lexical verb are identified.

v An anonymous reviewer notes that Serbocroatian perfective constructions with the syntactic form of (9) and (11a-b) cannot be ISs, and their dative is a benefactive; this reiterates Rivero’s conclusion in the text. Inceptive, continuative, and terminative prefixes are all grammatical in Bulgarian ISs, but not Slovenian ISs (Rivero 2009). An anonymous reviewer mentions that inceptive prefixes are fine in Serbocroatian ISs (also (Marušič & Žaucer 2010)). Given such a considerable variation, such prefixes may require a language-particular approach in Desideratives. Rivero (2009) suggests that the three Bulgarian prefixes function as Viewpoint operators, with an effect reminiscent of imperfectivity.

vi ISs have attracted attention in several theoretical frameworks under labels such as ‘dative disclosure’, ‘dative reflexive’, ‘dispositional (reflexive)’, ‘feel-like’, ‘impersonal’, ‘modal deagentive’, ‘non-bundling voice’, ‘passive-like’, ‘productive inversion’, and ‘propensity’. In a comparative analysis of Slavic reflexives, Fehrmann, Junghanns and Lenertová (2010) mention both semantic types in passing. In the factual group, Polish ISs are known as ‘productive inversions’ in relational grammar (Dziwirek 1994 and references), and are discussed in other frameworks by Dąbrowska (1997), Fici (2008), Frąckowiak & Rivero (2008), Gołąb (1975), Jabłońska (2003), Kibort (2004), Rivero (2003), Rivero, Arregui & Frąckowiak (2009, 2010), Rivero & Sheppard (2003), Wierzbicka (1988), a.o. For Czech ISs see (Fried 2007: §3.3) and (Rivero 2003, Rivero & Sheppard 2003), a.o. For Russian see most notably (Benedicto 1995, who partially predates our analysis, Fici 2008, Franks 1995, Markman 2003, Moore & Perlmutter 2000, Schoorlemmer 1994, Szucsich 2006, Whalen 1978, a.o.). For Slovak, Ružičková (1971) offers ideas that partially predate our analysis.

<sup>vii</sup> An anonymous reviewer suggests that a finer grained classification may uncover lexical restrictions on IS Vs, as Kimian statives (Maienborn 2007) do not build ISs in South Slavic. We add that various types of psychological Vs are not good candidates for ISs either. Vs in ISs need future research, but their restrictions may derive from components in the IS-structure. In particular, the circumstantial modal responsible for ‘out-of-control’ in our analysis should play an important role in eliminating several Vs as candidates for the construction.

<sup>viii</sup> A third restriction not found in Czech, Polish, and Slovak, relates to the reflexive. In Russian, perfective constructions with reflexives cannot receive an impersonal reflexive passive reading. In our view, reflexive impersonal passive constructions constitute an essential core in all ISs, Factuals and Desideratives alike. Thus, if well-formed reflexive impersonal passives must be imperfective in Russian, we expect ISs to be just imperfective in this language, again in contrast with West Slavic.

<sup>ix</sup> For additional information on Desideratives, the interested reader is referred to (Franks 1995, Marušič & Žaucer 2004, 2006, Rivero 2003, 2009, Rivero & Sheppard 2003, 2008, Stojanović 2003). By contrast with the analysis adopted in this paper, Marušič & Žaucer (2004, 2006) view Desideratives as biclausal constructions involving two semantic events: a null psychological V is in the matrix clause, and the lexical V is in the embedded clause (see also (Marušič & Žaucer 2010) for a critique of (Rivero 2009)).

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

<sup>xi</sup> We exclude *Praesens pro futuro*, as in (i), which, depending on verb class, may behave similarly in both Slavic groups, and in many languages (German, Spanish, etc.).

(i) *Zavtra ja uezžaju v Moskvu.* Russian  
 Tomorrow I leave<sub>PRES.IMP</sub> to Moscow  
 ‘Tomorrow I am leaving for Moscow.’

<sup>xii</sup> Rivero & Arregui (2010) note a third difference between the two groups - morphology in futures-, which they also attribute to Imperfective microvariation. We omit argumentation for lack of space, but mention the contrast. All languages with Factual ISs use different morphological means to express imperfective and perfective futures: imperfective futures are expressed with auxiliaries, perfective futures with present Vs with perfective prefixes, and the combination of a prefixed V with a future auxiliary is ungrammatical. By contrast, Desiderative languages all express both perfective and imperfective futures with future auxiliaries (Slovenian, Serbocroatian), or future particles (Bulgarian, Macedonian). South Slavic may be open to further internal variation. For instance, the conditional imperfectives discussed by Rivero & Arregui (2010) for Bulgarian do not have counterparts in Slovenian and Serbocroatian, so are more restricted than the intentional imperfectives of ISs.

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<sup>xiii</sup> Modal analyses of imperfectives include Dowty 1979, Landman 1992, Portner 1998, Copley 2002, Ippolito 2004. See also Zucchi 1999.

<sup>xiv</sup> Some terminology will be useful. We use  $s$  as variable ranging over situations, and also the type corresponding to situations. Situations may stand in a part-of relation, indicated with  $\leq$  :  $s \leq s' = s$  is part of  $s'$ . We follow a Kratzer's Lewis-style treatment of individuals, 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 themselves are simply maximal situations, not proper parts of any other situations (Kratzer 1989, 2002, 2009 on the situations framework). Unlike Cipria and Roberts, we do not encode past in the denotation of IMPF. We also simplify homogeneity. See Kratzer 1991 on how MBs may be mapped to accessibility relations, and vice versa.

<sup>xv</sup> We assume quantification takes place only over situations 'large enough' to accommodate an event with the relevant property. That is, the 'size requirement' corresponding to the event projects as a presupposition to the restrictor and quantification only takes place over situations that are large enough for the event. These are standard assumptions regarding presupposition projection in quantificational structures (see e.g. Heim 1982).

<sup>xvi</sup> (63) omits constraints on the relation between the time of the eventuality and reference time (or situation time) : the traditional view where event time is within reference time, which is not suitable for intentional imperfectives. However, (63) could be refined to include such constraints when relevant (for tense in a situations framework, see Kratzer 2009).

<sup>xvii</sup> Inertia analyses of IMPF go back to Dowty (1979). Our proposal relativized to events is inspired by Landman (1992), so could potentially be subject to objections in (Portner 1998). That is, it presupposes that we can say that an event (or event preparation) 'stops' and 'continues' in (a situation in) another world, which Portner considers impossible without taking into account properties used to describe the event. We do not attempt to settle this matter here, and (64)/(65) are preliminary. Any notion of inertia / cross-world-identification-of-parts-of-events that proves relevant could apply equally to E-inertia and P-inertia. In one, we deal with events already in motion, and in the other with preparations for events. What is important is that accessibility relations separate the two, with languages differing as to options available for IMPF.

<sup>xviii</sup> An anonymous reviewer suggests an interesting idea: Russian ISs could perhaps be restricted to the subtype of Factual Imperfective called presuppositional (see Grønn 2003), which could account for their (preferably) imperfective nature. Note that this view would imply that CM also selects for a particular kind of Imperfective in Russian, but of a different type than in South Slavic. However, Polish is similar to Russian in displaying presuppositional-like Factual Imperfectives, but its ISs can also be perfective, as we showed. Ulyana Savchenko (p. c.) reports that perfective ISs are possible in Russian.

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<sup>xix</sup> (69) is based on a simplified Kratzerian approach to modality, ignoring ordering sources. We give the truth conditions of the modal only with respect to situations that are worlds in a manner that stays close to familiar Kratzerian denotations. An equivalent characterization of accessibility in terms of a relation between worlds would also be possible.