Cross-linguistic Differences in Superlative Movement out of Nominal Phrases

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We observe that superlative nominal phrases allow a reading in Slavic that is not possible in English. The same variation is found within Slavic as well, where the relevant reading is constrained by the presence of the definite article. To account for the empirical observation, we propose that English *-est* and its Slavic counterpart *naj-* are interpreted inside definite DPs. The relevant reading requires DP-internal focus, but DP-internal *-est* cannot associate with DP-internal focus. Superlative nominal phrases can be indefinite in Slavic and in such cases *naj-* may QR out of the DP into the clause. DP-external *naj-* can associate with DP-internal focus, allowing the relevant reading. We conclude by discussing the significance of our findings and theory for the grammar of superlatives.

1. Background

Superlative expressions are evaluated with respect to a comparison class, and depending on how the comparison class is set, certain ambiguities arise (Heim 1985, Szabolcsi 1986, Gawron 1995, a.o.). For instance, (1) is three-way ambiguous. In the absolute reading (1a), the comparison class is determined just on the basis of the DP *the largest cake*: it is a set of cakes in a given context without consideration of who has bought or received them. In the relative readings (1b-c), other constituents in the sentence, e.g., *John* or *Mary*, determine the comparison class. In (1b), the cakes whose size is compared are the cakes bought for Mary by John and by other relevant alternatives to John. In (1c) cakes that John bought for Mary and for other relevant alternatives to Mary are compared.

(1) John bought the largest cake for Mary.
  a. 'John bought Mary the cake that is larger than any other cake.'
  b. 'John bought a larger cake for Mary than anyone else did.'
  c. 'John bought a larger cake for Mary than he did for anyone else.'

The same ambiguities obtain in the case of Slavic superlatives with *naj-* (Živanović 2006, Bošković and Gajewski 2009). (2a) is the absolute reading, where the comparison class is albums by U2 irrespective of who has given or received them, and (2b-c) are the two relative readings, determined on the basis of who gave Mary U2 albums, or who Ivan gave U2 albums to.

(2) Iwan   dał   Marii   *naj*-lepsze   albumy   U2.   Polish
     Ivan   gave   Maria.ACC   *naj*-better.ACC albums.ACC U2
  a. 'Ivan gave Maria the albums by U2 that are better than any other album.'
  b. 'Ivan gave Maria better albums by U2 than anyone else did.'
  c. 'Ivan gave Maria better albums by U2 than he did to anyone else.'

Two factors have been suggested to have an effect on how the comparison class is set, and thus on how the ambiguities arise: the LF syntax of *-est* and focus. Both factors remain subject to debate.

1.1. The role of QR of -est

There are two main approaches to the LF syntax of *-est*; we will call them the Scope Theory and the Pragmatic Theory. The two theories posit different scope for *-est* in relative readings: *-est* moves out of the superlative DP on the Scope Theory (Heim 1985, 1999, Szabolcsi 1986, a.o.) but remains inside the superlative DP on the Pragmatic Theory (Farkas and Kiss 2000, Sharvit and Stateva 2002). Both theories maintain that *-est* stays internal to the superlative DP in absolute readings.

Both theories can work with a meaning for *-est* as in (3), from Heim (1999).[1] The degree quantifier *-est* has a covert restrictor C – a contextual variable corresponding to the comparison class – a set of individuals.[2] [*-est C*] combines with a gradable predicate D to yield a predicate of individuals that have a degree of D such that no other individual in C has that degree of D. *-est* presupposes that its individual argument is a member of C, and that the members of C are arguments of D. Given the presupposition that C consists of individuals that are arguments of D (3-ii), and the fact that D is the denotation of the sister of [*-est C*], the LF syntax of [*-est C*] effectively determines the elements of C.

(3) $[\![\textit{-est}\,]\!] = \lambda C_{<e,t>} \lambda D_{<d,<e,t>>} \lambda x_e \exists d\, [D(d)(x) \wedge \forall y\, [y \in C \wedge y \neq x \rightarrow \neg D(d)(y)]]$
   -est $(C)(D)(x)$ is defined iff (i) $x \in C$, and (ii) $\forall y\, [y \in C \rightarrow \exists d\, [D(d)(y)]]$

On the Pragmatic Theory, C is partly determined from the DP-internal scope of [*-est C*] and partly from context. The LF and meaning of the DP *the largest cake* are given in (4). D is a relation between degrees d and individuals x such that x is a cake of size d (4b). Correspondingly, C is a set of cakes of some size (4c). The superlative DP denotes the unique cake of a certain size such that no other cake in the comparison class of cakes reaches that size (4d). This meaning is pragmatically specified further: if C is restricted to the set of cakes on display at *Sweet Lady Jane*, an absolute reading would result; if C is restricted to the set of cakes that some relevant individuals bought for Mary, or to the set of cakes that John bought for someone, we would get the relative readings in (1b) and (1c), respectively.

(4) a. $[_{DP}$ the $[_{NP}$ [*-est C*] $[_{NP}$ d-large cake$]]]$
    b. $[\![\,d\text{-large cake}\,]\!] = \lambda d\, \lambda x\, [x$ is a cake $\wedge$ x is d-large$]$
    c. $C = \{x: \exists d\, [x$ is a d-large cake$]\}$
    d. $[\![DP]\!] = \iota x\, \exists d\, [x$ *i*s a d-large cake $\wedge$ $\forall y\, [y$ is a cake $\wedge$ $y \neq x \rightarrow \neg\, y$ is a d-large cake$]]$

While the Pragmatic Theory derives all readings of (1) on the basis of a single LF, the Scope Theory posits different LFs. The absolute reading is the result of DP-internal QR of [*-est C*], as in (4). The relative readings obtain when [*-est C*] has sentential scope. Given the three-argument semantics for *-est* in (3), an individual-denoting DP needs to QR and become the third argument of *-est*. [*-est* C] tucks in below the QR-ed DP. The derivation of the relative reading in (1b) where *John* QRs, is given in (5). The relative reading in (1c) is derived analogously, with QR of *Mary*, and is not illustrated here.

On the Scope Theory, C is also set on the basis of the scope of [*-est C*], for the same reasons as outlined above. On the absolute reading, given the DP-internal scope of [*-est C*], C is a set of cakes, as in (4c). On the relative reading in (1b), given that D is interpreted as a relation between degrees d and individuals who bought a d-large cake for Mary, as in (5b), C comes out as a set of individuals who bought a cake for Mary, as in (5c). The resulting meaning of the sentence is in (5d). Note that the superlative DP is considered indefinite in relative readings, *the* in this case being interpreted as *a*.

(5) a. $[_{TP1}$ John $[_{TP2}$ [*-est C*] $[_{TP3}$ x bought $[_{DP}$ a $[_{NP}$ d-large cake$]]$ for Mary$]]]$
    b. $[\![TP_3\,]\!] = \lambda d\, \lambda x\, [x$ bought a d-large cake for Mary$]$
    c. $C = \{x: \exists d\, [x$ bought a d-large cake for Mary$]\}$
    d $[\![TP_1]\!] = \exists d\, [$John bought a d-large cake for Mary $\wedge$ $\forall y\, [y$ bought a cake for Mary $\wedge$ $y \neq$ John $\rightarrow \neg\, y$ bought a d-large cake for Mary$]]$

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[1] This meaning is chosen for ease of presentation. The alternative in (i), will also work (see Heim 1999).

(i) $[\![\textit{-est}\,]\!] = \lambda C_{<<d,t>,t>} \lambda D_{<d,t>} \exists d\, [D(d) \wedge \forall P\, [P \in C \wedge P \neq D \rightarrow \neg P(d)]]$; *-est* $(C)(D)(x)$ is defined iff $D \in C$

[2] C is the characteristic function of the comparison set, but we ignore the distinction, treating C as the set itself.

1.2. The role of focus

In English, focus facilitates disambiguation in favor of one or another of the relative readings. Prosodic prominence on *John*, as in (6a), clearly biases interpretation towards the relative reading in (1b). Prosodic prominence on *Mary*, as in (6b), reverses the effect on relative readings in favor of (1c).

(6) a.   JOHN$_F$ bought the largest cake for Mary.
    b.   John bought the largest cake for MARY$_F$.

The absolute reading is still available in (6a) and (6b). Focus, therefore, is not sufficient for relative readings. It has also been suggested that focus is not necessary, because elements that are not prosodically prominent can determine the comparison class. This is seen in (7), modeled after examples in Szabolcsi (1986) and Heim (1999): not only are *who* (or its trace) and PRO not prosodically prominent, but there is another element in the sentence that is the phonological focus.[3]

(7) a.   We should console the girl who got the fewest CAKES$_F$.
    b.   One can win this contest by PRO buying the largest CAKE$_F$ for Mary.

If focus needs to have a phonological reflex (Heim 1999), (7) would suggest that focus is not necessary for relative readings. In Hungarian, however, relative readings only obtain in the presence of syntactically-marked focus (Szabolcsi 1986, Farkas and Kiss 2000), suggesting that focus is necessary. Thus, the link between focus and relative readings remains unclear.

The Scope and Pragmatic Theories can accommodate focus in relative readings but do not require it. If a focused DP QRs and becomes an argument of *-est*, it will determine the comparison class. But QR of a DP should be available without focus as well. Contextual restriction too can be achieved in the absence of focus. As things currently stand, focus does not distinguish between the two theories.

2. New empirical observations about relative readings

In English, a DP inside the superlative DP cannot determine the comparison class. In Slavic this is possible, in the absence of a definite article in the superlative nominal phrase. We call the DP that determines the comparison class 'focus', and in section 3 we argue that it must indeed be F-marked.

2.1. DP-internal focus: English

Examples (8) and (9) have only one relative reading, with *John* the focus, as in (8a) and (9a). The potential relative reading determined by focus on U2, as in (8b) and (9b), is not available.[4,5]

(8) John has [$_{DP}$ the best [$_{NP}$ albums of/by U2]].
    a.   √   'John has better albums of/by U2 than anyone else does.'
    b.   *   'John has better albums of/by U2 than he has of/by any other band.'

(9) John has [$_{DP}$ the most [$_{NP}$ albums of/by U2]].
    a.   √   'John has more albums of/by U2 than anyone else does. '
    b.   *   'John has more albums of/by U2 than he has of/by any other band.'

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[3] Is a relative reading possible if the phonologically-marked focus is another individual-denoting DP? It seems that second occurrence focus is necessary in such cases:
(i)   A: I think it was Bill who bought a larger cake for Mary than he did for any other girl.
       B: No, JOHN$_F$ bought the largest cake for MARY$_F$. Bill bought the largest cake for ANN$_{F*}$.
[4] For help with English native speaker judgments, thanks to John Bailyn, Jonathan Bobaljik, Tom Buscher, Ellen O'Connor, Katy McKinney-Bock, David Pesetsky, Barry Schein, Andrew Simpson, Mary Washburn, a.o.
[5] Some speakers tell us that quantity superlatives (9), (11), unlike quality superlatives (8), (10), marginally allow the DP-internal focus relative reading. Thanks to Bob Frank and Jeff Lidz who first pointed this out to us.

Examples (10)-(12) and (11)-(13) form minimal pairs. The PP *from London* modifies the NP and so it cannot determine the comparison class: readings (10b) and (11b) are not available. The PP *in London* modifies the VP; consequently, the relevant relative reading is available, as in (12b) and (13b).

(10) John met [$_{DP}$ the youngest [$_{NP}$ students from London]].
  a.   √   'John met younger students from London than anyone else did.'
  b.   *   'John met younger students from London than he did from another city.'

(11) John met [$_{DP}$ the most [$_{NP}$ students from London]].
  a.   √   'John met more students from London than anyone else did.'
  b.   *   'John met more students from London than he did from another city.'

(12) John [$_{VP}$ met the youngest students] in London.
  a.   √   'John met younger students in London than anyone else did.'
  b.   √   'John met younger students in London than he did in another city.'

(13) John [$_{VP}$ met the most students] in London.
  a.   √   'John met more students in London than anyone else did.'
  b.   √   'John met more students in London than he did in another city.'

We emphasize that modification of the superlative DP does not preclude relative readings in general. We note this because according to Farkas and Kiss (2000) and Sharvit and Stateva (2002) (14) only has an absolute reading. We have found this not to be the case. While indeed (14) favors the absolute reading, it is also an acceptable answer to the question of who among a group of friends visited a larger city in Europe than anyone else in the group, in contexts where no one visited London.

(14) John visited the largest city in Europe.

2.2. DP-internal focus: Slavic

The missing relative reading in English is available in Slavic, as the examples from Bulgarian and Polish below illustrate. The facts also hold for Macedonian, Czech, Serbian/Croatian and Slovenian.[6,7]

(15) a.   Ivan   ima *naj*-dobri   albumi na/ot   U2.   Bulgarian
   Ivan   has *naj*-good   albums of/by   U2
  b.   Iwan   ma *naj*-lepsze   albumy   U2.   Polish
   Ivan   has *naj*-better.ACC   albums.ACC U2
   √   'Ivan has better albums by U2 than anyone else does.'
   √   'Ivan has better albums by U2 than by any other band.'

(16) a.   Ivan   ima *naj*-mnogo   albumi na/ot   U2.   Bulgarian
   Ivan   has *naj*-many   albums of/by   U2
  b.   Iwan   ma *naj*-więcej   albumów   U2.   Polish
   Ivan   has *naj*-more.ACC   albums.GEN U2
   √   'Ivan has more albums by U2 than anyone else does.'
   √   'Ivan has more albums by U2 than by any other band.'

[7] Some Slavic speakers find the DP-internal focus reading easier to get in quantity (16), (18) than in quality (15), (17) superlatives, mirroring the pattern reported for English in ftn. 5, modulo the difference in acceptability.

(17) a. Ivan se zapozna s *naj*-mladi studenti ot London. Bulgarian
Ivan refl met with *naj*-young students from London

   b. Iwan poznał *naj*-młodszych studentów z Londynu. Polish
Ivan met *naj*-younger.ACC students.ACC from London
√ 'Ivan met younger students from London than anyone else did.'
√ 'Ivan met younger students from London than from any other city.'

(18) a. Ivan se zapozna s *naj*-mnogo studenti ot London. Bulgarian
Ivan refl met with *naj*-many students from London

   b. Iwan poznał *naj*-więcej studentów z Londynu. Polish
Ivan met *naj*-more.ACC students.GEN from London
√ 'Ivan met more students from London than anyone else did.'
√ 'Ivan met more students from London than from any other city.'

Differences among the Slavic languages in the morphosyntax of superlatives and nominal phrases in general do not seem to matter. Polish adds *naj-* to the comparative form of adjectives, whereas in Bulgarian *naj-* combines with the absolute form (Stateva 2003, Bobaljik, to appear). This may have implications for the semantics of *naj-* in the two types of Slavic languages, but given that, as far as our phenomenon of interest is concerned, the *naj*-s behave the same, we will treat them alike.[8] It has also been suggested that Polish and most other Slavic languages lack a DP projection, while Bulgarian and Macedonian have a DP (Bošković 2008). This issue too does not directly affect the facts and analysis.

2.3. *The definite article: Bulgarian-type vs. Polish-type Slavic languages*

Bulgarian and Macedonian, unlike the other Slavic languages, have a definite article. When the definite article is added to (15a)-(18a), as in (19)-(22), the DP-internal focus relative reading is no longer available, similarly to the English (8)-(11)[9]. The same holds for Macedonian.

(19) Ivan ima *naj*-dobri-*te* albumi na/ot U2. Bulgarian
Ivan has *naj*-good-the albums of/by U2
a. √ 'Ivan has better albums by U2 than anyone else does.'
b. * 'Ivan has better albums by U2 than by any other band.'

(20) Ivan ima *naj*-mnogo-*to* albumi na/ot U2. Bulgarian
Ivan has *naj*-many-the albums of/by U2
a. √ 'Ivan has more albums by U2 than anyone else does.'
b. * 'Ivan has more albums by U2 than by any other band.'

(21) Ivan se zapozna s *naj*-mladi-*te* studenti ot London. Bulgarian
Ivan refl met with *naj*-young-the students from London
a. √ 'Ivan met younger students from London than anyone else did.'
b. * 'Ivan met younger students from London than he did from another city.'

(22) Ivan se zapozna s *naj*-mnogo-*to* studenti ot London. Bulgarian
Ivan refl met with *naj*-many-the students from London
a. √ 'Ivan met more students from London than anyone else did.'
b. * 'Ivan met more students from London than' he did from another city.

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[8] Stateva (2003) proposes that *naj-* in the two types of Slavic languages has the same semantics as *-est*, and that Bulgarian and English have a null counterpart of the comparative morpheme in superlatives. Bobaljik (to appear) argues that it is universally the case that superlative morphemes attach to the comparative form of adjectives.

[9] The definite article in quality superlatives (and in DPs in general) agrees with the noun in gender and number. In Bulgarian quantity superlatives (20), (22), the article is neuter singular, because *mnogo* 'many' does not inflect (cf. *mnogo-to studenti* 'the many students'). In Macedonian *mnogu* inflects, and so the article always agrees.

In sum, when the focus is inside the superlative DP, the corresponding relative reading is blocked in English but available in Polish and in the other Slavic languages without a definite article. Bulgarian and Macedonian are like English when the article is present, but like Polish, when it isn't.

3. Analysis

We take the empirical facts noted above to suggest that the definite article blocks *-est/naj-* QR. This partially follows Szabolcsi (1986) and Heim (1999), for whom QR of *-est* is allowed only out of indefinite DPs (recall that they posit that *the* is interpreted as an indefinite determiner on relative readings). We differ from these accounts in suggesting that *-est* does not move out of DPs even on relative readings; on this point we agree with the Pragmatic Theory. Given the facts in Bulgarian and Macedonian, *naj-* in these languages does not move out of definite-marked superlative DPs either. In the absence of a definite article, Bulgarian and Macedonian *naj-* can QR out of DPs. In the Polish-type languages *naj-* can always QR into the clause. The only parametric difference we posit concerns the definite article in superlative nominal phrases. English *-est* and Slavic *naj-* can have the same meaning and LF syntax involving QR. If *-est/naj-* finds itself in an island, as happens in definite superlative DPs, long QR into the clause is blocked, and only short QR within the DP is allowed. In the absence of an island, QR leading to clausal scope should be available to both *-est* and *naj-*.

We also propose that in relative readings, *-est* and *naj-* obligatorily associate with a focus-marked DP. This association is precluded when both *-est/naj-* and the focus-marked DP are internal to the superlative DP. In the section 3.1 we illustrate why that is so, and also how association with DP-external focus works, for both DP-internal *-est/naj-* and DP-external *naj-*.

3.1. Relative readings and focus
3.1.1. Relative readings with DP-internal focus in the absence of the definite article

For the DP-internal focus relative reading in Slavic (15) (and analogously in (16)-(18)), we suggest the LF in (23a), in line with the Scope Theory. For ease of presentation, we diverge from the standard approach of interpreting focus in-situ (see Heim 1999), so that we can keep the semantics for *naj-* in (3). The role of the focused element in in-situ theories of focus is to introduce alternatives. Here, the F-marked variable left by QR of *U2*, has a similar role.[10] The focus operator ~ introduces an anaphor, *S*, presupposed to be a subset of the focus-value of the constituent to which [~ *S*] attaches, assumed to be the clause, as usual (e.g., Rooth 1992). The focus value of [~ *S*]'s sister in (23), TP_4, is a set of set of individuals such that John has albums of some quality by them; *S* is a contextually relevant subset of that set, (23b). The focus operator ~ does not affect ordinary semantic values (see (23c)).

(23) a. $[_{TP_1}$ U2 $[_{TP_2}$ [*naj-* *C*] $[_{TP_3}$ [~ *S*] $[_{TP_4}$ Ivan has $[_{DP}$ *d*-good albums by/of x_F]]]]]

     b. $S \subseteq [\![TP_4]\!]^f = \{P: \exists d\ [P = \lambda x\ [\text{John has } d\text{-good albums by } x]]\}$

     c. $[\![TP_3]\!] = [\![TP_4]\!]^o = \lambda d\, \lambda x\ [\text{John has } d\text{-good albums by } x]$

Association with focus works by having the contextual variable argument of the focus-sensitive expression determined on the basis of *S*. In the case of *–est/naj-* *C* has to meet the condition $C = \cup S$ (Heim 1999). Given this condition and (23b), *C* is determined to be a set of contextually relevant individuals such that John has albums by them, (24a). *C* also has to meet the presuppositions of *-est/naj-* in (3). The individual argument of *naj-* in (23a), U2, is an element of *C*, and all elements of *C* are arguments of the second argument of *–est*, (24b). The requirements on *C*, independently imposed by *-est/naj-* and by association with focus, match, leading to an acceptable relative reading.

(24) a. $C = \cup S = \{x: \exists d\ [\text{John has } d\text{-good albums by } x]\}$ (focus association)

     b. U2 $\in$ C; $\forall y\ [y \in C \rightarrow \exists d\ [\text{John has } d\text{-good albums by } y]]$ (presuppositions of *naj-* (3i-ii))

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[10] See Erlewine (2012) on focus association with traces. Issues remain concerning the prosodic realization of focus, as ~ does not c-command the F-marked overt element receiving prominence (see Heim 1999). The two-argument semantics for *naj-* avoids this problem, as the F-marked element remains in situ, within the scope of ~.

In sum, when the superlative quantifier has sentential scope, it can associate with DP-internal focus without a problem. The corresponding relative reading obtains in the Polish-type languages and also in Bulgarian and Macedonian in the absence of a definite article in the superlative DP.

Focus association with DP-external focus proceeds analogously, so we do not illustrate it here.

3.1.2. DP-internal focus in the presence of the definite article

When the definite article is present, *-est* and *naj-* stay DP-internal. English (8) and Bulgarian (19) can in principle have the LFs in (25a), (26a), (27), (28a) or (29a). These correspond to various options involving QR of the focus DP, movement of the superlative DP itself, and the scope of the focus operator. We show that none of these options result in well-formed LFs, as in each case the DP-internal superlative quantifier fails to associate with focus.

Our first attempt at deriving the DP-internal focus relative reading with *–est/naj-* inside the superlative DP is to interpret both the F-marked DP and the superlative DP in situ. In (25a) *-est/naj-* cannot associate with focus, as the condition $C = \cup S$ cannot be fulfilled. The focus value of TP_2 is the set of propositions of the form "John has the best albums by x"; S is presupposed to be a (contextually relevant) subset of that set (25b). On the other hand, the LF in (25a) dictates that C is a set of (plural individuals that are) albums by U2, (25c). Given (25b-c), $C \neq \cup S$.

(25) a. $[_{TP1} [\sim S] [_{TP2} \text{John has } [_{DP} \text{ the } [\textit{-est/naj- } C] [_{NP} d\text{-good albums by/of U2}_F]]]]$

  b. $S \subseteq [\![TP_2]\!]^f = \{p: \exists x [p = \text{John has the best albums by } x]\}$

  c. $C = \{x: \exists d [x \text{ are } d\text{-good albums by U2}]\}$ (presupposition of *–est/naj-* (3ii))

QR of *U2*, as in (26a), does not help matters. The focus value of TP_3 is the set of sets of individuals such that John has the best albums by them and S is a subset of that set (26b). Here too the semantics of *–est/naj-* and the mechanism of focus association place incompatible demands on C, as seen in (26c-d): the focus-association condition requires that C is a set of individuals such that John has the best albums by them, while *–est/naj-* requires that C is a set of individuals that are albums.

(26) a. $[_{TP1} \text{U2}_F [_{TP2} [\sim S] [_{TP3} \text{John has } [_{DP} \text{ the } [\textit{-est/naj- } C] [_{NP} d\text{-good albums by/of } x_F]]]]]$

  b. $S \subseteq [\![TP_3]\!]^f = \{P: P = \lambda x [\text{John has the best albums by } x]\}$

  c. $C = \cup S = \{x: \text{John has the best albums by } x\}$ (focus association)

  d. $C = \{x: \exists d \exists y [x \text{ are } d\text{-good albums by } y]\}$ (presupposition of *–est/naj-* (3ii))

Finally, we may try to move the entire superlative DP, possibly also moving the focus first, as in (27a,b). However, this puts the F-marked U2 outside the scope of ∼, and since there is no F-marked trace in the scope of ∼ either, unlike the case in (23) or (26), such LFs should be precluded.

(27) a. $[_{TP1} [_{DP} \text{ the } [\textit{-est/naj- } C] [_{NP} d\text{-good albums by/of U2}_F]] [_{TP2} [\sim S] [_{TP3} \text{John has } x]]]$

  b. $[_{TP1} \text{U2}_F [_{TP2} [_{DP} \text{ the } [\textit{-est/naj- } C] [_{NP} d\text{-good albums by/of } y_F]] [_{TP3} [\sim S] [_{TP3} \text{John has } x]]]]$

We will try two more options, suggested by two reviewers. It is standard to assign the focus operator ∼ clausal scope but perhaps this is where the problem lies. What if ∼ had scope just over the superlative DP or even just over the NP, below *–est/naj-*?

Consider first the LF in (28a) where $[\sim S]$ is a sister to the superlative DP. It is clear that additionally moving the superlative DP or the focus won't matter, so this LF will suffice to illustrate the point. Following the familiar calculations, see (28b-d), C emerges as the set of the best albums by U2. This comparison class does not, of course, yield the desired reading.

(28) a. $[_{TP} \text{ John has } [_{DP1} [\sim S] [_{DP2} \text{ the } [\textit{-est/naj- } C] [_{NP} d\text{-good albums by/of U2}_F]]]]$

  b. $S \subseteq [\![DP_2]\!]^f = \{x: \exists y [x \text{ are the best albums by } y]\}$

  c. $C = \cup S = \{x: \exists y [x \text{ are the best albums by } y]\}$ (focus association)

  d. $C = \{x: \exists d [x \text{ are } d\text{-good albums by U2}]\}$ (presupposition of *–est/naj-* (3ii))

Giving the focus operator ~ NP-scope, as in (29a), doesn't work either, as (29b-d) attest. C has conflicting demands: focus association requires that C is a set of individuals such that there are albums by them, and the meaning of the superlative requires that C is a set of albums by U2.

(29) a. $[_{TP}$ John has $[_{DP}$ the [*-est/naj- C*] $[_{NP1}$ [~ *S*] $[_{NP2}$ *d*-good albums by/of U2$_F$]]]]]
    b. $S \subseteq [\![NP_2]\!]^f = \{P: \exists y \, \exists d \, [P = \lambda x \, [y \text{ are } d\text{-good albums by } x]]\}$
    c. $C = \cup S = \{x: \exists y \, \exists d \, [y \text{ are } d\text{-good albums by } x]\}$ (focus association)
    d. $C = \{x: \exists d \, [x \text{ are } d\text{-good albums by U2}]\}$ (presupposition of *–est/naj-* (3ii))

3.1.3. Relative readings with DP-external focus in the presence of the definite article

What is left to demonstrate is that when the focus is DP-external, a DP-internal superlative quantifier can associate with it. The LF for the English (8a) and the Bulgarian (19a) is given in (30). It is similar to the LF in (27) – the superlative DP *the best albums by U2* QRs – but crucially differs in the position of the focused element. In (30) the focus is *John*, it is external to the superlative DP and within the scope of ~. This makes all the difference: the LF in (30) yields the desired relative reading.

(30) $[_{TP1}$ $[_{DP}$ the [*-est/naj- C*] $[_{NP}$ *d*-good albums by/of U2]] $[_{TP2}$ [~ *S*] $[_{TP3}$ John$_F$ has *x*]]]

The focus value of TP$_3$ is the set of set of individuals that someone has, and S is interpreted accordingly (31a). Focus association determines the value of C as in (31b) and the meaning of *–est/naj-*imposes on C the interpretation in (31c). The two do not clash, and C is determined to be a set of albums by U2 of a certain quality that someone has.

(31) a. $S \subseteq [\![TP_3]\!]^f = \{P: \exists y \, [P = \lambda x \, [y \text{ has } x]]\}$
    b. $C = \cup S = \{P: \exists y \, [P = \lambda x \, [y \text{ has } x]]\}$ (focus association)
    c. $C = \{x: \exists d \, [x \text{ is a } d\text{-good album by U2}]\}$ (presupposition of *–est/naj-* (3ii))

To sum up, section 3.1 illustrated in detail how relative readings are derived and blocked. We reach three important conclusions. First, superlative *-est/naj-* must be degree quantifiers, undergoing QR, which is naturally subject to islands. It is unclear how an in-situ theory of superlatives (e.g., Farkas and Kiss 2000) would account for the observed cross-linguistic and within-language differences. Second, relative readings can obtain with *-est/naj-* remaining in the superlative DP, in line with the Pragmatic Theory, though *-est/naj-* must also be able to receive clausal scope, as in the Scope Theory. Third, focus association is crucially involved in relative readings. It is the impossibility of focus association that precludes the DP-internal focus relative reading when *-est/naj-* is DP-internal.[11]

3.2. The role of the definite article

In both English and Bulgarian, the definite article plays its usual role in absolute superlatives.[12] In relative superlatives, it is required in English but is optional in Bulgarian. Although we cannot provide an analysis of this cross-linguistic variation, we propose that in both English and Bulgarian the definite article blocks *-est/naj-* movement. It is often suggested that definite DPs are islands (e.g., Davis and Dubinsky 2003), but this is too strong a claim in light of examples like (34), (35) and (36) in the next subsection.[13] Definite superlatives are apparently only islands for degree movement.

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[11] Importantly, the conclusions are not an artifact of the three-argument semantics of *-est*. While the details of the LFs differ, the two-argument semantics yields the same general results.

[12] Superlatives with indefinite and quantificational determiners are discussed in Herdan and Sharvit (2006). A slight change to the meaning of *-est* in (3) is needed, to account for its compatibility with all types of determiners.

[13] The examples in the literature in support of the claim that definite DPs are islands usually involve DPs with possessors and quantifiers, and not DPs headed by *the*. In fact, the acceptability of (i) has been invoked, rather famously, as the control case for illustrating island effects with subject sub-extraction (Chomsky 2008).

(i)   Of which car did they find the driver?

We find supporting evidence for the claim that the definite article creates a degree island in the fact that it also blocks QR of the comparative quantifier *-er*. In (32a), *-er* can QR out of the indefinite DP and merge with its restrictor *than*-clause (Bhatt and Pancheva 2004). In (32b) this movement is blocked. Sentential scope for *-er* is needed in (32a,b) because of clausal ellipsis in the *than*-clause (see Bhatt and Pancheva 2004 for discussion of the ellipsis-scope generalization). When there is no need for resolving clausal ellipsis, as in (32c), *-er* can QR locally, internal to the definite DP.[14]

(32) a. John gave Mary a larger cake than Susan (did).
    b. *John gave Mary the larger cake than Susan (did).
    c. John gave Mary the larger cake of the two.

The same facts obtain in Bulgarian: the definite article prevents QR of *-er* into the clause, blocking the resolution of clausal ellipsis, as seen in (33).

(33) a. Ivan   kupi   *po*-goljama(*-*ta*)   torta   ot   Maria.   Bulgarian
         Ivan   bought   *-er*-large(-the)   cake   from   Maria
         'Ivan bought a/*the larger cake than Maria.'
    b. Ivan   kupi   *po*-goljama-*ta*   torta   ot   dvete.
         Ivan   bought   *-er*-large-the   cake   from   the-two
         'Ivan bought the larger cake of the two.'

We thus conclude that the definite article blocks the movement of degree quantifiers more generally. But we do not know why. One idea that has been pursued in the literature, independently of the generalization discussed here, is that, on relative readings of superlatives, the definite article is part of the (complex) degree quantifier itself. This idea is first expressed in Szabolcsi (1986), who proposes that it is [*the -est*] that moves to the clause in relative readings. Krasikova (2012) develops the idea further, suggesting that in relative readings, *the* heads a definite DegP.[15] In and of itself, this type of proposal does not help us resolve our question. There's no clear reason why a complex degree quantifier incorporating *the* should be trapped inside DPs any more so than [*-est C*] or *-er* should be.

Finally, we need to note that cross-linguistic differences in the role of the definite article in superlatives still need to be posited. German is like English in requiring a definite article in relative superlatives. However, we have found that German speakers accept DP-internal focus relative readings (in comparatives the facts are as in (32)).[16] This, of course, complicates the picture substantially, as it is no longer possible to predict, for a given language, that the presence of a definite article in superlatives will block readings relativized to DP-internal focus. One needs to look at more abstract properties of the definite article to determine whether or not it creates a degree island in superlatives – and we do not know what these properties are. The converse, of course, is also true: just because a definite article is not present in a given language does not guarantee that *-est* would be able to move out of the superlative DP. Perhaps another factor in that language makes the superlative DP an island for degree movement, or perhaps superlatives in that language are not degree quantifiers to begin with.

3.3. Why some alternative analyses do not work

One could argue that the cross-linguistic and within-language differences noted here stem from differences in whether or not focused elements can be moved out of superlative DPs. However, A'-movement out of definite-marked superlatives is available overtly in both English and in Bulgarian, as

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[14] The contrast between pairs such as (32a-b) has been noted by Gawron (1995) and Lerner and Pinkal (1995), though not in the context of QR of *-er*.

[15] Krasikova (2012) posits two different quantifiers in the two types of superlative readings: a null quantifier as in (3) in absolute readings and [*the max C*] in relative readings, where *max* is a maximality operator over sets of sets of degrees, which is the value that *C* receives through association with focus. *-est* itself is not interpreted.

[16] Thanks to Lena Benz, Natalie Boll-Avetisyan, Thomas Borer, Magdalena Schwager, Julia Staffel, Anke Stakemann, and Ulrike Steindl for German judgments.

(34)-(35) show – both on the absolute and on the DP-external focus relative readings – and as noted also in Sharvit and Stateva (2002) for English.

(34) a. Which band does John have [DP the best [NP albums of/by __]]?
    b. It is U2 that John has [DP the best [NP albums of/by __]]

(35) a. Na/ot koj   sâstav ima Ivan   [DP naj-dobri-te [NP albumi __]]?   Bulgarian
       of/by which band   has Ivan   *naj*-good-the   albums
       'Which band does John have the best albums of/by?'
    b. Na/ot U2 ima Ivan   [DP naj-dobri-te   [NP albumi __]]
       of/by U2 has Ivan   *naj*-good-the   albums
       'It is U2 that John has the best albums of/by.'

Moreover, the availability of wide scope interpretation for *every band* in (36) suggests that covert movement out of superlative DPs is possible as well. Thus, the inability of DP-internal focus to QR to the clause cannot be an explanation for the unavailability of the relevant relative reading.

(36) Some boy listened to [DP the best [NP albums of/by every band]]

Alternatively, one could argue that DP-internal focus itself is restricted in the relevant examples in English and Bulgarian. Yet, this too cannot be the explanation, since *U2* can be the focus associate of *only* in (37) and (38), yielding the implication that John didn't buy the best albums by other bands.

(37) John *only* bought [DP the best [NP albums of/by U2$_F$]]

(38) Ivan kupi   *samo* [DP *naj*-dobri-te   [NP albumi na/ot   U2$_F$]]   Bulgarian
    Ivan bought *only*   *naj*-good-the   albums of/by   U2
    'Ivan only bought the best albums by U2.'

The superlatives in (37) and (38) receive an absolute interpretation and on that reading the degree quantifiers do not associate with focus. The focus-sensitive adverb *only* does, and focus association with the DP-internal focus works because *only* is interpreted as having clausal scope. The acceptability of (37) and (38) underscores the claim that it is not the DP-internal status of the focus per se that precludes focus-association with *–est/naj-*, but rather the DP-internal position of the degree quantifiers.

4. Some open questions

We cannot address here modal superlatives, as in (39). These have been argued to involve clausal scope for *-est* (Schwarz 2005, Romero 2011). Romero's analysis is particularly appealing: *possible,* with a non-overt clausal complement, supplies the comparison class argument of *-est.* QR into the clause of [*-est* [*possible* <...>]] allows clausal ellipsis to be resolved, as in the usual analysis of comparative ellipsis. On our account ellipsis resolution of clausal material will not be possible.

(39) John bought the largest possible cake.

Another question is raised by an observation in Schwarz (2005) that superlatives with pre-nominal possessives lack relative readings altogether (40a). The Scope Theory has a plausible line of analysis: pre-nominal possessives make the superlative DP truly definite and thus prevent *–est* from moving into the clause, precluding relative readings. Post-nominal possessives appear in indefinite superlative DPs (their determiner *the* being expletive), and so they allow relative readings (40b). Given that for us *-est* is DP-internal in both (40a) and (40b), the contrast between the two remains unexplained.

(40) a. John read my longest article.
    b. John read the longest article of mine.

5. Conclusions

We offer a new empirical generalization concerning relative readings of superlatives. We argue that aspects of both the Scope Theory and the Pragmatic Theory are needed to account for the generalization. The unified theory posits QR of *-est/naj-* when syntactically possible; naturally, QR is blocked in islands. In Slavic, in the absence of a definite article in superlative DPs, *naj-* can QR into the clause; relative readings in such cases are derived as in the Scope Theory. The definite article precludes QR of both English *-est* and Slavic *naj-*, in which case they stay DP-internal; relative readings are then derived as in the Pragmatic Theory. In addition to suggesting a resolution to the debate concerning the correct analysis of superlative ambiguities, our analysis also takes a position with respect to the debate of whether *-est* and *naj-* are degree quantifiers – they are – with consequences for the treatment of degree words more generally.

We do not posit a parametric difference in the meaning or LF syntax of the superlative quantifiers themselves. English *-est* and Slavic *naj-* can be analyzed alike. The key factor that determines the (non-)availability of the relevant relative reading is the presence or absence of the definite article. The definite article in these languages creates a degree island in both superlatives and comparatives. Clearly, further work is needed to find out why the definite article is associated with degree island effects, and how languages can differ in this respect, given the facts of German.

We also argue that focus is crucially involved in deriving relative readings. The (non-)availability of readings relativized to DPs that are internal to the superlative DP is explained by the (im)possibility of focus association in the particular structural configuration. The relative-absolute ambiguity in superlatives is determined by whether or not *-est* and *naj-* associate with focus.

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