Hybrid negative concord, and quantifier-internal vs. clausal particles[1]

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Abstract. Surányi (2006) observed that Hungarian has a hybrid (strict + non-strict) negative concord system. This paper proposes a uniform analysis of that system, following but somewhat modifying Zeiljstra (2004, 2008) and Chierchia (2013). The focus of the paper is on two types of particles. Those that precede their hosts form strict NC items. Those that follow their hosts form non-strict NC items. We argue that the former are quantifier-internal and the latter are heads on the clausal spine. Negative concord is related to positive polarity and weak negative polarity.

1. <u>Issues to be addressed</u>

Russian is a classical strict negative concord (NC) language: the sentential negation marker <u>ne</u> is always obligatory in the presence of n-words. Italian is a classical non-strict NC language: the sentential negation marker <u>non</u> is in complementary distribution with preverbal n-words (unless the intended meaning is double negation).

Hungarian is known as a strict NC language. But, alongside <u>nikto</u>-style <u>senki</u> and <u>semmi</u>, it also has <u>senki sem</u> and <u>semmi sem</u>. Surányi (2006) made the fundamental observation that the distribution of the latter items is basically the same as that of <u>nessuno</u> and <u>niente</u>. He concluded that Hungarian is a hybrid NC language.

(1) a.	Nikto	ne	videl	nichego.	* w/o *ne*	No one saw anything
(2) a.	Nessuno		ha visto	niente.	* with *non*	No one saw anything
(3) a.	Senki	nem	látott	semmit.	* w/o *nem*	No one saw anything
(4) a.	Senki sem		látott	semmit sem.	* with *nem*	No one saw anything
(1) b.	Marija	ne	videla	nichego.	* w/o *ne*	M didn't see anything
(2) b.	Maria	non	ha visto	niente.	* w/o *non*	M didn't see anything
(3) b.	Mari	nem	látott	semmit.	* w/o *nem*	M didn't see anything
(4) b.	Mari	nem	látott	semmit sem.	* w/o *nem*	M didn't see anything

As Surányi points out, <u>sem</u> cannot be simply the same thing as <u>nem</u>, since <u>sem</u> accompanies n-words in postverbal position as well.

The two kinds of Hungarian NC items peacefully co-exist within a sentence, as expected based on (3) and (4). To underscore this, I add a third n-word in (5). All four postverbal combinations are possible: <u>semmit soha</u>, <u>semmit sem soha sem</u>, <u>semmit sem soha</u>, <u>semmit soha sem</u>.

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(5) a. Senki nem látott semmit (sem) soha (sem). `No one ever saw anything '
  n-one not saw n-thing nor n-ever nor

 b. Senki sem látott semmit (sem) soha (sem). `No one ever saw anything'
  n-one nor saw n-thing nor n-ever nor

 c. Mari nem látott semmit (sem) soha (sem). `M didn't ever see anything'
  M not saw n-thing nor n-ever nor

These facts raise the following questions, to be refined below:

(6) How do the strict and non-strict NC systems combine in one language?
(7) Why is <u>senki</u> a strict, and <u>senki sem</u> a non-strict, NC item?

Surányi proposed a system with multiple ambiguities: "N-words in Hungarian can be semantically negative or non-negative, and both types are lexically ambiguous between a universally quantified and a non-quantificational interpretation" (2006: 272).

My goal is to steer clear of ambiguities. Zeijlstra's (2004, 2008) theory seems like a promising framework for unification: Zeijlstra treats n-words in both strict and non-strict NC languages as negative polarity items: existential quantifiers that must occur within the scope of negation. This is encoded by their uninterpretable [uN] feature. This is something that I adopt:

(8) Following Zeijlstra, both <u>senki</u> and <u>senki sem</u> are strong negative polarity items, [uN].
  The syntactic and semantic composition will be spelled out below.

On the other hand, Zeijlstra does not treat the sentential negation markers uniformly. To make the strict/non-strict distinction, he analyses Italian <u>non</u> as having an interpretable [iN] feature and expressing semantic negation ¬, whereas Russian <u>ne</u> as having uninterpretable [uN]. <u>Ne</u> is a negative polarity item, like <u>nikto</u>. Both <u>nikto</u> and <u>ne</u> are licensed by a phonetically null operator Op with the meaning ¬.

Zeijlstra's dual analysis of the sentential negation markers predicts that strict and non-strict NC do not coexist in one language. But the hybrid situation exists in Hungarian, so the sentential negation marker <u>nem</u> needs a unique analysis. It seems that it can only be that of <u>non</u>:

(9) Hungarian <u>nem</u> has an interpretable [iN] feature and expresses semantic negation ¬.
  The configuration in which NC items fall within its scope will be spelled out below.

The focus of the present paper is on the NC items <u>senki</u> and <u>senki sem</u>. The main novel descriptive observation is that they are paralleled by two distinct `neither_nor' constructions:

(10) **Sen**ki nem aludt. ≈ **Sem** Kati **sem** Mari nem aludt. **strict** NC-items
  n-one not slept nor Kati nor Mari not slept

(11) Senki **sem** aludt. ≈ Kati **sem** (Mari **sem**) aludt. **non-strict** NC-items
  n-one nor slept Kati nor Mari nor slept

There are several differences between the two constructions. The most crucial is that the "particle precedes host" version needs a pair, whereas the "host precedes particle" version is happy on its own.

(12) a.* **Sem** Kati nem aludt.[2]
         nor K not slept.
     b.* Nem aludt **sem** Kati.
         not slept nor K

(13) a. Kati **sem** aludt.   `K didn't sleep, either'
        K nor slept
     b. Nem aludt Kati **sem**.   `K didn't sleep, either'
        not slept K nor

I will argue that,

(14) The <u>sem</u> that precedes its host within a paired construction is a phrase-internal particle, much like the <u>sen</u>-/<u>sem</u>- component of the n-words <u>senki</u> and <u>semmi</u>. On the other hand, the <u>sem</u> that follows its host is a head on the clausal spine, in all its occurrences.

This analysis is relevant to two larger issues. First, it can be used to explain why <u>senki</u> and <u>sem Kati sem Mari</u> are strict NC items, whereas <u>senki sem</u> and <u>Kati sem (Mari sem)</u> are non-strict NC items. The explanation will be in the spirit of Zeijlstra (2004, 2008) and, for the semantic aspects, Chierchia (2013), to be detailed in the body of the paper.

Second, the two particle constructions will be related to the larger landscape of quantifier particles in Szabolcsi (2015). Szabolcsi observed that the territory of Japanese <u>mo</u> is divided by two distinct particles in Hungarian, <u>mind</u> and <u>is</u>. <u>Mind</u> forms universal quantifiers and paired `as well as' constructions. <u>Is</u> forms paired `as well as' constructions and serves as an additive particle. I will observe that <u>mind</u> precedes its host, whereas <u>is</u> follows it. This, and other parallels, support the conclusion that <u>mind</u>, like <u>sem</u> in (10) and (12), is quantifier-internal, whereas <u>is</u>, like <u>sem</u> in (11) and (13), is a head on the clausal spine. Szabolcsi (2015) gave a compatible analysis for <u>is</u>, but only noted the existence of <u>mind</u> as a puzzle.

The two lines will crucially converge and allow us to relate <u>senki</u> `n-one' to <u>valaki</u> `someone' and <u>senki se</u> to <u>valaki is</u> `lit. someone even'. Both <u>valaki</u> and <u>valaki is</u> are positive polarity items in the sense of Szabolcsi (2002, 2004); they do not occur in the immediate scope of clause-mate negation, unless "rescued." <u>Valaki is</u>, in addition, is a weak negative polarity item: it occurs in the contexts where NC items do not. These correspondences are very natural in view of Progovac (1994), Krifka (1995), Lahiri (1998), and Chierchia (2013).[3]

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[2] (12a) is acceptable as `Nor did Kate sleep', distinct from `Kate didn't sleep, either'. (12b) is entirely ungrammatical.

[3] Kiss (n.d.) describes a Jespersen-cycle style development of Hungarian negative concord.

2. <u>Background basics: Zeijlstra (2004, 2008) and Chierchia (2013)</u>

This paper hopes to contribute to the understanding of negative concord by analyzing the Hungarian hybrid, but it aims to embed it within Zeijlstra's and Chierchia's theories and to focus on the particles. It is therefore important for the reader to be aware of those theories. Chierchia largely adopts Zeijlstra's syntax, but not only does he add a novel semantics, he also modifies the syntax a bit. Readers who are familiar with one of the theories but not both may find the distinctions between Op, NEG, and abstract ¬ confusing. This section gives a bare bones summary, without trying to do justice to the insight and elegance of the two theories. The reader may study it now or return to it if needed.

Zeijlstra uses the following syntactic features and semantic interpretations. I include French in this table but will not touch upon it further below. I will write "N" for his "Neg". The contents of the table reflects an amendment by Penka (2011, 2012). While Zeijlstra proposed that <u>nessuno</u>, <u>rien</u>, and <u>nikdo</u> were variables, Penka argued that they need to be indefinites. Hence ∃.

(15)

not NC Dutch (Stand. English)	non-strict NC (negative spread) Italian		French		strict NC Czech (Russian)	
niet ¬	non	[iN]:¬	pas	¬	ne	[uN]
niemand ¬∃	nessuno	[uN]:∃	rien	[uN]:∃	nikdo	[uN]:∃
	Op	[iN]:¬	Op	[iN]:¬	Op	[iN]:¬
			ne	npi		

Note that the phonetically null operator Op is identical in all the languages that have it, and it is both a syntactic licenser of NC items ([iN] checks [uN]) and a carrier of semantic negation, ¬.

Below are the representations that Zeijlstra assigns to some simple examples. Start with Italian:

(16)   Gianni non_[iN]:¬ ha telefonato.   `G didn't call'

(17)   Gianni non_[iN]:¬ ha telefonato a nessuno_[uN].   `G didn't call anyone'

(18) Op_[iN]:¬ nessuno_[uN] ha telefonato.   `No one called'

(19) Op_[iN]:¬ nessuno_[uN] ha telefonato a nessuno_[uN].   `No one called anyone'

(20) Chi ha telefonato?   `Who called?
        Op_[iN]:¬ Nessuno_[uN].   No one.'

While Italian has an overt sentential negation marker, <u>non</u> with the exact same properties as Op, French and Czech do not. I will illustrate strict NC with Russian, a language that I know, which works identically to Czech in these respects.

(21) Op_[iN]:¬ Marija   ne_[uN] pozvonila.   `M didn't call'

(22) Op_[iN]:¬ Marija nikomu_[uN]   ne_[uN] pozvonila.   `M didn't call anyone'

(23) Op_[iN]:¬ nikto_[uN]   ne_[uN] pozvonil.   `No one called'

(24) Op_[iN]:¬ nikto_[uN] nikomu_[uN]   ne_[uN] pozvonil.   `No one called anyone'

(25) Kto pozvonil?   `Who called?
      Op_[iN]:¬ Nikto_[uN].   No one.'

N-words are [uN]:∃ in both types of languages, and the preverbal ones are uniformly licensed by Op_[iN]:¬. Zeijlstra supports the claim that the preverbal n-words in Russian are not licensed by ne but, rather, by a higher licensor, with the observation regular indefinites and regular NPIs fall within the scope of negation when preverbal. Analogous strings do not carry analogous interpretations in Italian. I replicate his data with Russian:

(26) Op_[iN]:¬ mne   dve shljapy   ne_[uN] nuzhny.   `I don't need two hats'
      Op_[iN]:¬ mne   mnogo_NPI   ne_[uN] nuzhno.   `I don't need much'

(27) Op_[iN]:¬ nikomu_[uN] dve shljapy   ne_[uN] nuzhny .   `Nobody needs two hats'
      Op_[iN]:¬ nikomu_[uN] mnogo_NPI ne_[uN] nuzhno .   `Nobody needs much'

According to Zeijlstra and Penka, the licensing of regular NPIs (anyone, much) is purely semantic, not a matter of feature-checking. They must fall within the scope of a decreasing operator.

Chierchia (2013:38) proposes that NPIs in general are distinguished by the fact that they come with obligatorily active alternatives (here: subdomain alternatives).

(28) a. There are any cookies left.
         Assertion: $\exists x \in D$ [cookies(x) & left(x)]
         Alternatives: {$\exists x \in D'$ [cookies(x) & left(x)] : $D' \subseteq D$}

      b. There aren't any cookies left.
         Assertion: $\neg \exists x \in D$ [cookies(x) & left(x)]
         Alternatives: {$\neg \exists x \in D'$ [cookies(x) & left(x)] : $D' \subseteq D$}

These must be factored into meaning by alternative sensitive operators. One such operator is what he and associated literature dub O, the silent and non-presuppositional counterpart of the exhaustifier only. O negates those alternatives that are not entailed by the assertion. In a monotone increasing context, this leads to a contradiction. But in a monotone decreasing environment the alternatives are all entailed by the assertion, so O does not negate them. This is the reason why NPIs are only acceptable in a decreasing environment.

I summarize the essence of Chierchia's treatment of NPIs and NC with a series of quotes here.

- Strong vs. weak NPIs and feature checking (2013: 221)

So far as implementation goes, we may assume that SNPIs carry a feature that can be checked only by O_{ALT}, i.e. an exhaustification operator whose restriction includes the whole set ALT of grammatically determined alternatives. I'll notate this feature as $[[+\sigma, +D]]$, with double square brackets. The LFs of sentences with strong vs. weak NPIs come to:

(64) a. i. $O_{\sigma A}$ O_{DA} [Few$_{[+\sigma, +D]}$ people saw any$_{[+\sigma, +D]}$ movies recently]

  ii. # O_{ALT} [Few$_{[+\sigma, +D]}$ people saw Mary in weeks$_{[[+\sigma, +D]]}$]

b. i. $O_{\sigma A}$ O_{DA} [No$_{[+\sigma, +D]}$ people saw any$_{[+\sigma, +D]}$ movies recently]

  ii. O_{ALT} [No$_{[+\sigma, +D]}$ people saw Mary in weeks$_{[[+\sigma, +D]]}$]

The idea is that weak NPIs allow for "separate" exhaustification of D- and σ-alternatives. In (64a.i) and (64b.i) we first exhaustify relative to the D-alternatives. The result is fine, because when this occurs the prejacent is DE with respect to the position of the NPI. Then the scalar implicature is added.[22] Strong NPIs do not have this option; O_{ALT} must be used, which activates the relevant feature on any intervening XP. This forces exhaustification of both σ- and D-alternatives, which only works with end-of-scale XPs. We assume, furthermore, that O_{ALT} always factors in presuppositions as in (61a) above. So, from now on: O^{S}_{ALT} = O_{ALT} and O^{W}_{ALT} = $O_{\sigma A}/O_{DA}$. The former looks at presupposition +assertion, the latter just at the assertive component.

- Negative concord as an overt manifestation of exhaustification (2013: 234)

(88) a. $\|Nessuno_{[[n-D]]}\| = \lambda P \exists x \in D[\ person(x) \wedge P(x)]$

b. $\|Nessuno_{[[n-D]]}\|^{ALT} = \{\lambda P \exists x \in D'[person(x) \wedge n(x) \wedge P(x)]: D' \subseteq D \wedge n \in Num\}$

c. $[[n-D]]$ is checked by O_{ALT}

d. Example: O_{ALT} [pro non ho visto nessuno$_{[[+n-D]]}$]

Modulo the fact that *nessuno* is strong (and that its σ-alternatives are the numerals), its entry is identical to that of *any*. In (88d), we consider a simple example. O_{ALT} is required in this structure to check *nessuno*'s unvalued feature $[[n-D]]$. Negation is required for reasons of semantic coherence; without it, exhaustification would be contradictory. Clearly, more than one N-word can occur in the scope of O, their respective features checked by O in a multiple agree manner. No differences of substance so far with *any*.

- N-words vs. NPIs (2013: 235-36)

Let us now turn to what differentiates N-words from NPIs. As mentioned above, the main peculiarity of N-words is that they can support an abstract form of negation $NEG_{[n-D]}$. I assume that $NEG_{[[n-D]]}$ is a functional head governed by the following simple axioms, parallel to those of Zeijlstra (2009):

(91) $NEG_{[[n-D]]}$ must
      i.   co-occur with a C-commanding contentful, abstract negative operator $\neg$ (adjoined, say, at the left edge of its projection);
      ii.   enter an agreement relation in its Spec position with $DP_{[[n-D]]}$.

(92) a. *Gianni ha visto nessuno
        Gianni saw N-body
        i. O_{ALT} [Gianni saw N-body$_{[[+n-D]]}$]
        ii. $O_{ALT} \neg$ [Gianni $NEG_{[[+n-D]]}$ saw N-body$_{[[+n-D]]}$]
  b. Nessuno ha telefonato
        N-body called
        i. $O_{ALT} \neg$ [Nessuno$_{[[+n-D]]}$ $NEG_{[[+n-D]]}$ called]

(93) a. *O_{ALT} [Solo Gianni ha visto nessuno$_{[[+n-D]]}$]
        Only Gianni saw N-body
  b. *O_{ALT} [Non tutti$_{[+\sigma, +D]}$ hanno visto nessuno$_{[[+n-D]]}$]
        Not everybody saw N-body
  c. O_{ALT} [dubito che Gianni abbia visto nessuno$_{[[+n-D]]}$]
        (I) doubt that Gianni saw N-body
        'I doubt John saw anybody'
  d. *O_{ALT} [dubito [che ogni$_{[+\sigma, +D]}$ ragazzo abbia visto nessuno$_{[[+n-D]]}$]]
        (I) doubt that every body saw N-body

Sentence (93a) is syntactically well formed: the [n–D] feature is properly checked. However, the result is semantically incoherent due to the fact that *nessuno* is a strong NPI, and hence is sensitive to the presence of presuppositions that disrupt the DE character of the context. Similarly for (93b), a case of intervention. In this case, *not all* generates the implicature that somebody did see someone, which again disrupts the DE character of the context. Turning next to (93c), the verb *dubito* 'doubt' is neg raising (Gajewski 2007) and hence creates an anti-additive environment, which results in a coherent interpretation.[30]

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[30] We must assume that in these cases the clausemateness condition on O^S is suital weakened.

- More on negative concord (2013: 237-39),

(94) a. i. NIENTE ho mangiato t   [non-DN reading]
           N-thing (pro-I) have eaten
           'I haven't eaten anything'
        ii. O_{ALT} [¬[$_{FocP}$ niente$_{[[+n–D]]}$, i [$_{FocP}$ NEG$_{[[+n–D]]}$ [$_{VP}$ pro ho mangiato t$_i$]]]]

  b. i. NIENTE non ho mangiato   [DN reading only]
           N-thing (pro-I) not have eaten
           'I have eaten everything' (lit. 'Nothing is such that I didn't eat it')
        ii. [O_{ALT}[¬[$_{FocP}$ niente$_{[[+n-D]]}$, i [$_{FocP}$ NEG$_{[[+n-D]]}$ [$_{NegP}$ pro non [$_{VP}$ ho mangiato t$_i$]]]]]

A well-known further difference between N-words and NPIs has to do with constituent answers:

(97) A: Cosa hai comprato?   B: Niente   B': *Alcuna cosa
      What did you buy?   Nothing   Anything

N-words are acceptable as constituent answers, while NPIs are not. This is presumably to be related to the capacity of N-words of supporting abstract negation. Constituent answers like (97) can be analyzed as elliptical structures of the form:[31]

(98) O^S¬[niente$_{[n-D]}$, i NEG$_{[n-D]}$ ~~[VP pro you bought t$_i$]~~]

- On strict NC (2013: 239)

simple manner to Strict NC languages of the Czech type, following, once more, Zeijlstra's suggestions. It suffices to assume that sentential negation in these languages is the overt spell-out of the abstract negation NEG. This immediately explains why, in these languages, N-words in subject position require the presence of sentential negation: (contentful) negation is necessary on semantic grounds (given that N-words are strong NPIs) and NEG is checked by ¬ in a way that can scope over the subject. Here is a simple example:

(99) a. Dnes nikdo ne vola
         Today N-body not calls
         'Nobody calls today'

    b. O^S [Dnes ¬ [nikdo$_{[+n-D]}$ ne vola]][33]

- Summary (2013: 239)

> Summing up, N-words are NPIs that can induce the presence of an abstract form of negation. By "abstract negation" we mean a phonologically null negative operator ¬ associated with an abstract negative head that enters a local agreement relation with N-words. Since N-words, *qua* NPIs, must in turn associate with O, this whole process overtly manifests a form of agreement that is covert when pure NPIs are involved. The main assumptions that tie together NPIs and N-words can be summarized as follows:

(100) a. N-words are checked by (i.e. agree with) O.   [like NPIs]
  b. A (strong) overt or covert negative operator   [like NPIs]
   C-commanding an NPI/N-word is necessary
   for semantic coherence.
  c. Covert negative operators agree with [specific to N-words]
   N-words.

Comparing Zeijlstra's and Chierchia's representations, note that Chierchia splits Zeijlstra's Op into the phonetically null element NEG and the operator ¬. For example,

(29) a. Nessuno ha telefonato.
   `No one called'

  b. Zeijlstra
   Op_[iN]:¬ nessuno_[uN] ha telefonato.

  c Chierchia
   O_{ALT} ¬ [nessuno$_{[[+n\text{-}D]]}$ NEG$_{[[+n\text{-}D]]}$ ha telefonato]

On p. 235, Chierchia calls both NEG and ¬ "abstract", and indeed, they are both unpronounced. However, NEG is a syntactic element (it is a functional head with features and a specifier); it is simply a phonetically null head of the kind well-known from generative syntax. In contrast, the operator ¬ is not embodied by any syntactic element, even a phonetically null one. On p. 239, Chierchia defines "abstract" as referring to ¬.

I will follow this latter terminology, and only apply the term "abstract negation" to ¬. The question might arise whether it is legitimate to invoke abstract ¬ in the way Chierchia does. I believe it is. In fact, in Szabolcsi (2015), I appealed to join (∪) and meet (∩) operators that are abstract in exactly the same way. I called them "disembodied" and suggested that this may be the norm for logical semantic actors.

Turning to analytical matters, it is interesting to note that neither Zeijlstra, nor Penka have a good answer to the question why the sentential negation marker is obligatory in strict NC languages, given that they treat it as an [uN] element. Chierchia (2013: 239) treats ne as an overt variant of NEG that relies on a distinct abstract ¬ operator. But that cannot be quite right. NEG only occurs with an n-word in its specifier, but ne occurs on its own, and only does so when semantic negation is present, cf. (22). This issue will be taken up in Section 3.

(30) Marija ne pozvonila.   OK   `M didn't call'
                                       *   `M called'

3.   A bird's eye view of Hungarian hybrid negative concord

This section offers an analysis of hybrid negative concord, so as to provide a context for the discussion of the two `neither_nor' constructions. I will assume a minimal modification of the Zeijlstra-Penka-Chierchia theory, closer to Chierchia. I start with a bit of a background on the analysis of strict NC.

Pre-Zeijlstra, strict NC has often been analyzed as involving universals scoping directly above sentential negation. See Szabolcsi (1981: 528-535) and Surányi (2006) for Hungarian; Giannakidou (2000, 2006), though not Giannakidou (1998), for Modern Greek, and Shimoyama (2011) for Japanese. The actual arguments were language-specific, but they had a common thread. N-words should fall under the same generalizations concerning linear order and prosody that apply to other quantifiers in the given language. The researchers found that the position and stress of N-words suggests that they are scoping right above sentential negation in their languages. If so, they had to be be universals; they could not be existentials within the scope of negation.

For example, Szabolcsi (1981) argued, in agreement with É. Kiss and Hunyadi, that Hungarian supports the following descriptive generalizations (discounting contrastive topics). The generalizations were based on the behavior of universals, indefinites, modified numerals, and all manner of other quantificational expressions.

(31) In the preverbal field, left-to-right order maps to c-command and thus to scopal order.
(32) A stressed operator outscopes a de-stressed one.

Now, NC items may either precede or follow sentential negation nem; in both cases, the NC item can be stressed (the received view at that time was that it had to be stressed). The order variants below carry the same meanings.

(33) a.   SENKI   nem szólt.   `No one spoke'
            n-one   not spoke
      b.   Nem   szólt SENKI.   `No one spoke'

(34) a.   SENKI   nem   szólt   SEMMIT.   `No one said anything'
          n-one   not   spoke   n-thing
     b.   SENKI   SEMMIT   nem   szólt.   `No one said anything'
     c.   Nem   szólt   SENKI   SEMMIT.   `No one said anything'

Moreover, universals formed with <u>minden</u> are barred from scoping immediately above negation, irrespective of however emphatic a denial might be: [4]

(35) a.*   MINDENKI nem szólt.   intended, * $\forall > \neg$
            every-one   not spoke.
     b.*   Nem szólt MINDENKI.   intended, * $\forall > \neg$
     c.   NEM szólt mindenki.   `Not everyone spoke'

It seemed natural to conclude that <u>senki</u>, <u>semmi</u> serve to express $\forall > \neg$. They fill the gap left by <u>minden</u>.

This analysis of negative concord encounters various difficulties with further data; these are detailed in Surányi (2006). One of the striking observations that Surányi makes in fact parallels Zeijlstra's argument in (26)-(27) involving <u>mnogo</u> `much'. <u>Egy SZÓ</u> is a minimizer.

(36) Egy SZÓT   nem szóltam.
      one word.acc   not said.1sg
      `I didn't say a word'

(37) SENKI   egy SZÓT   nem szólt.
      n-one one word.acc   not spoke
      `No one said a word'

These examples flatly refute the assumption that all stressed operators preceding <u>nem</u> scope over <u>nem</u>. <u>Egy SZÓT</u> clearly scopes under <u>nem</u>. But then <u>SENKI</u> in (37) must too. We have seen though that Surányi ended up with a multiple-ambiguities analysis.

Here is how I propose to solve the problem of Hungarian strict NC. First, I propose, deviating from both Zeijlstra and Chierchia, that Hungarian <u>nem</u> expresses semantic negation $\neg$ just like Dutch <u>niet</u>, English <u>not</u>, and Italian <u>non</u>, and is as independent of NC-items as those are. Cf. (9).

The generalization that linear precedence maps to c-command in the preverbal field has been cashed out in terms of a cartographic analysis in the intervening 30 years; see among many others Szabolcsi (1997), É. Kiss (2002), and Brody & Szabolcsi (2003). For example, universals as in

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[4] Beghelli & Stowell (1997) explain why this scope restriction exists. Negation separates Dist from the projection that contains its distributed share, an existential quantifier over events or individuals. This explanation may prevent <u>senki</u> from filling in for <u>mindenki</u>, as was assumed in 1981. But I abandon that assumption anyway.

(35a) would be sitting in the specifier of Dist(ributive)P. The example is ungrammatical, because mindenki scopes directly above negation.

(38)

```
            DistP
           /     \
     mindenki    Dist'
                /     \
             Dist     NegP
                     /  \
                    /____\
                  nem szólt
```
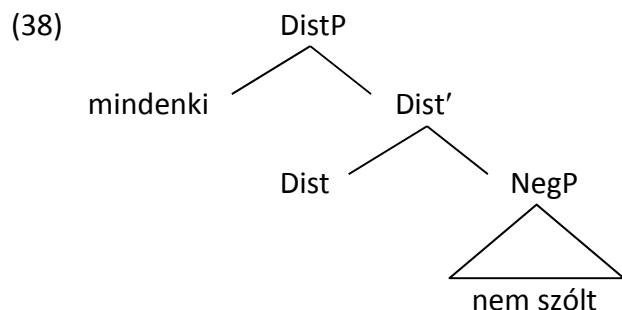
If senki and egy SZÓT scope under, not over, nem, then they cannot be in the specifier of a functional head above NegP. But they can be in the specifier of NegP itself. Quite likely, they move there as remnants, which gives them an extra reason to be taking low scope: remnant movement must reconstruct. This distinction can be made due to the fact that, thankfully and unsurprisingly, syntactic theory has become a bit more sophisticated by today than it was in 1981. Roughly, the structure is this, assuming V-to-T:

(39)

```
                    NegP                          Strict NC, with nem expressing ¬
                   /    \                         (fold in O_ALT for Chierchia)
     [vP senki __ egy szót]  Neg'
                            /     \
                         Neg      TP
                          |      /   \
                        nem    T      vP
                              / \    /  \
                             V   T  /____\
                             |   |  senki szól egy szót
                            szól  t
```
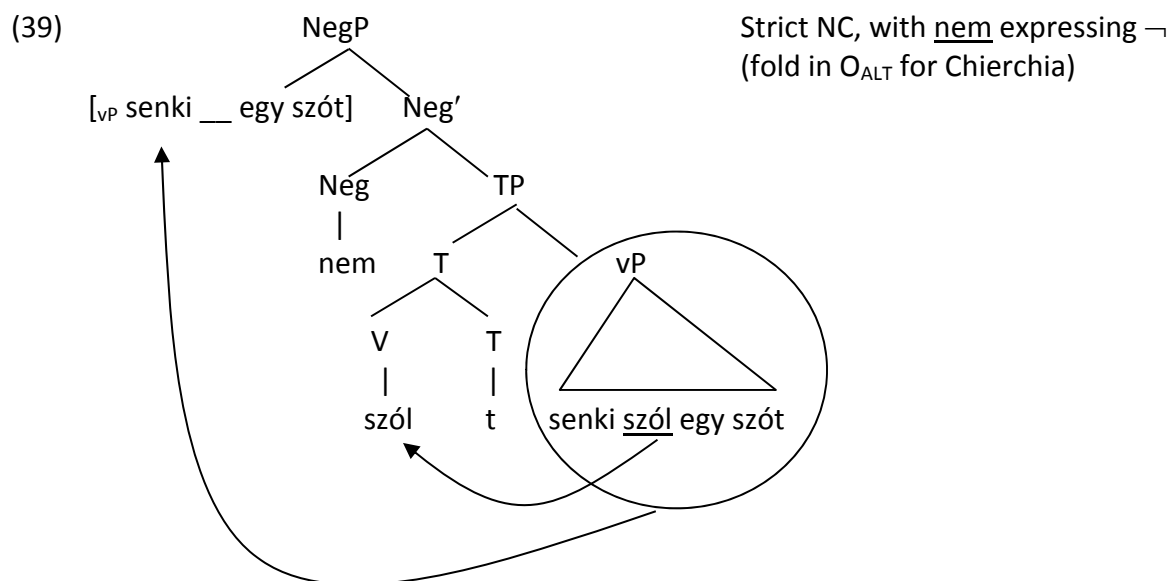
What about the stress generalization? Especially Hunyadi's experimental work in the past decades has shown that the correlation between higher stress and wider scope is not as strong as it had been thought. I do not claim that I have a good understanding of the stress facts, but they do not appear to constitute a reason to reject the proposed analysis.

Let us now turn to non-strict NC. The status of nem is now not an obstacle to the unified analysis: nem expresses ¬ in all its occurrences. As anticipated in (14), I will treat the sem in senki sem as a head on the clausal spine. If Hungarian has an overt version of Italian NEG, it is sem.

The actual analysis of <u>sem</u> will be fleshed out in the sections below. For the time being, here is the overall structure, matching Chierchia's *Nessuno ha telefonato*:

(40) $O_{ALT} \neg$ [nessuno$_{[[+n-D]]}$ NEG$_{[[+n-D]]}$ ha telefonato]

(41) $O_{ALT} \neg$ [senki$_{[[+n-D]]}$ sem$_{[[+n-D]]}$ szólt]

The fact that the string <u>senki sem</u> occurs both preverbally and postverbally is fully compatible with the analysis. Szabolcsi (1997), Brody & Szabolcsi (2003), and Bernardi & Szabolcsi (2008) argue that almost the same functional sequence that occurs above T is reiterated above each of the Asp and v heads. Therefore, postverbal <u>senki</u> can find itself in the specifier of a lower SemP.

Where is (abstract, disembodied) $\neg$ adjoined? Hungarian surface scope data support Chierchia's assumption that it is adjoined to the edge of the preverbal SemP. Linearly preceding quantifiers and indefinites happily scope over the negation that licenses the NC item. They are sitting in the specifiers of functional heads above SemP. [5]

(42) {A legtöbb gyerek / hat gyerek} $O_{ALT} \neg$ senkinek **sem** szólt.
the most child   / six child   n-one.to nor spoke
`Most of the children/Six children didn't speak to anyone'   *most/six > not*

(43) {A legtöbb gyerek / hat gyerek}   senkinek **nem** szólt.
the most child   / six child   n-one.to not spoke
`Most of the children/Six children didn't speak to anyone'   *most/six > not*

Why is $\neg$ adjoined only to a preverbal SemP and not to lower ones? The major difference between the functional sequence above T and the functional sequences above Asp and v is that only the first contains Neg. Based on Zanuttini (1997), it appears that languages choose the position of their overt negations in particular ways. It is possible that abstract $\neg$ is adjoined in the same region where Neg resides. But this may not be the full answer.

To summarize, <u>senki</u> is invariably an existential that must occur within the immediate scope of negation, [uN] in Zeijlstra's and [[+n-D]] in Chierchia's terms. In the preverbal field, it may occur in the specifier of NegP (Neg=<u>nem</u>) or in the specifier of SemP. In the former case, the licensing negation is contributed by <u>nem</u>. In latter case, the licensing negation is the abstract (disembodied) $\neg$ adjoined to the projection that <u>sem</u> calls for. In the postverbal field, <u>senki</u> is within the scope of <u>nem</u>'s $\neg$ or within the scope of the abstract (disembodied) $\neg$ adjoined to the preverbal SemP, whichever applies in the given sentence.

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[5] These examples are reminiscent of those that prevented Shimoyama (2011) from analyzing Japanese <u>dare-mo</u> as an existential within the scope of negation. Hungarian makes things easier, given its general correspondence between linear precedence and wider scope. But Hungarian may also suggest a way to solve the Japanese problem.

4. Particle precedes host vs. particle follows host

Recall the observation from Section1 that <u>senki</u> and <u>senki sem </u>are paralleled by two distinct `nei-ther_nor' constructions:

(10) **Sen**ki   nem aludt.   ≈ **Sem** Kati   **sem** Mari   nem aludt.   **strict** NC-items

      n-one   not   slept   nor Kati   nor Mari   not slept

(11) Senki **sem**   aludt.   ≈ Kati **sem** (Mari **sem**)   aludt.   **non-strict** NC-items

      n-one nor   slept   Kati nor   Mari nor   slept

These two constructions have parallels among non-NC items:[6]

(44) "Particle precedes host"

    a.   sem Kati sem Mari   `neither K nor M' (strict NC)
    b.   mind Kati mind Mari   `K as well as M'
    c.   vagy Kati vagy Mari   `either K or M, not both'
    d.   akár Kati akár Mari   `whether/either K or M'

(45) "Particle follows host"

    a.   Kati sem Mari sem   `neither K nor M' (non-strict NC)
    b.   Kati is Mari is   `K as well as M'

There are at least three further tangible differences between the two series. One, as mentioned in Section 1, is that members of the "particle precedes" series must come in pairs (triples, quin-tuples, etc.), whereas members of the "particle follows" series are happy on their own.[7]

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[6] Hungarian orthography requires a comma between the members of all these pairs, so what I write here looks jar-ring. However, non-Hungarian-speaking readers are sometimes confused by the commas, so I leave them out.

[7] The (*) examples are good in discourses where these sentences serve to brand the preceding sentence as the first member of a disjunction. Compare (i) and (ii).
(i)   Peti nem aludt.   vs.   (ii)   Peti nem aludt.
      Sem Kati nem aludt!   Nem aludt Kati sem.
The difference between the pairs seems similar to that between the following pairs in English:
(iii)   Pete didn't sleep.   vs.   (iv)   Pete didn't sleep.
      Nor did Kate (sleep)!   Kate didn't sleep either.
Similarly, unary <u>or</u> re-evaluates the preceding proposition as a member of a disjunction:
(v)   Pete is at home.
      Or, Mary is at home.
I will not go into details with the analysis of the (*) examples, especially since their counterparts in other languages have not received scrutiny. For the purposes of this paper I will treat them as plain *, i.e. ungrammatical.

(46) "Particle precedes host"

      a. (*) Sem Kati nem aludt.   * Nem aludt sem Kati.
      b. *   Mind Kati aludt.   * Aludt mind Kati.
      c. (*) Vagy Kati aludt.   * Aludt vagy Kati.
      d. * Akár Kati aludt.   * Aludt akár Kati.

(47) "Particle follows host"

      a.   Kati sem aludt.   Nem aludt Kati sem.
      b.   Kati is aludt.   Aludt Kati is.

The tuples in both series optionally contain overt connectives, but different connectives. Pedig and és are not interchangeable.

(48) "Particle precedes host"

      a.   sem Kati sem (**pedig**) Mari   `neither K nor M' (strict NC)
      b.   mind Kati mind (**pedig**) Mari   `K as well as M'
      c.   vagy Kati vagy (**pedig**) Mari   `either K or M, not both'
      d.   akár Kati akár (**pedig**) Mari   `whether/either K or M'

(49) "Particle follows host"

      a.   Kati sem (**és**) Mari sem   `neither K nor M' (non-strict NC)
      b.   Kati is (**és**) Mari is   `K as well as M'

Szabolcsi (2015) analyzed Hungarian és `and' as a mere pair-forming operator. The connective pedig that occurs in second position in the last conjunct/disjunct is a somewhat contrastive connective, similar to Russian a. It is better characterized as a marker of enumerating partial answers to a question under discussion. (I thank M. Esipova for discussion on this point.) On the clausal level pedig also has a first-position variant, which is adversative (`even though'). This latter pedig does not concern us.

Whatever the correct analysis of these connectives is, the pedig vs. és contrast highlights the fact that the "particle precedes" and "particle follows" constructions are distinct, even when they contain the same particle, i.e. sem.

Finally, a robust contrast pertains to whether the particles form quantifier words with indeterminate pronouns:

(50) "Particle precedes host"

   a.   senki, semmi, sehol   `no one, nothing, nowhere'
   b.   mindenki, minden(*mi), mindenhol   `everyone, everything, everywhere'
   c.   valaki, valami, valahol   `someone, something, somewhere'
   d.   akárki, akármi, akárhol   `whoever, whatever, wherever'

(51) "Particle follows host"

   a.   (not distinguishable from (50a))
   b. * iski, ismi, ishol

Szabolcsi (2015) discussed is-type particles in detail, and the analysis to be proposed here will be compatible with that discussion. The existence of minden-type particles was also recognized, but left as a puzzle (2015: 183-84):

> It is remarkable that the universal quantifiers that MO particles build also resist collective interpretations. See Lin (1998) for Chinese *dou*, and Szabolcsi et al. (2014) for a comparison of *dou* and Japanese *mo*. Shimoyama (2006, p. 147) suggests that *mo* 'every/any' and *mo* 'too/even' are distinct, in view of the fact that an intervening *mo* 'too' does not block the association of an indeterminate pronoun within a relative clause with *mo* 'every' outside the relative clause. Shimoyama does not specify exactly how the two *mo*'s have to be distinct in order not to interfere with each other. But the fact that Hungarian covers the territory of *mo* with two distinct segments, *mind* and *is*, would be consonant with Shimoyama's suggestion that there is a difference. See (2), repeated as (51):

> (51) a. **mind**-en-ki   dare-**mo**   'everyone/anyone'
>   b. **mind** A **mind** B   A-**mo** B-**mo**   'A as well as B, both A and B'
>   A **is** (és) B **is**   'A as well as B, both A and B'
>   c. A **is**   A-**mo**   'A too/even A'

> The relation between *mind* and *is* has not been investigated, and I have nothing useful to add here. But, *mind A mind B* is synonymous with *A is (és) B is*. This suggests that, by transitivity, *mind(enki)* and *is* legitimately belong under the same semantic umbrella. The expressions in (51) also occupy the same surface syntactic position in Hungarian (specifier of Dist); see Brody (1990) and Szabolcsi (1997).

Below I will argue for the following global analysis, cf. (14):

(52) a. The particles that precede their hosts (e.g. minden) are phrase-internal, much like their counterparts within quantifier words.

      b. The particles that follow their hosts (e.g. is) are heads on the clausal spine.

5. Hungarian *csak* `only' -- a syntactic precedent

The syntactician reader may be interested to know that the claim that a particle has both a phrase-internal and a clausal head variant is not unprecedented for Hungarian. The exclusive particle <u>csak</u> `only' occurs either preceding the expression that it exhaustifies, or following the finite verb. The following diagram represents Horvath's analysis, (2000) through (2014).

(53)   Horvath 2014
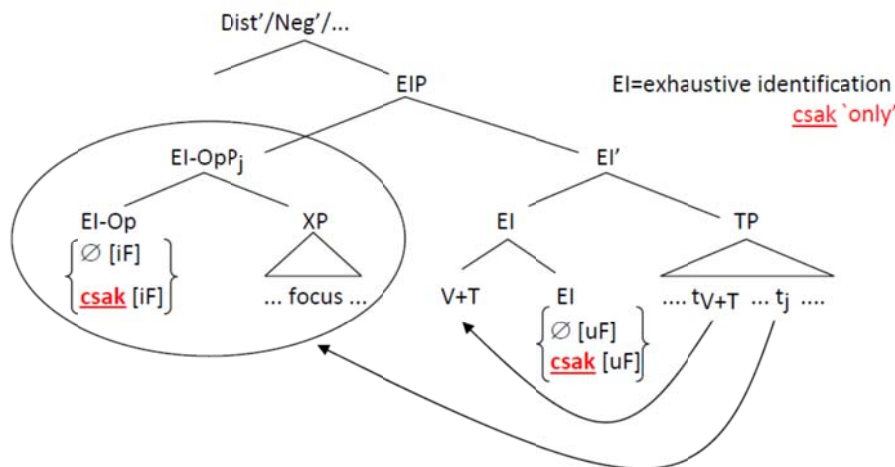
In brief, EI (short for Exhaustive Identification) is a clausal head, to which the verb adjoins. The EI head needs an EI-Op Phrase in its specifier. EI-Op (= EXH in other literature) in turn is focus-sensitive. EI-Op grabs a focused XP (KATI in (54)-(55)). EI-OpP moves to the spec of EI, accounting for the famously preverbal position of Hungarian focus. Both EI and EI-Op can be phonetically null or, importantly to us, one of them, either one, can be spelled out as <u>csak</u> `only'. Both examples mean, `Only Kate goes home'.

(54)   [$_{EIP}$ [$_{EI-OpP}$ **Csak** KATI] megy + $_{EI}\varnothing$ [$_{TP}$ ~~megy~~ haza   ~~csak KATI~~]]
                only   KATE goes   home

(55)   [$_{EIP}$ [$_{EI-OpP}$ $\varnothing$ KATI] megy + $_{EI}$**csak** [$_{TP}$ ~~megy~~ haza $\varnothing$ ~~KATI~~]]
                     KATE goes   only   home

<u>Csak</u> does not have a paired version, and it will not be discussed further in this paper. It is good to note its existence, however, and the fact that its phrase-internal version precedes its host, whereas its clausal-head version follows it.

6. *Is* `too' is a distributive head on the clausal spine

Szabolcsi (1997), Brody & Szabolcsi (2003), Bernardi & Szabolcsi (2008), among others, argue that a sequence of operator heads reiterates above and below the position of the finite verb; the heads overtly attract appropriate phrases to their specifiers. For example, the Ref head attracts definites (`Mary', `the girls') and indefinites (`some girl', `two girls'), the Dist head attracts universals and existentials that receive a distributive interpretation in its specifier (`every girl', `more than two girls'), and the Count head attracts counting quantifiers (`few girls', exactly two girls', `more than two girls'). Horvath (2000)--(2014) adds the EI head (EI for exhaustive identification) that attracts a phrase modified by <u>csak</u> `only' or by a null exhaustive operator to its specifier.

Because the movement of these phrases is overt, it is directly reflected in linear order at spell-out (for a similar proposal for covert LF-movements in English, see Beghelli & Stowell (1997) for overt ones in Kayne (1998)). The order of operator heads is the same in each of the iterations. However, a fixed order of the phrases is only discernible in the preverbal field. The reason is that T, Asp, and other lower heads that separate iterations do not host phonetically overt material. For example a counting quantifier can be followed by a referential phrase in the postverbal field if they belong to two distinct iterations.

(56)   Hungarian, after Brody & Szabolcsi (2003: 23)

finite verb

Phrases modified by <u>is</u> `too' occur in one of the Dist* regions (Brody 1990) and are distributive in all their uses (Szabolcsi 1997: 127; 2015: 181). <u>Kati is 100 kilót nyom</u> `Kate too weighs 100 kg' can only mean that Kate weighs 100 kg, in addition to someone else weighing 100 kg. It cannot mean

that Kate together with someone else does. <u>Két lány is 100 kilót nyom</u> `Even two girls/as many as two girls weigh 100 kg' can only mean that each of the girls by herself weighs 100 kg, and so on.

Section 3.2.1 of Szabolcsi (2015) discusses reiterated <u>is-is</u> `as well as' expressions at some length. In line with the general approach advocated in that article, she proposes that each <u>is</u> in <u>is-is</u> has the same semantics as it does in the non-iterated cases. She analyzes <u>X is (és) Y is</u> as a proposi-tional conjunction, syntactically held together by a Junction head (den Dikken (2006)). Junction can be overt (<u>és</u> `and') or null. When the overt expressions <u>X</u> and <u>Y</u> are not full sentences, ellipsis must be involved. I remain agnostic regarding the syntactic execution of ellipsis, e.g. whether or not it involves across-the board extraction, remnant movement, etc.

(57) a. [$_{JP}$ Kati **is** ~~100 kilót nyom~~ [$_{J'}$ (és) [Mari **is** 100 kilót nyom]]]
　　　　`Kate as well as Mary weigh 100 kg'

　　　b. [$_{JP}$ Kati **is** 100 kilót nyom [$_{J'}$ (és) [Mari **is** ~~100 kilót nyom~~]]]
　　　　`Kate as well as Mary weigh 100 kg'

What is critical for present purposes is that <u>is</u> `too' is a head on the clausal spine (the Hungarian literature takes it to be one of the Dist heads).

7. *Mind* is a quantifier-internal particle

Recall that particle <u>is</u> has a unary version `too, even' and a reiterated version `as well as', but it doesn't form a quantifier word.

(58)　　Kati **is**　　　aludt.　　　　Kati **is** (aludt) (**és**) Mari **is** aludt.　　* **Is**ki aludt.
　　　　Kate too/even slept　　　　Kate too slept and Mary too slept　　 is-one slept
　　　　`Kate too/even Kate slept'　　`Kate (slept) as well as Mary slept'

Contrast these with <u>mind</u>, which I momentarily gloss as <u>all</u> for lack of a better candidate:

(59)　　***Mind** Kati aludt.　　　　**Mind** Kati **mind** (**pedig**)　 Mari aludt.　　**Mind**enki aludt.
　　　　　all　 Kate slept　　　　　all　 Kate all　 whereas Mari slept　　all-who slept
　　　　　　　　　　　　　　　　　　`Kate as well as Mary slept'　　　`Everyone slept'

We see that <u>mind</u> entirely lacks a unary version comparable to `too, even'. Accordingly, in the reiterated version the predicate cannot be repeated: *Mind Kati aludt, mind (pedig) Mari aludt. On the other hand, <u>mind</u> forms a universal quantifier word. (The <u>-en</u> morpheme in <u>minden</u> is formally identical to an adverbial suffix, but no one knows what it is doing here.) The argument extends to the other particles.

I propose that the particles in <u>prt X prt Y</u> are quantifier-internal in the same way as the particle is quantifier-internal in <u>prt-wh</u>, i.e. in quantifier words <u>everyone</u>, <u>anyone</u>, <u>no one</u>, etc. <u>Prt X prt Y</u>

defines a domain by enumerating its elements and quantifies over it. <u>Prt-wh</u> takes the set of alternatives offered by the indeterminate pronoun and quantifies over it:

(60) a. <u>mind X mind Y mind Z</u>   = <u>mindenki</u>, when the universe is (restricted to) {X, Y, Z}
      b. <u>sem X sem Y sem Z</u>   = <u>senki</u>, when the universe is (restricted to) {X, Y, Z}
      c. <u>akár X akár Y akár Z</u>   = <u>akárki</u>, when the universe is (restricted to) {X, Y, Z}
      d. <u>vagy Z vagy Y vagy Z</u>   ≈ <u>valaki</u>, when the universe is (restricted to) {X, Y, Z}

Of course, other equivalences also hold. For example,

(61)   <u>mind X mind Y mind Z</u> aludt   = <u>X is</u> aludt, <u>Y is</u> aludt, <u>Z is</u> aludt

The claim is not that it is better to define the shared meanings in one way than in another. The claim is that, as a matter of linguistic fact, <u>Mind Kati, mind Mari, mind Pali aludt</u> defines that meaning in one way, whereas <u>Kati is (aludt), Mari is (aludt), Pali is aludt</u> defines it in another way. The second one follows the recipe outlined in Szabolcsi (2015). It builds the meaning from little propositions; the particle <u>is</u> occurs in each of the propositions and acts in the same way in each. The clearest evidence for this is that <u>Kati is aludt</u> is well-formed and semantically representative on its own. The first construction does not appear to work that way. The clearest evidence for this is that *<u>Mind Kati aludt</u> is not well-formed on its own. Instead, the <u>mind</u> particles collect Kati, Mari, and Pali into a set to operate on. (Why they perform this task specifically by attaching to each of these expressions remains to be understood at this point.) It seems natural for the quantifier word `everyone' to be built with the particle <u>mind</u>, rather than the particle <u>is</u>: even though "Everyone slept" is definable in propositional logic, its syntax is not propositional, at least not in Hungarian or English.

How should the semantics for these expressions be defined? It would seem attractive to try to define two separate mechanisms, one that caters to the unary and reiterated version (cf. <u>is</u>) and another that caters to the reiterated and the quantifier-word versions (cf. <u>mind</u>), such that the two deliver identical results for the shared case. But, even if that is possible, it does not go without saying that Hungarian reveals a universal division of labor. Do Japanese-style languages have a unitary mechanism catering to all three versions of <u>mo</u>? (What is the significance of Shimoyama's qualms about a unitary <u>mo</u>?) Should the division of labor in Hungarian indeed be canonized in the semantics, or should it be imposed by brute syntactic force?

8. <u>Junction Phrases with particles preceding their hosts</u>

Szabolcsi (2015) analyzes conjunctions as clause-size units (possibly involving ellipsis), sitting in the specifier and complement of den Dikken's 2006 J(unction) head; J is either null or spelled out as <u>és</u>, the dictionary equivalent of <u>and</u>.

As noted above, the Junction in <u>mind X mind Y</u> cannot be <u>és</u>. It is either null, or the morpheme <u>pedig</u> occurs between <u>mind</u> and <u>Y</u>. There are two possible syntactic analyses. According to the (a) version, <u>pedig</u> is J and the <u>mind</u> of of the complement raises to it (R. Kayne, p.c. for Latin <u>-que</u>).

According to (b), <u>pedig</u> is simply sitting in second position in the complement. As mentioned above, <u>és</u> is not possible in combination with <u>mind</u>, neither with or without <u>pedig</u>.

(62) a.
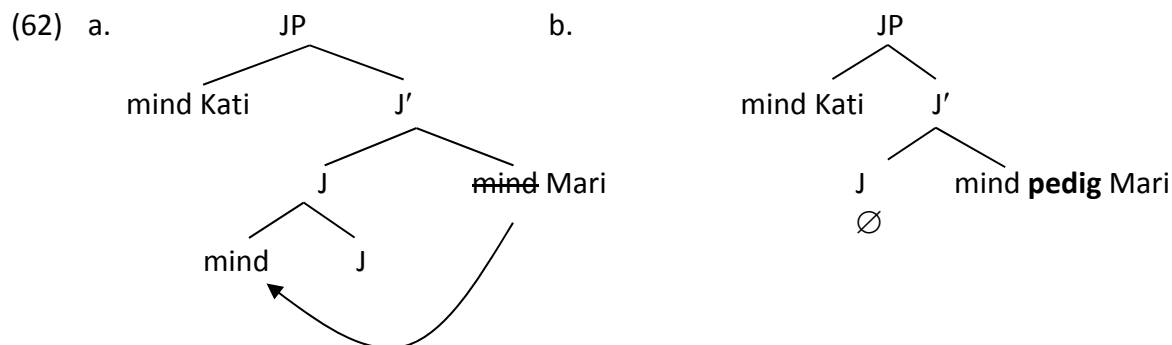
Recall that all the <u>prt X prt Y</u> constructions pattern in that way. Even though we do not yet understand the syntax of <u>pedig</u>, this clearly sets them apart from the clausal variants, whose Junction is <u>és</u>.

(63) a.   mind X   (*és) mind (**pedig**/*és)   Y   `X as well as Y'
      b.   sem X   (*és) sem (**pedig**/*és)   Y   `neither X nor Y'
      c.   vagy X   (*és) vagy (**pedig**/*és)   Y   `soit X soit Y' exhaustive
      d.   akár X   (*és) akár (**pedig**/*és)   Y   `either X or Y' free choice

9. <u>Negative concord, positive polarity and negative polarity</u>

With the above considerations in hand, we return to the question of how <u>sem</u>-expressions get to function as NC items, and how they relate to PPIs and NPIs in Hungarian.

9.1   *Se(m)* `nor' is a negative concord allomorph of *is* (among other things)

<u>Sem</u> is historically considered to be a combination of <u>is</u> `too' plus <u>nem</u> `not'. <u>Se</u> is a more colloquial version, which however is perfectly acceptable in the normative written language. <u>Se(m)</u> forms negative concord items that occur only in the presence of clause-mate negation. Note in passing that Modern Greek <u>oute</u> has the same etymology (Classical Greek <u>ou</u> `not' + <u>te</u> `and, both') and the same properties (Giannakidou 2007). I propose,

(64)   <u>Se(m)</u> is an allomorph of <u>is</u> within the immediate scope of clause-mate negation.

"Immediate scope" means that at most plain existentials intervene (see one semantic explanation of intervention in Chapter 7 of Chierchia 2013). For example,

(65)   [$_{JP}$ **Nem** nyom 100 kilót Kati **sem** [$_{J'}$ (és) ~~nem nyom 100 kilót~~ Mari **sem**]]]
        `Neither Kate nor Mary weigh 100 kg'

Be forewarned that <u>se(m)</u> will be analyzed as an allomorph of other morphemes as well, when they occur in the immediate scope of clause-mate negation.

9.2   Consequences: positive polarity items and negative polarity items formed with *is*

The allomorphy rule (64) postulated for <u>is</u> has the following consequences:

(66)   <u>X is</u>   →   <u>X sem</u> in immediate scope of clause-mate negation.
                        Therefore, <u>X sem</u> is a negative concord item

        <u>X is</u>   →   <u>X is</u> elsewhere.
                        Therefore, (i)   <u>X is</u> is a positive polarity item.
                                    (iii)   <u>X is</u> can be a negative polarity item.

Positive polarity items (PPIs) and negative concord items (NCIs) are in complementary distribu-
tion (almost -- the exception is "rescuing contexts" in the terminology of Szabolcsi 2004). By defi-
nition, PPIs are expressions that do not occur in the immediate scope of clause-mate negation,
and NCIs are ones that only occur in the immediate scope of clause-mate negation. Therefore, if
an expression <u>A</u> has a designated allomorph <u>B</u> in the immediate scope of clause-mate negation,
then its non-<u>B</u> allomorph <u>A</u> will automatically have the distribution of a PPI. <u>B</u> takes its place
where a PPI cannot occur.

The prediction is correct. <u>Is</u>-expressions only occur in the immediate scope of superficially clause-
mate negation when that negation is "metalinguistic" and the sentence is a response to an iden-
tically-phrased question or accusation. Classical PPIs are known to have this property, and the
pertinent type of "metalinguistic" negation is known to behave like extra-clausal negation
(Szabolcsi 2004: 413):

(67)   * Siettem, de **nem** törtem el valamit / a poharat **is**.
        `I was in a hurry but I didn't break something / the cup too'

(68)   Context: Eltörtél valamit.   Context: Eltörted a poharat **is**.
                    `You broke something'                  `You broke the cup too'

        Nem igaz, **nem** törtem el **vala**mit!   Nem igaz, **nem** törtem el a poharat **is**!
        `Not true, I didn't break something!'     `Not true, I didn't break the cup too!'

PPIs can only occur in the immediate scope of truly clause-mate negation when the offending
constellation is rescued by being in an NPI-licensing context (antecedent of a conditional below):

(69) a. Ha **nem** törtél el **vala**mit, akkor minden rendben.
         `If you didn't break something, then all is well'

      b. Ha **nem** törted el a poharat **is**, akkor minden rendben.
         `If you didn't break the cup too, then all is well'

In the same rescuing context <u>is</u> can be replaced by <u>sem</u>. The sentence will have a different mean-
ing, but it is equally grammatical, because all that <u>sem</u> cares about is the negation being there:

(70) Ha **nem** törted el a poharat **sem**, akkor minden rendben.
      `If you didn't break the cup either, then all is well'

In sum, we see that is-expressions have the characteristic behavior of PPIs. I remain agnostic as to whether their PPI-hood also has a separate, semantic explanation. PPI-hood is a consequence of the allomorphy rule anyway.

What happens when an is-expression occurs in a decreasing (DE) context other than clause-mate negation? The allomorphy rule says, be my guest. But, given that non-NC negative polarity items are licensed in precisely such contexts, is has the ability to form such NPIs. It does not have to, but it can. This happens to be the case in Hungarian and in various other languages. Serbo-Croatian non-NC NPIs are formed with i `and, even, too'; Progovac 1994 calls them I-NPIs, in distinction to NI-NPIs. Similarly, Hungarian non-NC NPIs are formed with is (Szabolcsi 1996, Tóth 1999). This phenomenon has become popularly known as the "bagel problem." Hindi NPIs are formed by bhii `even, too' (Lahiri 1998); apparently, Hindi does not make the NC vs. NPI distinction, judging by Lahiri's data.

To be more precise, an is-expression in a plain DE context has two possible interpretations:

(71) Nem állítom, hogy eltörted a poharat **is**.   -- not [$_{CP}$ ... the cup too
      `I am not claiming that you broke the cup too'

(72) Nem állítom, hogy **valamit is** eltörtél.   -- not [$_{CP}$ ... something even = anything
      `I am not claiming that you broke anything'

(73) Nem állítom, hogy **akár csak** Marit **is** megverted.   --   not [CP ... even [likely] Mary
      `I am not claiming that you beat even Mary'

Of these, a poharat is is not an NPI, but valamit is and akár csak Marit is are NPIs [in the absence of csak `only', akár Marit is can also be a free choice item]:

(74)   Eltörted a poharat is.
(75)   *   Valamit is eltörtél.   /   * Eltörtél valamit is.
(76)   *   Akár csak Marit is megverted.   /   * Megverted akár csak Marit is.

Here is the generalization. See Chierchia (2013: Ch 3).

(77) When X is a minimizer or is optionally interpreted as a minimizer, X is is a negative
      polarity item (NPI, not a negative concord, NC item). See (72)-(73), (75)-(76).

(78) When X is not a minimizer, X is is not an NPI. See (71), (74).

Valamit can, but need not, be interpreted as a minimizer. It can serve as a plain indefinite and then it can combine with simply additive is:

(79)   Context: Sue is peeking through a key hole.
         Joe asks,   Látsz valakit vagy valamit?   `Do you see someone or something?'
         Sue responds,   Valakit is és valamit is.   `Both someone and something'

In contrast, akár + csak Mari is a minimizer. (Abrusán (2007) discusses akár and analyzes it as `even'. She notes the occurrence of is in some cases, but does not mention that it is obligatory there, and does not attribute any interesting role to is. She only strives to eliminate a problem that is's presupposition raises. She does not analyze the contribution of csak.)

9.3   Minimizers plus `even' are NPIs

The observations above do not come as a surprise, given Lahiri's 1998 insightful analysis of Hindi NPIs, in the spirit of Krifka 1995. Lahiri discusses the following NPIs:

(80)
ek bhii	'any, even one'	ek	'one'
koii bhii	'anyone, any (count)'	koii	'someone'
kuch bhii	'anything, any (mass)'	kuch	'something, a little'
zaraa bhii	'even a little'	zaraa	'a little'
kabhii bhii	'anytime, ever'	kabhii	'sometime'
kahiiN^2 bhii	'anywhere'	kahiiN	'somewhere'

In a nutshell, the proposal, essentially adopted in Chierchia (2013), is as follows. [Notation: $^\wedge VP(a) = \lambda w.VP(a)(w)$]

(81)   [[EVEN Z VP]]   Asserts: VP(z)
                          Additive presupp.: $\exists x[x \neq z$ & VP(x)]
                          Scalar presupp.: $\forall y[y \neq z$][likelihood($^\wedge$VP(z)) < likelihood($^\wedge$VP(y))]

If Z is interpreted as a minimizer, and Z VP is an increasing context, the scalar presupposition leads to a contradiction: I have even ONE book!, I paid even the slightest attention! Something that is the most likely is presupposed to be the least likely. In contrast, if Z VP is a decreasing context, the likelihood scale is reversed and everything is fine: I don't have even ONE book, I didn't pay even the slightest attention. The intuition is captured in Chierchia (2013) in somewhat different terms; the differences do not seem to matter.

Lahiri notes that Raam bhii does not have a life as an NPI. The same holds for the corresponding non-scalar Hungarian examples. In Hungarian, the addition of akár (csak) turns a non-scalar expression into a minimizer, so is can form an NPI, see (73) and (76). The plain indefinite pronouns of the `something, somewhere' sort are happy to be interpreted as weakest predicates and thus as minimizers.

To summarize, is `even' carries an additive and a scalar, least-likely presupposition. A minimizer is an expression that has a *grammaticized* minimal amount or degree interpretation. When a minimizer occurs in the specifier of is, the result is a negative polarity item: to avoid a contradiction, `even' must scope over a decreasing environment.

Regarding scope relations, it may be useful to clarify that, according to the literature I am following, the NPI must occur *within* the syntactic scope of a DE operator, and its existential quantifier contribution must remain in that scope position at LF. But, the EVEN component (Chierchia's exhaustifier) that is either overtly present (as in even one soul) or is abstractly added to the LF of the sentence (as in anyone) must scope *above* the DE operator.

(82)   *   Mary saw anyone   ok Mary didn't see anyone   surface string
(83)   Mary saw > anyone   Mary didn't see > anyone   syntactic scope
(84)   EVEN ($\exists$x.saw(x)(m))   EVEN ($\neg\exists$x.saw(x)(m))   LF scope

The literature does not dwell upon the "separation" of the exhaustifier from the existential at LF. This is quite critical in the Hungarian examples, because the equivalent of anyone is formed with the help of an overt head (valaki is `someone even'), and Hungarian spell-out syntax is supposed to reflect scope relations. I assume that the solution is the same as what Szabolcsi (2015) already proposes for KA and MO particles in general. The morpheme is (a MO particle) points to a semantic actor but is not one itself. In other words, I am not assuming that in sentences with valaki is, the head is itself has to separate from valaki at spell-out or LF. Valaki is must occur in the correct syntactic scopal position (within the syntactic scope of a DE operator), and the presence of is signals that there is a higher, phonetically null or even disembodied operator that operates on the DE-context as a whole. (This seems to jibe with Chierchia (2013), although he does not explicitly address the matter.)

9.4   *Is `even, too' -- még Mari is `even Mary', még Mari se `not even Mary'*

Hungarian is (like Serbo-Croatian i and Hindi bhii) can mean `too' or `even'. Following the literature, I assume that it contributes to the formation of NPIs in its `even' capacity. This section provides a little more background on the two interpretations.

Combined with a basically non-scalar item like Mari, is can support both `too' and `even' interpretations. The latter requires extra-heavy emphasis on the specifier Mari, as though that emphasis conferred scalar alternatives on Mari. Pre- vs. postverbal order does not matter.

(85)   Itt volt Mari is.   just additive
        `Mary too was here'

(86)   Itt volt MARI is!   additive and scalar
        `Even Mary was here'

The scalar interpretation is enhanced but not really disambiguated by the addition of még `more'. (For a survey and analysis of még in the context of its German relative noch and its Chinese relative hái, see Zhang & Ling (2016); I will not be able to go into details here.)

(87)   Itt volt még Mari is.
         `Even Mary was here'   typical interpretation: additive and scalar
         `In addition, Mary was here too'   possible interpretation: just additive

In contrast to akár (csak) Mari is, the NPI use of még Mari is seems limited to clause-mate DE contexts (possibly, due to different scoping abilities). Note the absence of an NPI-ish interpretation from (84). "[(Un)likely]" indicates that it is likely/unlikely for Mary to be beaten.

(88)   Nem állítom, hogy **akár csak** Marit **is** megverted. -- not [CP ... even [likely] Mary
         `I am not claiming that you beat even Mary'

(89)   Kevesen verték meg **akár csak** Marit **is**.   -- few > even [likely] Mary
         `Few people beat even Mary'

(90)   Nem állítom, hogy **még** Marit **is** megverted.   -- not [CP ... even [unlikely] Mary
         `I am not claiming that you beat even Mary'

(91)   Kevesen verték meg **még** Marit **is**.   -- few > even [likely/unlikely] Mary
         `Few people beat even Mary'

In the immediate scope of clause-mate negation, is takes the shape sem, cf. the allomorphy rule in (64):

(92)   Nem   volt   itt   Mari **sem**.   -- not > either
         not   was   here   Mary nor
         `Mary wasn't here either'

(93)   Nem   volt   itt   **még** Mari **sem**.   -- not > [likely person] either
         not   was   here scal. Mary nor
         `Not even Mary was here; Even Mary wasn't here'

The `either' interpretation of még Mari sem is consistent with that of plain Mari sem, adding that Mary would have been likely to be here. I will not be able to discuss the syntax or semantics of még.

9.5   *Kati is (és) Mari is* `Kate as well as Mary', *Kati sem (és) Mari sem* `neither Kate nor Mary'

Recall the reiterated X is--Y is and X sem--Y sem constructions introduced above, which I argued have clausal-spine heads and involve ellipsis:

(94)   [$_{JP}$ Kati **is** ~~100 kilót nyom~~ [$_{J'}$ (és) [Mari **is** 100 kilót nyom]]]
        `Kate as well as Mary weigh 100 kg'

(95)   [$_{JP}$ **Nem** nyom 100 kilót Kati **sem** [$_{J'}$ (és) ~~nem nyom 100 kilót~~ Mari **sem**]]]
        `Neither Kate nor Mary weigh 100 kg'

In this case, neither the is version, nor the sem version can be modified by még, and they cannot receive a scalar, `even'-style interpretation under any circumstances. Only the additive readings are available. Accordingly, they also do not form NPIs. The same holds for oute (*kan) -- oute (*kan) in Modern Greek (Giannakidou 2007).

The "no scalar reading" restriction follows from the approach to reiterated MO constructions in Szabolcsi (2015). The claim is that the unary (non-iterated) version of the particles are basic, and in reiterated cases all the particles play the same role, i.e. the role that the unary version plays. Now, if is were interpreted as `even', the reiterated construction in (94) would have to mean (96), which is an inescapable contradiction. Kate and Mary may be similar in weighing 100 kg, but they cannot both be the least likely.

(96)   #   Kate weighs 100 kg and she is the least likely to, and
            Mary weighs 100 kg and she is the least likely to.

Furthermore, if NPIs rely on the `even' exhaustification of minimizers, then the reiterated X is, Y is construction cannot have NPI occurrences, in the absence of `even' readings.

(97)   Nem állítom, hogy eltörted (?? akár) a poharat is (és) a tányért is.   no NPI-ish reading
        `I am not claiming that you broke the cup as well as the plate'

In contrast, the allomorphy rule says that sem spells out is in the immediate scope of clause-mate negation. Therefore, Kati sem (és) Mari sem is a fully legitimate negative concord version, see (95).

9.6   *Valamelyik/akármelyik gyerek* is `any one of the children'

I note in passing that the minimizer approach to NPIs does not extend straightforwardly to items based on the indeterminate pronoun melyik `which'. Consider:

(98)   Nem állítom, hogy valamelyik / akármelyik gyerek is megsérült.
        `I don't claim that any one of the children got injured'

The meaning of these sentences is truth-conditionally identical or close to saying that I am not claiming that even one of the children got injured. However, melyik `which', an indeterminate pronoun ranging over individuals drawn from a contextually salient set, lends them a free-choice flavor. The sentences seem to be saying that I am not claiming that there is a way to choose from the salient set of children so as to find one that was injured. So the semantics needs to be adjusted a little.

9.7   *Senki sem* `no one', *a nessuno*-like non-strict negative concord item

The parallel structures in (99) have senki sem and Kati sem in preverbal position. We add (100), which has the same expressions in postverbal position. (99) must not contain, and (100) must contain, sentential negation nem. Finally, postverbal n-words are licensed by preverbal senki sem just as well as they are by nem, illustrated in (101). These constellations diagnose senki sem and Kati sem as nessuno-style non-strict NC items.

(99)   Senki **sem** (*nem) aludt.   ≈ Kati **sem** (*nem) aludt.
        n-one nor not   slept   K   nor   not   slept
        `No one slept'                      `Kate didn't sleep either'

(100)   Mari *(nem) szólt senkinek sem. ≈ Mari *(nem) szólt   Katinak sem.
        M   not spoke   n-one-dat nor M   not spoke K-dat nor
        `M didn't speak to anyone'           `M didn't speak to K either'

(101)   Senki sem (*nem) szólt   senkinek sem.   ≈ Senki/M sem (*nem) szólt K-nak sem.
        n-one nor   not   spoke n-one-dat nor   n-one/M nor   not   spoke K-dat nor
        `No one spoke to anyone'                `No one spoke to K' / `M didn't speak to K either'

Recall that we have adopted a Chierchia-style analysis for non-strict negative concord, with the modification that clausal-head sem plays the role that NEG plays in Italian. Our modification for strict negative concord was that the particle nem expresses ¬. Let us turn to the negative pronoun senki.

Regarding senki `n-one' and its brothers soha `n-ever', semmi `n-thing', and so on, I assume that they are plain existentials and thus potentially minimizers.The s-morphology is due to an allomorphy rule analogous to (64):

(102)   Vala+indeterminate pronoun   →   sem+indeterminate pronoun
                                           in the immediate scope of clause-mate negation
                                     →   vala+indeterminate pronoun
                                           elsewhere

Just as (64) did <u>is</u> and <u>sem</u>, (102) makes <u>vala</u>-pronouns PPIs and <u>sem</u>-pronouns NCIs. This is correct, as discussed in some detail above and in Szabolcsi (2002, 2004). When the context is DE but does not involve a clause-mate negation, both PPI <u>valaki</u> `someone' and NPI <u>valaki is</u> `someone even = anyone' may occur. The allomorphy rules will now jointly account for the following regularity:

(103)　　in scope of just DE operator　　　　　<u>valaki is</u>

　　　　　in scope of clause-mate negation　　　<u>senki sem</u>

[Come back to <u>Kati sem</u> vis-a-vis Chierchia.]

9.8　*Is `too, even' a disjunctive (join-style) particle?*

Why are <u>vala-</u> and <u>is</u> affected by essentially the same allomorphy rule? After all, in Szabolcsi (2015) <u>vala-</u> is analyzed as a KA particle, which comes with a join-style presupposition, and <u>is</u> as a MO particle, which comes with a meet-style presupposition. Is it a pure accident that these items have related allomorphy rules? It would be nice if <u>is</u> `too, even' could be shown to be an underlying disjunction.

There is a trend in recent literature that recasts expressions traditionally analyzed as universals / conjunctions as underlying existentials / disjunctions; see Bar-Lev & Margulis (2013), Bowler (2014), and Mitrovic (2014) in the first place. They use recursive (double) exhaustification without a scalar alternative to strengthen the weaker meanings to the stronger ones. For example, see Bar-Lev & Margulis (2013) for <u>kol</u>, an item that has universal, NPI, and FCI uses. They analyze it as an underlying existential (disjunction). Below is their derivation of the universal reading.

(104) EXH　EXH　**kol boy arrived**

　　　　　　　　avb

　　　　　　　　$\underline{\text{Alt(avb)}} = \{\text{avb, a, b}\}$　　　Note: $a \wedge b$ is not an alternative.

　　　　　EXH $_{\text{Alt(avb)}}$ [avb] = avb　　　B/c neither a, nor b is excludable. Why? $\{\text{avb}, \neg a\}$ and $\{\text{avb}, \neg b\}$ are both consistent sets and maximal as such. But $a, b \notin \{\text{avb, a}\} \cap \{\text{avb, b}\}$.

　　　　　　　　　　　　　　　　　If $a \wedge b$ were in Alt(avb), it would be excludable; EXH(avb) would be $(\text{avb} \wedge \neg(a \wedge b))$.

　　　　Alt $_{\text{EXH\_Alt(avb)}}$ [avb] =

　　　　{ EXH $_{\text{Alt(avb)}}$ [avb], EXH $_{\text{Alt(avb)}}$ [a], EXH $_{\text{Alt(avb)}}$ [b] } =

　　　　{　　avb,　　　$a \wedge \neg b$,　　$b \wedge \neg a$　　}

EXH $_{\text{Alt\_(EXH\_Alt(avb))}}$ [avb] [EX $_{\text{Alt(avb)}}$ [avb]] =

EXH $_{\{\text{avb}, a \wedge \neg b, b \wedge \neg a\}}$　　[avb] =　　　Now $a \wedge \neg b$ and $b \wedge \neg c$ are negated; the negations are consistent with avb.

avb $\wedge \neg(a \wedge \neg b) \wedge \neg(b \wedge \neg a)$ =

avb $\wedge (a \rightarrow b) \wedge (b \rightarrow a)$ = avb $\wedge (a \leftrightarrow b)$ = $a \wedge b$

It takes further work to pull off either of these analyses for <u>is</u>, and the difficulty is compounded by the fact that some of the relevant ingredients of meaning are presuppositions. It is unclear to me how to combine presuppositions with Fox-style recursive exhaustification.

It may be discouraging to note that Ahn 2015 analyzes English <u>too</u> and <u>either</u> as distinct (even though she does away with presuppositions):

(105) Ahn (2015)

(30) $[\![\text{too}]\!](q)([\![\mathbf{p}]\!]_{\sim C}) = \lambda w: q \in C - \{[\![p]\!]^o\}.\ q_w \wedge [\![\mathbf{p}]\!]^w$

(31) $[\![\text{either}]\!](q)([\![\mathbf{p}]\!]_{\sim C}) = \lambda w: q \in C - \{[\![p]\!]^o\}.\ q_w \vee [\![\mathbf{p}]\!]^w$

But, while no specific proposal is made in this draft, we are not giving up.

10. <u>Outlook</u>

I am not yet in a position to determine to exactly what extent our answers carry over to other languages. I mention two open questions here.

(106)   Could the etymological similarity between Hungarian *sem* and Modern Greek <u>oute</u> (Giannakidou 2007) be exploited in explaining how both form non-strict N-expressions in basically strict-NC languages? Both are composed of <u>and/too/even + not</u>, with a now-defunct negation.

(107)   Many languages have constructions of the form <u>ni X ni Y</u> `neither X nor Y'. Some are strict and others are non-strict N-expressions. Are there structural differences hidden under the uniform surface?

Investigating such cross-linguistic questions is a task for further research.

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