

Chapter 13

General-factual perfectives: On an asymmetry in aspect choice between western and eastern Slavic languages

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The paper addresses the issue of microvariation within Slavic aspect. Specifically, it investigates perfective general-factivals, which appear in Czech and Polish but not in Russian. It is shown that perfective aspect is used in Czech and Polish when the semantics of the VP of the sentence is such that reference is limited to unique events, or when reference to a unique event is contextually determined. Assuming that semantic aspects operate over VP-meanings, it is then argued that the semantics of perfective aspect in Polish and Czech includes a completedness condition and a uniqueness condition whereas the semantics of the Russian perfective, more strongly, encodes target state validity. This difference categorically bans perfective aspect from general-factual contexts in Russian, but not in Czech and Polish.

Keywords: microvariation, perfective, general-factual, target state, uniqueness, VP

1 Introduction

The present paper contributes to the discussion of microvariation within the realm of Slavic aspect. As is well-documented, the distribution of perfective and imperfective verb forms among contexts is not constant within the Slavic family (see, among others, Stunová 1991; 1993; Breu 2000; Petrushina 2000; Dickey 2000; 2015; Dickey 2018; Gehrke 2002; Wiemer 2008; Rivero & Arregui 2010; Alvestad 2013; Gattnar 2013; Berger 2013; Arregui et al. 2014; Dübbers 2015; Fortuin & Kamphuis 2015; 2018). Although there is typological reason to speak of “the Slavic-style aspect” (e.g. Dahl 1985; Plungjan 2011), it would be utterly wrong to consider the aspectual systems of the Slavic languages all the same.



The pioneering study on microvariation of aspect in Slavic is Dickey (2000). Based on disagreeing patterns of aspect choice (perfective / imperfective), Dickey analyzes the Slavic languages as clustering around two poles on a scale. The western languages represent one pole, the eastern languages the other one. Polish and Serbian and Croatian are diagnosed as occupying an intermediate region, as these languages share properties with languages of the western as well as with languages of the eastern group, see Table 1.

Table 1: Dickey (2000: 5)

WEST	TRANSITIONAL	EAST
	Polish	Russian
Sorbian		Belarusian
Czech		Ukrainian
Slovak		
Slovene		Bulgarian
	Serbo-Croatian	

Dickey (2015) presents a revision of the 2000 picture. The most important innovation is that the South Slavic languages (apart from Slovene) are no longer classified as members of the western or eastern groups, but are classified separately, see Table 2.

In this paper, I will be concerned with Czech, Polish and Russian. For the present purposes, therefore, the move from Dickey (2000) to Dickey (2015) is by and large irrelevant. What matters is that Czech is treated as a member of the western group, that Russian is counted as an instance of the eastern group, and that Polish is treated as a language sharing properties with both these groups.

More specifically, I will look at the aspectual behavior of these three languages in general-factual usage. General-factual contexts are particularly interesting from a comparative point of view. The Russian-biased general wisdom is that general-factuals call for imperfective aspect. As has been observed, among others, by Dickey (2000), however, there are certain general-factual contexts in which Czech speakers, for instance, resort to perfective forms. The aim of the present study is twofold. The first goal is to describe the kinds of contexts in which the western language Czech displays general-factual perfectives, whereas the eastern language Russian displays general-factual imperfectives. Since the theoretical prediction for “transitional” Polish is unclear, we will always have a look at the choice that speakers of Polish make in the respective cases. As we will

Table 2: Dickey (2015: 36)

NORTH		
WEST	TRANSITIONAL	EAST
Czech	Polish	Russian
Slovak		Ukrainian
Sorbian		Belarusian
Slovene		
SOUTH		
TRANSITIONAL (tending west)		EAST (with deviations)
Bosnian		Bulgarian
Croatian		Macedonian
Serbian		

see, and as noted in Dickey (2000: 101), with respect to aspect choice in general-factual contexts Polish is not “in between”, but follows the Czech pattern. The second goal, in turn, is to explain the described differences by tracing them back to differences in the underlying semantics of perfectivity.

The paper is structured as follows: In §2 I will introduce the phenomenon of perfective general-factivals in Czech and Polish. In §3 I will discuss and reject the hypothesis (proposed by Dickey 2000) that these cases can be traced back to underlying achievement verbs. In §4 I will discuss and reject the hypothesis (suggested by Cummins 1987) that the decisive factor is lack of volition. In §5 I will discuss and reject the hypothesis (brought up by myself) that perfective general-factivals are explicable in terms of event uniqueness. In §6, however, I will argue that the uniqueness hypothesis is not entirely on the wrong track, showing that it will produce correct results if it is relativized to the syntactic domain of the VP. In §7 the situation in Russian will be taken into account. I will explain why general-factual contexts are per se incompatible with perfective aspect in Russian, and what this reveals about differences in the semantics of the respective aspectual categories in the western and eastern Slavic languages under consideration. §8 concludes the paper.

2 General-factual perfectives

Somewhere in the world wide web, a young Russian-speaking lady tells us ten facts about herself.¹ We are invited to read that she prefers to drink tea without sugar (fact 1), that she is 18 years old but feels like 16 (fact 8), that she once started piano lessons but soon quit in favor of choreography (fact 3), and so on. Of relevance for us is fact 6. The young woman is telling us that she has once fallen from a tree. The Russian sentence that she uses to express that is (1):²

- (1) Ja padala s dereva.
I fell.IPF from tree
'I (once) fell from a tree.'

This is a canonic instance of a Russian general-factual imperfective. A similar one is sentence (2), which the young lady uses to convey fact 7:

- (2) Na menja padal šifer.
on me fell.IPF roof
'I was (once) hit by a piece of roof.'

Russian general-factuals are characterized by reference to a single completed event only vaguely located in past time, with verbal morphology always being imperfective.³ What is interesting is that, if our young lady was Czech-speaking, she would have used the perfective verb form to convey her message:

- (3) Jako malá jsem spadla ze stromu.
as small AUX fell.PF from tree
'As a child I (once) fell from a tree'

What about Polish? Polish turns out to pattern like Czech:

- (4) Jako dziecko spadłam z drzewa.
as child fell.PF from tree
'As a child I (once) fell from a tree.'

¹<https://ask.fm/Nailyuta>

²I reduce grammatical information in the gloss to a relevant minimum. IPF is for imperfective, PF is for perfective aspect. Other abbreviations are explained at the end of the paper.

³Note that the definition of general-factuals used here does not cover cases of 'presuppositional' (Grønn 2004) / 'actional' (Padučeva 1996) / 'anaphoric' (Mehlig 2011) imperfectives. Note furthermore that I restrict the scope of the term to past tense contexts, which is debatable.

The following pair of examples contrasting Polish general-factual perfectives (5) and Russian general-factual imperfectives (6) is taken from Wiemer (2001):

(5) Czy Pan kiedykolwiek zgubił swój portfel?
 Q sir ever lost.PF REFL briefcase
 'Have you ever lost your briefcase?'

(6) Vy kogda-nibud' terjali svoj košelek?
 you ever lost.IPF REFL briefcase
 'Have you ever lost your briefcase?'

The kind of data discussed so far are described in Dickey (2000: 95ff.). It is important not to overlook that in other cases of general-factuals, Czech and Polish resort to imperfective aspect, just like Russian does. The examples (7) to (9) may serve as illustration.

(7) Ty kogda-nibud' doila korovu?
 you ever milked.IPF cow
 'Have you ever milked a cow?'

(8) Už jsi někdy dojila krávu?
 already AUX ever milked.IPF cow
 'Have you ever milked a cow?'

(9) Czy kiedykolwiek doitaś krowę?
 Q ever milked.IPF cow
 'Have you ever milked a cow?'

We saw that Czech and Polish form *perfective* general-factuals, but that they do not always do so. It is only for a subset of general-factuals that these languages deviate from the imperfective coding holding in Russian throughout. The question that arises is: what precisely characterizes the contexts in which speakers of Czech and Polish use perfective forms to denote completed past events only vaguely located in time?

3 Achievements?

The first hypothesis to be discussed stems from Dickey (2000), reemphasized in Dickey (2018). According to Dickey, the use of imperfective aspect in the languages of the western group presupposes a temporal extension of the denoted

event. Given this, speakers will have to resort to perfective aspect whenever the predicate of the sentence is based on an achievement verb: “In the west [...] the *impv* forms of achievement verbs are unacceptable in contexts where one otherwise expects the *impfv*” (Dickey 2000: 124).

The idea may be restated in terms of the following hypothesis.

- (10) **Hypothesis H1:** Perfective aspect is used in general-factivals whenever the verb is an achievement verb because achievement verbs do not supply the temporally extended events required by imperfective aspect in Czech and Polish.

This builds on Dickey’s general conclusions about aspectual semantic differences between western and eastern languages. According to Dickey (2000: 107–109), the western imperfective expresses the notion of *QUANTITATIVE TEMPORAL INDEFINITENESS*, characterized as “the assignability of a situation to several points in time”. The eastern imperfective, by contrast, expresses the notion of *QUALITATIVE TEMPORAL INDEFINITENESS*, which is described as “the non-assignment of a situation to a unique location relative to other states of affairs”.

Consider example (4), for instance. Here the predicate is formed on the basis of a lexical verb which is arguably analyzable as characterizing achievement events. Being an achievement, the verb does not supply “several points in time”, which is, according to Dickey, a prerequisite for using the western imperfective. Therefore, in this case, the choice of imperfective aspect is no option for the speaker of Polish, and she has to use the perfective instead.

There is, however, counterevidence to Dickey’s proposal. To see why, consider the following example from Russian first:

- (11) A: A Niagarskij vodopad kogda-nibud’ zamerzal?
and N. water falls once froze.over.IPF
‘Did the Niagara Falls ever freeze over?’
B: Da, esli ja ne ošibajus’, odnaždy zamerzal.
yes if I not make.mistake once froze.over.IPF
‘Yes, if I am not mistaken, it once froze over.’

As can be seen and as expected, Russian speakers use imperfective aspect here. Now, as can be seen in (12) and (13), speakers of Czech and speakers of Polish would use perfective aspect when expressing the same thing:

- (12) A: A Niagarský vodopád někdy zamrzl?
but N. waterfalls ever froze.over.PF
‘Did the Niagara Falls ever freeze over?’

B: Ano, pokud se nemýlím, tak jednou zamrzl.
 yes if REFL not.mislead then once froze.over.PF
 ‘Yes, if I am not mistaken, it once froze over.’

(13) A: Czy wodospad Niagara kiedyś zamrzł?
 Q water falls N. ever froze.over.PF
 ‘Did the Niagara Falls ever freeze over?’

B: Tak, jeśli się nie mylę, kiedyś zamrzł.
 yes if REFL not mislead once froze.over.PF
 ‘Yes, if I am not mistaken, it once froze over.’

Above we saw that, according to Dickey’s explanation of general-factual perfectives, the respective predicates are perfective because of a conflict between the meaning of the imperfective and the lexical meaning of the verb, and that the conflict arises with achievement verbs. Accordingly, the reason why (12) and (13) have perfective predicates should be that these predicates are formed from achievement verbs lacking a process component in their lexical-semantic structure. The problem is that, if (12) and (13) were based on verbs lacking such a component, we would not expect these verbs to be (easily) used for denoting ongoing processes. As a matter of fact, however, they may be used in that function, quietly and without fuss. Consider the Polish example in (14):

(14) Jezioro zamarza!
 lake freeze.over.IPF
 ‘The lake is freezing over.’

The sentence can be found on the internet, written above a photograph that shows a half-frozen lake. It is further elaborated by the following text:⁴

Po raz pierwszy tej zimy w Jeziorze Tarnobrzesckim zaczęła zamarzać dalej niż tylko kilkadziesiąt centymetrów od brzegu.
 [‘This winter for the first time the water of Lake Tarnobrzeg froze further than for just some dozens of centimetres from the lakeside.’]

Example (14) proves that the Polish predicate meaning ‘freeze over’ characterizes temporally extended events. Thus, it does supply “several points in time”. According to Dickey’s reasoning, this implies that the predicate should be lexically capable of taking on imperfective morphology. But then, why does it not show up in the imperfective in (13)?

⁴<http://tarnobrzesckie.eu/2016/01/23/jezioro-zamarza-zdjecia/>

One might, of course, object that the argument misses the point because Polish is not classified as a genuine western language within Dickey's system. Fair enough, but consider the Czech equivalent to (14):

- (15) Jezero (právě) zamrzá.
lake right.now freeze.over.IPF
'The lake is freezing over (right now).'

There is an alternative way of understanding Dickey's proposal.⁵ Maybe the claim is that the sentences (12) and (13) denote achievements *because* they are perfective. Following this suggestion, we should perhaps restate H1:

- (16) **Hypothesis H1'**: Perfective aspect is used in general-factuals whenever the speaker wants to refer to an achievement event because the use of the imperfective in Czech and Polish is restricted to reference to temporally extended events.

Yet the problem remains. Note that the situations referred to in (12) and (13) *are* temporally extended. As a matter of fact, the freezing over of a waterfall does never happen all of a sudden. It is a very time-consuming process indeed. Given that "in the default conceptualization there is a process component in these situations" (Dickey 2018: 78), H1' predicts that the natural translation of the Russian (11) into Czech or Polish should make use of an imperfective verb form. What is actually chosen, however, is a perfective verb form. This raises the unanswered question: why should the speaker want to present the freezing of the Niagara Falls as an instantaneous event?

I think that it is fair to conclude that, without further modification, Dickey's solution to the puzzle of general-factual perfectives fails to explain cases like (12) and (13).⁶

4 Volition?

The next idea to be discussed has been stated by Cummins (1987) as a generalization to account for the situation in Czech:⁷

⁵Thanks to an anonymous reviewer for pointing that out to me.

⁶Fortuin & Kamphuis (2015) raise a similar concern about Dickey's analysis of the western imperfective.

⁷In the quote, I have replaced Cummins' "constative I" by the synonymous "general-factual imperfective".

Czech absolutely prohibits the general-factual imperfective in all low-volitional predicates. This restriction admits no exception [...]: all Czech general-factual imperfectives have predicates with high agentivity.

(Cummins 1987:41)

For the sake of the argument let us suppose an intuitive understanding of volition, according to which it is “the cognitive process by which an individual decides on and commits to a particular course of action.”⁸ Given that, Cummins’ law may suggest the following hypothesis.

- (17) **Hypothesis H2:** Perfective aspect is used in general-factuals whenever the speaker wants to refer to a non-volitional event because (for some unclear reason) general-factual imperfectives in Czech and Polish are restricted to volitional actions.

This may, indeed, account for the cases that we came across with so far. Sentences like (3) report on accidental events, and accidents are by definition not accompanied by the individual’s decision on the course of events. Also sentences like (12) may be accounted for, as the event participant is inanimate and, hence, void of volition.

Nevertheless, the approach as it stands is not tenable. This has been shown in Dickey (2000: 101–102). Consider the following examples:

- (18) Už jsi z toho prkna někdy skočila?
 already AUX from that diving.board ever jumped.PF
 ‘Have you ever jumped from that diving board?’
- (19) Czy kiedykolwiek skoczyłeś z tej trampoliny?
 Q ever jumped.PF from that diving.board
 ‘Have you ever jumped from that diving board?’

These sentences clearly report on volitional actions, and yet the perfective form is used. If lack of volition was the explanation for the use of perfective aspect in general-factual contexts, as the hypothesis H2 suggests, examples like Czech (18) and Polish (19) should not exist. So appealing as it may seem at first sight, we have to look for a better explanation.

⁸[https://en.wikipedia.org/wiki/Volition_\(psychology\)](https://en.wikipedia.org/wiki/Volition_(psychology))

5 Uniqueness?

The third hypothesis that I would like to check may be stated as follows:

- (20) **Hypothesis H3:** Perfective aspect is used in general-factivals whenever the speaker wants to refer to an event which is unique in the relevant context because perfectivity semantically expresses uniqueness in Czech and Polish.

To make sense of that, let us assume that the aspectual operators in Czech and Polish have the following semantics:⁹

- (21) $[[\text{IPF}]] = \lambda P \lambda t \exists e [P(e) \wedge e \circ t]$
 $[[\text{PF}]] = \lambda P \lambda t \exists e [P(e) \wedge e \subseteq t \wedge \neg \exists e' [P(e') \wedge e' \neq e]]$

Informally speaking, the PF-operator includes a completedness requirement ($e \subseteq t$) as well as a uniqueness condition ($\neg \exists e' [P(e') \wedge e' \neq e]$). The former requires that the denoted event must have reached its culmination point, and the latter requires that there is no possibility or, at least, no expectancy of a second event realization of the same type in the discourse context. The IPF-operator, by contrast, imposes only a very vague condition on interpretation ($e \circ t$). All that it requires is that the event time should, in this or that way, overlap the reference time (cf. Grønn 2004).

Given these assumptions, why do unique events call for perfectivity? Note that the two operators in (21) are of the same semantic type, differing only in specificity of content (every event that fulfills $e \subseteq t$ is an event that fulfills $e \circ t$). Therefore, the two aspectual operators may legitimately be analyzed as forming a Horn-scale (Sonnenhauser 2006; 2007). As they are located on a Horn-scale, the use of the less specific imperfective marker will trigger the conversational implicature that the speaker lacks evidence for using the more specific perfective marker. If the speaker wanted to avoid inviting this inference, because she does have sufficient evidence for categorizing the event as completed and unique, she would have to use the perfective. The use of the imperfective would otherwise misinform the hearer by suggesting that the event is either non-unique or non-completed. Taking into account that the latter option is out in general-factual contexts (as general-factivals always report on completed events, see above), we may rewrite H3 as H3':

⁹For ease of readability, I will not indicate Krifka's (1998) temporal trace function $\tau(e)$, which maps events onto their run time. Thus, wherever e is related to t in the semantic representations to follow, this is meant to express that $\tau(e)$ is related to t .

- (22) **Hypothesis H3'**: Perfective aspect is used in general-factuals whenever the speaker wants to refer to an event which is unique in the relevant context because imperfectivity in Czech and Polish general-factuals implies reference to non-unique events.

Note, by the way, that if accidental events imply uniqueness (and I shall argue that they do), Cummins' law ("Czech absolutely prohibits the general-factual imperfective in all low-volitional predicates") may be viewed as a special case: If the expression of a unique, completed event attracts perfective aspect, and if accidents represent a special kind of unique events, then the expression of an accident should likewise attract perfective aspect.

Hypothesis H3 gains further plausibility in view of the fact that necessarily unique events (i.e. cases where world knowledge makes event repetition unlikely) require perfective aspect. Note that these sentences do not represent cases of general-factuals, as general-factuals require the event property to be in principle replicable (e.g. Padučeva 1996: 58).

- (23) Jako malá jsem {pokácela / *kácela} náš jediný strom.
 as small AUX felled.PF felled.IPF our single tree
 'When I was young, I felled our one and only tree.'
- (24) Kiedy byłem młody, ściąłem nasze jedyne drzewo.
 when was small felled.PF our single tree
 'When I was young, I felled our one and only tree.'

And yet H3 and H3' are, like the previous hypotheses, confronted with counterevidence. Consider the following Czech dialogue.

- (25) A: Už mu odstraňovali slepé střevo?
 already him took.out.IPF appendix
 'Has his appendix been removed?'
- B: Ano, už mu odstraňovali slepé střevo.
 yes already him took.out.IPF appendix
 'Yes, his appendix has been removed.'

What A and B are talking about here is a non-repeatable, i.e. unique event (everything else would enforce the conceptualization of an absurd scenario where a formerly removed appendix is re-implanted). According to hypothesis H3', this should rule out imperfective aspect in favour of the perfective. Contra to that

prediction, however, the imperfective appears to be well suited to figure in the Czech example (25).

According to a comment by an anonymous reviewer, the situation in Polish seems to be the same as in Czech:

- (26) Czy mu {wycinali / wycięli} ślepą kiszkę?
 Q him took.out.IPF took.out.PF appendix
 ‘Has his appendix been removed?’

Here, too, it is possible to use an imperfective verb form under reference to a completed event, which is in conflict with H3/H3'.¹⁰

We have to conclude that, as it stands, the uniqueness hypothesis seems to be falsified.

6 Uniqueness!

In this section, I elaborate on hypothesis H3. The idea is to take the syntactic structure of the sentence into account and relativize the *semantic* uniqueness condition to the domain of the AspP. The new hypothesis (which is actually not “new” but merely more precise) will then be (27).

- (27) **Hypothesis H4:** Perfective aspect is used in general-factivals whenever the speaker wants to refer to an event which is unique in the relevant context because perfectivity semantically expresses AspP-uniqueness in Czech and Polish.

Let me explain. Above I proposed the denotations stated in (28).

- (28) $[[\text{IPF}]] = \lambda P \lambda t \exists e [P(e) \wedge e \circ t]$
 $[[\text{PF}]] = \lambda P \lambda t \exists e [P(e) \wedge e \subseteq t \wedge \neg \exists e' [P(e') \wedge e' \neq e]]$

Now I remind of that these semantic assumptions presuppose the syntactic assumptions stated in (29):

- (29) [... [_{AspP} {PF/IPF} [_{VP} ... V ...]]]

¹⁰ According to the reviewer, the use of the perfective form leads to an interpretation involving target state relevance (see §7). It needs to be checked whether target state relevance is indeed obligatory when the perfective is used in (26). If yes: Does it follow from the semantics of the perfective? Then Polish would approximate the Russian pattern. Or does it rather follow from pragmatic inferences, presumably in competition with the imperfective? I must leave this issue open.

What (28) basically says is that the use of a perfective form will always impose on interpretation the conditions of completedness and uniqueness. What (29) adds to that is that these interpretive conditions enter in above the syntactic level of VP (see Tatevosov 2011; 2015 for a defense). It is thus the semantics of the VP that the functions PF and IPF operate on. Several consequences follow from this kind of grammatical architecture.

The first consequence to be noted here is that if the VP-property entails event uniqueness, perfective aspect will have to be used. This prediction seems to be borne out (for the sake of space I will only use Czech examples):

- (30) Jako malá jsem [_{VP} pokácela náš jediný strom]. = (23)
 as small AUX felled.PF our single tree
 ‘When I was young, I felled our one and only tree.’

In (30), the VP-property is one that can be realized only once in a given world. The VP thus narrows down the denotation set to unique events. According to (28) and (29), this strictly calls for the perfective (when presupposing completedness) because the speaker cannot but refer to a unique event. This prediction is in line with the use of perfective aspect observed in (30).

Let me now turn to the second consequence that follows from the above made assumptions, specifically concerning general-factuals. If the VP does not restrict denotation to unique events, then on semantic grounds alone the perfective is neither required nor excluded. Perfective aspect may be used, but *if* it is used, the expression of event uniqueness introduced by it should be pragmatically motivated. Below I present three contexts in which the pragmatic felicity of perfective use is met because expressing uniqueness is what the speaker wants to convey (the list is not meant to be exhaustive).

Context 1: The choice of the perfective expressing uniqueness is felicitous because the speaker wants to refer to an accident. This is the case in (3), repeated here for convenience.

- (31) Jako malá jsem [_{VP} spadla ze stromu].
 as small AUX fell.PF from tree
 ‘As a child I (once) fell from a tree’

In (31), the speaker reports on an accidental event. It lies in the very concept of an accident that it is unexpected. If, unexpectedly, an accident happens to occur once (twice...), it will not be expected to occur a second time (third time...). Given this, communicating the existence of an accident, as in (31), or requesting the existence of an accidental event, as in (5) from above, will always invite an

inference of uniqueness. It follows from hypothesis H4 that the perfective is to be used because otherwise the event would be understood as non-unique and, hence, as non-accidental.

Context 2: The choice of the perfective is felicitous because the speaker refers to an action that requires unusual skills. (32), for instance, refers to a dare. It should be read here as an answer to (18):

- (32) Ano, jako malá jsem z toho prkna [VP skočila].
yes as small AUX from that diving.board jumped.PF
'As a child I (once) jumped from that diving board.'

Here, arguably, the speaker answers the question of whether she has performed an action that (from the point of view of the questioner at least) requires extraordinary courage of those who perform it. Given this, the speaker may assume that the addressee (= questioner) takes the occurrence of such an action as unlikely. Similar to the case of accidents, it then follows that if the speaker states that she has performed the action once, she may be sure not to be expected to having performed it a second time. Thus, the expression of uniqueness, which H4 attributes to the use of perfective aspect, is well grounded in the context of (32).

(33) shows a similar example. Again, the kind of event is such that already one event realization will count as something special (from Fortuin & Kamphuis 2018: 115):

- (33) Už jste někdy {dal / *dával} gól?
already AUX ever gave.PF gave.PF goal
'Have you ever scored a goal?'

Context 3: The choice of perfective aspect is felicitous because the speaker refers to an extraordinary event, see (34).

- (34) V minulém století Niagarský vodopád [VP zamrzl].
in last century N. waterfalls froze.over.PF
'In the last century Niagara Falls froze over.'

It is very difficult to imagine that the Niagara Falls freezes over completely. Thus, already one such event is unexpected. If it turns out to have taken place, we will not expect it to take place a second (let alone third, fourth, ...) time. Being about an unlikely event, (34) conveys uniqueness, and the attested choice of perfective aspect is correctly predicted by H4.

Finally, I turn to the case that rendered the hypothesis H3 wrong.

In (37), as in (35), the VP does not describe a unique event. The uniqueness-expectation associated with the sentence likewise enters in above VP, i.e. on account of further information provided by the linguistic and non-linguistic context within which the VP appears. The relevant pieces of information stem from: First, the (dropped) subject, which refers to a specific person as the agent of the event (the speaker). Secondly, the topic time, which is a specific day (today). Thirdly, script-knowledge which says that supper is normally taken once per day. In sum, the VP does not determine the uniqueness of the event in (36), the use of the perfective is therefore not mandatory, and imperfective aspect remains an option according to hypothesis H4.

To sum up, the observations made above amount to the following picture for Czech and Polish (which is valid not only for general-factual contexts):¹¹

- If the VP-property describes a kind of event that allows for one event realization at most, perfective aspect must be used.
- If the VP-property does not limit the event realization to be a singleton, both perfective and imperfective aspect are in principle possible.

In the latter case it is upon the speaker to decide on pragmatic grounds whether the denoted event should be understood as unique. If signaling uniqueness was intended by the speaker (because she perhaps wanted to refer to an accident, to a dare or to a sensational news event), she would have to use a perfective verb form. If, on the other hand, uniqueness is not what the speaker wants to signal, she should use an imperfective verb.

7 Taking Russian into account

As we saw above, Czech/Polish and Russian general-factuals do not pattern alike. The story told above takes care of the former languages. I have proposed denotations for PF and IPF in Czech and Polish that predict the aspectual choices made by the speakers of these languages. The open question is: why does Russian deviate from Czech/Polish in general-factual contexts?

My answer to that question follows Stunová (1991) who traces the differing distributions of the aspectual markers in Czech and Russian back to a difference in semantic content of the respective perfective category, the imperfective category

¹¹The reader should bear in mind that the exposition presupposes that reference to completed events is intended.

being treated in Czech as well as in Russian as “an unmarked member of the aspectual opposition” (Stunová 1991: 297). Stunová’s (1991) results are summarized in (38):¹²

- (38) PF_{Czech} \rightsquigarrow TOTALITY
 PF_{Russian} \rightsquigarrow TOTALITY + CONNECTEDNESS

I propose to reinterpret the feature of ‘totality’ as comprising the features (conditions) ‘completedness’ and ‘uniqueness’. Given that move, Stunová’s semantics for the Czech perfective will be in perfect harmony with the conclusions that I have arrived at. The remarkable thing is that Stunová’s result is derived from empirical observations based on entirely different linguistic “parameters” (in the sense of Dickey 2000) than mine. While I am concerned here with the choice of perfective or imperfective aspect in general-factual contexts, Stunová (1991) discusses aspect choice in sequences of events, in the historical present, in generics and in pluractionals.

Stunová’s feature ‘connectedness’ is adopted from Barentsen (outlined in Barentsen 1995; 1998). According to Barentsen’s (1998: 45) informal description, an event is “connected” if it is viewed from the perspective of the changes that it is imposing on its environment. Given this, Barentsen’s notion is virtually identical (or at least very similar) to Grønn’s (2004) pragmatic notion of target state relevance, which he derives from the semantic condition of target state validity.¹³ The notion of target state validity is formally defined by means of the condition $f_{\text{END}}(t) \subseteq f_{\text{TARGET}}(e)$.¹⁴

Given all this, we may rewrite (38) as (39):

- (39) PF_{Czech} \rightsquigarrow COMPLETEDNESS + UNIQUENESS
 PF_{Russian} \rightsquigarrow COMPLETEDNESS + UNIQUENESS + TARGET STATE VALIDITY

Now, formally, (39) may be stated as (40):

- (40) $[[\text{PF}_{\text{Czech}}]] = \lambda P \lambda t \exists e [P(e) \wedge e \subseteq t \wedge \neg \exists e' [P(e') \wedge e' \neq e]]$
 $[[\text{PF}_{\text{Russian}}]] = \lambda P \lambda t \exists e [P(e) \wedge e \subseteq t \wedge \neg \exists e' [P(e') \wedge e' \neq e] \wedge f_{\text{END}}(t) \subseteq f_{\text{TARGET}}(e)]$

¹²It should be noted that the conclusions in Stunová (1993) differ from those in Stunová (1991).

¹³Here is where the difference between the two notions lies: while target state relevance determines that the event produces an occasion for subsequent events, connectedness is more broadly construed allowing alternatively for that the event starts from the final state created by a preceding event; see Dickey (2018: 81ff.) for discussion on that point.

¹⁴The condition $f_{\text{END}}(t) \subseteq f_{\text{TARGET}}(e)$ requires the reference time to end when the target state is in force.

The “semantically unmarked” imperfective will be the same in all of the discussed languages:¹⁵

$$(41) \quad \llbracket \text{IPF} \rrbracket = \lambda P \lambda t \exists e [P(e) \wedge e \circ t]$$

In (40), target state validity is implemented in the Russian perfective operator as an additional condition besides completedness and uniqueness. It should be noted, however, that the semantic content of target state validity by itself implies the conditions of uniqueness and completedness (Mittwoch 2008: 342–344). Accordingly, (40) may be reduced to (42):

$$(42) \quad \llbracket \text{PF}_{\text{Czech}} \rrbracket = \lambda P \lambda t \exists e [P(e) \wedge e \subseteq t \wedge \neg \exists e' [P(e') \wedge e' \neq e]]$$

$$\llbracket \text{PF}_{\text{Russian}} \rrbracket = \lambda P \lambda t \exists e [P(e) \wedge f_{\text{END}}(t) \subseteq f_{\text{TARGET}}(e)]$$

Now back to the initial question of why Russian deviates from the Czech and Polish pattern in the way it does. The answer is that, given the Russian perfective operator as stated in (42), it will be ruled out for semantic reasons in any general-factual context. The condition of target state validity, and thus the perfective operator, is per se incompatible with general-factuals. To meet the condition of target state validity, the event has to have a specific reference time. General-factuals, by contrast, require the event to be located in a reference time which is “big and floating” (Grønn 2004: 273; see Mueller-Reichau 2016 for an explanation as to why this is so).

The incompatibility of general-factual interpretations and target state validity being associated with perfective aspect is, crucially, independent of whether or not the denoted event is unique. This is a non-trivial result, as it runs counter to Dickey (2018)’s claim that “[t]he only way to establish that an event [...] is unique in time is to specify the temporal (and causal) context of the event in question. And this can only be done by providing information about prior and subsequent situations”.

An event that has a specific reference time is necessarily unique, but a unique event does not have to have a specific reference time. This is what sets Russian apart from Czech and Polish, i.e. why Russian excludes general-factual perfectives, whereas Czech and Polish allow for them under the described circumstances.

¹⁵I wish to point out that under the proposed analysis (which closely follows Grønn 2004) the imperfective is, in fact, not unmarked/unspecified, but rather radically *underspecified* in comparison to the perfective. Thus, the approach is *not* Jakobsonian. The meanings in (40) and (41) all represent Hauptbedeutungen in the sense of Kuryłowicz (1960: 178).

8 Conclusions

In this paper, I have addressed the variation in aspect choice in general-factual contexts between Czech, Polish and Russian. I have argued that the asymmetry between Czech and Polish on the one hand, and Russian on the other hand, should be related to a difference in the semantics of the respective perfective operators. While perfectivity in the former languages introduces the condition that the denoted event is completed and unique, perfectivity in Russian more strongly requires that the reference time ends when the target state is in force. The imperfective operator is in each of these languages semantically vague in that it requires no more than that the reference time overlaps the event time.

I have shown that my conclusions are in line with much of the existing descriptive and theoretical literature on Slavic aspect. Specifically, I have made a case for the following claims:

- The two aspectual grammemes form a Horn scale, with the imperfective being semantically less specified than the perfective – in line with Sonnenhauser (2006) and Grønn (2004), and reminiscent of traditional explanations based on markedness (e.g. Maslov 1984: 15–16).
- The point just noted does not only hold for Russian, but for Czech and Polish as well – in line with Fortuin & Kamphuis (2018: 116), but contra Dickey (2000: 105).
- The perfective operator in Russian entails target state validity – in line with Grønn (2004), and arguably compatible with Barentsen (1998) and Dickey (2000).
- The Russian perfective category has a more specific content than the Czech perfective category – in line with Stunová (1991) and Dickey (2018).
- Aspect is syntactically located outside of (above) the VP – in line with, e.g., Tatevosov (2011).

Still, many questions remain open. How do the generalizations that I derived from general-factual contexts agree with the patterns of aspectual variation observed in other contexts (“parameters”)? The closeness to Stunová’s results gives rise to optimism, but these things have to be checked.

I wish to conclude with a further argument that one might bring forward in support of the story told in this paper. Dickey (2000: 112) reports that the Polish perfective in (43) is possible given the following scenario: The speaker, who

had instructed the hearer to air the room beforehand, has entered the room, the hearer is around, and the (only) window is closed at the moment. This possibility of perfective aspect is in sharp contrast to the case of Russian, where the use of a perfective verb would strictly require the window to be open.

- (43) Czy otworzyłeś już okno?
Q opened.PF already window
'Did you already open the window?'

Drawing on a suggestion made by Dickey (2018: 84), I speculate that the absence of target state validity in the Polish perfective operator provides the reason why the perfective is usable here despite result annullment, and that the significance of uniqueness (that there is the expectancy of a single event realization) explains why the perfective is indeed used in the particular context at hand. This points to but one out of many intriguing issues that await investigation in the field of inner-Slavic aspectual variation.

Abbreviations

AUX	auxiliary	Q	polar question marker
(I)PF	(im)perfective	REFL	reflexive

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