

ON ABSOLUTE QUANTITY SUPERLATIVES

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1. RELATIVE VS. ABSOLUTE READINGS OF SUPERLATIVES

Superlatives, like comparatives, involve comparison between degrees which satisfy a certain degree description. The element of the clause that varies across the descriptions of the compared degrees may be called the *comparandum*. In superlatives, the comparandum belongs to a set of entities (called *comparison class*) and the degree associated to it is claimed to be higher than the degrees associated to the other members of the set.

Szabolcsi (1986) argued that the comparandum in superlatives is not always the referent of the DP containing the superlative, or the subject of the superlative. Thus, the sentence in (1) has a reading in which Mary must read the longest book in the world or in a contextually restricted set of books (the *absolute* reading of the superlative) but also a reading in which Mary is compared to other persons in terms of the length of the book they have to read (the so-called *relative*, or *comparative* reading). As shown by Heim (1999), in the relative reading the DP containing the superlative (which I will call ‘superlative DP’), which is interpreted as an indefinite (as already shown by Szabolcsi), may scope independently from the superlative degree operator. (1) may have three relative readings, illustrated in (a)–(c): in (a), each member of the comparison class C must read a specific book (the superlative DP scopes above the modal, is interpreted *de re*); in (b), the requirement is that the length of the book read by Mary, no matter what book this is, should be higher than the length of the books the others will read; here both the superlative DP and the degree operator are interpreted in the scope of the modal (*de dicto*); in (c), the members of C are required to read books of different specific lengths, and the length associated to Mary is higher than the other lengths. Here, the degree operator scopes above the modal (*de re*) but the superlative DP scopes below (*de dicto*). The possibility of this split scope is a strong argument in favor of analyzing relative superlatives by raising of the degree operator – EST outside the superlative DP, to a position where it may directly access the correlate, as proposed by Szabolcsi

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(1986).

- (1) Mary must read the longest book
 Absolute: Mary must read the book which is longer than all the other books
 Relative: Mary must read a book longer than any other person will read/ must read.
 The comparison class C = Mary and other persons
- (a) $\exists d. (\exists y. y \text{ is a } d\text{-long book: Mary must read } y \text{ and } d > \max \{d'. \exists x. x \text{ in } C \text{ and } x \neq \text{Mary: } \exists y, y \text{ a } d'\text{-long book: } x \text{ must read } y\})$
 (b) must $(\exists d. \text{Mary reads a } d\text{-long book and } d > \max \{d'. \exists x. x \text{ in } C \text{ and } x \neq \text{Mary: } x \text{ reads a } d'\text{-long book}\})$
 (c) $\exists d. (\text{Mary must read a } d\text{-long book and } d > \max \{d'. \exists x. x \text{ in } C \text{ and } x \neq \text{Mary: } x \text{ must read a } d'\text{-long book}\})$

The comparandum in relative readings ('Mary' in (1)) is called 'the correlate'. Correlates are usually marked by focus or else are variables bound by a wh-operator (e.g. *Who has the best result? This is the city where I had the best time*).

2. THE ABSOLUTE READING OF QUANTITY SUPERLATIVES

Szabolcsi (1986) and Gawron (1995) claimed that quantity superlatives cannot take absolute readings (the examples (2) are from Gawron 1995: 36):

- (2) a. Brown's campaign has been joined by the most volunteers
 = 'by more volunteers than any other's campaign'
 ≠ 'by a group of volunteers larger than any other group of volunteers'
 b. Brown's campaign has been joined by the largest group of volunteers
 = 'by more volunteers than any other's campaign'
 = 'by a group of volunteers larger than any other group of volunteers'

The impossibility of the absolute reading for quantity superlatives may be explained by the fact that, unless we restrict the pluralities in the NP denotation whose cardinality is compared, or, for mass nouns, the portions of stuff whose measures are compared, we get absurd readings: since the sum of all pluralities/portions of stuff is in the denotation of the NP, the element with the maximal degree is this maximal sum, so *most* would mean *all*; with respect to *fewest*, as no single minimal element exists, sentences with *fewest* would always be false. Note that (2)b introduces groups. This restricts the comparison class to certain predefined pluralities, and thus the absurd readings are avoided.

Hackl (2009) claimed that the absolute reading of *most* is not impossible, but it exists and it is in fact the 'proportional' reading (majority). He proposes a special semantics for plural superlatives, where non-identity between compared elements is replaced with non-overlap, in order to derive the majority reading from the absolute superlative reading. However, as shown by Dobrovie-Sorin (2013, 2015),

Coppock et al. (2017), Dobrovie-Sorin & Giurgea (forth.), Hackl's position is untenable, because in many languages¹ the superlative of *many/much* lacks the proportional reading, although it has the relative reading (see (3)); moreover, in some languages (Romanian, Hungarian, also English in non-generic contexts) proportional *most* behaves as a distributive determiner, being ruled out with mass terms and collective predicates, which shows that it cannot be a quantity word.

- (3) {Erekhaner-i mec mas-ě / *Amena-šat erekhaner(-ě)} hargum en irenc'
 children-GEN big part-the SUP-many children(-the) respecting are their
 cnohner-i-n. (Standard Eastern Armenian)
 parents-DAT-the
 'Most children respect their parents'

It appears, thus, that absolute readings of quantitatives are impossible. However, I will argue that certain readings which appear to be relative are in fact to be analyzed as absolute readings where the comparison class is restricted in a way that produces the effect of a relative reading.

3. A PUZZLE WITH QUANTITY SUPERLATIVES

In the translation-based questionnaire we used for Dobrovie-Sorin & Giurgea (forth.), we encountered, in some languages, an unexpected contrast between examples where the superlative DP is in object position (4a), with a c-commanding correlate, and examples where the superlative DP is a subject, and the correlate does not c-command it (4b); the correlate is underlined in the examples:

- (4) a. Who has the most friends? / John has the most friends
 b. The most (largest number of) immigrants come from India (compared to other countries)

In Italian, Spanish, Catalan, Portuguese, and Albanian, although superlatives in general are realized as comparatives embedded in definite DPs (e.g. It. *il libro più lungo* 'the book more long' = 'the longest book'), with *more* the article is not used; thus, (4a) is translated by using just the comparative – *more friends*:

- (5) Chi ha più amici? / Gianni è quello che ha più amici (It.)
 who has more friends Gianni is the-one that has more friends

For (4b), neither 'more' nor 'the more' are available. The superlative was translated by constructions of the type 'the largest number/quantity', but also 'the largest part' or 'the majority', which are also used for proportional *most*; the informants that used

¹ All Romance languages except Romanian, all Slavic and Baltic languages, Albanian, Breton, Modern Persian, Hebrew, Turkish, Japanese, Chinese, Georgian.

‘largest part’ or ‘majority’ confirmed that this use is possible even if the proportion of immigrants is less than 50%, which shows that we are dealing with a genuine superlative (comparing the number of immigrants from different countries):

- (6) a. La maggior parte dei migranti viene dall’India. (It.)
 the bigger part of-the immigrants comes from-the India
 b. La major part dels immigrants provenen de l’India (Cat.)
 the bigger part of-the immigrants come from the India
 c. La mayor cantidad de inmigrantes vienen de la India (Sp.)
 the major quantity of immigrants come from the India
 d. A maioria dos imigrantes vem da Índia. (Port.)
 the majority of-the immigrants come from-the India
 e. Shumica e emigrantëve vijnë nga India (Alb.)
 majority-the AGR migrants-the.GEN come from India-the

French shows the same contrast, with the difference that the definite article is allowed before *plus* ‘more’ (see (7)): most speakers disallow the use of *le plus* in (8a); (8b) was confirmed to be a possible translation of (4b), not requiring more than 50%:

- (7) Qui a lu le plus de livres ?
 who has read the more of books
 (8) a. %?? Le plus d’immigrants viennent d’AFRIQUE.
 the more of immigrants come from Africa
 b. La plupart des immigrants viennent d’AFRIQUE
 the more-part of-the immigrants come from Africa
 ‘The most immigrants come from Africa (compared to other countries)’

The difference in the use of the article between French (see (7)) and the other languages (see (5)) can be correlated to the fact that French requires the article for superlative readings with adverbs and postnominal comparatives, whereas the other languages lack the article in such contexts:

- (9) a. Elle parle le plus fort (de tous). a’. le livre le plus long (Fr.)
 she speaks the more loud (of all) the book the more long
 b. Lei parla (*il) più forte (di tutti) b’. il libro più lungo (It.)
 she speaks (the) more loud (of all) the book more long
 ‘She speaks the loudest (of all)’ ‘the longest book’

If we assume that *le* in (7) is not the article of the DP, but a superlative marker, as in (9a), that forms a constituent with the comparative *plus*², French comes out identical to the other languages discussed in this section, in that it disallows a

² Bobaljik (2012) argues that universally superlatives embed a comparative:
 (i) [Sup [Comp [AP]]

quantity superlative embedded in a definite DP and does not use superlative *more* to translate (4b) (see (8)).

The absence of the article with the relative superlative *most* has also been noticed by Coppock & Josefson (2015) and Coppock (2019) for a number of North-Germanic varieties (Swedish, Norwegian, Danish, Faroese); thus, the presence of the article in (10) induces the proportional reading:

- (10) a. Gloria har besökt flest kontinenter (Sw.)
 Gloria has visited most continents (Coppock & Josefson (2015): ex. 3–4)
 ‘Gloria visited the most continents (more continents than anybody else)’
 b. Gloria har besökt de flesta kontinenterna.
 Gloria has visited the.PL most continents-the
 ‘Gloria has visited most continents (more than half of the continents)’

The aforementioned studies only examined the object position. In subject position, in examples of the type (4b), according to the Swedish native speakers consulted by Elizabeth Coppock (p.c.), the use of the article is preferred:

- (11) a. {De flesta /?Flest} bebisar är födda i juli (Swedish)
 the most most babies are born in July
 ‘The most babies are born in July’
 b. {De flesta invandrarna /?Flest invandrare} kommer från Indien
 the most immigrants-the most immigrants come from India
 ‘The most immigrants come from India (compared to other countries)’

A similar contrast is found in Basque, modulo the fact that the article is not a definite article, but a general ‘argumental’ article: the article is absent with object *most* interpreted as a relative superlative, but present with subject *most* in examples of the type (4b) (p.c. Ricardo Etxepare):

- (12) a. nork ikusi du ikasle gehien? (relative)
 who.ERG seen has student most
 ‘Who has seen the most students?’
 b. Inmigrante gehien-a-k Indiatik heldu dira (relative)
 immigrant most-ART-PL India.from come are
 ‘The most immigrants come from India (compared to other countries)’

4. THE SOLUTION TO THE PUZZLE: RELATIVE VS. QUASI-RELATIVE SUPERLATIVES

For the ban on the use of the definite article with the superlative of *many/much* and the restricted distribution of such superlatives, in certain languages, I propose the following explanation: (i) Quantity superlatives relying on raising of the degree operator (see section 1) lack the definite article in these

languages; (ii) Superlatives relying on raising of the degree operator, i.e. genuine relative superlatives, require c-commanding by the correlate.

The assumption n^0 (i) is supported by the fact that relative superlatives, with Deg raising out of the DP, are semantically indefinite. It is true that for quality adjectives the definite article is used (obligatorily in Romance, optionally in Swedish, see Coppock & Josefson 2015), a fact whose explanation is debated (see Bumford 2017 for a recent proposal; Krasikova's 2011 analysis of the article as part of the superlative is contradicted by the data, see Croitor & Giurgea 2016). As quantity words can themselves license the D level (see *many children, much sugar* etc.), we may assume that in some languages superlative *most* can perform this licensing, without the need of an article.

The assumption n^0 (ii) is supported by Farkas & Kiss's (2000) observation that relative readings require c-command by the correlate:

- (13) a. JOHN received the fewest votes. (Farkas & É. Kiss 2000:427, ex. 24)
 b. * The fewest voters voted FOR JOHN.

I think this requirement is not universal, but can be stronger in some languages (even for French, some speakers allow (8a), as we have seen). In Romanian, in an appropriate context, the counterpart of (13b) can be used:

- (14) Cei mai mulți colegi au votat pentru Andrei, și cei mai puțini pentru Ion.
 SUP COMP many colleagues have voted for Andrei and SUP COMP few for Ion
 'The most colleagues voted for Andrei, and the fewest for Ion.'

The fact that c-command rather than subjecthood is relevant for French is shown by the following paraphrase produced by French informants, showing that subjects c-commanded by the correlate are acceptable:

- (15) C'est de l'Inde que viennent le plus d'immigrants.
 it is from India that come the more of immigrants

This explanation has an important consequence for the issue of absolute quantity superlatives: if the ban on non-c-commanded relative superlatives is general in certain languages, it follows that superlatives in examples of the type (4b) – let's call them 'immigrants' – examples – are actually *absolute* superlatives.

Indeed, a relative-like reading can be obtained in an absolute superlative if the comparison class is constrained by using material inside the clause, including focal alternatives. Thus, in (4b), if the superlative is analyzed as relative, the comparison class C consists of India and other countries, whereas if it is analyzed as absolute, the comparison class will have the form $\{x: \text{immigrants}(x) \wedge \exists y (\text{country}(y) \wedge x = \sigma z.z \text{ comes from } y)\}$ – the set of maximal groups of immigrants coming from a certain country. A way of enriching the C of an absolute superlative

by using focal alternatives was suggested (but finally rejected) by Heim (1999) and later adopted by Pancheva & Tomaszewicz (2012), who also argue, like me, that certain relative readings are obtained by Deg raising (what I call ‘genuine relative superlatives’) and others by contextually constraining the C of an absolute superlative (what I call ‘pseudo-relative superlatives’). Using Rooth’s (1992) theory of focus, Pancheva & Tomaszewicz (2012) represent focal alternatives as a variable, S in (16), which is a subset of the focus value of the constituent to which it attaches, the TP from which the superlative DP has moved by QR:

- (16) [the -EST-C [d-many immigrants]] [λx [$\sim S$ [x come from [India]_F]]]
 $S \in \{\lambda P. \exists y. P = \lambda x. x \text{ comes from } y\}$

They propose that C, in addition to the general constraint imposed by -EST in (17b), is also constrained by association with focus (17a):

- (17) a. $C = \cup S = \{\lambda x. \exists y. x \text{ comes from } y\}$ (association with focus)
 b. $C \in \{x: \text{immigrants}(x)\}$ (presupposition of -EST)

This ensures that every element of C has the property of coming from a certain place. The sentence would have the meaning ‘the largest group of immigrants that come from a certain place come from India’, which corresponds to the desired reading.

A prediction of that analysis is that in languages which show the c-command constraint, non-c-commanded superlatives should lack the split scope reading discussed in section 1 (see (1c)), which can only be accounted for by Deg raising. I tested this prediction with examples of the type (18), where the most salient reading is the one with split scope (de re comparison but de dicto superlative DP) (note that these examples are not fully acceptable for all English speakers, probably depending on the strength of the c-command requirement):

- (18) a. The most books must be read for the HISTORY course.
 b. The most pages have to be written for the LITERATURE course.

French speakers confirm that the superlative used in the ‘immigrants’-example (8b), *la plupart*, cannot be used in (18). *Le plus* ‘the more’ can be used provided that the focus is realized by a specificational construction (pseudo-cleft), which ensures c-command:

- (19) a. *La plupart des pages doit/doivent être écrite(s) au cours d’HISTOIRE.
 the more-part of-the pages must(3SG/3PL) be written(PL) for-the course of history
 b. Le cours pour lequel le plus de devoirs doivent être écrits, c’est le cours d’histoire.
 the course for which the more of homeworks must be written it is the course of history
 ‘The course for which the most homeworks must be written is the history course.’

Another possible paraphrase uses comparison between numbers (Fr. *le plus grand nombre*, It. *il numero maggiore* ‘the largest number’).

Swedish informants use an articleless *most* in these examples, providing support for the idea that definite superlatives in ‘immigrants’-examples (see (11)) are quasi-relative superlatives:

- (20) Flest sidor ska skrivas i litteraturkursen.
 most pages must write.PASS in literature-course-the
 ‘The most pages have to be written for the LITERATURE (course).’

In Romanian, 10 out of 11 informants found the counterparts of (18) fully acceptable, showing that the c-command requirement is absent or very weak.

A last point which needs to be addressed is the impossibility of using *most* as an absolute superlative with a focus-constrained reading, i.e. as a quasi-relative superlative, in French, Italian, Ibero-Romance and Albanian. In other words, why can’t these languages use ‘the more NP’ in the ‘immigrants’-examples? (note that absolute superlatives are semantically definite, so we expect the use of the definite article).

I propose that the ban on absolute *quantity* superlatives has a syntactic reason. Note that all these languages are languages where the superlative is expressed by comparatives embedded in definite DPs. I propose that in these languages, the absolute interpretation is contingent on a dedicated functional projection Sup, in which superlative Deg may raise overtly (triggering pied-piping) or covertly (in case the superlative remains postnominal). Evidence for this assumption comes from the fact that prenominal superlatives are less marked than prenominal non-superlative adjectives of the same type: whereas most prenominal quality adjectives are marked and have a non-restrictive interpretation, superlatives are unmarked and restrictive:

- (21) a. l’intéressant roman (marked; non-restrictive) (Fr.)
 the interesting novel
 b. le plus intéressant roman (unmarked; restrictive)
 the more interesting novel
 ‘the most interesting novel’

Further support comes from Cinque’s (2010) observation that superlatives in the prenominal position necessarily have an absolute reading (this judgment is confirmed for French by Alain Rouveret, p.c.):

- (22) a. Chi ha scalato la più alta montagna innevata? (Cinque 2010, ch.2, 23)
 who has climbed the more high mountain snowy
 = ‘Who climbed Mount Everest?’
 ≠ ‘Who climbed a snowy mountain higher than that which the others climbed?’

- b. Chi ha scalato la montagna innevata più alta? (ibid. 24)
 who has climbed the mountain snowy more high
 = ‘Who climbed Mount Everest?’ or
 = ‘Who climbed a snowy mountain higher than that which the others climbed?’

This indicates that the prenominal position of superlatives (SpecSupP) is a scope position. Now, the ban on quantity absolute superlatives can be explained by assuming that SupP projects below MeasP, which is the base position of quantitatives (the label comes from Solt 2009; the fact that quantity modifiers such as *many*, *more* or *three* sit in a functional layer is undisputable given their special syntax):

- (23) [D ...[MeasP ... [SupP ...[NP]]]]

The combination of cardinals with superlatives conforms to this structure, cardinals occurring *before* prenominal superlatives:

- (24) [les [deux [plus anciens [auteurs français]]]] (Fr.)
 the two more old authors French

Among Romance languages, only Romanian behaves differently: it is known that the definite article *cel*, in combination with the comparative head *mai*, developed into a genuine superlative marker (see Giurgea 2013a,b; see its compatibility with indefinite determiners, e.g. *un [cel mai mare] număr* ‘a largest number’). Correlatively, the phrase *cel*+Comparative can occur before cardinals, presumably by raising to SpecDP and thereby marking the DP as definite:

- (25) [[cei mai bogați] [trei oameni din lume]]
 the more rich three people in world
 ‘the three richest people in the world’

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Abstract

It is widely believed that quantity superlatives (*most* and *fewest*) disallow absolute readings, being always relative. It has been shown that Hackl’s (2009) identification of the absolute reading with the proportional reading of *most* is erroneous, on empirical grounds. I show that absolute quantity superlatives do, nevertheless, exist. They have a focus-dependent reading which makes them similar to relative superlatives. They can be identified by the following properties: (i) they can appear in positions not c-commanded by the correlate/focus, in languages with a c-command requirement on relative superlatives; (ii) they appear in definite DPs, in languages where quantity relative superlatives lack a definite D; (iii) they disallow the split-scope reading characteristic of raising superlatives (Heim 1999). I argue that in some languages (Albanian and Romance languages other than Romanian) the quasi-relative reading is disallowed for quantity superlatives for syntactic reasons, absolute superlatives being licensed in a functional projection lower than the base generation position of quantitatives.