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## Negative concord: from Old Church Slavonic to Contemporary Czech\*

### Summary

The article examines negative concord phenomena in a diachronic perspective. It compares Old Church Slavonic and Contemporary Czech and discusses how these two languages fit into the generally accepted typology of negative concord languages. Another point of interest is the fact that negative concord presents a compositional problem for the semantics of natural language. This problem is solved by a syntactic theory of negative concord (Penka 2007, Zeijlstra 2004) which can get to grips with typological and even semantic facts. The article shows how this theory can be applied to the two diachronic stages of Czech and discusses a number of issues raised by Czech data.

### 1. Goal

The goal of this article is as follows: (i) to identify semantic properties of the preverbal negative marker and negative indefinite pronouns; (ii) to look at the development of negation from Old Church Slavonic to Contemporary Czech; (iii) to investigate Negative Concord from a diachronic perspective. Negative concord is a term (see Penka 2007, Zeijlstra 2008 and many others) that is used for describing a well known fact about negation: in some languages multiple occurrences of negation are interpreted as one semantic negation and this is termed Negative Concord. Examples of Negative Concord from contemporary Czech appear under (1).

- (1) Nikdo neviděl nikoho.  
Nobody NEG-saw nobody  
'Nobody saw anybody.' =  $\neg\exists xy[Person(x) \ \& \ Person(y) \ \& \ Saw(x,y)]$

### 2. Preliminaries

I assume a classical logical definition of negation. Negation has the logical type  $\langle t,t \rangle$  (i.e. it is a function from truth values to truth values), and it is a truth function which reverses truth values, as can be seen under (2). In syntax let us assume that negation is located somewhere above the Asp and below the TP projection – see Kosta (2001) for syntactic details of negation in contemporary Czech (CC). But because I will discuss mainly semantic properties of negation, nothing hinges on the syntactic details.

- (2)  $[[\neg]] =$
- |   |    |   |
|---|----|---|
| 1 | -> | 0 |
| 0 | -> | 1 |

(2) of course cannot characterize all occurrences of negation in natural language: metalinguistic negation or constituent negation for example are not covered. But in this article I focus mostly on sentential negation, which is a fairly good match for the truth function under (2). I consistently distinguish between sentential negation as a syntactic preverbal marker in natural language and propositional negation as a semantic operator which can be found in the logical form of sentences. Crucial for the distinction between

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sentential and constituent negation is that the former has scope over an event variable, as is shown by Acquaviva (1997): examples appear under (3). While (3-a) represents sentential negation because the sentence claims nonexistence of the event, (3-b) is a constituent negation because its truth conditions locate the scope of negation below the event variable. Although it is true in most cases that sentential negation corresponds to high scope of negation above the event variable, this is not always the case. At least since Russell, we know that there are two readings for sentences like (4): *de re* and *de dicto*, respectively. Their truth conditions are rendered as (4-a) and (4-b), and ambiguity depends on the scoping of negation and the generic operator; see Neale (1990), Chierchia (1995) for details.

- (3) a. John didn't meet Mary. =  $\neg\exists e[\text{Agent}(\text{John},e) \ \& \ \text{Theme}(\text{Mary},e) \ \& \ \text{Meet}(e)]$   
 b. John met not Mary. =  $\exists e[\text{AGENT}(\text{John},e) \ \& \ \neg\text{Theme}(\text{Mary},e) \ \& \ \text{meet}(e)]$
- (4) The French king isn't bald.  
 a.  $\text{Gen } s [\text{the } x: \text{FrenchKing}(x) \ \& \ C(j,s)](\neg\text{bald}(x,s))$   
 b.  $\neg\text{Gen } s [\text{the } x: \text{FrenchKing}(x) \ \& \ C(j,s)](\text{bald}(x,s))$

In Slavonic languages there is a well-known syntactic test for distinguishing sentential (SN) from constituent negation (CN): SN can license negative pronouns in negative concord (NC) languages like Czech, while constituent negation cannot:

- (5) a. Nikdo nepotkal Marii.  
 Nobody NEG-met Mary  
 'Nobody met Mary.'
- b. \*Nikdo potkal ne Marii.  
 Nobody met NEG Mary  
 'Everybody met not Mary.'

With respect to the relationship between negation and pronouns we can distinguish two important types of indefinites: negative words (n-words, in CC: *nikdo, nic, nikde, ...*) and Negative Polarity Items (NPIs)/Free Choice Items (FCIs – in CC *kdokoliv, kdekoliv, jakkoliv, ...*). Błaszczak (2001) discusses the distribution and semantics of NPIs/FCIs in Polish (similar to CC in many respects) at greater length. Let us assume that NPIs/FCIs are licensed semantically/pragmatically by a broad class of items which can be united under the semantic notion of nonveridicality, and also that the licensing of n-words is a syntactic phenomenon. N-words in CC are simply licensed by a clause mate sentential negation as under (6-a) to (6-c), but NPIs/FCIs can be licensed by the syntactically diverse but semantically unified class of items that is shown under (7-b) and (7-c). They are, however, ungrammatical without licenser – see (7-a).

- (6) a. Nikdo nevolal nikomu.  
 'Nobody called anybody.'  
 b. \*Málo lidí volalo nikomu.  
 'Few people called nobody.'  
 c. \*Volal nikdo?  
 'Did nobody call?'
- (7) a. \*Petr volal komukoliv  
 'Petr called anybody'  
 b. Málo lidí volalo komukoliv  
 'Few people called anybody'  
 c. Volal kdokoliv?  
 'Did anybody call?'

### 3. Strict NC and non strict NC languages

Giannakidou (2002) distinguishes between strict NC languages (Greek, Serbian / Croatian, all other Slavic languages, as well as Hungarian, Romanian and Japanese) and non strict NC languages (Romance languages): in both types of languages, if an n-word is in postverbal position, the verb has to be accompanied by the preverbal negative marker. By contrast, if an n-word is in pre-verbal position, the requirement is exactly the opposite in non strict NC languages (examples from Giannakidou 2002):

- (8) a. Nessuno ha letto niente. Italian  
 n-person have.3sg read n-thing  
 ‘Nobody read anything.’
- b. Nadie dijo nada. Spanish  
 n-person said.3sg n-thing  
 ‘Nobody said anything.’
- c. KANENAS \*(dhen) ipe TIPOTA. Greek  
 n-person not said.3sg n-thing  
 ‘Nobody said anything.’
- d. Nikt \*(nie) uderzył nigogo. Polish  
 n-person not hit.3sg n-person  
 ‘Nobody hit anybody.’
- e. Balázs \*(nem) beszélt senkivel semmiről. Hungarian  
 Balázs not spoke.3sg n-person n-thing  
 ‘Balázs didn’t talk about anything with anybody.’
- f. Dare-mo nani-mo iwa-nak-atta. Japanese  
 n-person n-thing say.neg.past  
 ‘Nobody said anything.’

At first sight, Old Church Slavonic (OCS) does not behave according to this division. Rather, it shares properties of both systems. I use data from the Codex Marianus in its e-text transliteration – the e-text can be found at <http://www.slav.helsinki.fi/ccmh/marianus.html> (the transliteration is based on Vatroslav Jagić’s edition). In the Codex the postverbal n-words are always accompanied by verbal negation (see (9-a) – (9-d)), but preverbal n-words occur without negation on the verb in approximately 1/3 of the cases (see (10-a) – (10-c)), while in 2/3 of the cases they are used with a negation on the verb (see (10-d) and (10-e)). This situation is quite representative of OCS, as other studies such as Večerka (1996) and references therein show.

- (9) a. ne pogubi xъ nikogože otъ ni xъ b. i ne ěstъ ničesože  
 c. ne rodiši ni o komъže d. ne viděše nikogože tokъmo !isa edinogo
- (10) a. J reče kъ nimъ nikogože obidite b. ničesože otъveštavaaše  
 c. niktože estъ iže ostavitъ domъ d. niktože nasъ ne najęntъ  
 e. I niktože ne znaetъ !sna tъkmo !otcъ

In all cases from the Codex Marianus where a preverbal n-word occurs without negation on the verb, the semantic negation is a propositional negation and has scope over the event variable: the meaning of (11-a) is (11-b):

- (11) a. ničesože ot veštavaaše b.  $\neg \exists e[Agent(x,e) \& answer(e)]$

Hence it seems that OCS represents a blend between strict and non strict NC languages. The main distinction between non strict NC languages and OCS is that in real non strict NC languages there is no possibility to have negation on the verb when the n-word is

preverbal, as can be seen in (12) (examples from Haegeman 1995). On the other hand, the distinction between OCS and strict NC languages like CC is of course the possibility of n-words in OCS to occur in sentences without verbal negation – a construction that is totally ungrammatical in strict NC languages like Czech.

- (12) a. Nessuno (\*non) telefona a Gianni.  
       no\_one NEG telephones to Gianni  
       ‘No one calls Gianni.’  
       b. Nadie (\*no) hará eso.  
       nobody NEG will do that

But contrary to the first impression that OCS does not fit into the distinction between strict and non strict NC languages, OCS is in fact strict NC language because parallel data to examples (9) and (10) can be found in Contemporary Greek and West Flemish (examples in (13) from Zeijlstra 2008) which are both classified as strict NC languages:

- (13) a. O Jannis \*(dhen) dhiavase oute kan tis Sindaktikes Dhomes. Greek  
       The Jannis NEG reads even the Syntactic Structures  
       b. Oute kan ti Marie (dhen) proskalese o pritanis  
       Even the Marie NEG invite the dean  
       c. ... da Valère niemand (nie) kent West Flemish  
       ... that Valère n-body NEG knows  
       ‘... that Valère doesn’t know anybody’

Contemporary Greek and West Flemish are both scrambling languages (as is OCS) and for Contemporary Greek the possibility of not expressing verbal negation depends on the preverbal position of the n-word, as is shown under (13-c). OCS is similar to Contemporary Greek and West Flemish in this respect because the possibility of having a non-negated verb with an n-word does not depend on the syntactic status (Subject/Object) of the n-word; rather, it only depends on its linear position – see (10) above. What is crucial is that preverbal n-words may not be accompanied by a negated verb in non strict NC languages – and this is not the case in OCS. Hence the ambiguous behavior of OCS shows either that the distinction between strict and non strict NC languages is not fine-grained enough, or that OCS is closer to strict NC languages than to non strict NC languages (if the criterion is the impossibility of a negated verb with preverbal n-words in non strict NC languages). Let us assume that the distinction between strict and non strict NC languages is correct and look for evidence which would group OCS with strict NC languages.

Besides the distributional argument mentioned, there is also an argument from morphology: it is known that there the negative imperative was regular in OCS; the example under (14) is from Večerka (1993). However, regular negative imperatives are not attested in non strict NC languages (Zeijlstra 2008). In non strict NC languages imperative forms may not be combined with the negative marker: in Spanish for example they are replaced by the subjunctive as under (15). This is explained by the fact that in non strict NC languages the negative marker on the verb carries semantic negation; in the imperative, however, this negation would have scope over the imperative operator, which would lead to wrong truth conditions:  $\neg > !$  Truth conditions of (15-c) would be ‘I don’t command you to read’ which explains its ungrammaticality. Let us thus assume that OCS

was a strict NC language because it allows verbal negation with preverbal n-words, and because it has regular negative imperatives.

(14) ne vьvedi nasъ v napastъ

(15) a. Tu no lees Spanish  
 NEG read.2SG  
 ‘You don’t read’

b. ¡Lee! c. \*¡No lee! (\*TNI)  
 Read.2SG.IMP NEG read.2SG.IMP  
 ‘Read!’ ‘Don’t read’

d. ¡No leas! (SNI)  
 NEG read.2SG.SUBJ  
 ‘Don’t read’

#### 4. Penka’s and Zeijlstra’s theory

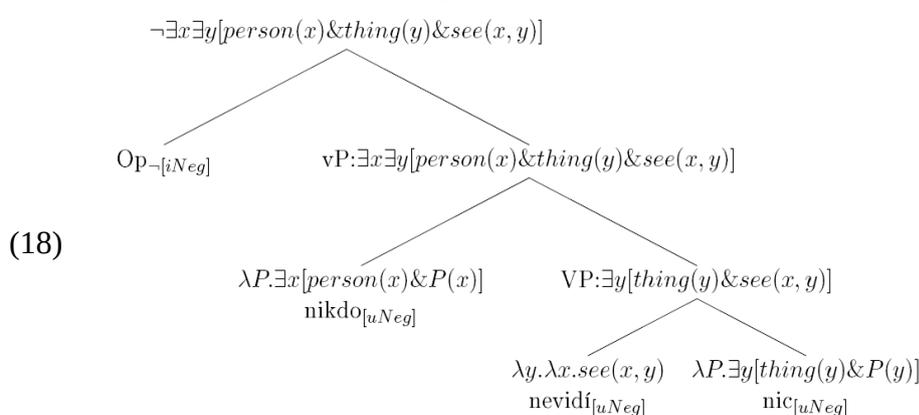
In this section I present the syntactic theory of Negative Concord developed by Penka (2007) and Zeijlstra (2004, 2008), which I submit is able to account for the data presented. The basic assumption for strict NC languages in Penka/Zeijslstra’s theory is that all morphologically negated words come in fact without semantic negation. Technically, the tool that builds on this intuition is derived from contemporary generative grammar: n-words and sentential negation carry a so-called uninterpretable [uNeg] feature which is in agreement with the logical operator (propositional negation) that has an interpretable [iNeg] feature. Propositional negation is not equal to sentential negation in this system. Sentential negation is a signal of propositional negation, but propositional negation is located higher in the syntactic tree than sentential negation.

A Consequence of this theory is that n-words in strict NC languages are in fact indefinite phrases without any inherent negation. They carry only the uninterpretable feature which signals the presence of the propositional negation operator. This can be seen in the sentence (16) and in the explicit semantics of the lexical entries under (17). The semantic derivation on the grounds of a simplified syntactic tree appears under (18): negation on the verb (sentential negation) only signals the higher propositional negation operator (Op) which has no phonetic realization.

(16) Op<sub>¬[iNeg]</sub> Nikdo<sub>[uNeg]</sub> ne<sub>[uNeg]</sub> viděl nic<sub>[uNeg]</sub>.

(17) a. [[nikdo]] = λP.∃x[person(x) & P(x)] b. [[nic]] = λP.∃x[thing(x) & P(x)]

c. [[nevidí]] = λy.λ x.see(x,y)



The theory also works quite well for non strict NC language. The main distinction between strict and non strict NC in the Penka/Zeijlstra theory lies in the semantic status of the negation on the verb – in strict NC languages the sentential negation is not semantically active (it has only a [uNeg] feature), but in non strict NC languages the sentential negation equals the propositional negation. How this works is shown under (19): the result of the semantic computation appears under (19-b). (20) shows why preverbal n-words are ungrammatical in non strict NC languages: the negation on the verb is semantically active, but the n-word *nadie* must be licensed by another semantic operator with negation semantics (*nadie* in the preverbal position is not c-commanded by the negation on the verb). Therefore the result is a double negation reading, as is shown under (20-a). Since languages generally avoid double negation, this is taken to be the reason for the ungrammaticality of preverbal n-words with negated verbs in languages like Italian or Spanish.

- (19) No<sub>[iNeg]</sub> vino nadie<sub>[uNeg]</sub>.  
 a. [[no]] =  $\neg$  b.  $\neg \exists x[\text{person}(x) \ \& \ \text{came}(x)]$
- (20) \*Op<sub>[iNeg]</sub> Nadie<sub>[uNeg]</sub> no<sub>[iNeg]</sub> vino. a.  $\neg \exists x[\text{person}(x) \ \& \ \neg \text{came}(x)]$

#### 4.1. Evidence for the uninterpretable nature of n-words and verbal negation in Czech

In this section I present data showing that n-words and verbal negation in Czech are not accompanied by semantic negation; they merely signal that there is an interpretable negative operator in their clause. This is important as the theory seems to be counterintuitive: it claims that morphologically negated words have no negative semantics. We will see, though, that this perspective is supported by actual data.

The theory predicts that the negative status of n-words in strict and non strict NC languages is only apparent; it merely signals the presence of operators with real semantic content. From this it follows that there can be operators intervening between an n-word and its interpretable operator. This is the case in so-called scope-split phenomena. Some variation of Penka's (2007) example of scope split phenomena appears under (21). The most probable reading of (21) is (21-a) where the scope of the negation is above the modal verb, but the n-word (without negation, as an indefinite) is scoped below the modal verb. The second (highly improbable) reading under (21-b) outscopes the indefinite above modal verb. The third reading is probably ungrammatical in Czech as it would lead to scoping negation below modal verb. Scope split phenomena adduce evidence for the non negative status of n-words.

- (21) Petr nemusel nosit žádnou kravatu.  
 a. 'It wasn't the case that Petr was obliged to wear a tie' =  $\neg > \text{must} > \exists$   
 b. 'There was no particular tie that Peter was obliged to wear.' =  $\neg > \exists > \text{must}$   
 c. #'It was obliged that Peter wears no tie.' =  $\text{must} > \neg > \exists$

At first sight, (22) is a counterexample for the theory: if it is grammatical at all, it does not allow for the scope split reading (even if universal quantifiers are grammatical under inverse scope reading with negation in Czech). This is quite surprising but probably shows that there are intervention effects in the licensing of [uNeg] features on n-words. The reason of this is quite mysterious but reminiscent of the immediate scope constraint of Linebarger (1987). It also confirms the non licensing ability of sentential negation. If

sentential negation were the licenser of n-words in (22), then this ungrammaticality would not arise.

- (22) ??Každý učitel nemá žádné auto.  
 every teacher have-NEG no car  
 ‘No teacher has a car.’

Similar phenomena can be observed with some adverbials under (23): the reading (23-a) is ungrammatical for (23). This can only be true if negation is interpreted higher than below the adverbial. On the other hand, it is quite obvious that negation and other logical operators can scopally interact, so it is not clear how reliable this argument is.

- (23) Petr moc nepil.  
 a. # ‘The amount of liquid which Peter drank wasn’t big’ = much > ¬  
 b. ‘It wasn’t the case that Peter drank a lot of liquid’ = ¬ > much

Maybe a better example can be construed using negation and the conjunction *-li*: (24) cannot mean that the implication is negated ((24) does not have the meaning “It is not the case that if Peter will buy the book, I will buy it myself”). This shows that negation is interpreted elsewhere than on the verb. This is good evidence for the non negative nature of verbal negation.

- (24) Nekoupí-li Petr tu knihu, tak jí koupím sám. → > ¬ / \*¬ > →  
 ‘If Peter will not buy the book, I will buy it myself.’

A last piece of data in support of the theory is so called expletive negation (see Abels 2005 for detailed discussion and older references). Expletive negation is an interesting phenomenon. In a nutshell, the embedded sentence in (25) is interpreted as non negated even if its verb bears negation. This is also clear from the English translation. Expletive negation provides evidence to the end that sentential negation is not the same thing as propositional negation: it may be a byproduct of agreement. In (25) there is negation on the embedded verb, which however is uninterpretable: it is licensed by the interpretable negation on the higher psych verb (in lexical decomposition of the verb *fear* where we can assume that *fear* can be decomposed into something like *hope* + not to be the case, that ...). This also explains why negative concord is not grammatical in expletive negation sentences, as (26) shows.

- (25) Petr se bál, aby Karel nepřišel.  
 Peter SE afraid COMP Karel NEG-come.3.sg  
 ‘Peter was afraid that Karel will come.’

- (26) \*Petr se bál, aby nikdo nepřišel.  
 ‘Peter was afraid that nobody will come.’

The conclusion from this section is that the negative status of n-words and verbal negation in CC is only apparent – n-words are indefinites with special syntactic properties – they need a negative element with an interpretable Neg feature; also, verbal negation is not the locus of propositional negation. This is in agreement with Penka/Zeijlstra’s theory.

## 5 Problems and a partial solution

Despite its good empirical coverage, Penka/Zeijlstra’s theory faces a serious problem as far as I can see: if all n-words and verbal negation in strict NC languages are really without semantic negation, why should verbal negation be used when the n-word is sufficient to mark the presence of the sentential negation operator in case its scope is high

enough? Therefore it seems that the theory predicts the existence of non strict NC languages, but that strict NC languages should be quite exceptional.

A partial answer to this problem can be found in Zeijlstra (2008) where building on the insights of Herburger (2001), Zeijlstra claims that verbal negation marks minimal scope of negative operators (see the Spanish example from Herburger (2001) under (31)). It is important to note that under (31) the postverbal n-word is grammatical even without negation on the verb (Spanish is a non strict NC language), but the sentence has a peculiar meaning: the baby is looking (there is an event of looking), but there is nothing on which it focuses. This is rendered in (32). The verbal negation then widens the scope of negation and extends it over the event variable which explains why negation on the verb is obligatory when the n-word is postverbal.

(31) Temen que el bebé sea autista. Se pasa el tiempo mirando a nada.  
fear.3pl that the baby is.subj autistic. cl spends the time looking at n-thing  
'They fear the baby is autistic. He spends his time looking at nothing.'

(32)  $\exists e[\text{Agent}(\text{baby}, e) \ \& \ \neg \exists x[\text{thing}(x) \ \& \ \text{Theme}(x, e) \ \& \ \text{look}(e)]]$

However, if this analysis is correct we expect that preverbal n-words are not accompanied by verbal negation because the scope of the negative operator that licenses these n-words is high enough above the event variable. This is exactly the situation of OCS, modern Greek and West Flemish. The question then is why OCS evolved into modern Slavic languages the way it did. Or, in other words, why did an optimal configuration change into a non optimal configuration? A plausible semantic solution does not appear to exist. We can patch the theory and assume something like Penka's Principle for the expression of negation under (33) which would of course make the correct prediction. This, however, is nothing but restating the problem (as Penka herself admits). In the end the development from OCS into CC seems to be the reflex of Jespersen's cycle which cannot be accounted for in semantic terms at all. The oft-quoted idea of Otto Jespersen (1917, 4) appears under (34). The situation in OCS admitted non negated verbs in sentences with n-words that are high enough to scope above event variables, but in diachronic evolution the situation changed and verbal negation (strengthening of negation in Jespersen's term) became obligatory in accordance with Penka's Principle for the expression of negation.

(33) **Principle for the expression of negation:**

Mark sentential negation on the finite verb, unless this results in a different meaning.

(34) The history of negative expressions in various languages makes us witness the following curious fluctuation: the original negative adverb is first weakened, then found insufficient and therefore strengthened, generally through some additional word, and this in turn may be felt as the negative proper and then in course of time be subject to the same development as the original word.

### 5.1 A partial syntactic solution

There is no guarantee that Penka/Zeijlstra's theory can answer the problems that were discussed in the preceding section, but the data below seem to be promising. For one thing, negation in OCS was not incorporated into pronouns. Evidence from negation merging with PP is shown under (35) and (36). (36-a) – (36-c) are Old Czech examples from Lamprecht et al. (1986). The data clearly show that Penka's principle for the

expression of negation was not completely respected in OCS and Old Czech. This was already clear from the n-word examples. But another thing to be observed is that the position of negation was not fixed in OCS, e.g. negation in most cases occurred before the modal verb and sometimes even before main verb of modal + lexical verb constructions. The same holds true for negation and future auxiliary: with a participle, negation occurs sometimes before the auxiliary verb and at other times before the lexical verb, see examples from the Codex Marianus under (37). This of course is completely impossible in CC where the position of negation with respect to modal, auxiliary and lexical verbs is strictly fixed (for discussion of CC see Kosta 2001; for discussion of sentential negation in OCS see also Večerka 1996: 129, from which similar claims about the variability of the syntactic position of negation can be also inferred).

(35) ni vь iměxъ poklonite sę otcju

(36) a. včeko ni za č by nejměl                      b. ni sě s kým o to potáza  
c. v ni v čem takovém

(37) a. J ne mogō ego iscěliti                      b. ni umřēti bo po tomъ mogōt  
c. ne bōdetъ poznano                              d. ne osōždeni bōdete

A possible partial solution for theoretical issues from the previous section would be to claim that negation before pronouns in preverbal position in OCS was still identified as sentential negation (the position of sentential negation was not fixed), and that in those cases where we see negation on both the verb and on the pronoun, the negation on the pronoun merges with the pronoun, a process whose end point is total fusion in CC. The verbal negation before indefinite pronouns in OCS will of course still be [uNeg], which however will be able to mark the scope of negation over event variables, something that merged negation on contemporary n-words is unable to do. But after the following step in Jespersen's cycle, the negation landed on the verb, which meant that sentential negation could not only be expressed by the negation on n-words. This means that n-words can be accompanied with non negated verbs in OCS because the negation on these pronouns is in fact a sentential negation that marks the scope of the propositional negation over event variables. In case of postverbal n-words, the scope of negation would be too low below the event variable, which would lead to a constituent negation reading that is ungrammatical in most cases.

This explanation is at best a first step towards a formal theory that describes the diachronic changes from OCS to CC. Serious morphological and syntactic investigation are needed in order to decode the nature of merging negation in OCS. Moreover in some contemporary Slavonic languages (Serbian, Croatian) negation is still not merged into PPs. These languages, however, are strict NC languages, which means that the explanation for the non strict NC nature of OCS cannot rely on this "sentential negation on the wrong place" argument alone. Pursuing this track would lead beyond the scope of this article and is thus left an open issue for further investigation.

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