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Two varieties of Korean

Microvariation in Semantics (S&B22 Satellite Event)
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Introduction

I. The question

Han, Lidz & Musolino (2007), Han, Musolino & Lidz (2016): Korean exhibits language-internal variation with respect to the interpretation of universal quantifier objects in negative sentences:

John-i motun chayk-ul an ilk-ess ta.
John-NOM every book-ACC NEG read-PST –DECL

John-i motun chayk-ul ilk-ci ani ha-yess-ta.
John-NOM every book-ACC read-CI NEG do-PST –DECL

- Variety A: 'John didn't read every book.' ¬>∀
- Variety B: 'John read no book.' ∀>¬

I. The question

Han, Lidz & Musolino (2007), Han, Musolino & Lidz (2016): This variation is is seemingly random throughout the population.

- Speakers are consistent in their judgments across testing sessions.
- They are consistent across syntactic environments.
- The judgments of children and their parents are uncorrelated.

I. The question

The Korean facts give rise to the following questions:

- What causes this variation?
- Why is there such random variation in a language?
- Why doesn‘t Korean converge to a single grammar?

Head movement vs. affix lowering

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Han, Lidz & Musolino (2007), Han, Musolino & Lidz (2016)

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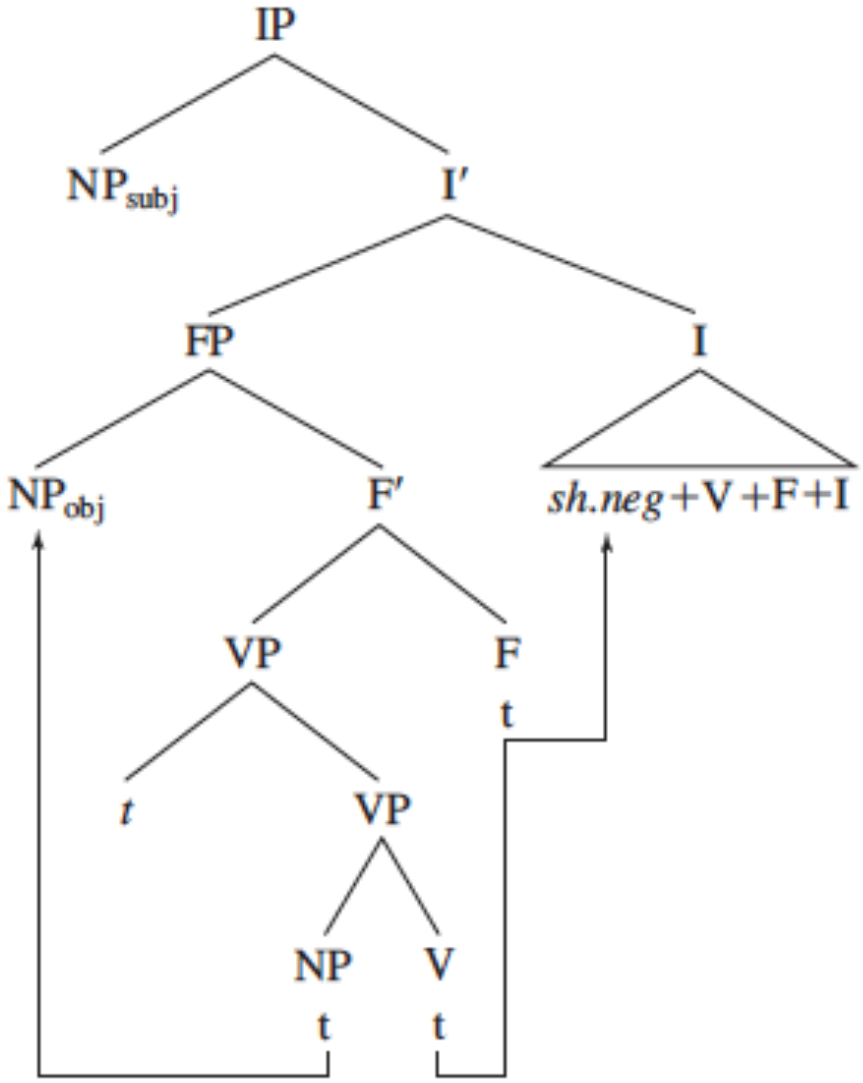
II. A syntactic account

HLM, HML: The Korean varieties differ with respect to whether the verb moves up to T (picking up negation along the way) or whether tense morphology lowers down onto the verb, based on the following three claims.

- Objects raise to a VP-external position (Hagstrom 2000, 2002).
- Korean is scope-rigid (Joo 1989, Ahn 1990, Sohn 1995, Hagstrom 2000).
- Negation must morphologically attach to the verb.

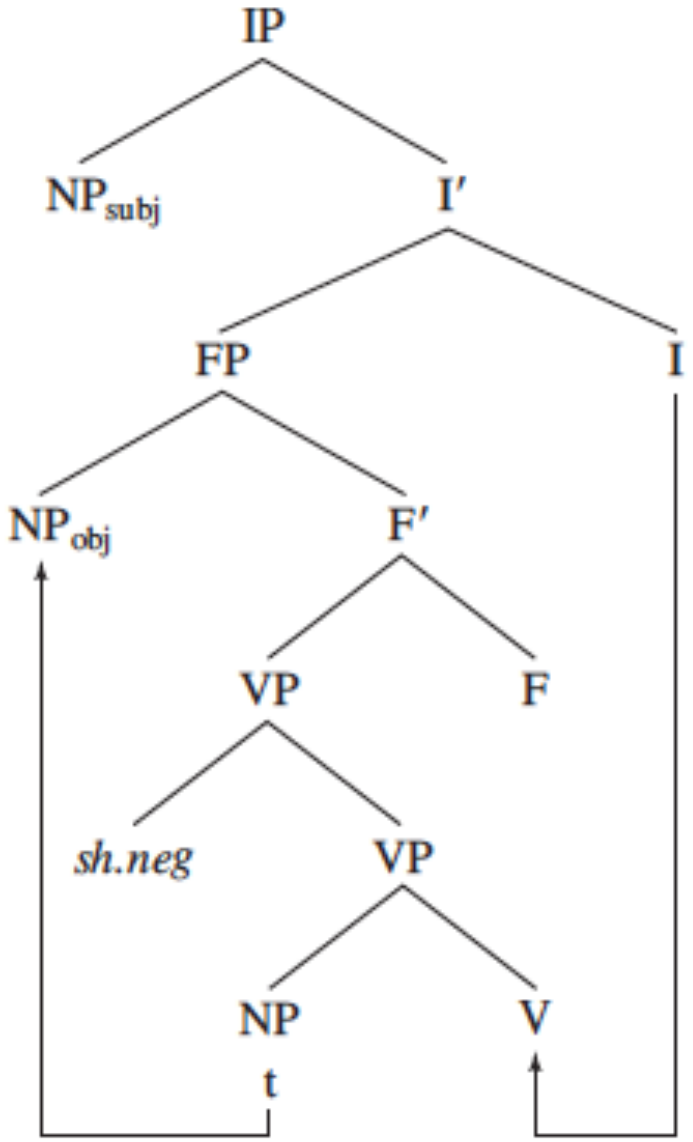
II. A syntactic account

Variety A:



II. A syntactic account

Variety B:



Consequences

III. Consequences

The conclusions reached in HLM and HML are important for linguistic theory:

- Children acquire only one of the two grammars that are consistent with their exposure on the basis of an internally driven learning mechanism.

- Microvariation can result from the fact that the language input is underdetermined and that multiple grammars are compatible with the language input.

III. Consequences

The conclusions reached in HLM and HML are important for linguistic theory:

- Rightward (string-adjacent) head movement is grammatically possible (in line with Otani and Whitman 1991, Yoon 1994, Koizumi 1995, 2000 and Choi 1999, but against Kim 1995, 1999, Chung and Park 1997, Hoji 1998, and Fukui & Sakai 2003).

- Rightward (string-adjacent) head movement is grammatically optional, not required.

Problems for the syntactic approach

IV. Problems

Korean is scope-rigid with respect to quantifiers that surface in their base position (only scrambling gives rise to ambiguity)

Nwukwunka-ka motun salam-ul piphanhay-ss-ta.
someone-NOM every person-ACC criticize-PST -DECL
'Someone criticized every person.' (∃ >∀; *∀> ∃)

[Motun salam-ul]$_i$ nwukwunka-ka t_i piphanhay-ss-ta.
every person-ACC someone-NOM criticize-PST -DECL
'Someone criticized every person.' (∃ > ∀; ∀>∃)

IV. Problems

But such scope-rigidity does not inform us about the scopal relation between quantifiers and other scope-taking elements, such as negation, as can be shown for German (cf. Fanselow 2001, Cavar & Fanselow 2002, Bobaljik & Wurmbrand 2013)

dass fast jeder Mann mindestens eine Frau kennt
that nearly every.NOM man at least one.ACC woman knows
'that nearly every man knows at least one woman'(∀> ∃; *∃ >∀)

dass [mindestens eine Frau] fast jeder Mann t_i kennt
that at least one.ACC woman every.NOM man knows
'that nearly every man knows at least one woman' (∀>∃; ∃ > ∀)

IV. Problems

German is not scope-rigid in other respects:

Marie soll nicht gehen
Marie should not leave (should>¬; *¬>should)

Marie darf nicht gehen
Marie may not leave (¬>may; #may>¬)

Marie hat nicht eine Frau gesehen
Marie has not a woman seen (¬ > ∃; ∃ > ¬)

Jeder hat nicht gearbeitet
Everybody has not worked (∀ > ¬; ¬ > ∀)

IV. Problems

Hence quantifier scope rigidity does not extend to rigidity for other scopal construals. Also Korean appears not to be fully scope-rigid with respect to subject quantifiers and negation.

Ta an o-ass-ta.
all NEG come-PST-DECL
'All didn't come' (∀ > ¬)

Amwuto khwukhi-lul an mek-ess-ta.
anyone cookie-ACC NEG eat-PST –DECL
'Nobody ate the cookies' (¬ > ∃)

IV. Problems

And similar facts can be attested for object quantifiers.

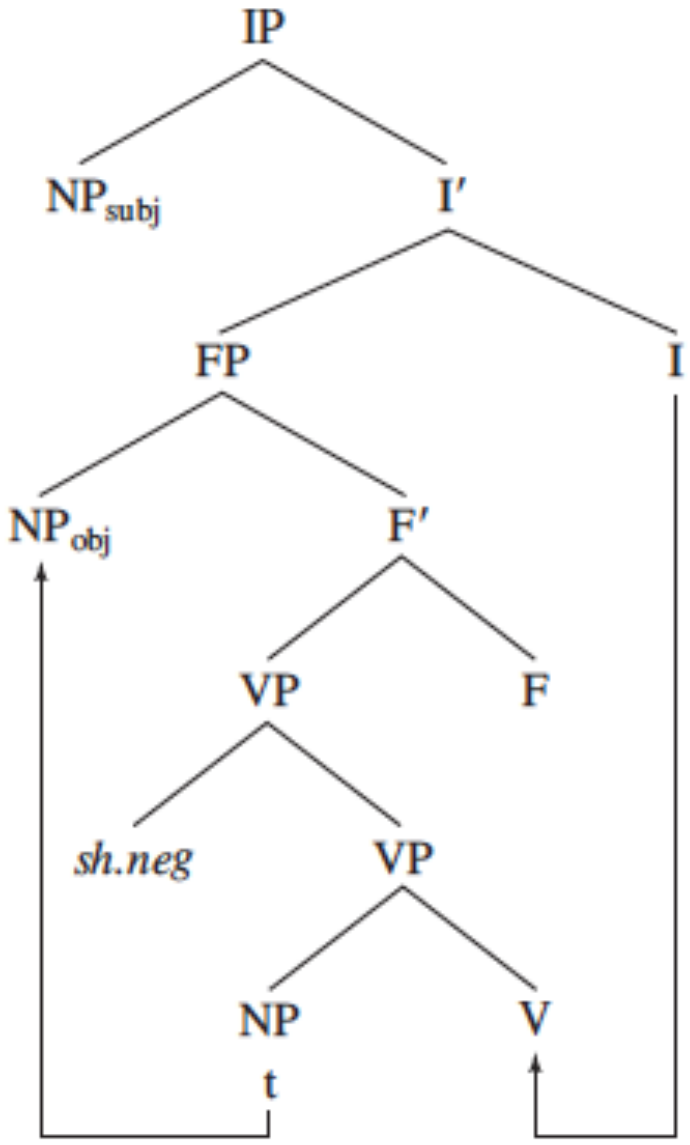
John-i motun chayk-ul an ilk-ess ta.
John-NOM every book-ACC NEG read-PST –DECL
'John read no book' (∀ > ¬)

John-un amwukesto an mek-ess-ta.
John-TOP anything NEG eat-PST -DECL
'John didn't eat anything' (¬ > ∃)

Hence, nothing predicts that the raised object quantifier cannot reconstruct to a position below negation, and Variety B (∀ > ¬) would be predicted to allow both scopal construals, contrary to fact.

IV. Problems

Variety B:



IV. Problems

Another problem emerges for Korean A, where even though object quantifiers take low scope, sentences are still judged true when the inverse reading is also true:

John-i motun chayk-ul an ilk-ess ta.
John-NOM every book-ACC NEG read-PST –DECL
'John didn't read every book'

- Judged true in a situation where John read some, but not all books.

- Judged true in a situation where John read no book.

IV. Problems

Even though the sentences with reading ¬>∀ are true in both scenarios, normally negated universals bring along an existential inference („John didn‘t read every book, but he did read some book‘) and would therefore be judged false in situations where John read no book, at least for a substantial number of speakers.

Hence, the theory predicts that Korean A is not ambiguous, where in fact it is; and the theory also predicts that Korean B is ambiguous, where in fact it is not.

IV. Problems

Hence, the theory predicts that Korean A is not ambiguous, where in fact it is; and the theory also predicts that Korean B is ambiguous, where in fact it is not.

- An analysis for Korean A where negation raises to a position higher then the object is problematic, as the inverse scope reading appears to be available as well:

- An analysis for Korean B where negation stays in situ is problematic, as it is not clear why the quantifier object could not reconstruct below negation:

Polarity-sensitive quantifiers

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Proposal

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V. A semantic account

An alternative proposal would be to assume that the difference between the two varieties does not lie in the syntax (head movement or affix lowering) but rather in the (lexical) semantics.

- Korean verbs never raise

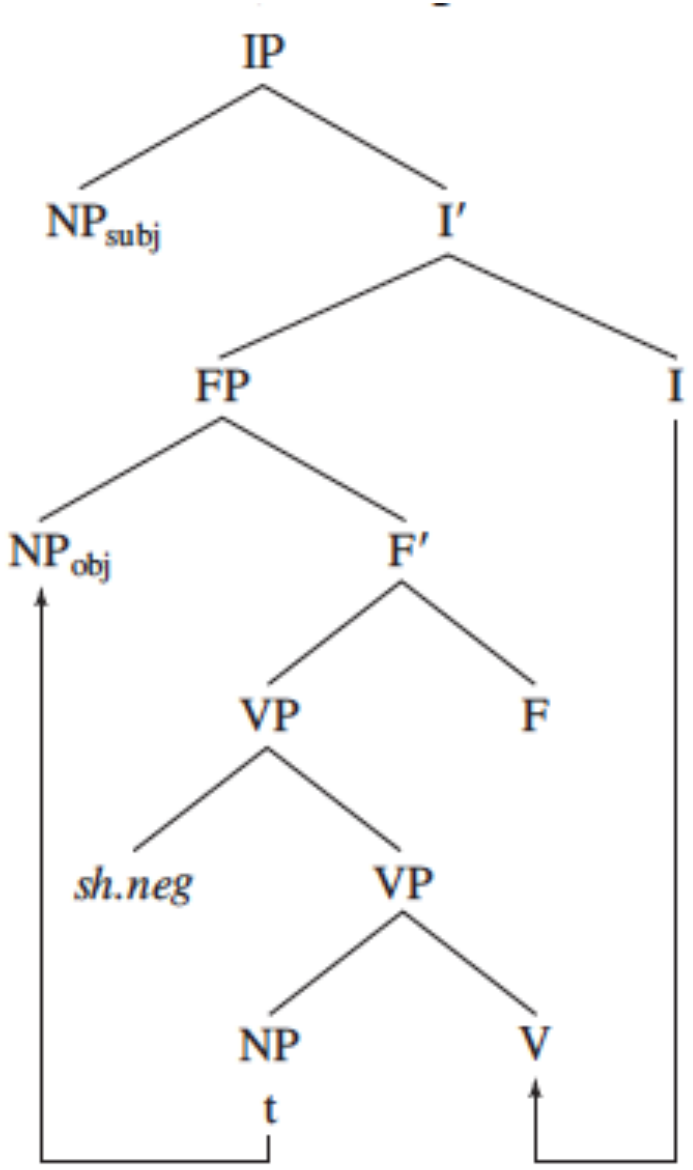
- In Korean B, the universal quantifier is a Positive Polarity Item (PPI) and can therefore not reconstruct below negation.

- In Korean A, the universal quantifier is polarity-insensitive and can therefore reconstruct below negation.

IV. Problems

Variety A and B:

In variety A, the object can reconstruct;
in Variety B it cannot.



V. A semantic account

This way, the attested problems would disappear.

- Korean A would correctly be predicted to be ambiguous
- Korean B would correctly be predicted not to be ambiguous

Moreover, rightward head movement would not have to be optionally available in a particular language.

The source of the variation in Korean would be language-internal variation with respect to the presence or absence of the NPI-/PPI-hood of particular scope-taking elements, a well-known instance of linguistic variation.

V. A semantic account

A prima facie this analysis can easily be dismissed

- In a sentence with an NPI subject, in both varieties the universal quantifier object can take scope below negation.

Amwuto motun chayk-ul an ilk-ess-ta
anybody every book-Acc neg read-Past-Decl
‚Nobody read every book‘

- Universal quantifiers over individuals that are PPIs are very rarely attested.

However, these objections no longer apply when the nature of universal quantifier PPIs is considered in more detail (just stating that something outscopes negation because it’s a PPI is circular).

The nature of existential NPIs

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VI. Existential NPIs

Following Chierchia (2006, 2013), basing himself on Kadmon & Landman (1993), Krifka (1995) and Gajewski (2002), a sentence with an unlicensed NPI yields a logical contradiction and logical contradictions give rise to ungrammaticality judgments.

The source of the logical contradiction is twofold:

- NPIs introduce domain-alternatives.
- NPIs come along with a syntactic feature that triggers the presence of a covert exhaustification operator.

VI. Existential NPIs

*I have any potato

[I have any potato$_{[u\sigma,D]}$]	no contradiction, unchecked feature
[EXH$_{[i\sigma,D]}$ I have any potato$_{[u\sigma,D]}$]	contradiction, checked feature

I don't have any potato

[EXH$_{[i\sigma,D]}$ I don't have any potato$_{[u\sigma,D]}$]	no contradiction, checked feature

VI. Existential NPIs

*I have any potato:

$\exists p[p \in \{p1, p2, p3\} \& Have(I, p)] <$
$\exists p[p \in \{p1, p3\} \& Have(I, p)]$
$\exists p[p \in \{p2, p3\} \& Have(I, p)]$
$\exists p[p \in \{p1, p3\} \& Have(I, p)]$
$\exists p[p \in \{p1\} \& Have(I, p)]$
$\exists p[p \in \{p2\} \& Have(I, p)]$
$\exists p[p \in \{p3\} \& Have(I, p)]$

These domain alternatives are stronger. Therefore:

VI. Existential NPIs

EXH(∃p[p∈{p1, p2, p3} & Have(I, p)) =

∃p[p∈{p1, p2, p3} & Have(I, p)] &
¬∃p[p∈{p1, p3} & Have(I, p]) &
¬∃p[p∈{p2, p3} & Have(I, p)] &
¬∃p[p∈{p1, p3} & Have(I, p)] &
¬∃p[p∈{p1} & Have(I, p)] &
¬∃p[p∈{p2} & Have(I, p)] &
¬∃p[p∈{p3} & Have(I, p)]

A clear contradiction

VI. Existential NPIs

I don't have any potato

$\neg\exists p[p\in\{p1, p2, p3\} \& Have(I, p)] >$
$\neg\exists p[p\in\{p1, p2\} \& Have(I, p)]$
$\neg\exists p[p\in\{p2, p3\} \& Have(I, p)]$
$\neg\exists p[p\in\{p1, p3\} \& Have(I, p)]$
$\neg\exists p[p\in\{p1\} \& Have(I, p)$, etc.

No domain alternative is stronger, so no contradiction arises.

$EXH(\neg\exists p[p\in\{p1, p2, p3\} \& Have(I, p)]) =$
$\neg\exists p[p\in\{p1, p2, p3\} \& Have(I, p)]$

Universal quantifier PPIs

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VII. Universal Quantifier PPIs

In principle, Chierchia's approach should also be applicable to universals, as nothing would rule out the introduction of domain alternatives in the restrictive clause of a universal quantifier.

- However, since universals are at the other end of the scale, the reasoning in terms of arising contradictions is reverse.

- Such universal quantifiers that are obligatorily exhaustified are expected to be PPIs.

VII. Universal Quantifier PPIs

To see this, take the imaginary word *pevery*, which would be the universal counterpart of *any*: a universal quantifier that obligatorily introduces domain alternatives, which must be exhaustified.

I didn't see pevery girl

$\neg \forall g[g \in \{g1, g2, g3\} \rightarrow See(I, g)] <$
$\neg \forall g[g \in \{g1, g2\} \rightarrow See(I, g)]$
$\neg \forall g[g \in \{g2, g3\} \rightarrow See(I, g)]$
$\neg \forall g[g \in \{g1, g3\} \rightarrow See(I, g)]$
$\neg \forall g[g \in \{g1\} \& See(I, g)]$, etc.

VII. Universal Quantifier PPIs

Consequently, EXH(I didn't see pevery girl) yields a contradiction:

EXH(¬ ∀g[g∈{g1, g2, g3} → See(I, g)]) =

¬ ∀g[g∈{g1, g2, g3} → See(I, g)] &
¬ ¬ ∀g[g∈ {g1, g2} → See(I, g)] &
¬ ¬ ∀g[g∈ {g2, g3} → See (I, g)] &
¬ ¬ ∀g[g∈ {g1, g3} → See (I, g)] &
¬ ¬ ∀g[g∈ {g1} → See (I, g)], etc.

VII. Universal Quantifier PPIs

Consequently, EXH(I didn't see pevery girl) yields a contradiction:

EXH(¬ ∀g[g∈{g1, g2, g3} → See(I, g)]) =

¬ ∀g[g∈{g1, g2, g3} → See(I, g)] &
∀g[g∈ {g1, g2} → See(I, g)] &
∀g[g∈ {g2, g3} → See (I, g)] &
∀g[g∈ {g1, g3} → See (I, g)] &
∀g[g∈ {g1} → See (I, g)], etc.

VII. Universal Quantifier PPIs

But PPIs like *pevery* seem extraordinarily rare. If Korean universal quantifiers were PPIs, why wouldn‘t such PPIs be attested more often?

- Universal quantifier PPIs have a property that allows them to take scope under negation.

- The only PPI-like behaviour is that these quantifiers exhibit is that they cannot reconstruct below negation.

VII. Universal Quantifier PPIs

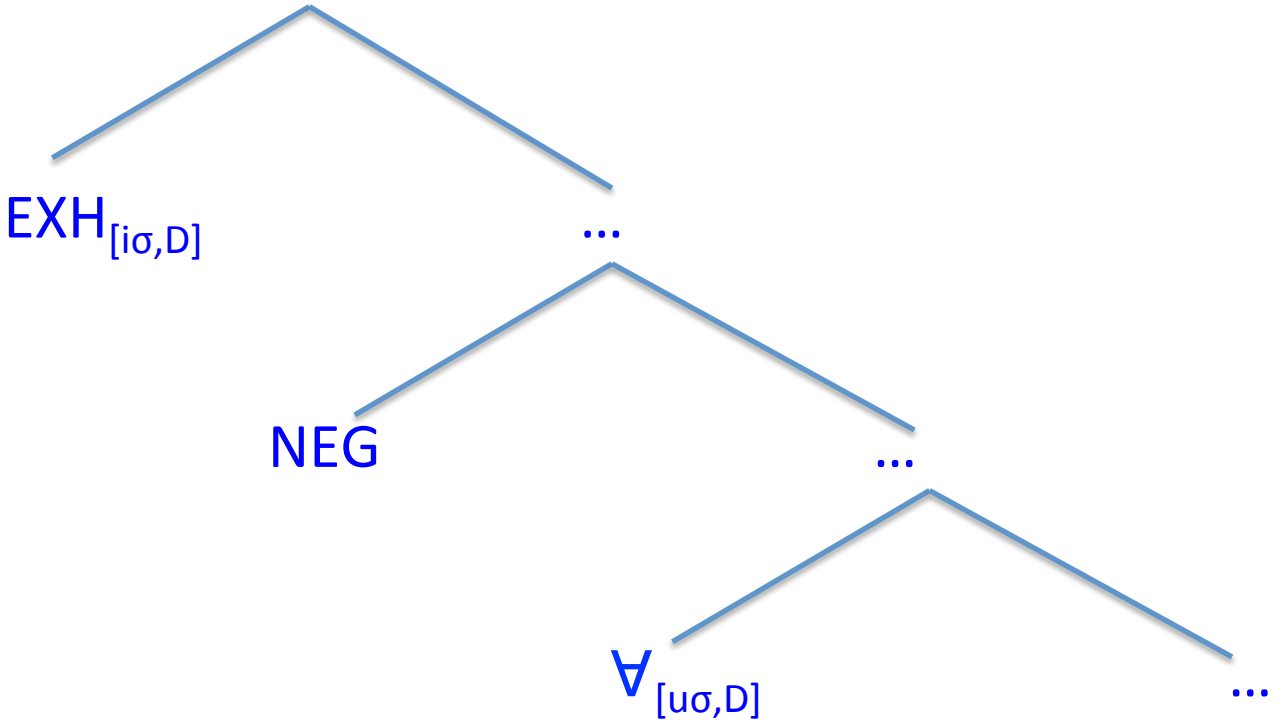
The reason is that EXH>NEG>$\forall_{[u\sigma,D]}$ yields a contradiction, but NEG>EXH>$\forall_{[u\sigma,D]}$ does not!

- So, it all depends on where $EXH_{[u\sigma,D]}$ is present in the structure.

- Covert $EXH_{[i\sigma,D]}$ is always higher than the NPI/PPI at surface structure, since it must appear in a position c-commanding its syntactic feature checker (cf. Chierchia 2013, Zeijlstra 2004, 2012).

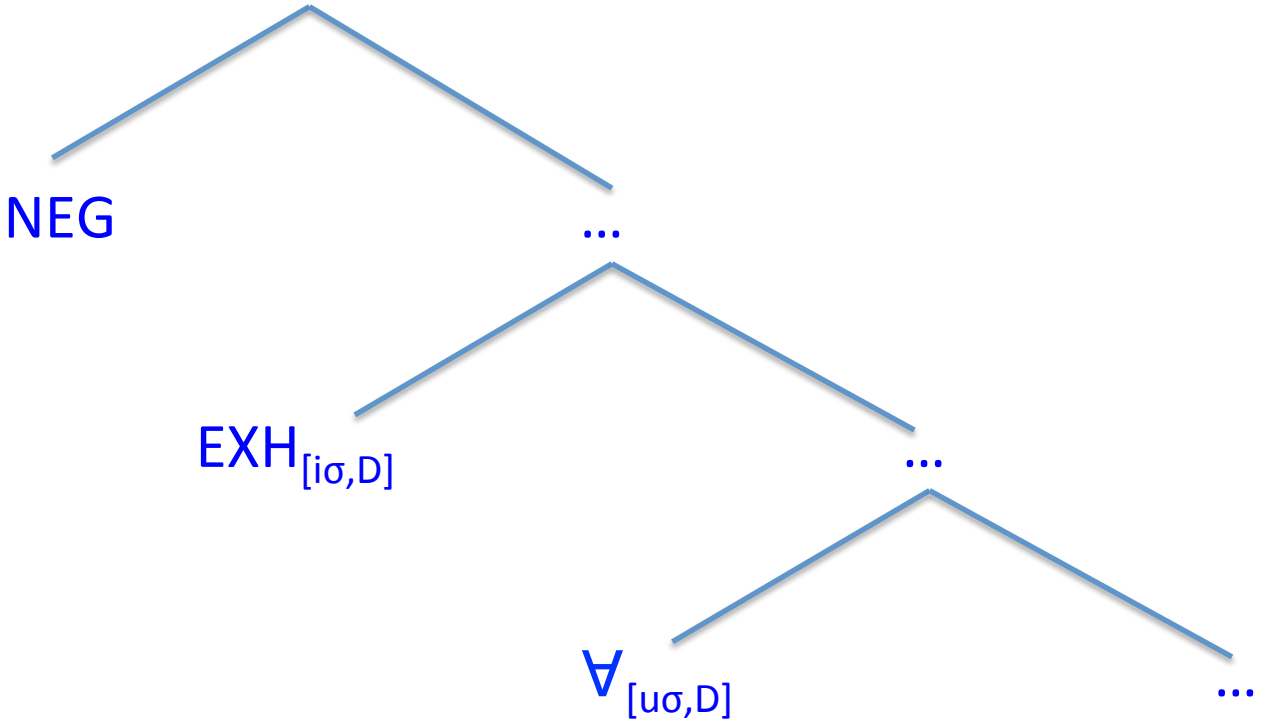
VII. Universal Quantifier PPIs

When the PPI appears below negation, one parse gives rise to a contradiction:



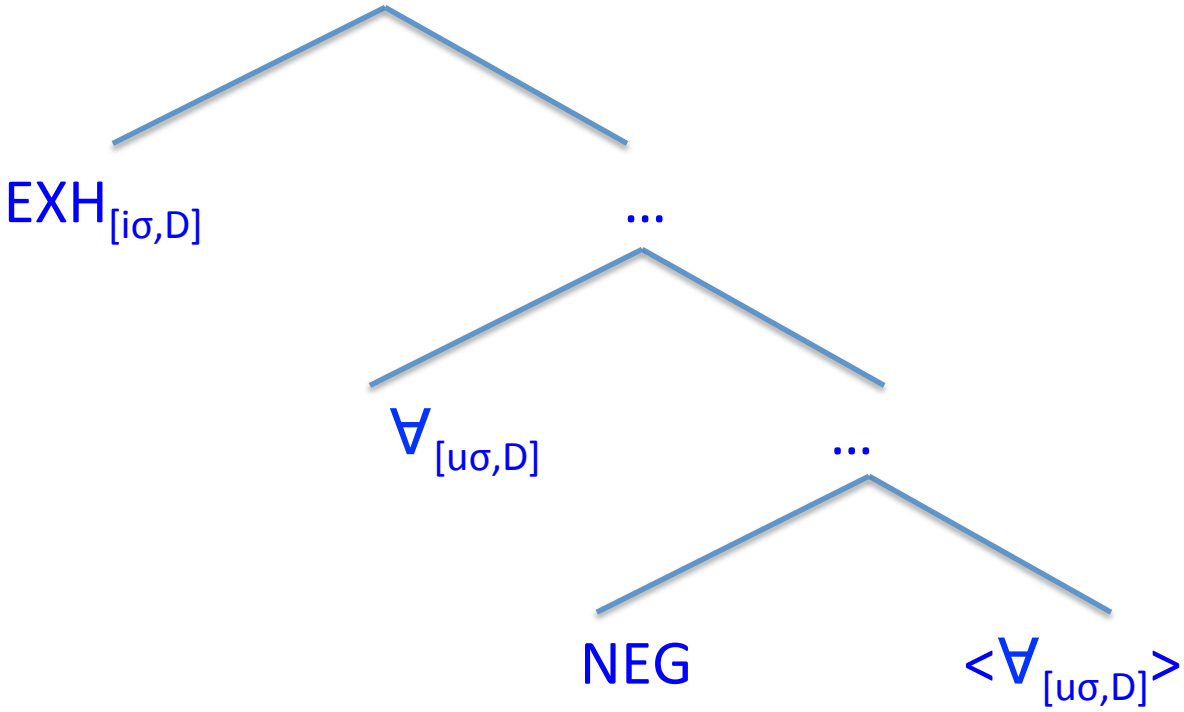
VII. Universal Quantifier PPIs

But the sentence also allows a parse that does not give rise to a contradiction. Hence the PPI may appear below negation:



VII. Universal Quantifier PPIs

When the PPI precedes negation, no contradiction arises either; but the contraction would arise if the PPI reconstructed below negation



VII. Universal Quantifier PPIs

Universal Quantifier PPIs can scope under negation, as long as the exhaustifier is able to intervene between the negation (or another anti-licenser) and the PPI.

- Universal Quantifier PPIs can appear (and take scope) below negation, but they cannot reconstruct under negation.

- Such PPIs have indeed been attested.

VII. Universal Quantifier PPIs

In most languages universal quantifier subjects can take scope below negation. In a few languages (Dutch, Northern German, Lebanese Arabic, Japanese) they cannot. These quantifiers can be analysed as such PPIs (cf. Zeijlstra 2017):

Every boy didn't walk — English
OK: "No boy walked"
OK: "Not every boy walked"

Iedere jongen liep niet — Dutch
OK: "No boy walked"
*: "Not every boy walked"

Analysis

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VIII. Analysis

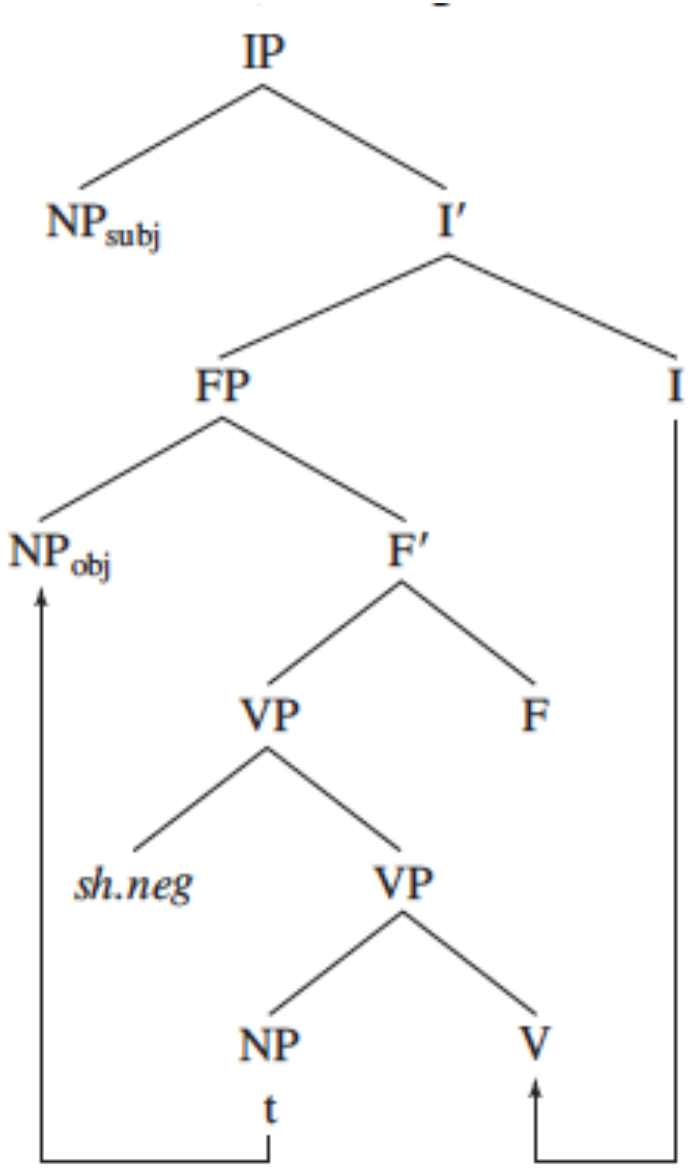
Now the Korean facts naturally follow:

- No rightward movement in Korean; negation stays in situ.
- Object quantifiers raise across negation.
- Korean A: the universal quantifier is polarity-insensitive. It can be interpreted in both positions: ambiguous between ¬>∀ and ∀>¬ readings.
- Korean B: the universal quantifier is a PPI. It can only be interpreted in the the higher position: only the ∀>¬ reading is available.

VIII. Analysis

Variety A and B:

In variety A, the object can reconstruct;
in Variety B it cannot.



Consequences and conclusions

NPI/PPI Variation

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IX. NPI/PPI Variation

The variation in Korean described in HLM/HML boils down to variation with respect to the polarity-sensitivity of certain lexical items. Such variation is fairly general and has been observed in many cases:

- In the early 20th Century, Northern Dutch *ooit* ('ever') was an NPI; Southern Dutch / Flemish *ooit* was polarity-insensitive (Hoeksema 1999).

IX. NPI/PPI Variation

The variation in Korean described in HLM/HML boils down to variation with respect to the polarity-sensitivity of certain lexical items. Such variation is fairly general and has been observed in many cases:

- Western Dutch *moeten* ('must') is a PPI; Eastern / Southern Dutch *moeten* is a polarity-insensitive (cf. Iatridou & Zeijlstra 2013).

Zij moet dat niet doen
She must that not do
'She mustn't do that' / 'She doesn't have to do that'

IX. NPI/PPI Variation

The variation in Korean described in HLM/HML boils down to variation with respect to the polarity-sensitivity of certain lexical items. Such variation is fairly general and has been observed in many cases:

- Also, among Western Germanic languages, such variation is attested. English *must* is a PPI; German *müssen* is not.

She must not go (must > ¬)

Sie muss nicht gehen
She must not go
'She doesn't have to go' (¬ > must)

IX. NPI/PPI Variation

The variation in Korean described in HLM/HML boils down to variation with respect to the polarity-sensitivity of certain lexical items. Such variation is fairly general and has been observed in many cases:

- Dutch / Northern German *ieder*/*jeder* (‘every‘) are PPIs; English / Southern German *every*/*jeder* are polarity-insensitive (cf. Zeijlstra 2017).

Iedereen loopt niet	Dutch	$\forall > \neg$; $^{*}\neg > \forall$
Jeder laüft nicht	German	$\forall > \neg$; $^{\#}\neg > \forall$
Everybody doesn’t walk	English	$\forall > \neg$; $\neg > \forall$

Conclusions

X. Conclusions

- The attested variation in Korean is due to the polarity-(in)sensitivity of universal quantifiers.

- No 'special status' to the attested microvariation in Korean. Korean microvariation reduces to well attested variation with respect to the presence or absence NPI-hood / PPI-hood of particular scope-taking elements.

X. Conclusions

- No evidence for rightward movement (in Korean).
- No evidence for optionality in grammar with respect to 'hard' syntactic operations, such as rightward movement / affix lowering.

Thank you!

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