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Aspectual Variation in Negated Past Tense Contexts Across Slavic

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Abstract: This study examines variation in the use and interpretation of the perfective (*pfv*) aspect in negated past tense contexts across East Slavic and selected West and Southwest Slavic languages. Unlike West and Southwest Slavic, where the *pfv* + neg in past tense contexts allows for an interpretation denying the existence of the event at any past time, East Slavic uniquely interprets the *pfv* aspect in these contexts as indicating that the agent either planned but failed to realize the event or initiated it but failed to complete it. We account for this by assuming that negation operates either high (¬TP), as sentential negation, or low (¬vP), over the event domain. In East Slavic, the interaction of the *pfv* aspect with the past tense prevents high negation and enforces low negation, resulting in inhibited event reading. This reading implies that the event was expected or initiated but ultimately unrealized. We argue that the semantics of the *pfv* aspect in East Slavic parallels the semantics of specific indefinites in the nominal domain. The aspect head introduces a temporal variable *t*, which, via a choice function, restricts the domain of existential quantification over *t* to a singleton set, presupposing the existence of *t*, which cannot be canceled by high negation. Consequently, in negated *pfv* past tense contexts in East Slavic, negation scopes over the event domain giving rise to special interpretative constraints in past tense perfective contexts with negation.

Keywords: negation; perfective aspect; past tense; East Slavic; West Slavic; Southwest Slavic; inhibited event reading

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1. Introduction

In Slavic languages, the grammatical aspect is explicitly coded by aspectual morphemes, and it manifests itself as the perfective (*pfv*) and imperfective (*ipfv*) opposition, presented in (1).

(1)	čytala	pročytala	Ukrainian
	čytała	pročytała	Belarusian
	čitala	pročitala	Russian
	čítala	prečítala	Slovak
	jsem četla	jsem přečetla	Czech
	czytałam	przeczytałam	Polish
	brala sem	prebrala sem	Slovene
	čitala sam	pročitala sam	Serbian
	čitala sam	pročitala sam	Croatian
	četoh	pročetoh	Bulgarian
	čitav	pročitav	Macedonian
	read.IPFV.1SG.F	read.PFV.1sg.f	

Pfv verbs typically describe completed, temporally delimited events and *ipfv* verbs refer to unbounded eventualities (Smith, 1991; Filip, 1999, 2017; Borik, 2006; Grønn, 2015; a.o.). In spite of significant variation in the use and meaning of the *pfv* and *ipfv* across Slavic, most studies on the Slavic aspect have focused on a single language. Dickey (2000, 2015, 2018a, 2018b, 2020) provides a comprehensive comparative framework for analyzing Slavic grammatical aspect, highlighting differences in the use of perfective and imperfective aspects across various contexts, such as habitual actions, general-factual statements, imperatives, and performatives. His micro-typology, termed the East–West aspect division, systematizes these differences. Building on this line of research, we explore the variation in the use and interpretation of the perfective aspect in negated past tense contexts across East and selected West and Southwest Slavic languages. East Slavic uniquely interprets the perfective aspect in these contexts as indicating that an agent either planned but failed to realize the event or initiated it but failed to complete it. In contrast, West and Southwest Slavic allow interpretations where the agent denies the event's existence at any past time. We propose a novel formal analysis of this variation, adopting the framework of Fábregas and González (2020), where negation operates either high (¬TP), as sentential negation, or low (¬vP), over the event domain. We argue that in East Slavic, the interaction of the perfective aspect with past tense restricts negation to the low event domain, giving rise to the inhibited event reading. This is due to the fact that the semantics of the *pfv* aspect in East Slavic is analogous to that of specific indefinites in the nominal domain (cf. Fodor & Sag, 1982; Diesing, 1992; Schwarzschild, 2002).

This paper is structured as follows: Section 1 introduces and motivates the research question and summarizes the main claims of this study. Section 2 overviews the relevant literature on the interaction of aspect and negation in East and West Slavic. Section 3 presents the methodology and key findings of an online acceptability rating survey on the variation in the interaction of aspect and negation across East, West, and Southwest Slavic languages. Section 4 outlines the theoretical framework adopted in this study. Based on Fábregas and González (2020), this section introduces the distinction between high and low negation and discusses how these positions interact with aspect and tense in Slavic languages. It also develops a formal account of the variation, proposing that the semantics of the perfective aspect in East Slavic parallels that of specific indefinites in the nominal domain. It explains, formally, how the semantics of the perfective aspect in East and West Slavic constrains its interaction with negation in past tense contexts. Finally, Section 5 concludes this paper by summarizing the findings and their implications for cross-linguistic research on aspect and negation. This section also identifies directions for future research, particularly regarding the broader typological significance of the observed patterns.

2. Aspect and Negation in East and West Slavic

Dickey and Kresin (2009) compare aspectual usage in contexts with negation in Russian and Czech narrative texts. Their claim is that negation can be used with *pfv* verbs in Russian only when the temporal definiteness of the past situation is satisfied. Dickey and Kresin (2009, p. 13) follow Forsyth (1970, pp. 103–104), who argues that in Russian, a negated *pfv* verb signals the "[n]on-performance of a potential single action at a specific juncture" and he exemplifies it by means of the context presented in (2).

(2) Načal'nik šagnul k arestovannomu
chief stepped toward prisoner
i vdrug rvjaknul: - Vstat'!
and suddenly bellowed: - Stand up!
'The chief stepped toward the prisoner and bellowed: "Stand up!"'
Arestovannyj ne poševelilsja.
Prisoner not stir.pfv
'The prisoner did not stir.'

In this example, the chief orders the prisoner to stand up. The prisoner's not reacting to this order happened right after the order was made. Therefore, the event of standing up was expected in this situation. In other words, in the scenario in (2), there was a specific situation (the situation is understood as an event instantiated in time) in which the prisoner was expected to stand up, and what is negated is the failure of the expected event to be realized at a specific point in time. Another example of a scenario in which a negated *pfv* verb is used in Rus to talk about a past event that failed to occur at a specific point in time is shown in (3), based on Dickey and Kresin (2009, p. 29).

(3) Na lice D'jakova mel'knula grimasa. No on ničego ne **skazal.pfv**, tol'ko skosil glaza na svoego načal'nika, točno priglašaja ego ubedit'sja, s kem on, D'jakov, imeet delo, a možet, ožidaja, čto tot sam čto-libo skažet. No čelovek s èskimosskim licom ničego ne skazal.pfv, gruzno podnjalsja i vyšel.
(Rus; Rybakov, 1988, p. 121)
'A grimace flashed across D'jakov's face. But he **did not say anything**, he only glanced at his superior, as if inviting him to see for himself who he—D'jakov—was dealing with, and perhaps expecting him to say something himself. But the man with the Eskimo face did not say anything, he got up awkwardly and went out.'

In this context, D'jakov was expected to say something but he did not. So, also in this scenario, there was a specific situation in which the event was expected to happen but failed to be realized. Dickey and Kresin (2009) conclude that the *pfv* aspect in negative contexts in Russian expresses the failure of a past action to occur at a specific juncture in time. If this condition is not satisfied, Russian uses the *ipfv* even if the negated past event was temporally delimited, as exemplified by Dickey and Kresin (2009, p. 40) in (4a and b) for Russian and Czech, respectively.

(4) a. Mark Aleksandrovič vsegda vydeljal Sonju sredi drugix svoix sester, ljubil i žalel ee, osobenno bespomoščnuju sejčas, kogda ot nee ušel muž. I Sašu ljubil. Za čto pridralis' k mal'čiku? Ved' on čestno skazal, a emu lomajut dušu, trebujut raskajanija v tom, čego **ne soveršal.ipfv**.
(Rus; Rybakov, 1988, p. 14)
b. Mark dával vždycky přednost Soně před ostatními sestrami, měl ji rád a litoval ji pro její bezradnost, zvlášt' ted', když od ní odešel muž. I Sašu měl rád. Proč si na toho chlapce tak zasedli? Vždyt' mluvil pravdu, a oni mu křiví charakter, chtějí po něm, aby si sypal popel na hlavu za něco, co **neudělal.pfv**.
(Cze; Rybakov, 1989 translated by Tafelová, p. 19)
'Mark Aleksandrovič always singled Sonja out from his other sisters, loved and pitied her, especially now, helpless as she was since her husband had left her. He also loved Saša. Why were they picking on the boy so much? He had told the truth, but they were crushing his soul, demanding repentance for something he **had not done**.'

In (4), unlike in (2) and (3), the negated event was not expected or planned. What is negated is the mere existence of the event at any point in time.

Similarly to Dickey and Kresin (2009), Leinonen (1982, pp. 256–259) postulates that the negated *pfv* aspect in Rus indicates the presence of a "precondition", i.e., an expectation of the corresponding affirmative predicate at a particular juncture in the discourse. Mehlig (1999, p. 192) proposes that negated *pfv* predicates in Russian refer definitely (i.e., they refer to situations about which the speaker assumes that the listener knows).

More recently, Kagan (2020) and Copley and Kagan (2023) have noticed that in a court scenario presented in (5) in Rus, Anna is accused of killing Ivan, and the speaker denies it by using a neg *ipfv* verb, even though a completed past event is discussed.

(5)	RUS	Anna	ne	ubivala/#ubila	Ivana.
		Anna	neg	killed.ipfv/pfv	Ivan
		'Anna did not kill Ivan.'			

They point out that when the perfective is used in (5), the context sounds like a confession. The speaker is saying that Anna might have attempted to kill Ivan, but she failed. Alternatively, she could have planned the murder but ultimately decided against it (cf. Paducheva, 2013). If an attempt was made, it could be said that the killing event was initiated but left incomplete. Copley and Kagan (2023) account for this observation within the force-theoretic framework of Copley and Harley (2015). Perfective verbs presuppose the existence of a force X (plan, intention, and expectation) which, with no external intervention, would bring about the event E, denoted by the perfective predicate, including its result state R. When a *pfv* statement is negated, it is either the X (plan) but not E $\rightarrow$ R that is preserved under the negation. Alternatively, the chain X (plan) $\rightarrow$ E is preserved under negation, but R fails to be realized. A potential problem for this claim is that the *pfv* aspect should trigger the same presupposition of intention/plan in future tense contexts in Russian contrary to fact. Consider the following offering context:

(6) a. #If you want I am visiting you on Monday.
b. #If you want I am going to visit you on Monday.
c. If you want I will visit you on Monday.

As observed by Copley (2009), in offering contexts, future forms presupposing the existence of a plan are implausible in English. When we make an offer, our addressee should have the possibility of either accepting or rejecting it. This implies that we cannot offer future actions which are already settled or planned at the moment of speaking. If it is true that the *pfv* in Russian presupposes pre-arrangement, it should be pragmatically implausible in offering contexts contrary to fact; see (7).

(7)	Esli	xočeš',	ja pridu	k	tebe	v	ponedel'nik.
	if	you want	come.pres.pfv	to	you	on	Monday
	'If you want I will visit you on Monday.'						

This implies that the presupposition of the existence of a plan arises when the *pfv* is used in negative past tense contexts, suggesting that it is related to the interaction of negation, aspect, and past tense. Another puzzling fact is that the confession effect in a court scenario under consideration in (5) is available in Russian, but it does not arise in analogous negative past tense perfective contexts in Polish. In fact, in Polish, the court scenario accusation–denial context would most naturally trigger the use of the *pfv* aspect, as shown in (8).

(8)	PL	Anna	nie	zabiła/#zabijała	Jana.
		Anna	neg	killed.pfv/ipfv	Jan
		'Anna did not kill Ivan.'			

Inspired by this observation, we broadened a comparative perspective to all the East Slavic languages, including Ukrainian, Belarussian, and Russian, and selected West and Southwest Slavic languages, including Polish, Czech, Slovenian, and Serbian, and we conducted an online survey testing the acceptability of *pfv* and *ipfv* aspectual forms in accusation–denial past tense contexts with negation.

3. The Study

In our study, we constructed ten scenarios in which the subject is accused of some past action, but they deny it using negation. The original list of scenarios was prepared in English, and it was translated into Polish (Pol), Czech (Cze), Russian (Rus), Belarusian (Bel), Ukrainian (Ukr), Slovenian (Slv), and Serbian (Srp), as exemplified in Table 1 (the full set of tested contexts is provided in the Supplementary Materials).

Table 1. An example set of the tested contexts.

Lg	Context	Options
Eng	Sally: My ancient vase disappeared. In the evening, I saw you, John, in the garden. You are the prime suspect. John: I did not [1] ..... your vase. This is a misunderstanding.	steal.pfv steal.ipfv
Pol	Krystyna: Zniknęła moja starożytna waza. Wieczorem widziałam Ciebie Janku w ogrodzie. Jesteś głównym podejrzanym. Janek: Nie [1] ..... twojej wazy. To jakieś nieporozumienie.	ukradłem.pfv kradłem.ipfv
Rus	Kristina: Propala moja starinnaja vaza. Ja videla tebja, Vanja, v sadu segodnja večerom. Ty glavnyj podozrevaemyj. Vanja: Ja ne [1] ..... tvoju vazu. Eto kakoe-to nedorazumenie.	ukral.pfv kral.ipfv
Ukr	Xrystyna: Moja starovynna vaza znykla. Ivane, ja bačyla tebe v sadu s'ohodni vvečeri. Ty—holovnyj pidozrjuvanyj. Ivan: Ja ne [1] ..... tvojej vazy. Ce jakes' neporozuminnja.	vkrav.pfv krav.ipfv
Ser	Kristina: Moja drevna vaza je nestala. Uveče sam u bašti videla tebe, Jovane. Glavni si osumnjičeni. Jovan: Nisam [1] ..... tvoju vazu. Nemam pojma otkud ti to.	ukrao.pfv krao.ipfv
Slo	Kristina: Izginila je moja stara vaza. Zvečer sem na vrtu videla tebe, Janez. Ti si glavni osumljenec. Janez: Nisem [1] ..... tvoje vaze. Prišlo je do nesporazuma.	ukradel.pfv kradel.ipfv
Cze	Kristýna: Moje starodávná váza je pryč. Večer jsem tě, Honzo, viděla v zahradě. Jsi hlavní podezřelý. Honza: [1] ..... jsem ti vázu. Jedná se o určité nedorozumění.	neukradl.pfv nekradl.ipfv
Bel	Kryscina: Prapala maja vaza. Večeram ja bačyla cjabje, Janka, u sadze. Ty haloŭny padazravany. Janka: Ja ne [1] ..... tvaëj vazy. Heta nejkae neparazumenne.	skraŭ.pfv kraŭ.ipfv

Each context contained a gap, and the participants saw two options for verbs (*pfv* and *ipfv*). The order of options was counterbalanced in that 50% of the contexts contained

pfv-ipfv verbs, and the other 50% of the contexts contained *ipfv-pfv* verbs. Next to each aspectual form, there was a slider, and the participants were instructed to use the slider to rate how acceptable the two forms were in the provided context. The numerical values on the slider ranged from 0 to 100. The participants were instructed that the left side of the slider means unacceptable, and the right side of the slider means acceptable. The survey was administered on the SoScie Survey. The instructions were given in the native language of the participants, as shown in Figure 1.

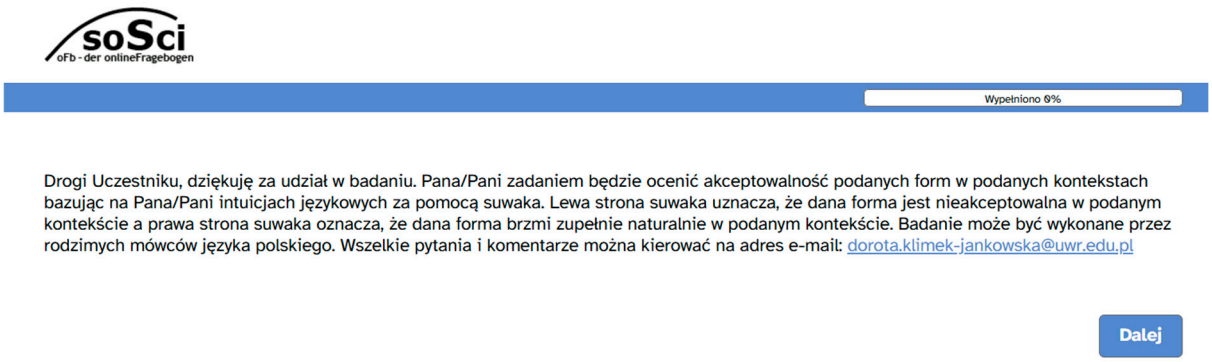


Figure 1. Example instructions in Pol.

The English translation of the instructions is provided in (9).

(9) Dear Participant, thank you for participating in the study. Your task will be to assess the acceptability of the given forms in the given contexts based on your linguistic intuitions using the slider. The left side of the slider means that a given form is unacceptable in the given context, and the right side of the slider means that the given form sounds completely natural in the given context. The test can be performed by native speakers of . . .. only.

An example trial is presented in Figure 2.

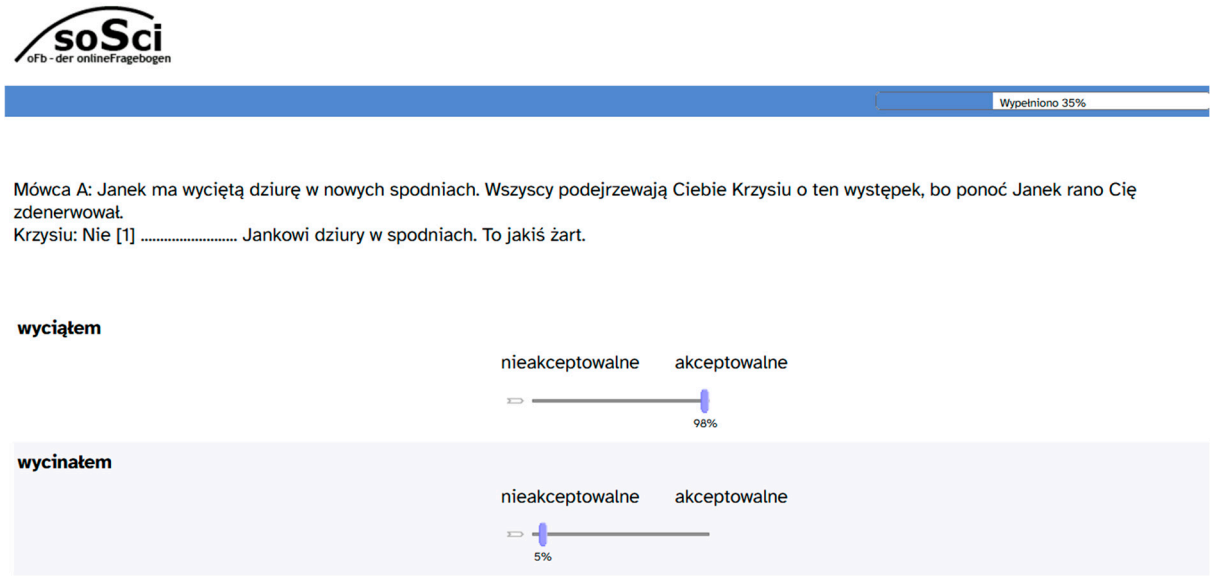


Figure 2. An example trial in Pol.

The English translation of the Polish context is provided in (10).

(10) Speaker A: John has a hole cut out in his new pants. Everyone suspects you, Chris, of this crime, because John apparently upset you in the morning.
Chris: No, I did not [1] ..... holes in John's pants. You must be kidding me.
cut out.pfv
cut out.ipfv

Participants were recruited through social media and Prolific. Responses were collected on SoSci Survey. Only native speakers of the tested language were invited to participate. The tested contexts were mixed with filler contexts containing adverbs of quantification, multiplicatives, and the adverbs *never* and *ever* to distract the participants from the goal of this study and to prevent the participants from developing a strategy in providing judgments. Among the fillers, there were unacceptable fillers, which helped us determine if the participants filled in the test attentively and whether they had native speaker judgments. Deviant responses (the ones in which unacceptable fillers were rated as acceptable) were filtered out. We collected responses from 30 participants for each language. The acceptability ratings for the *pfv* forms are provided in Table 2 and Figure 3, and the acceptability ratings for the imperfective forms are provided in Table 3 and Figure 4 (the full set of collected data, the R script and the full statistics report can be found in the Supplementary Materials).

Table 2. Mean acceptability ratings and the standard deviation values for the *pfv* forms in the tested negative past tense contexts in Bel, Ukr, Rus, Cze, Pol, Slv, Srp. Descriptive Statistics for PFV.

Language	Mean	Std. Deviation	N
Bel	10.81	9.56	30
Cze	96.05	5.70	31
Pol	98.41	4.27	30
rus	15.56	10.08	30
slv	96.10	4.76	30
srp	98.11	3.04	30
ukr	8.66	8.34	30

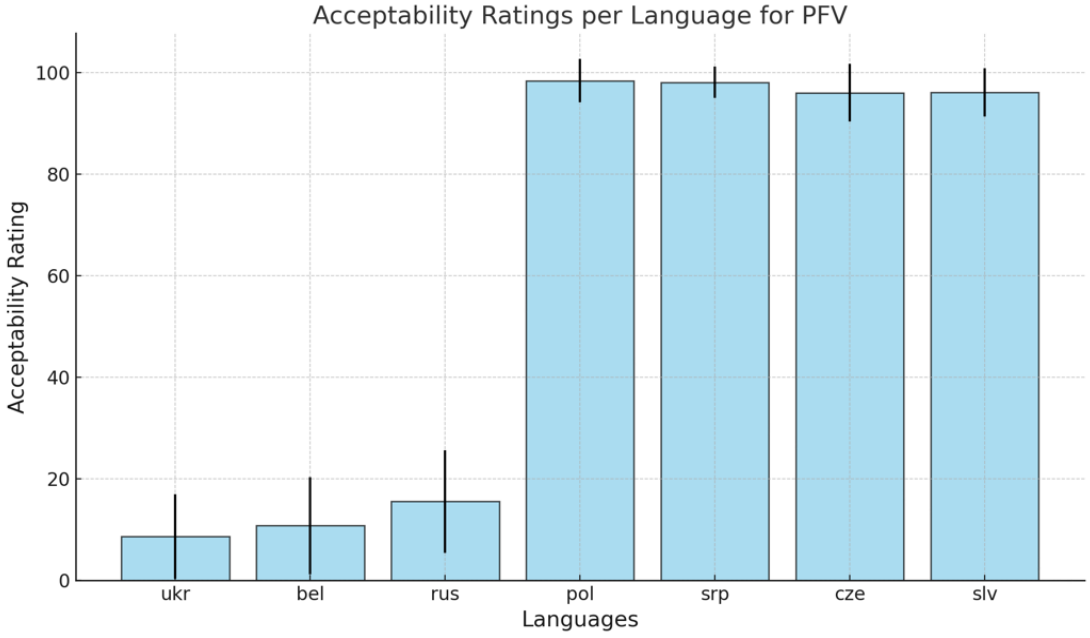


Figure 3. Bar plots showing the mean acceptability ratings and the standard deviation values for the *pfv* forms in the tested negative past tense contexts in Bel, Ukr, Rus, Cze, Pol, Slv, Srp.

Table 3. Bar plots showing the mean acceptability ratings and the standard deviation values for the *ipfv* forms in the tested negative past tense contexts in Bel, Ukr, Rus, Cze, Pol, Slv, Srp. Descriptive Statistics for IPFV.

Language	Mean	Std. Deviation	N
bel	95.51	8.16	30
cze	25.44	11.46	31
pol	52.68	20.43	30
rus	96.79	5.27	30
slv	28.95	15.79	30
srp	26.11	11.82	30
ukr	96.38	6.49	30

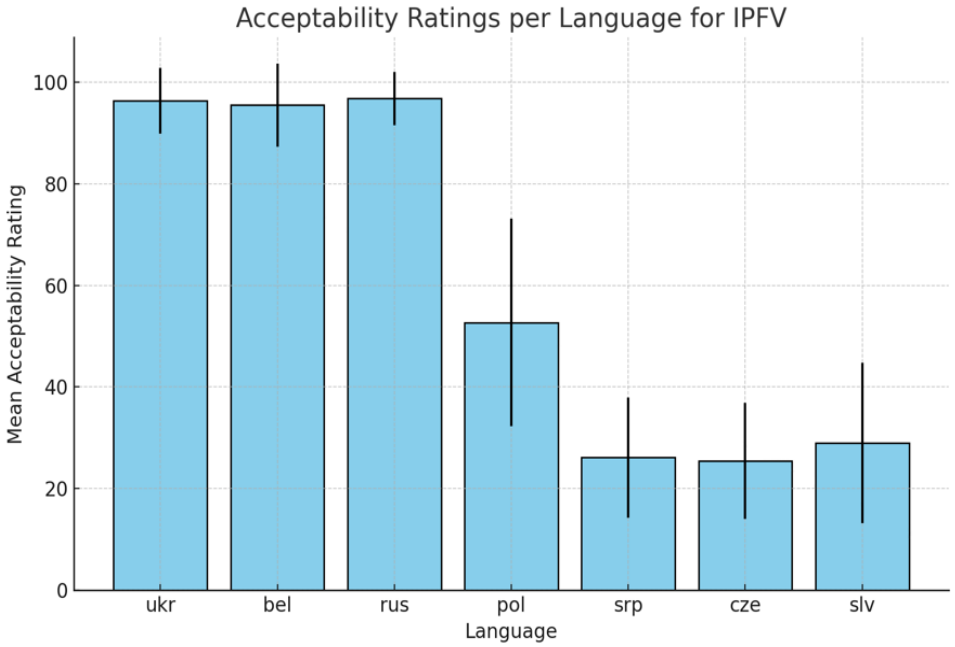


Figure 4. Bar plots showing the mean acceptability ratings and the standard deviation values for the *ipfv* forms in the tested negative past tense contexts in Bel, Ukr, Rus, Cze, Pol, Slv, Srp.

In order to provide a statistical analysis of the survey results, a linear mixed-effects model was fitted with Acceptability Rating as the outcome variable and Aspect, Slavic Group, and their interaction as predictors. The random structure consisted of the random intercept for Participant and Item, as well as the random slope of Slavic Group for Item. This was the maximal structure that allowed for correct model convergence. The predictors were sum-coded to facilitate the interpretability of the main effect and interaction coefficients: Aspect (pfv = 1/ipfv = −1) and Slavic Group (east = 1/west = −1). There was a significant main effect of both Aspect ($\beta = -5.16$, SE = 0.368, $t(4166) = -14.019$, $p < 0.001$) and Slavic Group ($\beta = -5.629$, SE = 1.155, $t(9) = -4.875$, $p = 0.001$). The main effects were qualified by a statistically significant interaction between the two factors ($\beta = -37.117$, SE = 0.368, $t(4166) = -100.848$, $p < 0.001$).

An inspection of the model-predicted marginal means (see Figure 5) revealed that the interaction consisted of the opposite effect of Aspect on the responses in the different levels of Slavic Group.

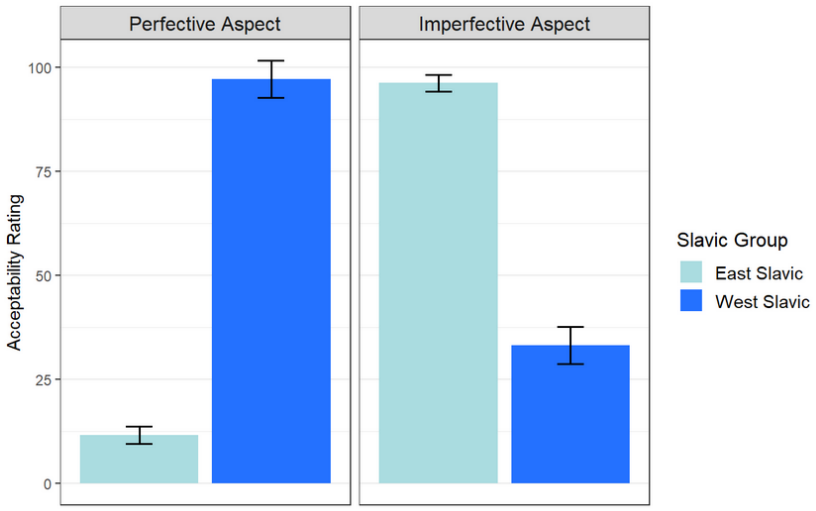


Figure 5. Estimated marginal means predicted by the model for Acceptability (the bars represent 95% confidence intervals).

Whereas the estimated ratings of trials with the perfective aspect were close to full acceptability for speakers of West Slavic languages (est. mean = 97.14), speakers of East Slavic languages rated them as mostly unacceptable (est. mean = 11.65). The opposite pattern was observed for trials with the imperfective aspect: West Slavic respondents rated them as somewhat unacceptable (est. mean = 33.23), while East Slavic speakers rated them as largely fully acceptable (est. mean = 96.20)[1].

The results show a dichotomy between the East Slavic languages (Bel, Ukr, and Rus), which strongly prefer the imperfective aspect in the tested accusation–denial negative past tense contexts, and West (Pol, Cze) and Southwest Slavic (Srp and Slv) on the other hand, which strongly prefer the perfective aspect in these contexts. The preference for the imperfective aspect in East Slavic in contexts that talk about telic past events is surprising. The question is what blocks the *pfv* aspect in East Slavic (but not in West and Southwest Slavic) in the tested contexts.

In order to account for the results, we need to broaden our understanding of the semantics of the perfective aspect and its interaction with negation in East and West Slavic. We will first briefly discuss the relevant literature on the variation in the semantics of aspect in Slavic languages. Then, we will introduce relevant cross-linguistic facts on two types of negation and their semantic differences. With this background in mind, we will present our formal analysis of the investigated problem.

4. Towards a Formal Account

4.1. Variation in the Semantics of Aspect Across Slavic

In the earlier literature, most scholars tend to advocate different meaning components of the *pfv* and *ipfv* aspects to account for the variation in its use across Slavic (see Dickey, 2000, 2015; Mueller-Reichau, 2018; Klimek-Jankowska, 2020, 2022; Gehrke, 2022, in press)). Dickey (2000, 2015) accounts for the differences in the Slavic aspectual system by postulating that in the western aspectual group, the *pfv* aspect conveys totality, while the *ipfv* aspect expresses quantitative temporal indefiniteness. Conversely, in the eastern aspectual group, the *pfv* aspect is associated with temporal definiteness, and the *ipfv* with qualitative temporal indefiniteness, where temporal definiteness refers to a situation that is "uniquely locatable in a context" and temporal indefiniteness relates to the absence of an assignment of an event to a single, unique point in time. Croatian and Serbian as well as Polish, occupy transitional zones, leaning toward the western and eastern types, respectively.

Mueller-Reichau (2018) attributes the difference in the distribution of grammatical aspects in Czech, Polish, and Russian to the different semantics of the *pfv* aspect. More precisely, in all three languages, perfective verbs involve event uniqueness, but in Russian, there is an additional requirement of target state validity. The difference is captured in the formulas presented in (11).

(11) a. $[[\text{PFV POL/CZ}]] = \lambda P \lambda t \exists e[P(e) \wedge e \subseteq t \wedge \neg \exists e'[P(e') \wedge e' \neq e]]$
b. $[[\text{PFV RU}]] = \lambda P \lambda t \exists e[P(e) \wedge e \subseteq t \wedge \neg \exists e'[P(e') \wedge e' \neq e] \wedge f\ \text{end}(t) \subseteq f\ \text{target}(e)]$

In PL, CZ, and RUS, the perfective requires that the event time is included in the reference time ($e \subseteq t$). For the event to be unique, it is required that no event e' exists for which the property holds as well and which is not identical to e. In Russian, there is an additional requirement specified in (f end(t) $\subseteq f$ target(e)), i.e., the reference time is required to end when the target state is in force. This requirement prevents the perfective aspect in Russian from being used in any existential context, which is not the case in Czech and Polish. This is because to meet the condition of target state validity, the event has to have a specific reference time. Both Dickey (2000, 2015) and Mueller-Reichau (2018) mention temporal definiteness or specific reference time in the context of the Russian *pfv* aspect. Klimek-Jankowska (2022) argues that the variation in the distribution of the *pfv* and *ipfv* aspects in general-factual contexts in East and West Slavic arises from the interaction between tense and aspect, with the *pfv* being associated with temporal specificity in East Slavic. Similarly, Gehrke (in press)) explores the idea that the Russian aspect has more tense properties than other Slavic aspects, investigates the role of finiteness in the context of the Russian aspect, and outlines a general research program that has the goal of drawing parallels between individuals, events, and times regarding definiteness in the discussion of the variation in the distribution and meaning of the Slavic aspect. Along these lines, we postulate that in order to account for the observed variation in the distribution of aspects in negative contexts across Slavic we should shift our attention to how the *pfv* and *ipfv* aspects interact with past tense in East, West, and Southwest Slavic.

4.2. Cross-Linguistic Facts on Two Types of Negation

In our account, we rely on Fábregas and González (2020), who discuss Lithuanian contexts (based on Arkadiev, 2021) in which a neg operator can be used either before an *aux* or between an *aux* and a participle (see 12), which is related to two different readings.

(12) a. Ne-s-u miegoj-us-i.
neg-be-1sg sleep-ptcp-nom.sg.f
'I have not slept.'
b. Es-u ne-miegoj-us-i.
be-1sg neg-sleep-ptcp-nom.sg.f
'I have not slept.'

In (12a), the speaker denies that they have the experience of having slept, as in, *It is not the case that I have slept*, while (12b) asserts that the speaker now suffers the consequences of an event that was expected to happen but did not, as in, *It is the case that I have not slept*. The high negation is the standard sentential negation, where the NegP is generated to the left of the TP (see Zanuttini, 1997). The low negation has properties that are familiar to the type of interpretations known in the literature as "negative event readings" (see Stockwell et al., 1973; Horn, 1989; Asher, 1993; de Swart & Molendijk, 1999; Przepiórkowski, 1999; Arkadiev, 2015, 2016; a.o.). Fábregas and González (2020) argue that the 'low negation' gives rise to an inhibited event reading where the subject refrains from realizing the event,

as in, *I saw María not kiss the bride*, where in fact the speaker saw that María failed to kiss the bride, which was expected in this particular social context. They argue that the low negation is placed below the AspP and above the verbal (event) domain. This is compatible with Ramchand (2004), who shows that Bengali possesses two distinct sentential negation markers, *na* and *ni*, which occur in different morphosyntactic contexts and with different interpretations. According to Ramchand (2004), *na* is a negative quantifier over events, and when it is used, the time variable is linked via context to some particular time in the past, and the negation merely says that no event of the specified type occurred at that moment. This corresponds to the formula in (13) for the sentence: *John did not eat the mango*.

(13) ∃t: [t < t*] No e: [tf ∈ τ(e) = t] [eating(e) ∧ Θ1 (e, "Ram") ∧ Θ2 (e,"the mango")]
Ramchand (2004, p. 10; ex. 23)

On the other hand, *ni* is a negative quantifier that binds the time variable. A sentence with this sort of negation states that for no time at all (in the discourse context) did an event of the specified type occur, corresponding to the formula in (14).

(14) No t: [t < t*] ∃e: [tf ∈ τ(e) = t] [eating(e) ∧ Θ1 (e, "Ram") ∧ Θ2 (e,"the mango")]
Ramchand (2004, p. 10; ex. 24)

Importantly, only the *na* marker, which is a negative quantifier over events, gives rise to an inhibited event reading in Bengali. Along similar lines, we add new data from Venetan (Italo-Romance) varieties, which use the two distinct neg markers *no,* appearing before the aux (15a), and *mia,* appearing between an *aux* and a participle (15b) (cf. Magistro, 2023), and these positions are related to two different readings.

(15)	a.	La	Maria	no	la = ga	basà	el	sposo.
		def	Mary	neg	3sg = have	kissed	def	groom
		'Mary did not kiss the groom.'						
	b.	La	Maria	la = ga	mia	basà	el	sposo.
		def	Mary	3sg = have	neg	kissed	def	groom
		'Mary did not kiss the groom.'						

By contrast, low negation is naturally used in contexts in which the event was expected but failed to be realized. In (15b), Mary did not kiss the groom at the wedding ceremony at the time when it was expected. Low negation in Venetan clearly triggers an inhibited event reading. Only the higher negation *no* (but not the low negation *mia*) asserts that an event did not happen at any time. High negation in Venetan is natural in contexts with negative polarity items like *ever/never,* as in (16).

(16)	a.	No	go	mai	magnà	el	mango.
		Neg	have.1sg	never	eaten	the	mango
		'I have never eaten mango.'					
	b.	*Go	mia	mai	magnà	el	mango.
		have.1sg	neg	never	eaten	the	mango
		'I have never eaten mango.'					

All these facts allow us to assume, following Fábregas and González (2020), that the inhibited event reading in negative contexts arises when the negation acts low over the vP (event domain).

4.3. On Different Merge Sites of Negation and Their Semantics in Slavic

The two negations in Venetan overtly instantiate different NegPs within a single clause. The pre-aux *no* occupies a high NegP1, merged over the TP. The post-aux *mia* occupies a lower NegP2, merged over the vP (cf. Zanuttini, 1997; Zeijlstra, 2004); see (17).

(17) [CP [NegP1 [Neg *no*] [TP [AspP [NegP2 [Neg *mia*] [vP/VP . . .]]]]]]

We propose that the different NegPs are universally available cross-linguistically and languages differ in their PF and LF realization; languages like Venetan use separate items. Slavic languages allow the same negation item to be realized in different NegPs (see Borsley & Rivero, 1994). Zeijlstra (2004) proposes that in Slavic languages that feature the negative concord, the negation operator Op¬ is covertly realized above the TP at LF and takes scope over the entire proposition. We diverge from this standard view and provide evidence that the same negation item can be realized in different NegPs and scope over either the TP or vP/VP in Slavic. Our first argument is based on the interaction of negation with restructuring verbs, such as, for example, *stop, continue, finish,* and *try* in Slavic languages. We adopt Cinque's (2001) proposal that restructuring verbs are not full lexical verbs but functional heads that directly integrate into a rigidly ordered hierarchy of projections. This means that restructuring always takes place within a single clause. Cinque supports this monoclausal analysis with the strict ordering of multiple restructuring verbs. In Cinque's hierarchy, conative *try* aligns with the predispositional aspect, positioned below the habitual aspect *be used to* but above the attempted event predicate.

(18) [TP [Asp-HabP be used to [Asp-PredP try [Asp-TermP stop [Asp-ContP continue]]]]]

This ordering is evident in word order constraints, where habitual *be used to* must precede *try*, while *try* precedes an infinitival verb.

(19)	On	byl	privyk	pytat'sja	delat'	eto	samostojatel'no	RUS
	he	was	used	try	do	this	himself	
	'He used to try to do things by himself.'							
(20)	*On	pytalsja	byt'	privyk	delat'	eto	samostojatel'no	
	he	tried	be	used	do	this	himself	
	'He tried to be used to do it by himself.'							

Example (19) is grammatical, whereas (20) is not, confirming that *try* is structurally lower than *be used to*. This rigid sequencing supports Cinque's claim that restructuring verbs are functional heads, integrated into a fixed syntactic structure rather than behaving as full lexical verbs. *Try* is best understood as a predispositional aspect verb that sits below habitual and expresses an attempted event. Going back to negation, this evidence is crucial to support the necessity of assuming two syntactic positions for negation in Slavic (we use Russian and Polish for illustration), considering the following examples:

(21)	a.	On	ne	byl	privyk	pytat'sja	delat'	eto	samostojatel'no.	RUS
		he	not	was	used	try	do	this	himself	
		'He used to try to do this by himself.'								
	b.	On	nie	zwykł	próbować	robić	rzeczy	samodzielnie.		POL
		he	not	used	try	do	things	himself		
		'He did not try to do this by himself.'								

(22) a. On byl privyk ne pytat'sja delat' eto samostojatel'no. RUS.
he was used not try do this himself
'He used not to try to do this by himself.'
b. On zwykł nie próbować robić rzeczy samodzielnie. POL
he used not try do things himself
'He used not to try to do this by himself.'

(23) a. On byl privyk pytat'sja ne delat' eto samostojatel'no. RUS
he was used try ne do this himself
'He used to try not to do this by himself.'
b. On zwykł próbować nie robić rzeczy samodzielnie. POL
he used try not do things himself
'He used to try not to do this by himself.'

The structure in (24) corresponds to the situation in which the speaker negates the fact that someone used to try to do something by himself, meaning "It was not the case that he used to try to do it by himself". Conversely, (25) corresponds to the situation in which the speaker negates only the act of trying, implying that he had a habit of not trying to do things by himself. Example (26) corresponds to the situation in which he used to try not to do something by himself. These facts suggest that negation can scope over lower portions of the clause and not necessarily over the TP solely.

We propose that, in a monoclausal configuration where *try* behaves as a restructuring verb, the three sentences have the following structures:

(24) [NegP ne [TP byl [Asp-HabP privyk [Asp-PredP pytat'sja [vP/VP delat' eto samostojatel'no]]]]]
(25) [TP byl [Asp-HabP privyk [NegP ne [Asp-PredP pytat'sja [vP/VP delat' eto samostojatel'no]]]]]
(26) [TP byl [Asp-HabP privyk [Asp-PredP pytat'sja [NegP ne [vP/VP delat' eto samostojatel'no]]]]

Another argument for the potential low position of negation comes from its interaction with durative adverbs like *for x time* (e.g., *for three hours*, *for a long time*), which typically attach to the AspP in the syntactic structure (see Travis, 1988, 1994). Alexiadou (1994) acknowledges that while durative adverbs are generally considered AspP-adjoined, there are cases where they might attach higher, potentially at the TP. This happens when durative adverbs are used sentence-initially, and they set the scene, as in: *For three hours, John read the book.* In this case, *for three hours* could be left-adjoined to the TP. It turns out that durative adverbs may modify negative events. Consider (27) in Russian and Polish:

(27) a. On ne skazal ni slova v tečenie časa. RUS
he not say.pfv.pst no word for duration Hour
'He did not say a word for an hour.'
b. Nie odezwał się słowem przez godzinę. POL
not say.pfv.pst refl word.inst for hour
'He did not say a word for an hour.'

In (27), the durative adverb scopes above negation, and it describes the duration of a negative event. It is used sentence-finally, which allows us to assume it attaches to the AspP, implying that the negation in its scope is below the AspP. These facts allow us to argue that even though one negation marker, *ne*, in Slavic languages, it can be realized in high and low NegP, scoping over the TP and vP/VP, respectively. Importantly, both in the contexts with the verb *try not to do something* and *not to do something for an hour,* the negated

component expresses an inhibited event. In the context with *try*, the embedded event was attempted but failed to be realized, while in the context with the durative adverbial, the negated event was expected but the subject managed not to do something for an hour.

4.4. Variation in the Composition of the Perfective Aspect and Negation in East and West Slavic

In what follows, we propose a formal account of the obligatory inhibited event reading in East Slavic and not in West and Southwest Slavic.

We assume, following Ramchand (2008a, 2008b), that the aspectual head of the AspP combines with the predicate of events in the vP, and it binds the event variable *e* introduced by the verbal predicate (in this case, the *l*-participle). The aspectual head also introduces a time variable, *t*, and establishes the following two types of relations:

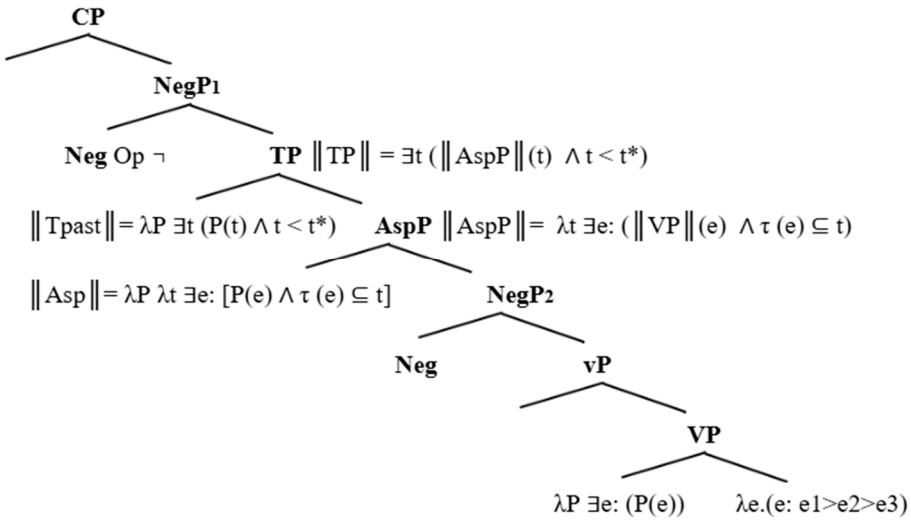
Relation 1: *t* is temporally related to the run time of the event with the perfective situating the run time of the event inside t (τ (*e*) $\subseteq$ *t*) and the imperfective situating t inside the run time of the event *t* $\subseteq$ τ (*e*).
Relation 2: t is introduced by the AspP and is related to the TP level where *t* is located before, at, or after the evaluation time t* (by default, it is the speech time).

We claim that it is this second relation that distinguishes between East and West Slavic. It is constituted as an outcome of the interaction between the AspP and TP, in that the anchoring of *t* to the time axis with respect to t* is taking place at the level of the TP, but the perfective aspect in East Slavic imposes a constraint, and it requires that the *t* variable it introduces be anchored at a specific point in time (an analogy to specific indefinites in the nominal domain). The difference between East and West Slavic resides in the way the *pfv* aspect interacts with the past tense.

4.4.1. Negated Past Tense in West and Southwest Slavic

In West and Southwest Slavic, high negation takes scope over the existential quantifier over *t*. In such cases, the existence of a time interval instantiating the event in the actual world is denied (¬∃t). In other words, we receive the interpretation that the event under consideration did not happen at any time before the speech time, as shown in (28).

(28)



The notation e: e1 > e2 > e3 corresponds to Ramchand's (2008a, 2008b) event decomposition in the first phase of the derivation (the so-called first-phase syntax), with e1 standing

for an initiation subevent, e2 a process subevent, and e3 the result subevent. E1 causes e2, and e2 causes e3. See Section 5 for more details.

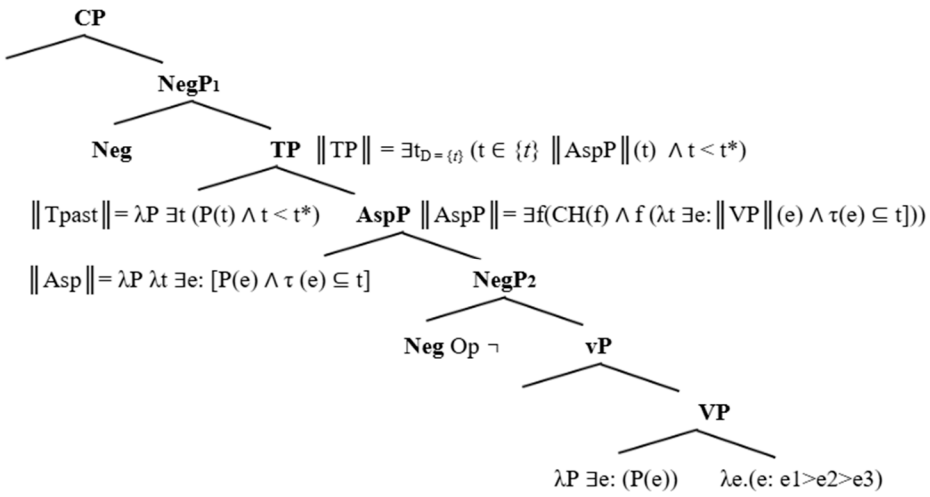
Importantly, Op¬ in the *pfv* simple past contexts in West and Southwest Slavic is realized as high negation (¬TP), represented in (17), repeated here as (29).

(29) [CP [NegP1 [Neg Op¬] [TP [AspP [NegP2 [Neg **ø**] [vP/VP . . .]]]]]]

4.4.2. Negated Past Tense in East Slavic

In East Slavic, we propose that the *pfv* aspect affects the anchoring of *t* to the time axis in ways analogous to specific indefinites in the nominal domain (cf. Fodor & Sag, 1982; Diesing, 1992; Reinhart, 1997; Winter, 1997; Schwarzschild, 2002; Geist, 2019; Heim, 2011; a.o.). More precisely, a *t* variable introduced at the AspP is bound in an operation of existential closure over a variable *t* selected by a choice function. A choice function CH(f) applies to a non-empty set of values and yields a specific member of that set. This is compatible with the formal treatment of specific indefinites proposed by Schwarzschild (2002), according to whom specific indefinites involve a pragmatic mechanism reducing the domain of an existential quantifier to a singleton set. We propose that *pfv* past tense verbs in East Slavic are interpreted vie existential quantification over *t*, with the domain of quantification restricted to a singleton set $\exists t_{D = \{t\}}$ (t ∈ {t} ‖AspP‖(t) ∧ t < t*) at the TP. The singleton set {t} is the outcome of the choice function CH(f), which is part of the semantics of the perfective aspect, and it applies to a non-empty set of values of t introduced at the level of the AspP and yields a specific member of that set. This means that *pfv* verbs in East Slavic are pretty close to being referential in that the event is anchored to a specific single temporal interval; see (30).

(30)



We claim that the operation of the existential closure of the *t* variable selected via a choice function gives rise to the presupposition of the existence of *t* (cf. Diesing, 1992; Kratzer, 1995).

Following Stalnaker (1973), we assume that presupposition is a proposition that both speakers assume to be part of the common ground in a conversation. The common ground consists of shared beliefs or assumptions between participants. According to Stalnaker, when a speaker makes an assertion, they act as if the presuppositions of that assertion are already accepted by all parties. What is presupposed in East Slavic in contexts with perfective past tense verbs is the time/world instantiation of the event. Hence, the event under consideration is, by presupposition, anchored to a specific temporal interval.[2] The

presupposition of the existence of *t* cannot be canceled by negation (typically, presupposed content cannot be canceled by negation; cf. Abrusán, 2016). This explains why negated *pfv* past tense contexts in East Slavic block high negation and force low negation (¬vP) at LF; see (31).

(31) [CP [NegP1 [Neg ø] [TP [AspP [NegP2 [Neg Op¬] [vP/VP . . .]]]]]]

One argument for this view comes from the observation that the perfective predicates in East Slavic in past tense contexts are incompatible with the negative polarity adverbs *ever* and *never*, which are also called non-specific occurrence adverbs. *Ever* is used in questions in which the speaker asks if the event happened at least once at any time in the past. *Never* states that there has been no time at which the event under discussion happened in the past. Example (32) shows that East Slavic languages obligatorily use the imperfective in contexts with *ever* and *never,* suggesting that the perfective is blocked in temporally nonspecific contexts (cf. Kagan, 2010). By contrast, (33) shows that West and Southwest languages use the perfective aspect in contexts with *never* and *ever.*

(32) a. A: Ty kali-nebudz' lamaŭ /*zlamaŭ drevy? BEL
you ever break.ipfv.pst break.pfv.pst leg
'Have you ever broken a leg?'

b. B: Ne, ja za svaë žyccë ne lamaŭ /*zlamaŭ dreva.
no I in my life not break.ipfv.pst break.pfv.pst leg
'No, I have never broken a leg.'

b. A: Ty kogda-nibud' lomal /*slomal nogu? RUS
you ever break.ipfv.pst break.pfv.pst leg
'Have you ever broken a leg?

B. Ja nikogda v žizni ne lomal /*slomal nogi.
I never In life not break.ipfv.pst break.pfv.pst leg
'No, I have never broken a leg in my life.'

c. A: Ty koly-nebud' lamav /*zlamav nohu? UKR
you ever break.ipfv.pst break.pfv.pst leg
'Have you ever broken a leg?'

B. Ni, naspravdi v žytti ne lamav /*zlamav nohy.
No In life not break.ipfv.pst break.pfv.pst
'No, I have never broken a leg in my life.'

(33) a. A: Už jsi někdy zlomil /*lomil nohu? CZ
already be.aux ever break.pfv.pst break.ipfv.pst leg
'Have you ever broken a leg?'

B: Ne, vlastně jsem si nikdy v životě zlomil *lomil nohu
no actually be.aux never in life break.pfv.pst break.ipfv.pst leg
'No, I have never broken a leg.'

b. A: Czy kiedykolwiek złamałeś /*łamałeś nogę? POL
Q ever break.pfv.pst break.ipfv.pst leg
'Have you ever broken a leg?

B. Nie, nigdy nie złamałem *łamałem nogi.
no never not break.pfv.pst break.ipfv.pst leg
'No, I have never broken a leg in my life.'

c.	A:	Ali	si si	že kdaj	zlomil	/*lomil	nogo?		SLV
		Q	aux refl	ever	break.pfv.pst		leg		
	'Have you ever broken a leg?'								
	B.	Ne,	nikoli v življenju	si še	nisem	zlomil	/*lomil	nogu.	
			never in life	aux yet	neg-aux	break.pfv.pst	break.ipfv.pst	leg	
	'No, I have never broken a leg in my life.'								
d.	A.	Da	li	si	ikada	slomio	/*lomio	nogu?	SRP
		Q	Q	aux	ever	break.pfv.pst	break.ipfv.pst	leg	
	'Have you ever broken a leg?'								
	B.	nikada u životu		nisam	slomio	/*lomio	nogu.		
		never in life		neg-aux	break.pfv.pst	break.ipfv.pst	leg		
	'No, I have never broken a leg.'								

Similarly, in East Slavic languages, the perfective aspect is highly constrained in contexts with iterativity, inducing adverbials of definite cardinality, as shown in (34).

(34)	a.	Marysja	ela	/*z'ela	cukerki	nekal'ki razoŭ	na minulym tydni	BEL
		Mary	eat.ipfv.pst	eat.pfv.pst	candy	several times	last week	
	'Mary ate a candy several times last week.'							
	b.	Na prošloj nedele	Nataša	neskol'ko raz	ela	/*s'ela	konfety.	RUS
		last week	Nataly	many times	eat.ipfv.pst	eat.pfv.pst	candy	
	'Mary ate a candy several times last week.'							
	c.	Mynuloho tyžnja	Marija	kil'ka raziv	jila	/*z'jila	cukerky.	UKR
		Many times	Mary	several times	eat.ipfv.pst	eat.pfv.pst	candy	
	'Mary ate a candy several times last week.'							

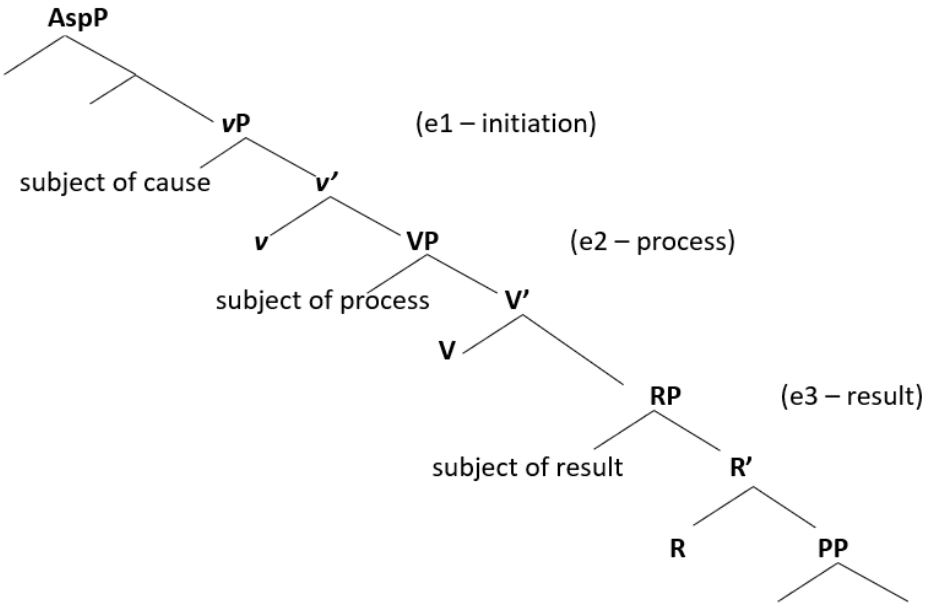
By contrast, West Slavic and Southwest Slavic languages use the perfective aspect in multiplicative contexts, as shown in (35).

(35)	a.	Maria	snědla	/*jídla	minulý týden	několikrát	bonbón.	CZ
		Maria	eat.pfv.pst	eat.ipfv.pst	last week	several times	candy	
	'Mary ate a candy several times last week.'							
	b.	Marysia	zjadła	/?jadła	cukierka	kilka razy	w zeszłym tygodniu.	POL
		Mary	eat.pfv.pst	eat.ipfv.pst	candy	several times	last week	
	'Mary ate a candy several times last week.'							
	c.	Marija je	prošle nedelje	nekoliko puta	pojela	/?jela	bombonu.	SRP
		Mary aux	last week	several times	eat.pfv.pst	eat.ipfv.pst	candy	
	'Mary ate a candy several times last week.'							
	d.	Marija je	prejšnji teden	nekajkrat	pojela	/?jela	bonbon.	SLV
		Mary aux	last week	many times	eat.pfv.pst	eat.ipfv.pst	candy	
	'Mary ate a candy several times last week.'							

4.5. On the Inhibited Event Reading of Negated Perfective in East Slavic

When the neg operator acts over the event domain (¬vP), the only reading possible is the inhibited event reading, implying that there was a situation at a particular past interval in the actual world at which the event under consideration was expected to happen but failed to be realized or it was initiated but failed to be completed, which explains the confession effect in the court scenario arising in *neg* + *pfv* past tense contexts in East Slavic. In order to account for the inhibited event reading, we resort to Fábregas and González (2020), who assume, following Ramchand (2004, 2008a, 2008b), that the event domain corresponds to the first phase of the derivation (the so-called first-phase syntax), which consists of three sub-events: an initiation sub-event (e1), a process sub-event (e2), and a sub-event corresponding to the resulting state (e3). Each of these sub-events is represented as its own projection, ordered hierarchically, and each of them has an event participant projected in the specifier position, as demonstrated in (36).

(36)



The initiation sub-event (*e*1) has the INITIATOR in the specifier position. The initiation sub-event e1 leads to the process sub-event e2 that is present in every dynamic verb. The process sub-event e2 corresponds to the VP projection, with the UNDERGOER in the specifier position. The process sub-event may optionally lead to the result phrase, corresponding to the result state of the event, with the RESULTEE (the holder of a 'result state') in the specifier position. In this chain of events, e1 causally implicates e2, and e2 causally implicates *e*3. Now, let us consider how the inhibited eventuality reading arises under low negation scoping over the event domain (vP). Negation either scopes over the initiation subevent. In this case, negation reverses the cause relation to an inhibition relation, producing the entailment that the agent planned the event but inhibited its realization. Alternatively, negation scopes over the process subevent. In this case, negation reverses the cause relation between the process subevent *e*2 and the result subevent *e*3 to an inhibition relation, producing the entailment that the agent initiated the event but inhibited the result subevent.

5. Conclusions

This study highlights the intricate variation in the interaction of aspect and negation in past tense contexts across East and selected West and Southwest Slavic. We propose that negation in Slavic can merge at two different positions within the clause structure and at the Logical Form, with each position determining its scope over specific elements. The negated event reading arises when negation scopes above the TP, whereas the inhibited eventuality reading emerges when negation scopes over the vP (event domain). Our analysis demonstrates that East Slavic languages, unlike their West and Southwest counterparts, exhibit an inhibited event reading in negated perfective past tense contexts. This reading implies that the event was planned or initiated but ultimately unrealized, a pattern rooted in the interaction of the *pfv* aspect with negation and past tense. We propose that this phenomenon arises from the semantics of the *pfv* aspect in East Slavic, which parallels the interpretation of specific indefinites in the nominal domain. The aspectual head introduces a temporal variable t, restricted by a choice function to a singleton set, resulting in a presupposition of the existence of a specific temporal interval to which the event under consideration is anchored at the TP. This presupposition cannot be overridden by negation. Consequently, East Slavic blocks high negation, enforcing low negation over the event domain and giving rise to the inhibited event reading. By adopting a formal framework that distinguishes between high and low negation in Slavic, this study provides a unified account of the observed variation and sheds light on broader cross-linguistic patterns in the interaction of aspect, negation, and tense. These findings open new avenues for exploring the role of aspectual semantics in shaping syntactic and interpretative constraints in negative contexts across languages.

Supplementary Materials: Tested contexts are available here: https://osf.io/xnm3d/?view_only=28c23f4887f344b5b58dd2d05dfa6276 (accessed on 22 March 2025).

Author Contributions: Conceptualization, D.K.-J.; methodology, D.K.-J.; formal analysis, D.K.-J. and A.F.; investigation, D.K.-J.; writing of the original draft; D.K.-J., writing—review and editing; D.K.-J., A.F. and P.G., visualization; D.K.-J. and P.G., statistics; P.G., funding acquisition; D.K.-J. All authors have read and agreed to the published version of the manuscript.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Collected data and the report of the statistical analysis are available here: https://osf.io/xnm3d/?view_only=28c23f4887f344b5b58dd2d05dfa6276 (accessed on 22 March 2025).

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Conflicts of Interest: The authors declare no conflict of interest.

Notes

[1] Interestingly, imperfective sentences, although degraded in acceptability, were not completely rejected by West Slavic speakers, in contrast with the degree of rejection of perfective sentences by East Slavic speakers.

[2] Our account is restricted to *pfv* past tense contexts and does not extend to future tense or imperative contexts, which are subject to a different set of temporal and modal constraints. The distribution of aspect in future tense and imperative contexts is beyond

the scope of this study. What our analysis predicts is that the perfective has temporally specific semantics, but in future-oriented contexts, the temporal anchoring is interpreted relative to many possible worlds and the modal semantics comes into play, making future-oriented contexts less specific in that *t* is not anchorable to a specific possible world. What is past is fixed, so the temporally specific perfective aspect in past tense contexts is by default interpreted relative to the actual world.

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