

**Two varieties of Korean, or the ban against rightward head movement**

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Han et al. (2007, 2016) have shown that there are two varieties of Korean: a variety where universal quantifier objects outscope sentential negation, and a variety where such universal quantifier objects take scope below sentential negation:

- (1) John-i motun chayk-ul an ilk-ess ta  
 John-NOM every book-ACC NEG read-PST -DECL  
 Variety I: 'John didn't read every book.'  $\rightarrow \forall$   
 Variety II: 'John read no book.'  $\forall > \neg$

As Han et al. (2016) show, this variability is attested between speakers but not within a speaker, which suggests that the two varieties of Korean have different grammars. As objects in Korean always raise from a VP-internal position to a VP-external position (Hagstrom 2000, 2002), Han et al. (2007) assume that in Variety I, the verb raises from V to T and the negation raises along, whereas in Variety II, the verb stays in situ, and the tense marker lowers down to V. Since in Variety I, negation raises along with the verb to a position (T) higher than the object, negation outscoops the object. In Variety II, negation is in a position that is structurally lower than the (raised) object, so the object outscoops negation, as in (2) (surface positions in boldface):

- (2) Variety I [TP [FP **OB<sub>i</sub>** [ [**OB<sub>i</sub>** > **V<sub>j</sub>**] <NEG<sub>k</sub>> ] ] **V<sub>j</sub>-NEG<sub>k</sub>-T**]  
 Variety II [TP [FP **OB<sub>i</sub>** [ [**OB<sub>i</sub>** > **V-T<sub>j</sub>**] **NEG**] ] <T<sub>j</sub>>]

Han et al.'s conclusions have created a serious impact on syntactic theory, as it appeared to provide evidence for the claim that rightward (string-adjacent) head movement (Korean is strictly head-final) and affix lowering could co-exist and that languages could arbitrarily vary with respect to that. Whether rightward, string-adjacent head movement exists or not, however, has been an issue of debate for a long time. Whereas Otani and Whitman (1991), Yoon (1994), Koizumi (1995, 2000) and Choi (1999) have argued that in Japanese verbs must raise out of the VP for reasons involving ellipsis, scrambling, coordination and NPI licensing, Kim (1995, 1999), Chung and Park (1997), Hoji (1998), and Fukui & Sakai (2003) have shown all these facts can also be accounted for by approaches that do not allude to rightward head movement, and thus do not provide any evidence in favour of it. Han et al.'s arguments have therefore been taken to be the strongest argument in favour of rightward (string-adjacent) head movement. However, it is far from clear that Korean provides evidence for rightward string-adjacent head movement and that the presence or absence of rightward verb raising explains the difference between the two varieties. Closer inspection will actually reveal that the two varieties are only different in terms of polarity-sensitivity of universal quantifiers. Consequently, perhaps the strongest arguments in favour of rightward (string-adjacent) head movement vanishes.

First, as acknowledged by Han et al., Korean speakers of Variety I also take sentences like (1) to be true in scenarios where John read no book. Under the view that neither negation nor objects may reconstruct in Korean that is a problem for their analysis. To circumvent this problem, Han et al. argue that since the  $\forall > \neg$  reading entails the  $\rightarrow \forall$  reading, the participants in their experiments who accepted the  $\rightarrow \forall$  reading also accepted the  $\forall > \neg$  reading (since the  $\rightarrow \forall$  reading is still true in a  $\forall > \neg$  scenario). However, for speakers of a language where a universal quantifier object takes scope below negation (as in English *Mary didn't eat all the cookies*) such sentences are generally not felicitous when uttered in a scenario where  $\forall > \neg$  is true, the reason being that such sentences also trigger an existential implicature (e.g. that Mary ate at least one cookie).

Second, the analysis crucially relies on the ban on argument reconstruction in Korean. Han et al. argue that arguments never reconstruct, but this cannot be correct. If in Korean, existential NPIs appear in subject position (a position that is structurally higher than negation), they still take scope below negation, as shown in (3).

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

That means that arguments can actually reconstruct and that the claim that Korean forbids argument reconstruction (a necessary ingredient for their analysis) is too strong. If the subject can reconstruct in (3), why can't the objects reconstruct in (1)? For these reasons, the facts in (1) call for a different analysis. In this paper I demonstrate that the difference between the two varieties is that in Variety II the universal quantifier is a Positive Polarity Item (PPI), whereas in Variety I it is not.

Chierchia (2013) takes Negative Polarity Items (NPIs) to be existentials that carry an

uninterpretable feature  $[u\sigma, D]$  that (i) obligatorily introduces domain alternatives and (ii) must be obligatorily exhausted (i.e., every stronger alternative proposition must be taken to be false). Outside downward entailing contexts, such elements yield a reading that is a logical contradiction (which triggers the unacceptability judgement):

- (4) a.  $[EXH_{[\sigma, D]} [Mary\ ate\ any_{[u\sigma, D]} cookies]]$  EXH $\exists$  Contradiction  
 b.  $[EXH_{[\sigma, D]} [Mary\ didn't\ eat\ any_{[u\sigma, D]} cookies]]$  EXH $\neg \rightarrow \exists$  No contradiction

Zeijlstra (2013, 2017) shows that for the same reason universal quantifiers that carry such a feature  $[u\sigma, D]$  are PPIs. The scopal order in (5a) yields no contradiction, but the one in (5b) does. However, as Zeijlstra shows, that does not entail that such elements may never appear under negation: if (5a) (EXH $\forall$ ) does not yield a contradiction (in fact, exhaustification in such cases takes place vacuously), then (5c) does not do so either.

- (5) a. EXH $\forall$  No contradiction c.  $\neg \rightarrow EXH \forall$  No contradiction  
 b. EXH $\neg \rightarrow \forall$  Contradiction

Such universal quantifier PPIs are thus universal quantifiers that can take scope below negation, as long as the exhaustifier (EXH) is able to intervene. This makes their PPI-behaviour rather opaque (as they can take scope below negation). Only if such PPIs appear above the negation do they reveal their PPI-hood: the scopal surface order EXH $\forall \neg$  is then still fine, but now the universal quantifier cannot reconstruct below negation. If it did, it would yield the scopal order EXH $\neg \rightarrow \forall$ , which, again, gives rise to a logical contradiction. An example of this type of such a PPI is the Dutch universal quantifier *ieder(een)* ('every(body)'). Unlike its English, polarity-neutral counterpart *every(body)*, Dutch *ieder(een)* may appear under the surface scope of negation, but may not reconstruct below it.

- (6) a. i. Everybody didn't leave  $\forall \neg; \neg \forall$   
 ii. I haven't seen everybody  $\neg \rightarrow \forall; * \forall \neg$   
 b. i. Iedereen vertrok niet (Everybody left not)  $\forall \neg; * \neg \forall$   
 ii. Ik heb niet iedereen gezien (I have not everybody seen)  $\neg \rightarrow \forall; * \forall \neg$

The circumstances under which subject *every/ieder(een)* may or may not reconstruct are identical to the circumstances under which negated universal quantifier objects in Korean appear: at their surface position they are in a position higher than the negation. Assuming, then, that in Variety I the universal quantifier is polarity-neutral, whereas in Variety II it is a PPI (of the kind discussed above) explains the full pattern. In Variety I the object raises to a position outside negation, but can reconstruct in its base position. Therefore these sentences are fine with both a  $\neg \rightarrow \forall$  and a  $\forall \neg$  construal. In Variety II, the object raises as well, but since the object must be exhausted (given that it is a PPI), the object can no longer reconstruct (as that would yield the contradictory scopal order EXH $\neg \rightarrow \forall$ ) and the only available reading is  $\forall \neg$ .

- (7) Variety I  $[_{TP} [_{FP} \mathbf{OB}_i [ [ \langle \mathbf{OB} \rangle \mathbf{V} ] \mathbf{NEG} ] ] \mathbf{T}]$  reconstruction possible  
 Variety II  $[ \mathbf{EXH} [_{TP} [_{FP} \mathbf{OB}_i [ [ \langle \mathbf{OB} \rangle \mathbf{V} ] \mathbf{NEG} ] ] \mathbf{T}]]$  reconstruction forbidden

The Korean facts can thus be better explained by simply reducing the difference between the two varieties to the polarity-sensitivity of the universal quantifier: in Variety II it's a PPI, in Variety I it's not. This explanation covers all the readings speakers assign to these constructions in the two varieties and covers the fact that quantifiers in argument positions may actually reconstruct. Note that this explanation also does not have to allude to optional verb raising. All the readings follow immediately, without any raising or lowering of the negation. Negation, in both varieties, simply occupies its base position between the lower and the higher position of the object.

Finally not that this kind of variation is widely attested in other languages as well. For instance, in various northern German varieties *jeder* is also a similar PPI as the Dutch cognate *ieder*, and cannot reconstruct below negation, whereas in most other varieties it is polarity-neutral (and can reconstruct), as shown in Zeijlstra (2013, 2017). And Dutch modal *moeten* is a PPI in most western varieties of the language, but not in most eastern varieties (cf. Iatridou & Zeijlstra 2013). Consequently, the type of variation attested in Korean is not in any way exceptional: it belongs to the kind of semantic variation that is well known and does not provide any evidence for the existence of rightward (string-adjacent) head movement in syntax (let alone arbitrary variation with respect to it).

Selected references: Chierchia, G. 2013. *Logic in Grammar: polarity, Free Choice, and Intervention*. Oxford: OUP. Han, C, J. Lidz & J. Musolino. 2007. 'V-raising and grammar competition in Korean: Evidence from negation and quantifier scope.' *Linguistic Inquiry* 38: 1–47. Han, C, J. Musolino & J. Lidz. 2016. 'Endogenous sources of variation in language acquisition.' *PNAS* 113: 942-947 Zeijlstra, H. 2017. Universal Quantifier PPIs. *To appear in Glossa*.