Cross-linguistic Differences in Superlative Movement out of Nominal Phrases

Roumyana Pancheva and Barbara Tomaszewicz
University of Southern California

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 dal Marii naj-lepsze albumy 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 for 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.

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1.1. The role of QR of -est

There have been two main approaches to the LF syntax of -est; we will call them the Scope Theory and the Pragmatic Theory. According to the Scope Theory -est moves out of the DP to a scope position in the clause in relative readings (Heim 1985, 1999, Szabolcsi 1986, a.o.). According to the Pragmatic Theory -est stays inside the DP in relative readings (Farkas and Kiss 2000, Sharvit and Stateva 2002). Both theories maintain that -est stays internal to the DP in absolute readings.

Both theories can work with a meaning for -est as in (3), from Heim (1999). The degree quantifier -est has a covert restrictor C – a contextual variable corresponding to the comparison class – which is a set of individuals. The other arguments of -est are a gradable predicate D of type <d,<e,t>>, and an individual x. The meaning contribution of -est is that there is a degree d such that x has that degree of D and no other individual in the comparison class C has that degree of D. The superlative also presupposes that (i) x is a member of C, and (ii) the members of C are arguments of D.

\[(3) \neg\text{-est} = \lambda C \lambda D \lambda x \exists d \left[ D(d)(x) \land \forall y [y \in C \land y \neq x \rightarrow \neg D(d)(y)] \right]\]

\[-\text{est} (C)(D)(x) \text{ is defined iff } (i) x \in C, \text{ and } (ii) \forall y [y \in C \rightarrow \exists d [D(d)(y)]]\]

Let us first briefly illustrate how the Pragmatic Theory works. The comparison class C is partly determined from the DP-internal scope of [-est C], and partly from context. Given the presupposition of -est that C consists of individuals which are arguments of D (see (3-ii)), and the fact that D is the denotation of the sister of [-est C] (it is the second argument of -est), the LF syntax of [-est C] effectively determines the elements of C. C is then further specified pragmatically. The LF for the DP the largest cake and the meaning it derives are given in (4). D is a relation between a degree d and an individual x such that x is a cake of size d (4b). Correspondingly, C is determined to be a set of cakes of some size (4c). The DP then denotes the unique cake of a certain size such that no other cake in the comparison class of cakes reaches that size (4d).

\[(4) a. \left[\text{DP the [NP [-est C] [NP d-large cake]]}\right] \]

\[b. \left[\text{d-large cake}\right] = \lambda d \lambda x [x \text{ is a cake } \land x \text{ is d-large}]\]

\[c. C = \{x : \exists d [x \text{ is a d-large cake}]\}\]

\[d. \left[\text{DP}\right] = \forall x \exists d [x \text{ is a d-large cake } \land \forall y \exists d' [y \text{ is a d'}-\text{large cake } \land y \neq x \rightarrow \neg y \text{ is a d'}-\text{large cake}]\]

This meaning can be further pragmatically specified: if C is restricted to the set of cakes on display at Sweet Lady Jane at a given time, an absolute reading would result; if C is restricted to the set of cakes that some relevant individuals bought for Mary, we would get the relative reading in (1b); and if C is restricted to the set of cakes that John bought for someone, we would get the relative reading in (1c).

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 as well and become the third argument of -est; [-est C] then tucks in. 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 (the presupposition in (3-ii) and the way the degree predicate D is derived). 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 not being interpreted.

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1 This meaning, and the LFs that go with it, are chosen for ease of presentation. An alternative, two-argument semantics for -est, as in (i), is preferred. The three-argument semantics will also work (see Heim 1999 for discussion).
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. JOHNF bought the largest cake for Mary.
   b. John bought the largest cake for MARYF.

Both (6a) and (6b) still allow the absolute reading in (1a). Focus, therefore, is not sufficient for relative readings. It has also been suggested that focus is not necessary for relative readings, because elements that are not prosodically prominent can determine the comparison class. This is seen in (7), modeled after examples in Szabolcs (1986) and Heim (1999): not only are the relevant elements – who (or its trace) and PRO – not prosodically prominent, but there is another element in the sentence that is the phonologically-marked focus. On the assumption that focus needs to have a phonological reflex (Heim 1999), (7) suggests that focus is not necessary for relative readings.

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

In Hungarian, however, relative readings only obtain in the presence of syntactically-marked focus, i.e., placement in the pre-verbal focus position (Szabolcs 1986, Farkas and Kiss 2000), suggesting that focus is necessary. Thus, the link between focus and relative readings remains unclear.

The Scope Theory can accommodate focus in relative readings but doesn’t require it. If a focused DP QRs and becomes the argument of –est, it will determine one relative reading to the exclusion of another. But QR of a DP should be available in the absence of focus as well. On the Pragmatic Theory too focus is not obligatory to receive a relative reading: contextual restriction 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

We observe that in English, a DP inside the superlative DP cannot determine the comparison class, and thus, the corresponding relative reading is missing. The Slavic languages allow such readings, 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.

2 Is a relative reading possible if the phonologically-marked focus is another individual-denoting DP? It seems that (6a), with John prosodically prominent, cannot have the relative reading in (1c) with Mary determining the comparison class, unless there is second occurrence focus on Mary:

(i) A: I think it was Bill who bought a larger cake for Mary than he did for any other girl.
   B: No, JOHNF bought the largest cake for MARYF. Bill bought the largest cake for ANNF.

3 For help with English native speaker judgments, thanks to John Bailyn, Tom Buscher, Ellen O’Connor, Katy McKinney-Bock, Barry Schein, Andrew Simpson, Mary Washburn.
(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.'

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 stress that the only relative reading ruled out is the one dependent on DP-internal focus. Modification of the superlative DP does not preclude relative readings in general. We emphasize this because Farkas and Kiss (2000) suggest that (14) only has an absolute reading, and Sharvit and Stateva (2002) agree. We have found this not to be the case. While indeed (14) favors the absolute reading, it is also acceptable in contexts where, among a group of friends, no one visited London and the question under discussion is who among the friends visited a larger city in Europe than anyone else did.

(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.5

(15)a. Ivan ima naj-dobri albumi na/ot U2.        Bulgarian
      Ivan has naj-good albums of/by U2
   b. Ivan 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.'

4 Bob Frank and Jeff Lidz tell us that quantity superlatives (9), (11) seem to marginally allow the DP-internal focus relative reading. Other speakers do not find this contrast between attributive and quantity superlatives.

5 For help with judgments thanks to Dimka Atanasov, Boris Harizanov, Snejana Iovtcheva, Todor Kolev (Bulgarian), Dorota Klimk-Jankowska, Agnieszka Łazorczyk, Krzysztof Migdalski, Ewa Tomaszewicz (Polish) Slavica Kochovska, Zlatina Sandalska (Macedonian), Petr Biskup (Czech), Nataša Miličević, Ivana Mitrović (Serbian/Croatian), Lanko Marušič (Slovenian).
Differences among the Slavic languages in the morphology of superlatives or in the syntax of the nominal phrase more generally do not seem to matter. As can be seen above, Polish adds naj- to the comparative form of the adjective, whereas in Bulgarian naj- is added to the absolute form (see also 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 this phenomenon is concerned, the Bulgarian-type naj- and the Polish-type naj- behave the same, we will treat them alike.6 It has also been suggested that Polish and most other Slavic languages lack a DP projection altogether, 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 the Bulgarian (15a)-(18a), as in (19)-(22), the DP-internal focus relative reading is no longer available, similarly to the English (8)-(11). The same also holds for Macedonian.

(19) Ivan ima naj-dobi-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.’

6 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.
(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.

In sum, in English, when the focus is inside the superlative DP, the corresponding relative reading is blocked. In Polish and in the other Slavic languages without a definite article, this doesn’t hold. 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, which leads them to posit that the is interpreted as an indefinite determiner on the relative reading. We differ from these accounts in suggesting that –est doesn’t 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 doesn’t 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- are focus sensitive, obligatorily associating 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 next three subsections 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 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 (23), in line with the Scope Theory. For ease of presentation only, we diverge here from the standard approach of interpreting focus in-situ (see Heim 1999 for discussion), so that we can keep the three-argument 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.7

The focus operator ~ introduces an anaphor, S, which is 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), TP₄, is a set of set of individuals such that John has albums of some quality by them; S then is calculated to be a contextually relevant subset of that set (see (24a)). The focus operator ~ does not affect ordinary semantic values (see (24b)).

(23)[TP₁ U2 [TP₂ [naj-C] [TP₃ [~ S] [TP₄ Ivan has [dp d-good albums by/of xF ]]]]]
(24)a. \[ S \subseteq \{ P : \exists \text{d} \ [P = \lambda x [\text{John has d-good albums by x}]] \}\]
b. \[ \{ TP₄ \} \circ \{ TP₄ \} = \lambda d \lambda x [\text{John has d-good albums by x}] \]

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 = \$S (Heim 1999). Given this condition and (24a), C is determined to be a set of contextually relevant individuals such that John has albums by them, (25a). C also has to meet the presuppositions of -est/

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7 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 that is to receive 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 ~.
naj- in (3). The individual argument of naj- in (23), U2, is an element of C, and all elements of C are arguments of the second argument of –est, (25b). The requirements on C, independently imposed by -est/naj- and by association with focus, match, leading to an acceptable relative reading.

(25)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- (3ii))

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.

3.2. 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 have the LFs in (26), (28), (30), (31) or (33). We show that none are well-formed, as in each case the DP-internal superlative quantifier fails to associate with focus.

3.2.1. In-situ superlative DP, in-situ 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 (26) -est/naj- cannot associate with focus, as the condition \( C = \cup S \) cannot be fulfilled. The focus value of TP3 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 (27a). On the other hand, the LF in (26) dictates that \( C \) is a set of (plural individuals that are) albums by U2, (27b). Given (27a-b), \( C \neq \cup S \).

(26) \[ [TP1 [\neg S] [TP2 \text{John has } [DP \text{ the [-est/naj- } C \text{]} [NP d-good albums by/of U2F ]]]] \]

(27)a. \[ S \subseteq [TP2]^f = \{ p : \exists x [p = \lambda x \text{[John has the best albums by } x] \}] \] (presupposition of –est/naj- (3ii))

3.2.2. In-situ superlative DP, QR of focus

QR of U2, as in (28), does not help matters. The focus value of TP3 is the set of sets of individuals such that John has the best albums by them and S is a subset of that set (29a). Here too the semantics of –est/naj- and the mechanism of focus association place incompatible demands on C, as seen in (29b-c): 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.

(28) \[ [TP1 U2F [TP2 [\neg S] [TP3 \text{John has } [DP \text{ the [-est/naj- } C \text{]} [NP d-good albums by/of xF ]]]] \]

(29)a. \[ S \subseteq [TP3]^f = \{ P : P = \lambda x [\text{John has the best albums by } x] \} \] (focus association)
b. \[ C = \cup S = \{ x : \exists d [x \text{are } d\text{-good albums by U2}] \} \] (presupposition of –est/naj- (3ii))

3.2.3. QR of the superlative DP

Finally, we may try to move the entire superlative DP, possibly also moving the focus first, as in (30a,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 (28), such LFs should be precluded.

(30)a. \[ [TP1 [DP \text{ the [-est/naj- } C \text{]} [NP d-good albums by/of U2F ]]] [TP2 [\neg S] [TP3 \text{John has } x]] \]
b. \[ [TP1 U2F [TP2 [DP \text{ the [-est/naj- } C \text{]} [NP d-good albums by/of yF ]]] [TP3 [\neg S] [TP3 \text{John has } x]] \]
3.2.4. DP/NP scope for ~

We will try one last option, 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 (31) where [] 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 (32), C emerges as the set of the best albums by U2. This comparison class does not, of course, yield the desired reading.

(31) [TP John has [DP1 [~ S] [DP2 the [-est/naj- C] [NP d-good albums by/of U2]]]]

(32)a. \( S \subseteq [\text{[DP2]}] \) = \{x: \exists y [x are the best albums by y]\}
   b. \( C = \cup S = \{x: \exists y [x are the best albums by y]\} \) (focus association)
   c. \( C = \{x: \exists d [x are d-good albums by U2]\} \) (presupposition of ~est/naj- (3ii))

Giving the focus operator ~ NP-scope, as in (33), doesn’t work either, as (34) attests. 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.

(33) [TP John has [DP the [-est/naj- C] [NP1 [~ S] [NP2 d-good albums by/of U2]]]]

(34)a. \( S \subseteq [\text{[NP2]}] \) = \{P: \exists y \exists d [P = \lambda x [y are d-good albums by x]]\}
   b. \( C = \cup S = \{x: \exists y \exists d [y are d-good albums by x]\} \) (focus association)
   c. \( C = \{x: \exists d [x are d-good albums by U2]\} \) (presupposition of ~est/naj- (3ii))

3.3. 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 (35). It is similar to the LF in (30) – the superlative DP the best albums by U2 QRs – but crucially differs in the position of the focused element. In (35) the focus is John, it is external to the superlative DP and within the scope of ~. This makes all the difference: the LF in (35) yields the desired relative reading.

(35) [TP1 [DP the [-est/naj- C] [NP d-good albums by/of U2]] [TP2 [~ S] [TP3 John has x]]]

The focus value of TP3 is the set of set of individuals that someone has, and \( S \) is interpreted accordingly (36a). Focus association determines the value of \( C \) as in (36b) and the meaning of ~est/naj- imposes on \( C \) the interpretation in (36c). The two do not clash, and \( C \) is determined to be a set of albums by U2 of a certain quality that someone has.

(36)a. \( S \subseteq [\text{[TP3]}] \) = \{P: \exists y [P = \lambda x [y has x]]\}
   b. \( C = \cup S = \{P: \exists y [P = \lambda x [y has x]]\} \) (focus association)
   c. \( C = \{x: \exists d [x is a d-good album by U2]\} \) (presupposition of ~est/naj- (3ii))

To sum up, section 3 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 in the presence of the definite article.\(^8\)

4. Why some alternative analyses do not work

One could argue that the cross-linguistic and within-language differences 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 (37)-(38) show – both on the absolute and on the DP-external focus relative readings – and as noted also in Sharvit and Stateva (2002) for English. In purely syntactic terms, a difference in extractability based on the covert and overt nature of the movement cannot be maintained.

(37)

\begin{itemize}
  \item a. Which band does John have \([ DP \text{ the best } [ NP \text{ albums of/}}} \_
  \right]\]?
  \item b. It is U2 that John has \([ DP \text{ the best } [ NP \text{ albums of/}} \_
  \right]\]
\end{itemize}

(38)

\begin{itemize}
  \item a. Na/ot koj sâstav ima Ivan \([ DP \text{ naj-dobri-te } [ NP \text{ albumi __}]]\]? Bulgarian
    \begin{quote}
      ‘Which band does John have the best albums of/’
    \end{quote}
  \item b. Na/ot U2 ima Ivan \([ DP \text{ naj-dobri-te } [ NP \text{ albumi __}]]\]
    \begin{quote}
      ‘It is U2 that John has the best albums of/.’
    \end{quote}
\end{itemize}

Moreover, wide scope interpretation for every band in (39) 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.

(39)

\begin{itemize}
  \item Some boy listened to \([ DP \text{ the best } [ NP \text{ albums of/} \text{ every band}]]\]
\end{itemize}

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 (40) and (41), yielding the implication that John didn’t buy the best albums by other bands.

(40)

\begin{center}
John only bought \([ DP \text{ the best } [ NP \text{ albums of/} \text{ U2}]]\]
\end{center}

(41)

\begin{center}
Ivan kupi samo \([ DP \text{ naj-dobri-te } [ NP \text{ albumi na/ot } \text{ U2}]]\] Bulgarian
\begin{quote}
‘Ivan only bought the best albums by U2.’
\end{quote}
\end{center}

The superlatives 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 (40) and (41) 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.

5. The role of the definite article and other open questions

The role of the definite article in superlative DPs is unclear, particularly as -est itself contributes uniqueness. The article is nevertheless always required in English and some other languages, e.g., German. In Bulgarian it is required for absolute readings, and is optional in relative readings with DP-external focus. The meaning difference between (15a) and (19a), if any, is not clear to us.

\(^8\) 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.
Why does the definite article block -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 (37), (38) and (39). 9 Definite superlatives are apparently only islands for degree movement; individual-denoting DPs and quantifiers over individuals can be felicitously extracted.

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 (42a), -er can QR out of the indefinite DP and merge with its restrictor than-clause (Bhatt and Pancheva 2004). In (42b) this movement is blocked. The contrast between pairs such as these has been noted by Gawron (1995) and Lerner and Pinkal (1995). Sentential scope for -er is needed in (42a,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 (42c), -er can QR locally, internal to the definite DP.

(42) 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.

We thus conclude that the definite article blocks the movement of degree quantifiers more generally. But we still do not know why. One idea that has been pursued in the literature, independently of the generalization discussed here, is that, on relative readings, 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, [the max C]. 10 Max is a maximality operator over sets of sets of degrees, which is the value that its restrictor C receives through association with focus. 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] should be.

Finally, we need to note that cross-linguistic differences in the role of the still need to be posited. German is like English in always requiring a definite article in superlatives. However, we have found that German speakers accept DP-internal focus relative readings. 11 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 will block DP-internal focus relative readings. One needs to look at more abstract properties of the definite article to determine whether or not it creates a degree island – 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.

Continuing with the topic of questions that remain open, one issue that we cannot address here is the analysis of modal superlatives, as in (43). 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 of [-est possible <…>] to the clause allows clausal ellipsis to be resolved, as in the usual analysis of comparatives. On our account ellipsis resolution of clausal material will not be possible. We leave this issue for future research.

(43) John bought the largest possible cake.

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9 The examples in the literature in support of the claim that definite DPs are islands usually involve Complex NPs, 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?

10 Krasikova (2012) posits two different quantifiers in the two types of readings: a superlative quantifier as in (3) in absolute readings and [the max C] in relative readings. The morpheme -est itself is not interpreted.

11 Thanks to Lena Benz, Natalie Boll-Avetisyan, Magdalena Schwager, Julia Staffel, Anke Stakemann for German judgments.
Another question is raised by an observation in Schwarz (2005) that possessive superlatives lack relative readings altogether (44a). The Scope Theory has a plausible line of analysis: pre-nominal possessives make the superlative DP definite and therefore prevent –est from moving into the clause, precluding relative readings. Post-nominal possessives can be indefinite, with an expletive the, and they allow relative readings (44b). We leave this issue unresolved as well.

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

6. 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 available; naturally, QR is blocked in islands. In the absence of a definite article in superlative DPs, naj- can QR and have clausal scope; relative readings in such cases are derived as in the Scope Theory. The definite article precludes QR of -est and 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, 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 differ in this respect.

We also argue that focus is crucially involved in relative readings. The (non-)availability of relative readings, where the individual argument of –est/naj- is internal to the superlative DP, is explained by the (im)possibility of focus association in the particular structural configuration.

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