

# IMPERFECTIVITY: CAPTURING VARIATION ACROSS LANGUAGES

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## 1 Introduction

The goal in this paper<sup>1</sup> is to investigate crosslinguistic variation in the interpretation of imperfectives. While there is a large body of work on imperfective modality within formal syntax and semantics in generative grammar<sup>2</sup>, a crosslinguistic picture is still missing. The view that emerges from detailed comparative studies, however, seems surprisingly idiosyncratic, with a range of variation even amongst closely related languages, as in the Slavic family (i.e. *microvariation*). In this paper, we will investigate the interpretation of imperfective morphology across a variety of unrelated languages, some being highly permissive (e.g. Spanish in Romance, with a rich list of so-called modal imperfectives including intentional ones), others more restrictive (e.g. Polish and Russian in Slavic, lacking some intentional imperfectives), and others highly restrictive (e.g. Amazonian Mëbengokre, a Jê language from Central Brazil, with particular particles specialized for specific interpretations). We propose that variation in the range of imperfective readings shows that these must be hardwired into the semantics of an Imperfective operator (IMPF), arguing against popular accounts that consider imperfective aspect as simply ‘unmarked’, or that its shifts in interpretation arise from pragmatic coercion. We offer a modal account of IMPF, and capture variation via accessibility relations (‘modal bases’) similar to those for modal verbs (see Kratzer 1991). In §2, we exemplify crosslinguistic variation, comparing Romance, Slavic, and Mëbengokre. In §3, we outline a modal analysis of IMPF. In §4 and §5, we reexamine Slavic and Mëbengokre in view of our proposals for IMPF.

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<sup>2</sup> See Dowty 1979, Landman 1992, Portner 1998, Zucchi 1999, Cipria & Roberts 2000, Giorgi & Pianesi 2001, Copley 2002, Ippolito 2004, Hacquard 2006, among others.

## 2 On Variation in imperfectives

In this section we examine imperfective categories in Romance, Slavic, and Mēbengokre, seeking both similarities and differences in their readings, stressing variation.

### 2.1 The case of Romance

Romance offers morphology that subsumes both imperfective aspect and past tense. Imperfectives (Impf) can have a wide range of readings in the most intensely studied Romance languages like Italian and Spanish. In addition to the often discussed generic/habitual and ongoing readings, and the ‘imperfective paradox’ effects with accomplishment verbs illustrated in (1) through (3) via Spanish (Sp) and Portuguese (Por), we find ‘plans in the past’ readings, as in (4). In addition, there are ‘ludic’ readings for future role-playing, modal readings in conditional sentences, and narrative readings, none of which are illustrated in this paper.<sup>3</sup>

- (1) ‘Generic/ habitual’ = In some past time, X (typically/always) did Y.
- |     |                                                                                                                                           |     |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------|-----|
| a.  | Hace veinte años, los niños <b>veían</b> menos televisión.                                                                                | Sp  |
| a’. | Há vinte anos, as crianças <b>viam</b> menos televisão.<br>‘Twenty years ago children <b>watched</b> (Impf) less TV.’                     | Por |
| b.  | Napoleón (siempre) se <b>bañaba</b> después de una larga batalla.                                                                         | Sp  |
| b’. | Napoleão (sempre) <b>tomava</b> banho depois de uma longa batalha.<br>‘After a long battle, Napoleon (always) <b>took</b> (Impf) a bath.’ | Por |
- (2) ‘Ongoing’ = At a past time, X was doing Y.
- |    |                                                                                                                         |     |
|----|-------------------------------------------------------------------------------------------------------------------------|-----|
| a. | Quando mi madre entró en mi habitación, yo <b>hablaba</b> con mi novio.                                                 | Sp  |
| b. | Quando a minha mãe entrou no meu quarto, eu { <b>estava falando</b> /? <b>falava</b> } com o meu namorado. <sup>4</sup> | Por |
|    | ‘When my mother came into my room, I <b>was talking</b> (Impf) to my boyfriend.’                                        |     |
- (3) ‘Imperfective paradox’ effect = At a past time, X had begun accomplishing Y.
- |  |                                                                         |    |
|--|-------------------------------------------------------------------------|----|
|  | El perro <b>cruzaba</b> la calle cuando lo atropelló un camión.         | Sp |
|  | ‘The dog <b>was crossing</b> (Impf) the road when it was hit by a bus.’ |    |
- (4) ‘Plans in the past’ = At a past time, there was a plan for Y.
- |     |                                                                                                                                        |     |
|-----|----------------------------------------------------------------------------------------------------------------------------------------|-----|
| a.  | <b>Ibamos</b> al cine mañana, pero cambiamos de idea.                                                                                  | Sp  |
| a’. | A gente <b>ia</b> ao cinema, mas mudamos de idéia.<br>‘We <b>were going</b> (Impf) to the cinema (tomorrow), but we changed our mind.’ | Por |
| b.  | El vuelo <b>salía</b> a las 8, pero fue cancelado.                                                                                     | Sp  |
| b’. | O vôo <b>saia</b> às 8 horas, mas foi cancelado.<br>‘The flight <b>was leaving</b> (Impf) at 8, but it was cancelled.’                 | Por |

<sup>3</sup> See traditional grammars, and (Ippolito 2004) on Italian, among others.

<sup>4</sup> The Brazilian Portuguese progressive (*estava falando*) is often preferred to the imperfect tense (*falava*) for both ongoing readings, (2b), and progressive paradox effects, suggesting some microvariation within Romance. Brazilian Portuguese imperfects such as *falava*, then, may bear a resemblance to Hindi imperfectives, which have generic but no progressive uses (see Bhatt 2006).

In sum, languages within the Romance family appear to consistently display a large variety of readings for Imperfects, even though there seems to be some little known microvariation. In particular, imperfective morphology in Romance is able to give rise to a wide range of intensional interpretations, including the ‘plans-in-the-past’ reading illustrated in (4), which plays an important role in our later analysis of the IMPF operator.

## 2.2 The case of Slavic

In this section, we will examine data from a range of Slavic languages. The objective is to highlight commonalities and differences in the interpretation of imperfectivity both within the Slavic family itself (microvariation), and in comparison to the Romance family (macrovariation).

### 2.2.1 Core readings in Slavic

Languages in the Slavic family share a range of core readings with languages in the Romance family.<sup>5</sup> As often reported in the literature, Slavic imperfective verbs share ongoing, habitual, and generic readings, as illustrated in (5) through (7). In Slavic too, accomplishment verbs lead to so-called imperfective paradox effects, as illustrated in (8). All these situations obtain both when imperfective verbs display a simple /default morphology, or when they display the complex morphology associated with so-called secondary imperfectivization. Bulgarian (Bg) in the a. examples is a representative of South Slavic, Polish (Po) in the b. examples is a representative of West Slavic, and Russian (Ru) in the c. examples is a representative of East Slavic.<sup>6</sup>

- (5) ‘Ongoing’ = At a past time, X was doing Y.
- |    |                                                                                                                                                             |    |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| a. | Kogato majka mi vleze v stajata mi, az <b>govoreh</b> s gadžeto mi.                                                                                         | Bg |
| b. | Kiedy moja mama weszła do pokoju, ja <b>rozmawiałam</b> z moim chłopakiem.                                                                                  | Po |
| c. | Kogda mama voshla v moju komnatu, ya <b>razgovarivala</b> so svoim parnem.<br>‘When mother came into my room, I <b>was talking</b> (Impf) to my boyfriend.’ | Ru |
- (6) ‘Generic’ = In some past time, X typically did Y.
- |    |                                                                                                                           |    |
|----|---------------------------------------------------------------------------------------------------------------------------|----|
| a. | Predi 20 godini, decata <b>gledaxa</b> po-malko TV.                                                                       | Bg |
| b. | Dwadzieścia lat temu, dzieci <b>spędzały</b> mniej czasu przed telewizorem.                                               | Po |
| c. | Dvadcat’ let nazad, deti <b>smotreli</b> televizor men’she.<br>‘Twenty years ago children <b>watched</b> (Impf) less TV.’ | Ru |
- (7) ‘Habitual’ = At a past time, X (always) did Y.
- |    |                                                         |    |
|----|---------------------------------------------------------|----|
| a. | Napoleon (vinagi) se <b>kāpeše</b> sled dālga bitka.    | Bg |
| b. | Po długiej bitwie Napoleon (zawsze) <b>brał</b> kąpiel. | Po |

<sup>5</sup> See general grammars, Dickey 2000; for Russian in particular see Altshuler 2010, Borik 2006, Grønn 2003, Kagan 2007, Klimonov & Klimonov 2008, among many others.

<sup>6</sup> We thank Nikolay Slavkov and Galia Dukova-Zheleva for help with Bulgarian, Ewelina Frąckowiak for help with Polish, and Ulyana Savchenko for help with Russian. The Slavic section of this paper was presented at Chronos 10 in Birmingham (UK) in April 2011, and we thank members of the audience for helpful comments, in particular Olga Batsiukova. We also thank the audience of Moss 2 in Moscow in April 2011, and in particular Elena Karvovskaya, Yura Lander, and Eugenia Romanova. Usual disclaimers apply.

- c. Posle dlitel'noj bitvi, Napoleon (vsegda) **prinimal** vannu. Ru  
 'After a long battle, Napoleon (always) **took** (Impf) a bath.'
- (8) 'Imperfective paradox' effect = At a past time, X had begun accomplishing Y.
- a. Kučeto **presičase** pătja, kogato avtobusăt go bläsna. Bg  
 b. Pies **przechodził** przez ulicę i został uderzony przez autobus. Po  
 c. Sobaka **perebegala** dorogu kak na nejo naexal avtobus. Ru  
 'The dog **was crossing** (Impf) the road when it was hit by the/a bus.'

## 2.2.2 Microvariation in Slavic

Outside of the core mentioned in 2.2.1, imperfectives display considerable internal variation within Slavic, leading to both further differences and also similarities with Romance. In this paper, we identify two instances of such a microvariation: one concerning so-called Factual Imperfectives, and the other concerning what we dub Intentional Imperfectives. In §4, we will provide a formal analysis for the second type.

A first type of microvariation we identify but do not analyze in this paper resides in Imperfectives for complete/culminated events, which are often dubbed 'Factual Imperfectives' in the literature (see Dickey 2000, Grønn 2003, among several others, for references and discussion). Such 'Factual Imperfectives' are found in Russian as illustrated in (9), and Polish, which we do not illustrate.

- (9) Odnazdy on uže **polučal** vygovor za opozdanie. Ru  
 Once he already receive.Impf.Past reprimand for lateness  
 'He (has) already once **received** (Impf) a reprimand for being late.'  
 (adapted from Dickey 2002)

It is well known that Factual Imperfectives are not a feature of all Slavic languages, but Dickey (2000) proposes that Bulgarian is among the languages that exhibit them. In our view, Bulgarian lacks Factual Imperfectives, and we use this language to illustrate a first kind of microvariation within Slavic.

Bulgarian expresses readings parallel to the one in Russian (9) via **compositional perfectives**, and cannot express such an interpretation via **compositional imperfectives**, as the paradigms in (10) and (11) illustrate. The first label on the verb in (10-11) identifies the morphology traditionally known as imperfective (Impf) or perfective (Perf), and the second a particular past tense: Aorist, Imperfect, or Perfect.

- (10) a. Vednuž toj veče **polučava** zabeležka za zakusnenie. Impf Aorist  
 Once he already receive.Impf.Aorist remark for tardiness  
 b. Vednuž toj veče **polučil** zabeležka za zakusnenie. Perf Aorist  
 Once he already receive.Perf.Aorist remark for tardiness  
 c. Vednuž toj veče **e polučaval** zabeležka za zakusnenie. Impf Perfect  
 Once he already be.3sg.Pres receive.Impf.Perfect remark for tardiness  
 d. Vednuž toj veče **e polučil** zabeležka za zakusnenie. Perf Perfect  
 Once he already be.3sg.pres receive.Perf.Perfect remark for tardiness

All a-d: ‘He (has) already once received a reprimand for being late.’

- (11) a. \*Vednuž toj veče **polučavaše** zabeležka za zakusnenie. Impf Imperfect  
 Once he already receive.Impf.Imperfect remark for tardiness
- b. \*Vednuž toj veče **polučеше** zabeležka za zakusnenie. Perf Imperfect  
 Once he already receive.Perf.Imperfect remark for tardiness
- Both a-b: ‘\*He (has) already once received a reprimand for being late.’

As the paradigm in (10) suggests, Bulgarian verbs with imperfective or perfective morphology must combine either with the Aorist as in (10a-b), or with the Present Perfect as in (10c-d), to successfully convey complete/culminated events. In more detail, the verb in (10a) is a secondary imperfective inflected for the Aorist, while (10c) displays a secondary imperfective verb in the Present Perfect. In all instances, however, the compositional effect of the combinations in (10) results in the type of Viewpoint Aspect (Smith 1991) usually dubbed ‘perfective’ in the literature, not ‘imperfective’.

By contrast, the paradigm in (11) illustrates that Imperfect tenses necessarily convey Imperfective Viewpoint Aspect whether they are combined with imperfective or with perfective verbs, and are thus unsuitable to express readings corresponding to Factual Imperfectives in Russian. In more detail, (11a) contains a secondary imperfective verb inflected for the Imperfect tense. Even though such a combination could intuitively be dubbed a ‘double imperfective’, it cannot be used to express a culminated event, thus, establishing a clear contrast with Russian simple or secondary imperfectives. Thus, it can be concluded that Bulgarian is not one of the Slavic languages that display ‘Factual Imperfectives’.

The Romance family also lacks Factual Imperfectives, so we consider Spanish (12a-b) with an Aorist and a Perfect tense the Romance counterparts of the Bulgarian **compositional perfectives** in (10a-d).

- (12) Una vez él ya {a. **recibió** /b. **ha recibido**} un aviso  
 Once he already {receive.a. Aorist/ b. Perfect} a remark  
 por su tardanza. Spa  
 for his tardiness.  
 ‘He (has) already once received a reprimand for being late.’

In the analysis for imperfectives developed in §3 encompassing Romance and Slavic, the Bulgarian and Spanish patterns under discussion are parallel in so far as they all lack the Viewpoint IMPF Operator proposed in (31): [<sub>TP</sub> T [<sub>AspP</sub> IMPF [<sub>VP</sub> Voice [<sub>VP</sub> .....]]]].

To conclude with Factual Imperfectives, those are found in at least Russian and Polish, but not in Bulgarian.

A second kind of microvariation we illustrate in this section, and analyze in §4 hinges on imperfectives for plans, which we dub ‘**Intentional Imperfectives**’. This type of variation divides the Slavic family into two distinct groups, as (13) indicates. The difference is that languages in the South Slavic branch that include Bulgarian, Macedonian, Serbo-Croatian, and Slovenian have Intentional Imperfectives, while West Slavic languages such as Czech, Polish, and Slovak, and also Russian, lack such imperfectives.

- (13) Group 1(Yes): South Slavic (Bulgarian, Macedonian, Serbo-Croatian, Slovenian).

## Group 2 (No): Russian and West Slavic (Czech, Polish, Slovak).

Data illustrating the second type of variation is provided in (14) through (18).<sup>7</sup> The examples in (14-15) vs. (16-17) show that similar past imperfective verbs in sentences that allude to future plans are grammatical in South Slavic, and ungrammatical in West Slavic and Russian. In addition, the paradigm in (18) shows that for such intentional readings to be successful, Russian and Polish sentences must contain an overt modal component in addition to an imperfective verb: conditional *by* in Russian B', and modal *mieli* in Polish B'. As Bulgarian B suggests, a similar addition is not necessary in this language (but it is also an option).

## (14) Bulgarian (Group 1: yes)

Utre, po plan, Ivan **leteše** za Sofia, (ama tuku-što razbrahme če vsički poleti sa otmenei).  
 Tomorrow, per plan, Ivan fly.Impf.Imperfect to Sofia (but just now found out.Aor.1pl  
 that all flights be.Pres.3Pl cancelled)

'Tomorrow, according to plan, Ivan was flying to Sofia, (but today we found out that all flights are cancelled).'

## (15) Slovenian (Group 1: yes)

Še včera smo jutri **leteli** v London,  
 Still yesterday Past.Aux.1pl tomorrow fly.Impf to London  
 (danes pa zvemo, da so vsi leti v London odpovedani.)

(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).'

## (16) Russian (Group 2: no)

\* Ivan **uletal** zavtra v Ispaniju.  
 Ivan fly.Past.Impf tomorrow to Spain

Intended: '\*Ivan was flying to Spain tomorrow.'

## (17) Polish (Group 2: no)

\*Jan **lecial** jutro do Hiszpanii.  
 Jan fly.Past.Impf tomorrow to Spain

Intended: '\*Ivan was flying to Spain tomorrow.'

<sup>7</sup> Rivero & Arregui (2010, in press) provide a second argument in support of the division in (13). Briefly, South Slavic Involuntary States such as (i) have a desiderative reading because they are composed of Intentional Imperfectives. West Slavic and Russian Involuntary States such as (ii) have a factual reading because they do not contain Intentional Imperfectives, since those are absent in Group 2. See also (Rivero, Arregui & Frąckowiak 2010).

(i) Janezu se je plesalo. Slovenian  
 J<sub>DAT</sub> REFL be<sub>3S</sub> danced<sub>NEU</sub>  
 'John was in the mood for dancing.'

(ii) Jankowi tańczyło się dobrze. Po  
 J<sub>DAT</sub> danced<sub>NEUT</sub> REFL well  
 'Somehow, John danced with pleasure.'

- (18) A: It's a pity the cinema had to close because of fire hazards.  
 B: (Yes.) Tomorrow they were showing "Avatar".

Bulgarian (Group 1: yes)

B: Utre **davaxa** "Avatar".  
 Tomorrow give.Past.Impf.3Pl  
 'Tomorrow they **were giving** (=showing) "Avatar".'

Russian (Group 2: no)

B: \*Zavtra oni **pokazivali** "Avatar".  
 \*Tomorrow they show.Past.Impf Avatar  
 B': OK: Zavtra oni **pokazivali** **by** "Avatar".  
 Tomorrow they show.Past.Impf **Cond** Avatar  
 'Tomorrow they **would** be showing "Avatar".'

Polish (Group 2: no)

B: \*A jutro **grali** "Avatara"!  
 \*And tomorrow play.Past.Impf Avatar  
 B': OK: A **mieli** **grac** "Avatara" jutro!  
 And **shall**.Past.3Pl play.Inf.Impf Avatar tomorrow  
 'And tomorrow they **would** be showing "Avatara"!'

In sum, languages within the Slavic family display variation in the interpretation of imperfectives from several perspectives: micro-variation. Our interest in this paper is on differences with respect to Intentional Imperfectives, and we have noted that Slavic languages divide into two groups: Group 1 languages with Intentional Imperfectives, and Group 2 languages without Intentional Imperfectives.

## 2.3 The case of Mēbengokre

Mēbengokre is a Jê language spoken by approximately 10,000 people in central Brazil.

### 2.3.1 Aspectual readings in Mēbengokre

Aspectual distinctions in Mēbengokre (Mb) are expressed by means of a series of post-verbal markers such as those illustrated in bold in (19): prospective-like *mã* in (19a), imminent-like *'yr* in (19b), etc. Some postverbal progressive-like markers indicate the position in which the subject carries out the action, as in (20).

- (19) a. Ije mry krĕn **mã**.  
 Ierg meat eat.N PROSP  
 'I was going to eat the meat.'  
 b. Ije mry krĕn **'yr**.  
 Ierg meat eat.N IMM  
 'I was almost at the point of eating the meat.'

- (20) a. Ba mry krĕn o=**nhỹ**.  
 1nom meat eat.N o=sit.V  
 ‘I was eating the meat (sitting down).’
- b. Ba mry krĕn o=**dja**.  
 1nom meat eat.N o=stand.V  
 ‘I was eating the meat (standing).’

Both series of Mb aspect markers convey a range of interpretations traditionally associated with imperfectivity in Indo-European languages. Progressive-like *nhy* in (20a), for instance, brings to mind the so-called ‘ongoing’ imperfectives in Romance illustrated in (2), equivalents in Slavic (5), and English progressives. Prospective-like *mã* in (19a) is comparable to intentional imperfectives for future plans in Romance (4), South Slavic (14-15) and (18), and English progressives in so-called futurate uses, and so on and so forth.

Mb markers can give rise to a variety of effects that can be roughly grouped under the ‘imperfective paradox’ label (Dowty 1979), as illustrated in (21a-c). Later in §4, however, we distinguish two kinds of such effects, and subdivide the notion of Inertia used in the analysis of imperfectivity into two types.

- (21) a. Maria pry kapêr'yr o=**mõ** be pry kapêr'yr kêt.  
 Maria path cross PROG but path cross not  
 ‘Maria was crossing the path, but she did not cross the path.’
- b. Maria pry kapêr'yr **mã** be pry kapêr'yr kêt.  
 Maria path cross PROSP but path cross not  
 ‘Maria was going to cross the path, but she did not cross the path.’
- c. Maria pry kapêr'yr **'yr** be pry kapêr'yr kêt.  
 Maria path cross IMM but path cross not  
 ‘Maria was at the point of crossing the path, but she did not cross the path.’

All the Mb aspect markers in (19) to (21) embed a nominalized clause signaling a subordination structure, as indicated by the morphology on the verb (Salanova 2007). In this way, aspect markers differ syntactically from temporal adverbs, which do not subordinate the verb phrase, as illustrated in (22-23). In particular, *krĕn* ‘eat’ in (19a) is a nominalized verb, while *tĕ* ‘go’ in (22-23) is not a nominalized verb.

- (22) Kajtire nĕ arým mã tĕ.  
 Kajtire nfut already away go.V  
 ‘Kajtire has left already.’

- (23) Ba ãm tĕ.  
 1nom now go.V  
 ‘I am going now.’

If the Mb aspect markers in (19) through (21) stand for a Viewpoint IMPF Operator, as we propose in §3, and such an operator is in the matrix clause, it c-commands the verb in the subordinate clause. On such an analysis, Mb markers are structurally parallel to IMPF in Romance and Slavic, which c-commands V in a VP-complement, not a clausal complement.

### 2.3.2 Two types of aspect markers in Měbengokre

We separate aspect markers in Mb into two groups for at least three reasons. First, from a morphological perspective, markers in the first group (Group 1) are simple, and homophonous with directional postpositions, as illustrated in (24a-b).

- (24) a. lje mry krĕn {mã/'ÿr}. (Aspectual)  
 lerg meat eat.N {PROS/IMM}  
 'I {**was going to/about to**} eat meat.'
- b. Ba kikre {mã/'ÿr} tĕ. (Directional)  
 lnom village {to/towards} go.V  
 'I went **to/towards** the village.'

Markers in the second group (Group 2) are complex: they consist of a stative light verb, and the applicative element *o*, as in (25).<sup>8</sup>

- (25) Ba mry krĕn o=nhÿ. (O with aspectual marker)  
 lnom meat eat.N O=sit.V  
 'I was eating meat (sitting down).'

Second, from a syntactic perspective Group 1 aspectual markers are different from those in Group 2. While in Group 1 an ergative pronoun is mandatory and no nominative is present in the construction, as in (24a), in Group 2 the nominative is obligatory, and ergative may appear redundantly, as in (26).

- (26) Ba (ije) krĕn o=nhÿ.  
 lnom lerg eat.N o=sit.V  
 'I was eating it (sitting down).'

Third, there is a semantic relation between Group 2 markers and the subject, while none exists in the case of Group 1 markers. This thematic-like relation is reflected in the fact that the marker specifies the position in which the subject is carrying out the action, as already illustrated in (25) and (26), as well as the plurality of the subject, as the contrast between (27) and (28) now illustrates. In (28), both main clause and subordinate clause bear markers of plurality.

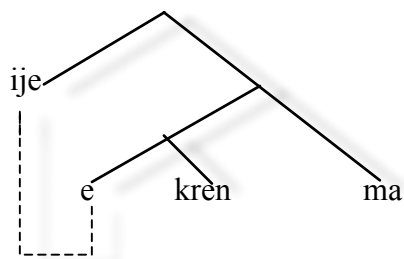
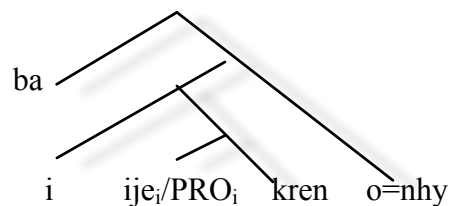
- (27) Ba krĕn o=dja.  
 lnom eat.N o=stand.V  
 'I was eating it (I am standing up).'

<sup>8</sup> Applicative *o* is also used outside the Viewpoint domain, as illustrated in (i).

- (i) a. Ba mry o=iĕ. (Applicative use)  
 lnom meat O=go.V  
 'I took the meat.'
- b. Ba kupip o=mex. (Causative use)  
 lnom mat O=good  
 'I fixed the mat.'

- (28) Ba mē krēn o=i-ku'ê.  
 1nom PL eat.N o=stand.PL.V  
 ‘We were eating it (we are standing up).’

In view of the three differences mentioned above, we propose that Group 1 markers have a (rough) ‘raising’ structure as schematically depicted in (29), while those in Group 2 have a (rough) ‘control’ structure as in the skeleton in (30), where *i* is an index ‘abstracting’ over the embedded subject position (see Heim & Kratzer 1988). The intuition behind this proposal is that constructions with Group 1 markers involve only one thematic-like role assigned by the embedded verb to the logical subject, while those with Group 2 markers involve two thematic-like roles: one assigned by the embedded verb, and one assigned by the aspectual head. The syntactic implementation of our proposal remains for future research, but some of its semantic consequences will be discussed in more detail in §5.

(29) Group 1(30) Group 2

In sum, regarding aspect in a comparative perspective, markers in Mb are structurally similar to imperfective categories in Romance and Slavic, since they c-command the verb as (29-30) show. However, Mb contrasts with languages in both Romance and Slavic since it is a language where different imperfective-like interpretations are encoded by distinct aspect markers, and there is little flexibility of interpretation for each marker.

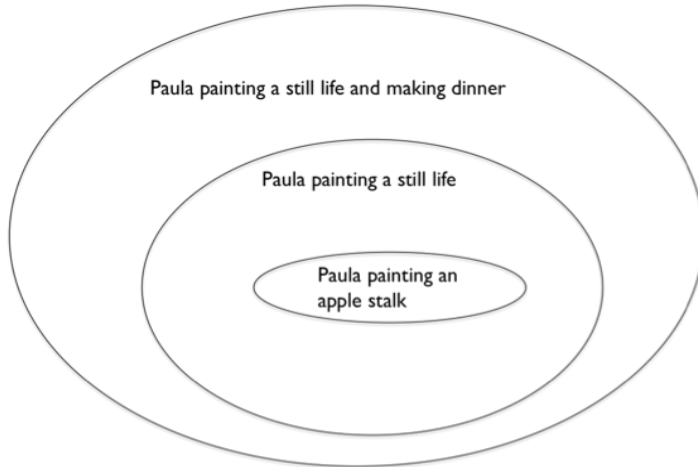
### 3 Capturing semantic imperfective variation: a modal proposal

Our general idea is to capture semantic variation on the basis of a modal analysis of imperfectives inspired by Cipria & Roberts 2000, with lexically determined modal bases (see Rullmann & al. 2008) encoded in syntax. The proposal will be presented within the framework of situations (see Kratzer 1989, 2002, 2009), which we will not present in any detail here for lack of space. Such a framework is particularly appropriate since it allows us to access a temporal and a modal dimension simultaneously. In a sense, the situations framework collapses temporal and modal categories, and thus provides us with ideal units for the problem at hand.

Situations are parts of possible worlds. Intuitively, we can think of a situation in the actual world as a ‘piece’ of such a world, a part of what is going on (that ‘part of’ relation is represented with  $\leq$ ). An example from (Kratzer 1989) as represented in the following diagram is helpful to understand the situations framework and the ‘part of’ relation: Suppose Paula has painted a still life with apples. There is something in the actual world that makes it true that Paula painted a still life. This is the situation of Paula painting the apples. It will have parts, like the situation of Paula

painting an apple stalk. And it will be part of bigger situations, like the situation of Paula painting a still life with apples and making dinner.

**The ‘part-of’ relation**



Let us now formalize our proposal on imperfectives. We adopt a standard view where Viewpoint Aspect projects above vP and below TP in Romance and Slavic, as in (31). Abstracting from Tense, the crucial point with respect to Viewpoint Aspect in Mb is that it projects above the nominalized clause complement containing the lexical verb, as in (32). The semantics of the shared IMPF operator are as in (33).<sup>9</sup>

(31) [TP T [AspP IMPF [vP Voice [VP ...V....]]]]

(32) [AspP [Nominal Clause ... V...] IMPF ]

(33) [[IMPF]] =  $\lambda P_{\langle l, \langle s, t \rangle \rangle} . \lambda s . \forall s' : MB_i(s)(s') = 1, \exists e : P(e)(s') = 1$ .

P = a property of events (argument saturated by the denotation of {vP/nominalized clause}).

MB<sub>i</sub> = contextually provided MB (following Kratzer), understood as *accessibility relation* (function from situations, to situations to truth values:  $\langle s, \langle s, t \rangle \rangle$ ).

In (31-32), IMPF combines with a property of events P, and results in a property of situations true of s iff in all situations s' accessible to s given the contextually salient modal base, there exists a P-event (for events in a situations framework, see Kratzer 2009).

Different choices of MB result in different domains of quantification, and thus flavors for IMPF. MBs for IMPF inspired by Cipria & Roberts (2000) include (34a) and (34b). (34a) is available in Romance (2a-b), Bulgarian, Polish, Russian in (5), and Mëbengokre (20a-b). (34b) is available in Romance (1a-d) and Bulgarian, Polish, and Russian in (6-7).

<sup>9</sup> The denotation in (33) does not impose a temporal constraint on the relation between event and reference situation . That is, there is no temporal claim in (33), in contrast with common views on traditional viewpoint aspect. Note that accounts that do place emphasis on the temporal relations corresponding to imperfectivity are not able to handle the modal dimension.

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

## 4 A proposal on Slavic: Group 1 vs. Group 2 imperfectives

We have shown a difference in Slavic between Group 1 and Group 2 as to the availability of intentional readings for imperfectives. Those are available in Group 1, as in Bg (14), Slo (15) and Bg (18) but not in Group 2, where Ru and Po (16-17-18) are ungrammatical. Intentional readings have at times been attributed to coercion. For Cipria & Roberts (2000) in particular, they arise from the pragmatic coercion of the ongoing reading, ‘pushing it back’ so that it includes the plans. However, such a proposal seems to pose several problems. One, we saw in §2.2 that in Slavic this is not possible in Group 2. Two, we noted in passing that Brazilian Portuguese imperfectives disfavor an ongoing reading, which is preferably expressed with progressives, so it seems unreasonable to suggest that such a reading is the source of the intentional reading. Three, ‘ongoing’ and ‘intentional’ readings correlate with different aspectual markers in Mb, as we saw in §2.3. The Slavic, Brazilian Portuguese, and Mb situations suggest that the availability of an intentional reading cannot be attributed to coercion, but must instead be grammatically encoded.

Concentrating on variation in Intentional Imperfectives, we propose to distinguish between two inertia readings, as in (35) and (36).<sup>10</sup>

(35) Event inertia

$MB_{\text{E-inertia}} = \lambda s. \lambda s'. s'$  is an **Event-inertia** situation for  $s$ .

$s'$  is an event inertia situation for  $s$  iff all the events that **have actually started in  $s$**  continue in  $s'$  as they would if there were no interruptions.

(36) Preparatory inertia

$MB_{\text{P-inertia}} = \lambda s. \lambda s'. s'$  is a **Preparatory-inertia** situation for  $s$ .

$s'$  is a preparatory inertia situation for  $s$  iff all the events that are **in preparatory stages in  $s$**  continue in  $s'$  as they would if there were no interruptions.

Event Inertia in (35) applies to the traditional ‘Imperfective Paradox’ paradigm shared by Romance and Slavic, as illustrated in §2. Preparatory Inertia in (36) applies to Intentional Imperfectives crosslinguistically, including Romance and the South Slavic languages, as also illustrated in §2.

Our proposal is that in West Slavic and Russian, IMPF accesses  $MB_{\text{E-inertia}}$ ,  $MB_{\text{ongoing}}$ ,  $MB_{\text{generic}}$ , but NOT a ‘purely’ Preparatory  $MB_{\text{P-inertia}}$  in (36). By contrast, in the South Slavic languages IMPF may access all of those modal bases- namely  $MB_{\text{E-inertia}}$ ,  $MB_{\text{ongoing}}$ ,  $MB_{\text{generic}}$  - and ALSO a ‘purely’ Preparatory  $MB_{\text{P-inertia}}$ . Let us fill in the details of our proposal in (37).

<sup>10</sup> Inertia analyses of IMPF go back to Dowty (1979). Our proposal relativized to events is inspired by Landman (1992) and Cipria and Roberts (2000). The usual problems arise when explaining in what conditions an event that starts in one world ‘continues in another (see e.g. Portner 1998). We take this problem to be independent of Inertia types.

(37) A ‘purely’ preparatory  $MB_{P-inertia}$  as in (36) for plans in the past in Group1.

- (a) (14) Utre, po plan, Ivan leteše za Sofia .....  
 ‘Tomorrow, according to plan, Ivan was flying to Sofia ...’
- (b) For all past situations  $s$ ,  
 $[[a]](s) = 1$  iff  $\forall s'$ :  $MB_{P-inertia}(s)(s') = 1$ ,  
 there exists an event of Ivan flying to Sofia in  $s'$   
 (=  $[[a]]$  is true in (past)  $s$  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).

In West Slavic and Russian, IMPF does not access  $MB_{P-inertia}$ , so the plans-in-the-past reading is missing, resulting in ungrammaticality.

## 5 A proposal on Měbengokre: Group 1 vs. Group 2 markers

We have shown that aspect markers in Mb have each a lexically specified interpretation. Variation arises between Group 1 and Group 2 markers on the basis of morphology, syntax, and argument structure. Group 1 markers give rise to ‘raising’ structures, with only one semantic role for their logical subject, while Group 2 aspect markers give rise to ‘control’ structures, with two semantic roles for their subject. Let us see how this semantic distinction fits within our crosslinguistic analysis of IMPF and its different readings.

We can first capture the specific reading each Mb marker encodes as a lexical entry by making a distinction in terms of modal bases, within a shared semantic architecture for imperfectivity of the type depicted in (32-33).

It is particularly interesting for the purposes of this paper that Mb resembles Romance and Slavic in making differences in terms of the kind of inertia situations made accessible by aspect markers. Event Inertia as in (34) is involved in Mb (20b). In (37) we provide its aspectual marker with a preliminary analysis that will be modified in (39) in order to capture the double semantic role associated with complex aspectual markers. That is, *dja* indicates that something has already begun, which brings to mind the traditional imperfective paradox, and effects similar to those found across Romance and Slavic with ongoing imperfectives.

- (20) b. Ba mry krěn o=**dja**.  
 Inom meat eat.N o=stand.V  
 ‘I was eating the meat (standing).’

(37)  $[[dja_{IMPF}]] = \lambda P_{\langle I, \langle s, t \rangle \rangle}. \lambda s_s. \forall s'_s: MB_{event-inertia}(s)(s') = 1, \exists e: P(e)(s') = 1$

By contrast, given the proposal in (38), *mã* in (19a) indicates that something is in its planning stage. This corresponds to Preparatory Inertia in (35), and is reminiscent of intentional imperfectives found generally in the Romance family, but restricted in Slavic to the South languages.

- (19) a. Ije mry krěn **mã**.  
 Ierg meat eat.N PROS  
 ‘I was going to eat the meat.’

$$(38) \llbracket [\mathbf{m\ddot{a}}_{\text{IMPF}}] \rrbracket = \lambda P_{\langle I, \langle s, t \rangle \rangle} \lambda S_s \forall S_s': \text{MB}_{\text{prep-inertia}}(s)(s') = 1, \exists e: P(e)(s') = 1.$$

In addition to lexically specified imperfective readings, in §3 we identified a type of variation in Mb aspectual markers without counterpart in Romance and Slavic. We showed that Mb Group 1 and Group 2 markers differ on the basis of morphology, syntax, and argument structure, with the first type giving rise to ‘raising’ properties, with one semantic role for their logical subject, and the second type giving rise to ‘control’ properties, with two semantic roles for their subject. Let us see how such a variation can be captured within our general approach to IMPF.

Group 1 ‘raising’ markers resemble imperfective categories in Romance and Slavic, since those also display ‘raising’ properties: i.e. they do not assign a semantic role to subjects. Thus, we make no additional comment on Group 1 markers at this point. Group 2 markers as ‘control’ categories, however, deserve additional attention since they have unique characteristics. To this effect consider (26), and the semantic analysis proposed for its aspect marker in (39).

$$(26) \text{Ba} \quad \text{kr\ddot{e}n} \quad \mathbf{o=nh\ddot{y}}.$$

1nom eat.N o=sit.V  
‘I was eating it, sitting down.’

$$(39) \llbracket [\mathbf{nh\ddot{y}}] \rrbracket = \lambda P_{\langle e, \langle I, \langle s, t \rangle \rangle} \lambda x_e \lambda S_s \lambda s \text{-is-sitting-down-in-s-and} \\ \forall S_s': \text{MB}_{\text{event-inertia}}(s)(s') = 1, \exists e_1: P(x)(e)(s') = 1$$

According to (39), the aspect marker *nhÿ* in (26) combines with a property of individuals and events (P), and an individual (x). The result is a proposition true of a situation *s* iff x is sitting down in s and, in all situations *s'* that are event-inertia situations, there exists a P-event (*Event-inertia*=all the events that have actually started in *s* continue in *s'* as they would if there were no interruptions). As an aspect marker with its own logical subject, *nhÿ* thus imposes restrictions (via control) on the subject of the embedded clause. Combining all the ingredients of our analysis in the structure in (40) for (25), where PRO represents the ‘controlled’ subject, the result is the proposal in (41).

(40) Putting things together for Group 2 aspect markers

|      |     |                   |      |       |     |         |
|------|-----|-------------------|------|-------|-----|---------|
| Ba   | [ i | [PRO <sub>i</sub> | mry  | krēn] | o-] | nhÿ.    |
| 1nom |     |                   | meat | eat.N |     | o-sit.V |

‘I was eating meat (sitting down).’

(41) a.  $\llbracket [\mathbf{i \text{ PRO}_i \text{ mry krēn}}] \rrbracket = \lambda x_e \lambda e_1 \lambda S_s \lambda s \text{-is-an-event-of-x-eating-the-meat-in-s}$   
 b.  $\llbracket [\mathbf{ba}] \rrbracket^c = \text{the speaker in } c$   
 c.  $\llbracket [\mathbf{ba [ i [PRO}_i \text{ mry krēn] o-] nhÿ}] \rrbracket^c =$   
 $\lambda S_s \text{the-speaker-in-c-was-sitting-down-in-s-and}$   
 $\forall S_s': \text{MB}_{\text{Event-inertia}}(s)(s') = 1,$   
 $\exists e_1: e \text{ is an event of the speaker eating the meat in } s'$

## 6 Conclusions

In this paper we have addressed the topic of **cross-linguistic variation** in the interpretation of imperfectivity. We have shown that there is a surprising range of variation even within closely related languages, as well as variation across language families. We have argued that this supports a view of the semantics of the imperfective operator that allows languages to lexicalize very specific options. Inspired by Cipria and Roberts (2000), we have captured the range of variation appealing to proposals made in the domain of **modality** (Kratzer 1991). We have departed from Cipria and Roberts in arguing that the range of modal bases available to imperfectives does not simply depend on context, and that languages lexically encode restrictions on the range of modal bases that are available to the imperfective operator (see Rullman et al. 2008 for the case of modals). There is variation regarding how permissive languages may be. We have seen that on the one hand, Romance languages allow a wide range of modal bases to be associated with a single manifestation of imperfective morphology, but still lack ‘Factual Imperfectives’. On the other hand, while Slavic languages offer crisscrossing patterns of variation, Měbengokre is much more restrictive, with lexically specified modal bases for distinct aspectual morphology.

Our proposals contribute towards debates on the nature of the imperfective operator. We have argued that to account for the range of variation in readings it is necessary to semantically encode fine distinctions such as the difference between event inertia and preparatory inertia modal bases, as well as to narrow down the role of pragmatics. In our view, pragmatic coercion is not equipped to capture crosslinguistic variation of the type discussed in this paper.

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