

NEG Raising and Serbo-Croatian NPIs

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Abstract

Collins and Postal (2014) postulate that English NPIs represent two distinct structures: a unary NEG structure and a binary NEG structure. Some NPIs, such as *any* and *ever* expressions, can instantiate either of these two structures in different contexts. Others (such as one use of *jackshit*) have only unary NEG structures. The present article seeks to provide cross-linguistic support for this hypothesis by showing that the two series of NPIs in Serbian/Croatian (Progovac 1994) should be analyzed in terms of the two structure types postulated for English NPIs.

Keywords: Negative Polarity Items, NEG deletion, NEG raising, resumptive negation, Horn clauses

Résumé

Collins et Postal (2014) proposent que les éléments de polarité négative en anglais résultent de deux structures distinctes: une structure de négation unaire, et une structure de négation binaire. Certains de ces éléments, tels que *any* et *ever*, peuvent instancier l'une ou l'autre des deux structures, tandis que d'autres, comme par exemple un des usages de *jackshit*, n'ont que la structure de négation unaire. Le présent article cherche à fournir des preuves interlinguistiques pour cette hypothèse en montrant qu'en serbe/croate (Progovac 1994), les deux séries d'éléments de polarité négative doivent être analysées en fonction des deux types de structure postulés pour l'anglais.

Mots-clés: Éléments de polarité négative, suppression de NEG, soulèvement de NEG, négation résomptive, propositions Horn

1. INTRODUCTION

Collins and Postal (2014) (henceforth CP2014) postulate that English NPIs represent two distinct structures: a unary NEG structure and a binary NEG structure.¹ Some

¹ACC: accusative case; AdjP: adjective phrase; Aux: auxiliary verb; cNEG_x: a copy/resumptive NEG in the position of a raised NEG_x; Comp: complementizer; CP2014: Collins and

NPIs, such as *any* and *ever* expressions, can instantiate either of these structures depending on the context. Others (such as one use of *jackshit*) can only represent unary NEG structures. The present article seeks to provide cross-linguistic support for this proposal by showing that the two series of Serbian/Croatian (henceforth SC) NPIs should be analyzed in terms of the two structure types postulated for English NPIs.

The two relevant classes of NPIs in SC are the *ni*-series, illustrated in (1), and the *i*-series, illustrated in (2). We analyze the *ni*-series as unary NEG NPIs and the *i*-series as binary NEG NPIs:

- (1) Milan *(ne) vidi ništa.
 Milan not see nothing
 ‘Milan cannot see anything.’ (Progovac 1994: 40)
- (2) Ako Milan povred i(t)ko-ga/ *ni(t)ko-ga, bi-ce kažnjen.
 if Milan hurts anyone-ACC/ no-one-ACC be-FUT punished
 ‘If Milan hurts anyone, he will be punished.’ (Progovac 1994: 64)

In section 2, we outline the basic assumptions of CP2014. In section 3, we summarize the consensus view of NPIs in the literature. In section 4, we discuss resumptive NEG. In section 5, we discuss the NPI *jackshit*_A and show it is uniquely a unary NEG NPI. In section 6, we discuss Horn clauses. In section 7, we present an overview of the two classes of SC NPIs. In section 8, we present an analysis of SC unary NEG NPIs. In section 9, we present an analysis of SC binary NEG NPIs. In section 10, we discuss so-called sentential negation, and show how it fits into our framework. In section 11, we discuss the so-called Bagel Problem. Section 12 is the conclusion.

2. COLLINS AND POSTAL (2014)

We assume there is a notion of syntactic negation, whose representative is NEG. Unlike most linguistic studies of negation, with their common appeal to ‘sentential negation’ (and now frequently a clausal NegP), we posit that NEG can syntactically modify a large range of categories including AdjPs, NPs, Ds, and in general any category with predicational semantics (see CP2014 and Collins 2016). A category has predicational semantics if it denotes a function whose semantic type ends in *t*. For example, a DP like *everybody* has the type $\langle\langle e, t \rangle, t \rangle$, and so counts as a predicate. A fundamental assumption of the present framework is that while a NEG may

Postal (2014); D: determiner; DAT: dative case; DP: determiner phrase; FUT: future tense; *i*-NPI: any member of the set of SC NPIs including *i(t)ko* ‘anyone’, *išta* ‘anything’, *ikud* ‘anywhere’, *ikad* ‘ever’; JACK: the category of English forms including *dick*, *diddly*, *diddly-squat*, *jack*, *jackshit*, *shit*, *squat*; *jackshit*_A: the NPI usage of *jackshit*; *jackshit*_Z: the ‘nothing’ usage of *jackshit*; *n*-word: negative word, that is, words/phrases functioning essentially like English *no rocket*, French *personne*; NegP: negative phrase; NC: negative concord; *ni*-NPI: any member of the set of SC NPIs including *ni(t)ko* ‘no one’, *ništa* ‘nothing’, *nikud* ‘nowhere’, *nikad* ‘never’; NP: noun phrase; NPI: negative polarity item; Q: question marker; SC: Serbo-Croatian; SGM: singular masculine; T: tense; TP: tense phrase; V: verb; VP: verb phrase

raise from its position of origin, it is always and only interpreted as modifying its sister constituent *in the original locus*. The reader is referred to CP2014 (chapters 3 and 5) for further discussion of NEG interpretation.

According to CP2014, each NPI originates in a construction which obligatorily contains a syntactic negation, and some originate in a construction with two, yielding the partially contrasting structures in (3).

(3) Two Types of NPIs

- a. [NEG X] unary NEG NPIs
- b. [NEG [NEG X]] binary NEG NPIs

We can call the proposal that each NPI originates with at least one instance of NEG, the *negative conception* of NPIs, and the related proposal that there are the two types in (3a–b) the *bifurcated (negative) view*. Standard views of NPIs do not adopt either of these assumptions, as we review in section 3.

Consider from this point of view the examples in (4).

- (4) a. I didn't advocate any proposal.
- b. No linguist accepted any proposal.
- c. Elissa doesn't do anything on Sunday.
- d. Elissa doesn't go anywhere on Sunday.
- (5) a. Not many people advocated any proposal.
- b. If he accepted any proposal, he was mistaken.
- c. Everyone who did anything on Sunday was praised.
- d. Everyone who went anywhere on Sunday got rained on.

In the framework of CP2014, the NPIs in (4) have a structure and meaning identical to the structure and meaning of negative existential quantifier DPs, accounting for the truth-conditional equivalence of pairs like the one in (6).

- (6) a. I advocated no proposal. $\neg\exists x[\text{proposal}(x) \wedge \text{advocate}(I, x)]$
- b. I didn't advocate any proposal. $\neg\exists x[\text{proposal}(x) \wedge \text{advocate}(I, x)]$

In particular, CP2014 analyzes both *no proposal* and *any proposal* in (6) as DPs of the form [[NEG SOME] proposal], where NEG modifies an existential quantifier SOME. The differences between (6a) and (6b) lie in the assumption that in (6a), SOME is realized as null and NEG is spelled out as *no*, while in (6b), NEG raises to the post-Aux position and SOME is spelled out as *any* (see rule (8) below).²

In these terms, a fuller structure of (4a) is given in (7b).

²A reviewer observes that when NEG raises from a position modifying D, it is raising from a left branch. This is usually regarded as impossible in English; see for example Ross (1967 [1986 127–134]). We have no explanation for why NEG differs from other extracted constituents in this regard.

- (7) a. I didn't advocate any proposal.
 b. I did NEG₁ advocate [[<NEG₁> SOME] proposal]

┌──────────────────┐
 Raising of NEG₁

In (7b), NEG₁ originates in a position modifying SOME (internal to the NPI *any proposal*). While NEG₁ raises to the post-Aux position, it is nonetheless interpreted in its position of origin, modifying SOME. The angled brackets around the lower occurrence of NEG₁ in (7b) indicate a non-pronounced occurrence. This notation is used throughout when appropriate. The reader is referred to CP2014 (chapters 3 and 5) for further discussion.

Because the NPIs in (4) are analyzed as having the structure [[NEG SOME] NP], they are called unary NEG NPIs in CP2014. As seen below, they contrast with binary NEG NPIs, which contain two underlying NEG_s. We will return to examples like (4b), which involve no post-Aux NEG, in the discussion of (13) below. These will also be analyzed as unary NEG NPIs.

CP2014 claim that *any* in (7a) is a suppletive form of SOME, determined by the rule in (8).

- (8) SOME/*any* Mapping (CP2014: 21)
- a. SOME → *any*, in the context [<NEG> ___] (NEG unpronounced)
 - b. SOME → null, in the context [NEG ___] (NEG pronounced)
 - c. SOME → *some*, otherwise

Since CP2014 analyze *nobody* as [[NEG SOME] body], the rule in (9) is also required for the realization of NEG.

- (9) NEG Mapping
- a. NEG → *no* in the context [_D ___ [_D <SOME>]]
 - b. NEG → *not*, otherwise.

The statement in (9b) is a simplification, since there are other forms of NEG (such as *un-*, *non-*, *n't-*, *n-*) not discussed in this article.

The NPIs in (5) are analyzed in CP2014 as double-negation structures. Consider again (5b), repeated as (10):

- (10) If he accepted any proposal, he was mistaken.

First, no overt NEG precedes the verb in (10), unlike the situation with unary NEG NPIs illustrated in (4a). Second, the interpretation of *any proposal* in (10) is equivalent to the existential quantifier DP *some proposal*. CP2014 argues that the NPI *any proposal* in (10) has the double-negation form shown in (11). In such a structure, the semantics of NEG₁ cancels that of NEG₂, so that the resulting interpretation is identical to that of *some proposal*.

- (11) If you see [[<NEG₁> [<NEG₂> SOME] proposal], tell me.

A binary NEG NPI (also called a reversal NPI) such as that in (11) contains two unpronounced NEG_s. We sometimes refer to NEG₁ as the *outer* or *reversal* NEG.

According to CP2014, the NEG_s in (11) are unpronounced because they are deleted. NEG deletion involves a relation between individual NEG_s and other phrases, their *NEG deleters*. Some relevant NEG deleters in the case of binary NEG NPIs are listed in (12).

- (12) Some NEG Deleters in English Binary NEG Structures
- a. The conditional complementizer *if*
 - b. The yes-no question complementizer (the Q morpheme)
 - c. verbs such as *surprise*
 - d. the quantifier *every*
 - e. phrases of the form: [only DP]

In (11), the conditional complementizer *if* deletes the NEG₁ of the structure [NEG₁ [NEG₂ SOME]], while NEG₁ deletes NEG₂. Because NEG₂ is deleted, SOME is realized as *any* by rule (8a). See CP2014 (chapter 4) for further detail.

The distinction between unary and binary NEG NPIs corresponds to the traditional distinction drawn between strong and weak NPIs, and between strict and non-strict NPIs (see CP2014: section 9.4 for discussion). In general, weak NPIs are licensed in downward-entailing contexts, although there are some complications. For example, yes-no questions and the scope of *only*-phrases are not, by standard definitions, downward-entailing contexts (on *only*-phrases, see von Stechow 1999). Addressing these questions goes beyond the scope of this article.

Return to example (4b), repeated in (13).

- (13) No linguist accepted any proposal.

From the perspective of CP2014, a natural question is whether *any proposal* in this example is a unary or a binary NEG NPI. CP2014 advance several reasons to believe that *any proposal* in such cases is a unary NEG NPI; see the sections below on the distribution of *jackshit*_A and Horn clauses. On that assumption, (13) has the structure shown in (14).

- (14) [[NEG SOME] linguist] accepted [[NEG SOME] proposal]

Whether the subject or object DP is taken to have higher scope in (14), the normal result, given the occurrence of two distinct NEG_s, would be a so-called double-negation meaning. In the case of two negative existentials, this should give the interpretation that every linguist accepted some proposal. Since it does not, something in the posited overall structure must prevent this incorrect inference.

CP2014 (chapter 6) appeals to the semantic notion of polyadic quantification, while adding a novel syntactic basis for it. The latter involves the idea of the sharing of D_s, so that in such terms the subject and the object of (13) would have a representation like (15). Previous work invoking polyadic quantification for the description of negative concord (NC) includes de Swart (1999) and de Swart and Sag (2002).

- (15) [_{DP} [NEG₁ SOME₂] NP]..... [_{DP} [NEG₁ SOME₂] NP]

In other words, while the subjects and objects involve distinct DPs with distinct NP components, these DPs share the identical D [NEG₁ SOME₂]. Critically, since the two distinct DPs share the D containing NEG₁, and since it is such structures

which are semantically interpreted, the problem of the cancellation of the negative force of distinct NEG_s simply does not arise.

A key element in the analysis just sketched is that the NEG occurring in *any proposal* in (13) is deleted. In the framework of CP2014, this deletion appeals to a second kind of NEG deletion (distinct from that seen above with binary NEG NPIs), one subject to a number of governing conditions discussed in detail in CP2014 (chapter 8). One of these conditions is that the first argument of the NEG-deletion relation must c-command the second argument.

A mild warning is in order here. While we use terms like ‘NPI’ and ‘licensing’, this is for descriptive convenience and to make contact with the standard literature. But such usages must be considered a rough disposable shorthand for the more complex structures and relations we take to be involved in this domain, including NEG raising and NEG deletion.

One important consequence of the bifurcated view is that every proposed analysis of any so-called NPI occurrence involves a decision as to whether to posit a unary or a binary NEG structure. Moreover, some morphologically defined NPIs might, in different contexts, allow either analysis. We take this to be the case with English *any* and *ever*. We return to this issue in section 6.

3. THE CONSENSUS VIEW OF NPIs

Although there are of course many different approaches to NPIs, it seems fair to state that current mainstream views of them share a core set of features. Focusing on NPIs such as English *any* forms, such expressions are almost always taken to be simply indefinites or existentials, as indicated in (16).

- (16) a. “The three arguments presented here in support of the E-theory (in which polarity *any* is represented as an existential quantifier in the scope of NOT)...”
Linebarger (1980: 217)
- b. “*Any* is an existential quantifier which must appear within the scope of negation.”
Carlson (1980: 800)
- c. “The NP with *any* has the usual semantic properties of an indefinite. We won’t make a choice here concerning the proper way of treating indefinite NPs. If indefinite NPs are best regarded as existential quantifiers, then so is the *any* NP; if indefinite NPs are best treated as new variables (Heim 1982), then the *any* NP too is a new variable. From either assumption the existential behavior of PS *any* follows without problems.”
Kadmon and Landman (1993: 357)
- d. “Since Klima 1964, these NPIs have been termed as ‘indefinites’, and it is best to interpret this term in the sense of Heim 1982... Argument NPIs like *any* and *ever* can be treated as indefinites which are subject to twin licensing requirements, ...”
Ladusaw (1995: 211)

None of (16a–d) recognize that NPIs like *any* or *ever* forms involve any instance of NEG. In current views, syntactic negation plays a role only in the formation of *other*

expressions which can serve as licensers of NPis. Let us call such views the *NEG-free conception (of NPis)*.

The NEG-free conception is obviously motivated by the fact that in general, NPis do not appear *overtly* with instances of NEG. But in any framework which recognizes NEG raising and deletion, the absence of some overt X internal to a constituent Y is anything but a definitive justification for the syntactic absence of X from Y.

Statements (16a–d) and many similar ones reveal their authors' assumption that not only are the relevant NPis nonnegative expressions, but also that *any* NPis appearing in various contexts always have the same structure (namely, that of an indefinite/existential DP). None of these authors question whether there might be distinct types of NPI *any* (putting aside the issue of free choice *any*). Analogous remarks hold for *ever*. Let us call the assumption that there is a unique NPI type found in the range of environments occupied by English NPI *any* and *ever* the *homogenous* view. Thus currently common views of English *any* and *ever* forms assume a NEG-free, homogenous view of these expressions.

4. RESUMPTIVE NEGS

The view that the notion of NPI dissolves into a complex of analyses involving NEG raising, NEG deletion and morphophonemic modifications receives some support from simple facts about *nonstandard* English; see Blanchette (2015) for a much more detailed study. Consider the following triple, where (17a–b) represent standard English, and (17c) some variant of nonstandard English.

- (17) a. I punched nobody.
 b. I didn't punch anybody.
 c. I ain't punched nobody. (books.google.com/books?isbn = 1462819346)

For us, the ideal analysis gives all three object DPs the same underlying structure, shown in (18).

- (18) [_{DP} [NEG₁ SOME] [_{NP} body]]

In standard English (17a), NEG₁ is neither raised nor deleted and SOME is then forced to be null, while NEG₁ is realized as *no* via the mappings in (8) and (9). In standard English (17b), NEG₁ raises and SOME is required to appear as *any* via mapping (8a).

Unanalyzed so far is the nonstandard case (17c). If the object DP *nobody* there receives the same analysis as the corresponding DP in standard English (17a), then the additional presence of the post-Aux NEG raises the obvious question of why the combination of that NEG and the NEG assumed to be part of *nobody* does not yield a double-negation reading. In other words, why doesn't (17c) mean 'I punched somebody'? Commonly, approaches to cases like (17c) invoke some notion of *negative concord*, not recognized for standard English. But analyzing

closely related variants of a language as differing in something as basic as the presence of negative concord is, we believe, suspect.³

In the overall framework of C2014, these issues are addressed by appealing to one further concept relevant to the syntax of negation, that of a *resumptive* or *copy* NEG. While we will not attempt a formal characterization of that concept here, it can be thought of as the close analog of the notion of *resumptive pronoun* in work on extraction.

Before proceeding, it is worth clarifying the relation between copies and occurrences, which are distinguished in both CP2014 and the present article. ‘Occurrence’ is a general theoretical term needed in any system in which phrases occur in more than one position. When that is the case, statements about a phrase can be equivocal. Precision in such cases, then, must refer to occurrences of the phrases. For example, in a topicalization case like *Pizzas, she doesn’t eat*, does the DP *Pizzas* precede or follow the verb? As such, the question makes no sense. We say that one occurrence follows the verb and another precedes it.

In minimalist syntax, *copy* is a term sometimes used as a synonym of *occurrence*. However, we draw a distinction between occurrences and copies both in CP2014 and here. There are at least two possible interpretations of our notion ‘copy’. In one, a copy of a syntactic object X is the overtly realized phonological spell-out of an occurrence of X, where X has more than one occurrence. On another interpretation, a copy of a syntactic object X is a distinct syntactic object associated with one of the occurrences of X. For the purposes of this paper, it does not matter which of these views is chosen.

The notion of a copy constituent is instantiated by the italicized pronoun in (19).

(19) Jane is the sort of person who I wonder whether *she* will ever finish her doctoral work.

One tradition allows that such pronominals can occur in extraction sites normally not filled with overt material, especially in cases where the extraction site is separated from the final locus of the extracted element – *who*, in (19) – by an island boundary.⁴

Let us take the resumptive/copy NEG associated with any NEG_x to be represented as *cNEG_x*. The resumptive NEG concept is then relevant for (17c) as follows. Despite our claim that the object DPs in all three examples of (17) originate with the common structure in (18), these cases illustrate three distinct structural possibilities, two of which have already been gone over. The notion of a copy/resumptive NEG provides the third analysis, relevant for nonstandard (17c). There, NEG₁ raises out of its containing DP and moves to the post-Aux position, as in (17b). However, in (17c), NEG raising leaves a resumptive/copy NEG in the original position of NEG₁, resulting in the structure:

³Note that nonstandard English is also discussed in Chapter 6 of CP2014, though examples like (17c) are not covered there.

⁴A reviewer suggests that our resumptive/copy NEG analysis here is similar to Hornstein’s treatment of reflexive anaphors (see Hornstein 2001).

- (20) I_{AUX} NEG₁ punch [DP [cNEG₁ SOME]] [NP body]]
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 NEG raising + copying

Notably, (20) does not satisfy condition (8a) but does satisfy (8b). Hence it also satisfies (9a). Thus the object DP in (20), despite its partial structural contrast with the corresponding DP in (17a), is also spelled out as *nobody*.

Consider now the subjects in (21), which involve the same three DP types seen in (17).

- (21) a. Nobody showed up.
 b. *Anybody didn't show up.
 c. And nobody ain't showed up here from FEMA...
 (<http://transcripts.cnn.com/TRANSCRIPTS/0509/12/asb.01.html>)

Here, (21a–b) are representations of standard English, and (21c) an instance of non-standard English.⁵ For (21a), the subject form *nobody* is the expected result when NEG₁ neither raises nor is deleted. For (21b), the NEG has raised and the shape of the remnant subject is the same as that of the object in (17b). But for reasons so far unspecified, the overall result is ungrammatical.

What accounts for the contrast between the ungrammatical standard English (21b) and the grammatical nonstandard (21c)? Looking at the object cases in (17), one might have assumed that nonstandard *no* forms are just analogs of standard English NPI *any*. But if that were true in general, (21c) would be parallel to (21b) and thus predicted to be ungrammatical, contrary to fact.

A key question then is why in our terms the nonstandard English subject case (21c) is grammatical, while in standard English (21b) is not, although both object cases (17a–b) are grammatical. Two sorts of contrast manifest here. One is a contrast between standard and nonstandard English. The other is a contrast between standard English subjects and non-subjects with respect to co-occurrence with post-Aux NEG, which has raised from the relevant NPI DP.

Now, in the cases at hand, it is a banal observation that English subjects both precede and c-command the Aux and the NEG associated with it, while English objects are preceded and c-commanded by the Aux and NEG. Given the subject/object contrast between (17b) and (21b), some constraint must make reference to this distinction. A second observation is that the nonstandard English subject cases have been analyzed as involving overt copy NEG_s in the extraction positions of raised NEG_s, while the standard English cases involve gaps we represent as <NEG>. We can then suggest the grammatical constraint in (22).

- (22) The Remnant Raising Condition

If M = [DP [D <NEG_x> SOME] NP], then no occurrence of M c-commands an occurrence of NEG_x.

⁵On subject negative concord, see Blanchette (2015: 105).

Condition (22) amounts to a ban on remnant raising of DPs containing a NEG gap.⁶

In the terms we have developed, the contrasts between standard English and non-standard English with respect to the distribution of *any* and *no* forms just discussed reduces to the relatively minor issue of whether NEG raising leaves a resumptive NEG or not.

5. JACKSHIT_A

A different kind of motivation for the unary/binary NEG distinction is derivable from the fact that there are two basic classes of environments as far as English NPIs are concerned: those like *No linguist* ____, and those like *Not many people* ____. This demarcation shows up in a way not yet touched on, specifically, in the behavior of a class of English NPIs referred to in CP2014 with the cover term JACK. This class includes *dick*, *diddly*, *diddly squat*, *jack*, *jackshit*, *shit*, *squat*, etc., of which we cite here only *jackshit*. These forms have in general two uses, illustrated in (23), which are annotated as *jackshit_A* and *jackshit_Z* in CP2014.⁷

- (23) a. Terry knows *jackshit_Z* about transponders.
 b. Terry doesn't know *jackshit_A* about transponders.

The form *jackshit_Z* (Z for 'zero') functions as an equivalent of *nothing* or *zero* and does not require a licenser in the sense of common approaches to NPIs. It is of no relevance to the present discussion and is ignored from this point on. The form *jackshit_A* (A for 'any') functions as an NPI and is the equivalent of one use of *anything*. It is a unary NEG NPI in the sense of CP2014.

The environments in (24) and (25) are differentiated by the distribution of *jackshit_A*:

- (24) a. I didn't advocate anything/*jackshit_A*.
 b. No linguist accepted anything/*jackshit_A*.
 c. Elissa doesn't do anything/*jackshit_A* on Sunday.
 (25) a. Not many people advocated anything/**jackshit_A*.
 b. If he accepted anything/**jackshit_A*, he was mistaken.
 c. Everyone who did anything/**jackshit_A* on Sunday was praised.

A rough generalization is that *jackshit_A* can only occur in environments containing a post-Aux NEG or a preceding negative quantifier DP defining an antiadditive

⁶A reviewer observes in connection with (22) that CP2014 (p. 107) posited the condition given in (i):

(i) The NEG Remnant Movement Condition

If NEG raises out of a clause C, then C itself cannot be raised.

The reviewer insightfully asks what is the relation between (22) and (i) and whether they might be the same mechanism. We believe this is possible but cannot pursue the question here for reasons of space.

⁷See Postal (2004: chapter 6) for detailed discussion.

operator. We claim that those *any* forms that occur in environments which accept *jackshit_A* represent unary NEG NPI structures, while *any* forms in environments incompatible with *jackshit_A* are binary NEG NPI structures.

The analysis of *jackshit_A* is then that it represents a unary NEG structure, as in (26):

(26) [DP [D NEG₁ [D SOME]]] [NP *jackshit_A*]

That is, we propose that members of JACK can never have the reversal structure in (3b). Compared to unary NEG *any* forms, however, members of JACK_A are subject to additional constraints. First, NEG₁ in (26) must either be raised or deleted, determining that no NEG occurrence internal to the original DP is overt. So JACK_A forms never have overt *no* forms:

- (27) a. They proved no theorem/nothing.
 b. * They proved no *jackshit_A*.

Second, according to rule (8a) above, raising or deletion of the NEG associated with SOME forces its realization as *any*. But a further peculiarity is that the resulting *any* must be null in a DP whose NP is a member of JACK_A. So instances of the DP structure in (26) always surface with only the NP *jackshit_A* overt (SOME is not realized overtly, and NEG raises out of the DP).

We can then account for the ungrammaticality of the bad *jackshit_A* cases like those in (25), in contrast to the well-formed ones in (24). Consider the structure of the JACK_A version of (25b):

(28) If he accepted [[NEG SOME] *jackshit_A*]...

In order for this structure to be realized as in (25b), NEG needs to raise to the post-Aux position and be deleted. To block this analysis, we appeal to a version of a principle originally due to Szabolcsi (2004), which we called the *NEG Deletion Evenness Condition*; see CP2014 (p. 32, p. 75) for initial and refined versions of this principle. For present purposes, we oversimplify and say simply that standard instances of general (nonlexical) NEG deletion must lead to the deletion of *an even number of NEG*s. Since *jackshit_A* cases like (28) have only a single NEG, the Evenness Condition cannot be satisfied. We ignore here, for simplicity, other reasons that the analysis in (28) is blocked, having to do with the types of NEG deleters that can delete unary NEG_s; see CP2014 (chapter 10) for relevant discussion.

The *anything* case of (25b) does not involve a violation of the Evenness Condition, since *anything* can be analyzed as a binary NEG NPI, as shown below:

(29) If he accepted [[NEG₁ [NEG₂ SOME]] *anything/jackshit_A*]...

In (29), the conditional complementizer *if* is the NEG deleter. It deletes NEG₁, which in turn deletes NEG₂. Since two NEG_s are deleted, there is no violation of the Evenness Condition.

This raises the obvious question of how the *jackshit_A* case in (24a) can be grammatical. The answer is that no NEG is deleted. Rather, the unary NEG of the original JACK_A DP is raised to post-Aux position, so no violation of the NEG Deletion Evenness Condition can arise. For cases like (24b), the situation is more complex,

as we take these to be instances of polyadic quantifier formation based on D sharing between *no linguist* and *jackshit*_A. While there is NEG deletion in such cases, it is not subject to the Evenness Condition. The reader is referred to CP2014 – especially chapter 6 – for detailed discussion of these matters.

6. HORN CLAUSES

A second argument showing that English NPIs divide into the two classes represented in (3) above is based on *Horn clauses*; see CP2014, chapters 13 and 14, for extensive discussion. These are complement clauses manifesting the inverted subject–auxiliary order typical of the *Negative Inversion* construction. The key peculiarity of Horn clauses is that where a standard Negative Inversion clause involves a fronted overt negative or decreasing phrase, the fronted phrase in a Horn clause is an NPI. Thus one finds:

(30) Negative Inversion Clauses

- a. Under no conditions would she move to Alaska.
- b. They believed that under no conditions would she move to Alaska.
- c. None of the cats could they train to play ping pong.
- d. They expected that none of the cats could they train to play ping pong.

(31) Horn Clauses

- a. They didn't believe that under any conditions would she move to Alaska.
- b. They didn't expect that any of the cats could they train to play ping pong.
- c. I don't suppose that even a red cent would he contribute.
- d. It doesn't seem that even the slightest deviation from the plan would she accept.

One hypothesis might be that a Horn clause can be formed by the extraction of any NPI (or a PP containing such a NPI). But in fact only a subset of NPIs can be extracted in Horn clauses, and these must be of the unary NEG type. For instance, as already touched on in (5), NPIs can occur without negation in conditional clauses, restrictive relative clauses within universal (and negative existential) quantifier DPs, complements of predicates like *astounding*, in clauses with *only* DPs, etc., as in:

- (32) a. If she rejects any application, the Dean will object.
- b. No professor who rejected any application was criticized.
- c. It is astounding that she rejected any application.
- d. Only Rachel bought any blouse.

But no NPI of the type in (32) can form a Horn clause:

- (33) a. If you believe that she rejected any application, you are mistaken.
- b. *If you believe that any application did she reject, you are mistaken.
- (34) a. No scientist who imagined that he taught any pigeons to text was rational.
- b. *No scientist who imagined that any pigeons did he teach to text was rational.

- (35) a. It is astounding that they think she visited anywhere like that.
 b. *It is astounding that they think that anywhere like that did she visit.
- (36) a. Only Carl thinks she bought any blouse.
 b. *Only Carl thinks that any blouse did she buy.

In the framework of CP2014, the above contrasts are not mysterious. Horn clauses are shown to be special cases of Negative Inversion clauses, and only negative phrases (and certain irrelevant exceptions) can be fronted in Negative Inversion clauses. The relevant NEG_s are covert in the NPIs in Horn clauses because they have raised into the containing main clauses. Critically, the main verbs in such cases are triggers for Classical NEG Raising. So the conclusion is that the fronted phrases in Horn clauses manifest unary NEG NPIs because such fronted phrases must satisfy the conditions on Negative Inversion. The fact that NPIs can do that makes sense only under a view which can take them to represent underlying structures of the form [DP [D NEG₁ SOME] NP].

7. OVERVIEW OF SC NPIs

If the distinction between unary and binary NEG NPIs drawn in the previous sections is correct, one would expect it to manifest in other languages. In English, common NPIs like *any* and *ever* do not *morphologically* mark that distinction, but there could well exist languages in which the two types posited in our framework are systematically morphologically distinct. And such cases are in fact already well described in the literature, although not in the theoretical terms we have developed.

The first documentation of this state of affairs that we know of is in the work of Progovac (1990, 1991, 1993, 1994, 2005). Progovac (1994) showed that SC has two classes of NPIs (see also Szabolsci 2004: 439, fn. 29, and see Zeijlstra 2004 for a completely different approach to Slavic *ni*-NPIs). While the basic material in this subsection is from Progovac (1994), we also cite data from other works of hers and from many extensive and extremely helpful personal communications from her and from Željko Bošković.

One class of SC NPIs, the *ni*-NPIs, are marked with the prefix *ni*- or morphological variants. The second class, the *i*-NPIs, are marked with the prefix *i*- or morphological variants. Some *ni*-NPIs are given in (37).

- (37) a. ni(t)ko ‘no one’
 b. ništa ‘nothing’
 c. nikud ‘nowhere’
 d. nikad ‘never’
- (Progovac 1994: 40)

These forms are compounds consisting of three elements which Progovac glosses from left to right as *n*- ‘NEG’, *i*- ‘any’ and a *wh*-form ‘who’, ‘what’, etc. In the framework of CP2014 it is tempting to think of *i*- as a morphological realization of SOME so that ‘no one’ would have the structure [[[D n-] [D i]] [NP tko]].

Some *i*-NPIs are given in (38).

- (38) a. i(t)ko ‘anyone’
 b. išta ‘anything’
 c. ikud ‘anywhere’
 d. ikad ‘ever’ (Progovac 1994: 41–42)

Both classes of forms qualify as NPIs in the usual sense. For example, neither can occur in a simple positive declarative sentence.

- (39) a. Milan *(ne) vidi ništa
 Milan not see nothing
 ‘Milan cannot see anything.’ (Progovac 1994: 40)
 b. *Milan to i-kako odobrava
 Milan that any-how approves
 ‘Milan approves of that in any way.’ (Progovac 1994: 43)

On the basis of data like (39), one might conclude that SC *ni*-NPIs have the key property of only occurring in clauses which contain an overt NEG, *ne*, regardless of the position of the NPI as object, subject, or adjunct. However, a reviewer points out that there is a class of cases where *ni*-NPIs occur in certain small clauses or prepositional phrases in which no overt *ne* is present. The reviewer provided the example in (40).

- (40) on place zbog nichega
 he cries because-of ni-NPI
 ‘He cries for no reason.’

Similar SC data are given in Progovac (2005: 190). These seem similar to English cases like (41) discussed in CP2014 (139–141).

- (41) In no clothes, Bill might shock the audience.

The key similarity is that in both types of case the scope of the understood negation does not include the main clause but is limited to some subconstituent.

Fitzgibbons (2010a–b) studied analogous constructions in Russian, positing what we would interpret as a covert NEG in these contexts. Reinterpreting Fitzgibbons’ analysis in our framework, the class of contexts at issue could be said to involve the same obligatory NEG raising as in standard constructions, but with the additional obligatory deletion of the raised NEG.

Our initial hypothesis about SC NPIs is that while both types involve an existential component, SC *ni*-NPIs correspond to unary NEG structures like (42), while SC *i*-NPIs correspond to binary NEG structures like (43).

- (42) Abstract Structure of SC *ni*-NPIs
 [DP [D NEG SOME] [NP X]]
 (43) Abstract Structure of SC *i*-NPIs
 [DP [D NEG [D NEG SOME]] [NP X]]

Under this view, there is an *overt* NEG in SC *ni*-NPIs but not in SC *i*-NPIs.⁸

In (42) and (43) we posit DP structures for SC NPI nominals. However, Bošković (2007) has argued that SC nominals lack a DP structure. We believe that adopting structures of the DP-free form he suggests would not fundamentally affect the arguments being made here.

The bases for the above conclusions are these. First, there is a parallel between the type of syntactic environments which sanction SC *ni*-NPIs and those that permit English unary NEG NPIs. Second, the properties of *ni*-NPIs in SC can be explained in terms of the unary NEG analysis. Third, there is a parallel between the syntactic environments that allow English binary NEG NPIs and those that allow SC *i*-NPIs.⁹

A note on terminology is in order. We use the term ‘NPI’ to characterize both *i*-NPIs and *ni*-NPIs in SC. However, it is also common for NPIs in SC to be referred to as n-words (‘negative words’: Giannakidou 2006). The relationship between an n-word and a negative marker, or between two n-words, is called negative concord: ‘Roughly, we talk about negative concord in situations where negation is interpreted just once although it seems to be expressed more than once in the clause’ (Giannakidou 2006: 328–329). According to Giannakidou, a criterial property of n-words is that they are able to occur as fragment answers. By this criterion, the SC *ni*-NPIs are n-words (see section 8.2). For us, n-words are negative quantifier DPs, and have a similar structure to English unary NEG NPIs, which are also negative quantifier DPs. The syntactic difference between SC n-words and English unary NEG NPIs is that in SC, NEG raising must leave a resumptive copy, while standard English NEG raising cannot leave such a copy. Moreover, in our framework, the phenomenon of negative concord is analyzed in terms of NEG raising and determiner sharing (see below).

8. SC *ni*-NPIS

In this section, we discuss the distribution and analysis of SC *ni*-NPIs.

8.1 Obligatory NEG Raising

Consider the following examples of SC *ni*-NPIs:

- (44) a. Marija ne voli ni(t)ko-ga
 Mary NEG loves no-one-ACC
 ‘Mary does not love anyone.’ (Progovac 1994: 80)

⁸Although we claim that *ni*-NPIs involve the structure [[NEG SOME] NP], we do not claim that constituent negation in the sense of Borschev et al. 2005 exists in SC.

⁹A reviewer observes that SC *i*-NPIs occur in negative questions while *ni*-NPIs cannot. This seems parallel to English facts, namely, that nonstrict NPIs like *anyone* can occur in negative question clauses, but strict NPIs like *in years* cannot:

(i) Hasn’t Jane seen anyone/her ex-husband recently?

(ii) *Hasn’t Jane seen her ex-husband in years?

We can make no proposal here about such facts in either language.

- b. Milan ni-kada ne vozi
 Milan no-when NEG drives
 'Milan never drives.' (Progovac 1994: 41)
- c. Niko ne poznaje Marij-u
 no-one NEG knows Mary-ACC
 'No one knows Mary.' (Progovac 1994: 35)

In each of these cases, there is a *ni*-NP accompanied by a clausemate instance of NEG *ne*. One can reasonably see sentence (44a) as analogous to English (45), containing a NEG external to the DP and an *any*-NPI which we have argued is a unary NEG structure.

(45) Mary doesn't love anyone.

A difference between English and SC is the absence in SC of analogs of standard English *no*-forms, that is, unary NEG structures occurring *without* a DP-external NEG.

- (46) *Marija ce videti niko-ga
 Mary will see no-one-ACC
 'Mary will see no one' (Progovac 1994: 36)

We claimed that the underlying structure of the object in (39a) has the form (42), as does the one in (44a). However, that claim must be expanded to account for the fact that the presence of the clausal NEG *ne* does not combine with our posit of an underlying NEG in the *ni*-NPI to wrongly yield a double-negation reading. To that end, we appeal again to the notion of resumptive/copy NEG discussed in section 4.

A first step is to claim that the structure of (39a) is as shown in (47) (assuming that *i*- is an instance of SOME):

- (47) Milan NEG₁ vidi [_{DP} [_D cNEG₁ i] [_{NP} šta]]
 Milan not see some thing

Under this analysis, the only underlying NEG, NEG₁, originates in the D of the DP, where it is interpreted. But it raises out of DP, leaving a copy, cNEG₁ in its original position. The possibility of an incorrect double-negation analysis then does not arise.

As shown in (46), unlike standard English, whose *no* forms we also claim instantiate structure (42), there is no possibility in SC of *not* raising the underlying NEG. This leads us to propose the constraint in (48).

- (48) SC Obligatory NEG Raising
 In A = [_{DP} [_D NEG₁ SOME] NP], NEG₁ raises out of A into the lowest clause containing A, leaving a copy cNEG.

This condition is intended to account for why (46), lacking a clausally located NEG, is ungrammatical. That is, NEG raising is obligatory and must leave a copy NEG.

A reviewer brings up the issue of *ni*-NPIs in the subjunctive complement of *wish*:

- (49) ne želi-m da vidi-m ni(t)ko-ga/ i(t)ko-ga
 NEG wish-1SG that see-1SG no-one-ACC/ anyone-ACC
 'I do not wish to see anyone.'

In this example, the *ni*-NPI is not a clausemate of the negation marker *ne*, seemingly violating (48). Furthermore, the complementary distribution usually found between *ni*-NPIs and *i*-NPIs (see the discussion of the Bagel problem in section 11), breaks down in (49). The framework of CP2014 offers at least two possibilities for an analysis of (49) consistent with condition (48). First, the matrix negation could be related to the embedded *ni*-NPI by Classical NEG Raising from the embedded clause (assuming that SC *wish* is a Classical NEG Raising predicate). Notably though, Bošković (2007) has argued that SC lacks Classical NEG Raising. Second, the strict *ni*-NPI could take main clause scope, and NEG raising would take place from the scope occurrence of the *ni*-NPI. This would not instantiate Classical NEG Raising. We cannot differentiate between these alternatives at this stage because we lack independent grounds for diagnosing high vs. low SC quantifier phrase/NPI scope.

Moreover, Progovac (1994: 50–53) has proposed a kind of restructuring approach to cases like (49) in which the whole would in effect function as a single clause for various grammatical phenomena (see also Bošković (2008)).

Our approach shares with Progovac (1994) the crucial assumption that the relation between a *ni*-NPI and the negative marker associated with it is syntactic. Progovac (1994: 45) claims that *ni*-NPIs are ‘...anaphoric, subject to Principle A...’ We assume that the relation between a *ni*-NPI and a negative marker is mediated by NEG raising leaving a copy. Both analyses then posit a syntactic relation, and not merely a semantic condition on the distribution of *ni*-NPIs. Furthermore, as discussed below in section 11, our approach assumes a syntactic anti-locality condition on *i*-NPIs, much in the spirit of Progovac (1994).

8.2 The Remnant Raising Condition

One sharp difference between the SC *ni*-NPI cases we have cited and the corresponding standard English ones is seen in (44c), where the *ni*-NPI occurs as a subject, preceding and presumably c-commanding the local instance of NEG. The standard English analogs are of course ungrammatical on the relevant readings:

- (50) a. *Anyone does not know Mary.
- b. *Anyone knows Mary.
- c. *No one doesn’t know Mary.

While (50b) might have a free choice reading, and (50c) with stress on *doesn’t* is grammatical on a double-negation reading, none of the sentences in (50) paraphrases SC (44c). However, significantly, the analogous SC facts do seem parallel to those of nonstandard English:

- (51) a. Outside of this country around us, nobody ain’t seen Ben Curry in years.
(<https://books.google.com/books?isbn...>)
- b. I ain’t seen nobody.
(<https://books.google.com/books?id>)

We suggested in section 3 that the contrast between standard English *any* NPIs and nonstandard cases like (51) lay in constraint (22), the Remnant Raising Condition, on

the displacement of NEG raising remnant phrases. There are at least two ways to describe the SC situation. First, it might simply have no constraint analogous to (22). Second, some version of (22) might be a universal principle. If so, as in non-standard English examples like (51a), SC cases like (44c) would escape the constraint because the obligatory presence of the copy NEG in them guarantees that the antecedent of the condition in (22) is not satisfied.

The Remnant Raising Constraint may also account for the fact that SC *ni*-NPIs contrast with standard English *any* NPIs with respect to appearance in fragment answers to questions. SC *ni*-NPIs can serve as fragment answers, but English *any* NPIs cannot.

- (52) a. Šta si kupio? b. Ništa
 what are bought nothing
 ‘What did you buy?’ ‘Nothing.’ (Bošković 2009: (19))
- (53) a. What did you buy? b. Nothing/*Anything

This difference between SC *ni*-NPIs and standard English *any* NPIs is especially striking in present terms since we analyze both as involving NEG raising from a unary NEG NPI.

Following Bošković (2009),¹⁰ we assume that examples like (52b) represent preposing of the NPI followed by clausal deletion. This view parallels the Sluicing analysis first proposed by Ross (1969) and defended by Merchant (2001).

- (54) Nista <[nisam kupio]>
 Nothing NEG.am bought

Applying the same analysis to the *any* variant of English (53b) would yield the structure in (55).

- (55) [[<NEG₁> SOME] thing]]₂ <[I did NEG₁ (= not) buy <DP₂>]

While (55) violates the Remnant Raising Constraint, the SC example (52b) avoids a violation of that condition since the raised NEG leaves a copy.

8.3 Determiner Sharing

Cases of multiple *ni*-NPIs (all italicized) in the same clause raise further key issues:

- (56) a. Milan nije poslao *nikome ništa*.
 Milan NEG.AUX sent no one.DAT nothing
 ‘Milan sent no one anything.’
- b. *Niko* nije *ništa* video.
 No one NEG.AUX nothing seen
 ‘No one saw anything.’
- c. *Nijedan* student nije pio *nikakav* viski.
 No student NEG.AUX drunk no whiskey
 ‘No student drank any whiskey.’ (Progovac, p.c.)

¹⁰For a similar analysis in Japanese, see Watanabe (2004).

But even acceptance of the determiner-sharing view of these negative-concord cases leaves a serious question: how do such structures interact properly with condition (48), which is intended to force the NEG in an SC unary NEG structure to raise to yield the clausal NEG regularly found as a clausemate of a *ni*-NPI? We propose that in such multiple *ni*-NPI cases the NEG₁ raises from the shared determiner [NEG₁ SOME₂]. A reviewer points out a parallel between this proposal and the phenomena usually called *across-the-board extraction*.

For (56b), NEG₁ raises from the shared determiner to a DP-external location in the clause. The raising leaves a copy NEG in the D of the containing DP. But since that D is shared by several DPs, the ultimate result will be the presence of a copy NEG occurrence in every DP sharing the same D.

We observe, though, that while the account just sketched arguably suffices for SC, it is insufficient for standard English under our assumptions. This is due to the fact that in English, the original NEG in a shared D structure does not have multiple realized copies, but instead is represented as null in all but one of the containing DPs, as in (13) and (59):

(59) Janet did NEG₁ (not) send [[<NEG₁> any] note] to [[<NEG₁> any] teacher].

See CP2014 (section 6.4) for discussion of this property of English.

A reviewer suggests that our treatment of SC negative concord (NC) cases will not straightforwardly extend to non-strict NC languages of the Italian type, citing Penka (2010). In fact, it is straightforward to extend the analysis of SC concord cases in this section to languages like Italian. Their central relevant property is as follows. Given a set of *n*-words in a single clause, when all of these are postverbal, the presence of the DP-external analog of the obligatory SC NEG is also obligatory. But when at least one such *n*-word is preverbal, for example a subject, the external NEG is not found. We would then simply add, to an account like the one we have given for SC, a claim that a preverbal *n*-word DP obligatorily deletes the raised NEG.

8.4 The Clausemate Condition

A last NPI distributional issue concerning *ni*-NPIs involves the condition that they must appear with a clausemate negation:

- (60) a. *Milan ne tvrđi da Marija poznaje ni(t)ko-ga
 Milan NEG claims that Mary knows no-one-ACC
- b. *Milan ne tvrđi da ni(t)ko vidi Marij-u
 Milan NEG claims that no-one sees Mary-ACC
- c. *Milan ne tvrđi da Marija nikada vozi.
 Milan NEG claims that Mary never drives
- d. *Milan ne tvrđi da Marija to ni-kakp odobrava
 Milan NEG claims that Mary that no-how approves (Progovac 1994: 41)

As Progovac notes ‘A negative particle in a superordinate clause does not license a *ni*-NPI...’. To explain the unacceptability of these sentences in the framework of

CP2014, two alternative structures must be considered, one in which the *ni*-NPI has embedded scope and another in which it has matrix scope.

If *ni-koga* in (60a) is interpreted with embedded scope, then its scope position occurrence is internal to the embedded clause. In that case, the main clause position of the clausal NEG in (60a) would require NEG raising from the embedded clause to the matrix clause. The ungrammaticality of (60a) suggests that such raising is impossible. This is not surprising, since the apparently banned case would involve a variety of Classical NEG Raising in the sense of CP2014. But a verb meaning ‘claim’ is not the sort of predicate expected to be a trigger for such raising; see Horn (1978: 187–208). Moreover, Bošković (2007) argues that SC lacks Classical NEG Raising.

If, however, *ni-koga* has matrix scope in (60a), then raising of the NEG from the matrix scope position of *ni-koga* to the preverbal position of the matrix clause would not violate any known general conditions. Relevantly, CP2014 (chapter 9) discussed English cases where strict NPIs seem to be separated from the associated NEG by a finite clause boundary. It was argued there that certain strict NPIs, if stressed, can appear with a non-clausemate negation. CP2014 observed that in such cases, the prediction is that the scope position of the strict NPI will be in the matrix. The NEG then raises from the scope position of the NPI. Crucially, such raising is not Classical NEG Raising, which involves raising from a complement clause into a matrix clause.

The ungrammaticality of examples like (60a) seems to indicate that such a high-scope analysis is impossible in SC. That is, SC appears to block a structure in which a unary NPI in a complement clause takes high scope with the obligatory NEG raising occurring in the matrix clause. In contrast, Collins, Postal and Yevudey (2015) show that the African language Ewe permits a high-scope analysis for examples analogous to the bad SC cases in (60).

9. SC *i*-NPIs

In this section, we discuss the distribution and analysis of SC *i*-NPIs.

9.1 Distribution of *i*-NPIs

The distribution of SC *i*-NPIs is essentially complementary to that of *ni*-NPIs. Whereas *ni*-NPIs generally cannot occur without a clausemate instance of NEG (but see the discussion of (49) above), *i*-NPIs are generally banned in the presence of clausemate instances of NEG (but see Progovac 2005: chapter 6).

The sentences in (61–79) list a variety of contexts in which *i*-NPIs appear. **First**, they occur in complement clauses with a negated matrix verb, as in (61).

- (61) a. Milan ne tvrdi da i(t)ko/ *ni(t)ko voli Marij-u
 Milan NEG claims that anyone/ no one loves Mary-ACC
 ‘Milan does not claim that anyone loves Mary.’
- b. Milan ne tvrdi da Marija poznaje i(t)ko-ga
 Milan NEG claims that Mary knows anyone-ACC
 ‘Milan does not claim that Mary knows anyone.’ (Progovac 1994: 42 and p. c.)

We note that the grammatical complement clause object in (61b) corresponds to the type of English case which we have argued to represent a binary NEG NPI. For instance, as shown in (62), it cannot form a Horn clause.

(62) *Mike does not claim that anyone does Mary know.

Similarly, as in (63), it cannot contain members of JACK_A (ignoring the possibility of a high-scope analysis).

(63) *Mike did not claim that Mary had discovered jackshit_A.

Second, Progovac (1994: 64–65) makes clear that *i*-NPIs are possible in conditional clauses, as in (64).

(64) Ako Milan povred i(t)ko-ga/ *ni(t)ko-ga, bi-ce kažnjen
if Milan hurts anyone-ACC/ no-one-ACC be-FUT punished
'If Milan hurts anyone, he will be punished.' (Progovac 1994: 64)

The grammatical *i*-NPIs in such conditional examples correspond to the English *any* forms that cannot form Horn clauses or be replaced by members of JACK_A, shown in (65).

- (65) a. If the judge believes that Milan injured anyone, he should be punished.
b. *If the judge believes that anyone did Milan injure, he should be punished.
c. *If the judge believes that Milan stole jackshit_A, he should punish him.

Third, SC allows *i*-NPIs inside restrictive relatives with universal quantifier DP heads as licensors.

(66) Svako (t)ko povredi i(t)ko-ga/ *ni(t)ko-ga mora biti kažnjen
everyone who injures anyone-ACC/ no-one-ACC must be punished
'Everyone who injures anyone must be punished.' (Progovac 1994: 64–65)

Here too the corresponding English clauses in (67) cannot contain Horn clauses or members of JACK_A and are thus arguably binary NEG structures.

- (67) a. Everyone who believes she stole anything is being kind of unfair.
b. *Everyone who believes that anything did she steal is being kind of unfair.
c. *Everyone who stole jackshit_A was interrogated by the police.

Fourth, SC *i*-NPIs can appear in yes/no questions (lacking negation), as in (68).

(68) Da li Milan voli i(t)ko-ga/ *ni(t)ko-ga?
That Q Milan loves anyone-ACC/ no-one-ACC
'Does Milan love anyone?' (Progovac 1994: 43)

Such cases also parallel English *any* NPIs as in (69), which cannot form Horn clauses and which occur in contexts precluding members of JACK_A. That is, they correspond to English binary NEG NPIs.

- (69) a. Can he really believe that Mary loves anyone?
b. *Can he really believe that anyone does Mary love?
c. *Can he really understand jackshit_A about love? (ignore rhetorical reading)

Fifth, a SC *i*-NPI can occur as the clausemate of a form meaning ‘few’, as in (70).

- (70) Malo ljudi je išta/ *ništa kupilo.
 Few people AUX anything nothing bought
 ‘Few people bought anything.’ (Progovac p.c.)

Again, this is a semantic type allowing an English *any* NPI incapable of forming a Horn clause or of being replaced by a member of JACK_A.

- (71) a. Few people believe that they bought anything.
 b. *Few people believe that anything did they buy.
 c. *Few people understand jackshit_A about thermodynamics.

Sixth, an element meaning ‘only’ licenses clausemate SC *i*-NPIs, as in (72).

- (72) Samo je Milan išta/ *ništa kupio.
 Only AUX Milan anything/ nothing bought
 ‘Only Milan bought anything.’ (Progovac p.c.)

As before, the corresponding English NPI cannot be the basis of a Horn clause or be replaced by a member of JACK_A.

- (73) a. Only Mike believes that they bought anything.
 b. *Only Mike believes that anything did they buy.
 c. *Only Mike bought jackshit_A.

Seventh, some SC *wh*-questions like (74) permit *i*-NPIs:

- (74) Kako bi Milan ikoga/ *nikoga zavoleo?
 how would Milan anyone/ no one love
 ‘How would Milan fall in love with anyone?’ (Progovac 2005: Chapter 7)

Once more, the English analog determines binary NEG NPIs, as shown in (75) by the Horn clause and JACK_A tests.

- (75) a. How could Mike believe Milan would fall in love with anyone?
 b. *How could Mike believe that anyone would Milan fall in love with?
 c. *How could Mike accomplish jackshit_A?

The sentence in (75c) is ungrammatical only on the genuine interrogative reading. On a rhetorical assertion reading, the example is well-formed.

Eighth, SC *i*-NPIs can occur in the complement of a verb meaning ‘forget’, as in (76).

- (76) Ernest je zaboravio da je Gladys ikoga/ *nikoga uvredio.
 Ernest AUX forgot that AUX Gladys anyone no one insulted
 ‘Ernest forgot that Gladys had insulted anyone.’ (Progovac, p.c.)

This environment also permits only binary NEG NPIs in English, as shown, for example, by the Horn clause criterion. Here, we cannot cite parallel JACK_A examples, since all instances of JACK_A are inanimate nouns. However, the rather stilted

human strict NPI phrase *a living soul* functions in much the same way, in that it can only be a unary NEG NPI. And as expected, it is impossible in the complement of *forget* when unaccompanied by an embedded NEG, as in (77).

- (77) a. Ernest forgot that Gladys had insulted anyone.
 b. *Ernest forgot that anyone like that had Gladys insulted.
 c. *Ernest forgot that he had insulted a living soul.

Ninth, another environment for SC *i*-NPIs is the complement clause of a form meaning ‘sorry’.

- (78) Žao mi je što je on ikoga/ *nikoga obmanuo.
 Sorry me-DAT AUX COMP AUX he anyone/ no one misled
 ‘I am sorry he misled anyone.’ (Progovac, p.c.)

As expected, the Horn clause and *a living soul* criteria determine that the English analog can only involve a binary NEG NPI:

- (79) a. I am sorry that he misled anyone.
 b. *I am sorry that anyone at all did he mislead.
 c. *I am sorry that he misled a living soul.

We have thus illustrated nine different SC contexts which allow *i*-NPIs. These correspond to English contexts which only allow *any* NPIs of the type that passes known tests for binary NEG NPIs (specifically, those based on Horn clauses and strict NPIs like *jackshit*_A and *a living soul*). We believe that this provides solid initial evidence that SC *i*-NPIs are binary NEG NPIs. Given the reasons for taking SC *ni*-NPIs to be unary NEG structures, there then emerges a basis for the conclusion that the distinction between binary and unary NEG NPIs worked out in CP2014 almost entirely on the basis of English also exists in SC. Strikingly, in SC this distinction is morphologically marked in a systematic way. This in turn provides strong cross-linguistic support for the theoretical distinction drawn in CP2014 between unary and binary NEG NPIs.

9.2 Analysis of *i*-NPIs

Given the detailed parallels between English and SC documented above, we assume that the nine SC *i*-NPI cases we have mentioned have the same binary NEG structure as we proposed for English in CP2014, shown in (80).

- (80) [_{DP} [_D NEG₁ [_D NEG₂ SOME]] NP]

As in English, there is no evidence in SC that binary NEG NPIs contain *overt* NEG_s. The two NEG_s we posit must therefore be deleted. Recall that for us, NEG deletion involves a relation with a phrase which is a NEG deleter, a relation subject to a number of general constraints spelled out in CP2014 (chapter 8). Since space does not permit a detailed review of that discussion, here we simply list what we propose as a plausible NEG deleter in a few of the binary NEG NPI cases discussed here.

In cases like (64), we take the conditional element *ako* ‘if’ to be the NEG deleter. In those like (66), we assign this function to *svako* ‘everyone’. In cases like (68), the NEG deleter is the Q marker. For (70) the NEG deleter is *malo ljudi* ‘few people’ and in (72) it is the form *samo* ‘only’. In (74) the identity of the NEG deleter is less obvious. It could again be Q, or possibly the *wh* form. In (76), the NEG deleter is the main verb *zaboravio* ‘forgot’, while in (78) it is *Žao* ‘sorry’. Arguably, each of these forms defines an operator which is not increasing with respect to the original positions of the deleted NEG_s. CP2014 (chapter 8) claim that a general NEG deleter lawfully has this property (see the General NEG Deletion Condition, p. 72). This imposes strong limitations on our analysis of binary NEG structures. In many cases, it is by no means obvious how to provide an analysis which satisfies the General NEG Deletion Condition, and certainly much further research is required in this area.

10. SENTENTIAL NEGATION

The traditional notion of sentential negation (and the related, more recent syntactic concept of a clausal NegP) have played no role in the preceding sections. In all the SC cases involving *ni*-NPIs we have discussed, the omnipresent clausal NEG was analyzed as arising via raising from a unary NEG NPI (leaving a copy NEG in situ). Such an analysis leaves open how to analyze the multitude of sentences containing clausal NEG_s that do not appear to involve NPIs at all.

(81) a. Milan nije plesao.
 Milan NEG.AUX danced.SGM
 ‘Milan didn’t dance’

b. Milan ne pleše.
 Milan NEG dances.
 ‘Milan does not dance.’

c. Milan nije video Marij-u.
 Milan NEG.AUX seen Mary-ACC
 ‘Milan did not see Mary.’

(Progovac, p.c.)

The open question is what is the correct syntactic analysis of *ne* in examples like (81). What is its structural origin? Since there is no overt NPI in such cases, *ne* appears not to have raised from any DP at all. Similar questions arise in every language for negative clauses not containing NPIs.

Specifically, let us consider whether dealing with this issue requires sentential negation of the kind that heads a clausal NegP syntactically and negates a proposition semantically. We suggest that it does not.

One approach to the problem posed by cases like (81) would be to assume that the NEG in so-called sentential negation examples modifies the relevant verb, VP, adjective, AdjP or other predicate in the clause. Such a NEG would then raise from its predicational position to a higher clausal position. This is the sort of analysis of simple negation (i.e., negation not accompanied by NPIs) given in CP2014.

Here, we will suggest a much more radical alternative, although we will not be able to argue for it in detail here; see Collins, Postal and Yevudey (2015) for a related treatment. See also Bošković (2009), who arrives at a partially related conclusion about a ‘null operator (Op) with iNEG’. We propose that examples such as (81) involve a covert negated existential quantifier DP and that the so-called sentential NEG is actually raised from this quantifier DP. The semantics of this syntactic proposal fall in the general domain of so-called event semantics, introduced by Davidson (1967). But we believe the idea that the relevant quantifier has a syntactic (albeit covert) reality to be novel.

This covert existential quantifier DP will function just like other existential quantifier DPs, sharing with them the property that their *scope* occurrences are covert. Its unique feature is the additional covertness of its *argument* occurrence.

We do not assume that the relevant existential quantifier DP is limited to events, but would recognize a range of other possibilities (e.g. states), sometimes called eventualities. Maienborn (2011: 809) cites the following relevant remark from Kim (1969): ‘When we talk of explaining an event, we are not excluding what, in a narrower sense of the term, is not an event but rather a state or process.’ See Maienborn (2011) for more recent discussion and alternative formulations of event semantics.

To illustrate these ideas, we begin with the NPI-free simple English sentence in (82).

(82) Claudia sang.

This sentence can be represented in predicate logic in terms of quantification over events, as in (83), omitting reference to time.

(83) $\exists e.\text{sing}(e, \text{Claudia})$
 ‘There is an event *e* such that *e* is a singing event by Claudia.’

The syntactic version of this hypothesis simply posits a covert quantifier DP that quantifies over events, as in:

(84) [Claudia sang [_{DP} SOME EVENT]]

As with all quantifier DPs, this silent one will have two syntactic positions: a scope position and an in-situ position (interpreted as a variable); see CP2014, chapter 2. Structure (84) illustrates the in-situ position. But (84) is not intended to make any particular claims about the argument position of the quantifier DP; whether or not it is internal to the VP is not relevant to the points to be made here. We omit the representation of the scope position in (84).

Turning to the negative case, on the Davidsonian view, example (85a) would have the semantic representation in (85b).

(85) a. Claudia did not sing.
 b. $\neg\exists e.\text{sing}(e, \text{Claudia})$
 ‘There is no event *e* such that *e* is a singing event by Claudia.’

In other words, (85) represents a case of the negation of existential quantification. In the framework of CP2014, negated existential quantifiers have, as already indicated, a structure like (86):

(86) no chinchilla = [[NEG SOME] chinchilla]

In this representation, NEG is realized as *no*, while SOME is covert. So (85a) would be represented with a negated existential quantifier over events.

Given this background, the SC sentence in (81b) will have the structure in (87), ignoring the scope position occurrence of the event quantifier.¹¹

(87) Milan NEG₁ pleše [[cNEG₁ SOME] EVENT]
 Milan dances

In this structure, NEG₁ modifies SOME and raises to a pre-verbal position leaving a copy NEG. The whole expression [[cNEG₁ SOME] EVENT] is covert, the general case for event quantifier DPs. In other respects, the SC examples in (81) fall together with the *ni*-NPI cases.

While Herburger (2001:302) also appeals to events in the analysis of negative sentences, her approach differs from ours in that we assume that there is a syntactically present event quantifier DP, and that negation syntactically modifies the D of this DP in the structure: [[NEG SOME] EVENT].

11. THE BAGEL PROBLEM

Bifurcated systems of NPIs more or less parallel to that of SC are found in other languages already described in the literature, including Russian (Pereltsvaig 2004), Hungarian (Tóth 1999) and Polish (Błaszczak 2003). Pereltsvaig suggests that the facts in Russian create what she calls *the bagel problem*. The basic fact is that Russian analogs of SC *i*-NPIs, like the SC examples, are incompatible with sentential negation under conditions predicted to be ideal for NPIs under semantic views of licensing (since the NPIs are then under the scope of an antimorphic operator).¹²

The relevant SC pattern is illustrated in (88).

- (88) a. *Marija ne poznaje i(t)ko-ga
 Mary not knows anyone-ACC
 'Mary does not know anyone.'
- b. *I(t)ko ne vidi Milan-a
 anybody not sees Milan-ACC
 'Anyone does not see Milan.'
- c. *Milan ikada ne vozi
 Milan ever not drives
 'Milan doesn't ever drive.'
- d. *Milan to i-kako ne odobrava
 Milan that any-how not approves
 'Milan does not approve of that in any way.'
- (Progovac 1994: 42)

¹¹See CP2014 (chapter 5) for a discussion of NEG raising from scope positions.

¹²An antimorphic function is one satisfying the conditions in (i):

(i) $f(X \cap Y) = f(X) \cup f(Y)$ and $f(X \cup Y) = f(X) \cap f(Y)$ (van der Wouden 1997: 104)

Similar ungrammatical examples can be given in which both a *ni*-NPI and an *i*-NPI occur in the same clause.

- (89) a. Niko nije video niko-ga/ *iko-ga
 nobody NEG.AUX saw no-one-ACC/ anybody-ACC
 ‘Nobody saw anybody.’
- b. Milan nije nikada video niko-ga/ ?*iko-ga
 Milan NEG.AUX never saw no-one-ACC/ anybody-ACC
 ‘Milan never saw anybody.’ (Progovac, p.c.)

Recall that SC NEG raising from DPs is only relevant in the case of unary NEG NPIs. For binary NEG NPIs, which have the form [[NEG₂ [NEG₁ SOME]] NP], NEG₁ and NEG₂ are deleted as a consequence of some general NEG deleter. So, under these assumptions, the preverbal NEGs in (89) cannot have resulted from the raising of a NEG originating in the binary NEG *i*-NPIs. Rather, these preverbal NEGs must have originated as modifiers of the Davidson event-quantifier DP, [[NEG SOME] EVENT].

Evidently, some sort of clausemate condition is operative here to rule out such examples. There are at least three partially alternative ways one could formulate the relevant constraint in present terms. One could claim that (i) the NEG deleter of the outer NEG of the reversal NEG defining an *i*-NPI is not a surface clausemate of the *i*-NPI itself; or (ii) it is not a clausemate (at any point) of the argument position of the *i*-NPI or (iii) it is not a clausemate of the scope position of the *i*-NPI.

While we lack any strong SC basis for a decision about these three, (90) seems to us the most plausible theoretical choice:

- (90) The Bagel Condition: If $K = [{}_{DP} [{}_{D} \text{NEG}_1 \text{SOME}] \text{NP}]$ is a general NEG deleter for a reversal NEG₂ of $M = [{}_{DP} [{}_{D} \text{NEG}_2 [{}_{\text{NEG}_3 \text{SOME}}] \text{NP}]$, then K is not a clausemate of M's scope position.
 So consider a partial structure of (88a), shown in (91).
- (91) [[_{DP} [NEG₁ SOME] EVENT]₅ [[_{DP} [NEG₂ [NEG₃ i]] (t)ko-[ga]]₇ [Marija poznaje DP₅ DP₇]]]

Here the coindexing of the full DPs in scope positions with the abbreviated DPs in argument (in-situ) positions represents the fact that these DPs have occurrences in two different positions.

In this case, the NEG deleter of NEG₂ is the negated event quantifier DP₅ = [[NEG SOME] EVENT]], but it is a clausemate of the scope position of DP₇, violating condition (90).

When pre-verbal negation and the *i*-NPI are not clausemates, no violation of (90) arises, as shown in (92).

- (92) Milan ne tvrdi da Marija poznsaje i(t)ko-ga
 Milan NEG claims that Mary knows anyone-ACC
 ‘Milan does not claim that Mary knows anyone.’ (Progovac 1994: 42)

In this case, [[NEG SOME] EVENT] is separated from the scope position of the *i*-NPI by the clause boundary before *da*, and there is no violation of the Bagel Condition.

There is a certain formal similarity between our condition (90) and the binding-theory approach to the relevant facts in Progovac (1994). Both involve an antilocality condition on the allowable distribution of *i*-NPIs, for us (90), for Progovac a version of Principle B.

Suppose that (90), the Bagel Condition, is factually adequate; that is, it does not block any grammatical *i*-NPI SC cases. Nonetheless, it remains quite stipulative. This raises the question of whether (90) could be derived from some more general condition, either something about SC specifically, or preferably from a grammatical universal. Space precludes considering universality issues here. However, we briefly explore the first possibility, while acknowledging that our remarks are highly speculative.

Consider (44a), repeated here as (93).

- (93) Marija ne voli ni(t)ko-ga
 Mary NEG loves no-one-ACC
 'Mary does not love anyone.'
 *'Mary does not love no one' = 'Mary loves someone' (Progovac 1994: 80)

Example (93) has only a negative concord meaning; that is, cannot be interpreted as an instance of double negation.¹³ In our terms, the question is why *ne* cannot be analysed as negating the existential quantifier expression in the Davidsonian event quantifier DP. We believe that such double-negation readings are in general absent from Serbo-Croatian clauses involving (what are for us) two NEG-containing phrases.

Actually, this statement is overly general. As Progovac (2000) documents in some detail, in a variety of environments involving certain adverbials and instances of coordination some double-negation possibilities exist. We cannot attempt to take these data into account here. But we note that these 'exceptions' appear to correlate with those environments where *ni*-NPIs do not permit the obligatory NEG raising/resumptive NEG analysis we have posited.

From the standpoint of CP2014, the generalization seems to be that if two SC NEG-containing DPs appear in the same clause, they must have a polyadic quantification interpretation with a single underlying quantifier $D = [\text{NEG SOME}]$. This motivates a formulation like (94).

- (94) The SC Double-Negation Constraint: If $K = [{}_{\text{DP}} [{}_{\text{D}_a} \text{NEG}_1 \text{SOME}] \text{NP}]$ is a clausemate of $M = [{}_{\text{DP}} [{}_{\text{D}_b} \text{NEG}_2 \dots] \dots]$, then $D_a = D_b$.

In other words, a DP of the form $[{}_{\text{DP}} [{}_{\text{D}} \text{NEG}_1 \text{SOME}] \text{NP}]$ can only be a licit clausemate of another NEG-containing DP if they share a single determiner. That in turn would force the resulting interpretation to involve polyadic quantification.

As well as cases like (93), constraint (94) rightly blocks double-negation readings of SC clauses with multiple overt *ni*-NPIs like (56c), repeated here:

- (95) *Nijedan* student nije pio *nikakav* viski.
 No student NEG.AUX drunk no whiskey
 'No student drank any whiskey.'

¹³We thank Ljiljana Progovac (p.c. to Collins, 17/11/2016) and Željko Bošković (p.c. to Postal, 17/11/2016) for verifying this state of affairs.

Here *Nijedan student*, which we analyze as having a D of the form [NEG SOME], is a clausemate of the NEG-containing DP *nikakav viski*, and thus falls under (94).

Notably then, (90), the Bagel Condition, falls out from the SC Double-Negation condition. This can be shown informally as follows. Consider a structure in which an *i*-NPI, which we have analyzed as a reversal structure [_{DP} [_D NEG [_D NEG SOME]] NP], cooccurs with either an overt *ni*-NPI (with clausal *ne*) or just with clausal *ne* (as in (88a)). Since we analyze examples like (88a) in terms of the negative event DP, both cases reduce to having a NEG-containing DP of the form of the first DP in (94). And any reversal structure DP, hence any *i*-NPI in our terms, will satisfy the second DP representation in (94). But if a DP instantiating that second DP representation is of the reversal form [_{DP} [_D NEG [_D NEG SOME]] NP], the identity condition on determiners cannot be met. The D of the *ni*-NPI or of a negative event quantifier DP is [_D NEG SOME], distinct from the D of an *i*-NPI, which is [_D NEG [_D NEG SOME]].

Our reduction of the Bagel Condition to the SC Double-Negation Constraint gives indirect support to the assumption that *i*-NPIs in SC involve a double-negation structure. If they did not involve a double-negation structure, they would not be subject to (94).

12. CONCLUSION

In this paper we have argued on the basis of evidence from SC for the claim in CP2014 that English NPIs instantiate two distinct structures: unary NEG NPIs and binary NEG NPIs. We claimed that SC *i*-NPIs correspond to English binary NEG NPIs, while SC *ni*-NPIs correspond to English unary NEG NPIs. We showed how the properties of SC *ni*-NPIs can be understood in terms of their analysis as unary NEG NPIs. We explained the syntactic differences between SC *ni*-NPIs and English unary NEG NPIs in terms of the assumption that *ni*-NPIs, like *no* forms in nonstandard English, involve copy raising. Further, we suggested that these ideas, combined with a syntacticized version of what is now called event semantics, could provide a novel approach to so-called sentential negation.

We have also indicated how a simple clausemate condition can account for the basic facts corresponding to the generalization Pereltsvaig (2004) referred to (for Russian) as the Bagel Problem. And we have suggested that this condition may in turn be a consequence of a more general constraint barring two SC negative DPs which fail to share a D.

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