Quantity superlatives vs. proportional quantifiers. A comparative perspective

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The aim of the talk will be to answer two correlated questions. Why is it that certain languages, e.g., French, allow superlative quantitatives of the form *le plus de NP* 'the more of NP' to take relative/comparative readings, but not proportional readings? Why is it that other languages, e.g., English (as all the other Germanic languages, Slavic languages, Hungarian or Romanian) allow the proportional reading (in addition to the relative/comparative one)? The solution of the puzzle will rely on the difference between superlative modifiers (type <et>) and superlative determiners (type <et,<et,t>>) and the semantic universal stated in (1), which will occupy the central part of the talk (§3):

(1) Superlative quantitative modifiers cannot be interpreted DP-internally (cannot take 'absolute' readings).

1. *The Puzzle*. The contrast in (2)a-b shows that DPs of the form *le plus de* NP_{pl} 'the most of NP_{pl}' can take the relative reading but not the proportional reading.

(2) a. *Le plus d'enfants respectent leurs parents. (Fr.) 'The most of children respect their parents.'

b. [Parmi mes élèves] Jean a lu le plus de livres. '[among my studs] John read the most of books'

Note that the English counterpart of (2a), built with *most,* is grammatical:

(3) Most children respect their parents.

2. The Solution in a Nutshell. The ungrammaticality of the proportional reading of *le plus* will attributed to the semantic ill-formedness of absolute superlative quantitatives; by way of contrast, relative/comparative quantitative superlatives will be shown to be well-formed (§3). The grammaticality of the proportional reading of *most* will be attributed to its being a quantificational Det (type <et,<et,t>>), as in GQT (§4) rather than a superlative modifier (*contra* Hackl 2009). In §5 it will be explained why *le plus* (unlike *most*) cannot be analyzed as a quantificational Det.

3. Superlative Quantitatives cannot take absolute readings. Superlative qualitative adjectives are systematically ambiguous between an absolute and a relative reading:

(4) John climbed the highest mountain.

a. "John climbed a mountain higher than any other mountain." (Absolute)

b. "John climbed a mountain higher than any of the mountains climbed by somebody else. (Relative)

Following Heim (1999), the currently assumed LFs are as in (5a-b), where (at least) the superlative operator raises to the edge of the DP and out of the DP, respectively. These LFs are oversimplified, and not intended to take a stand regarding the exact constituent that is raised or the status of the comparison class variable notated C. What matters for our present purposes is the fact that the difference in the landing position (DP-internal in (5)a and DP-external in (5)b) of the raised superlative operator yields different comparison classes: (i) the (contextually restricted) NP-set, i.e., the set of mountains of a certain region, for the absolute reading and (ii) the set of climbers - a set of contextually given individuals j, f, k, etc. (and correlated to it the set of mountains climbed by j,f,k) - for the relative reading:

(5) a. LF: John climbed [$_{DP}$**[the -est$_i$ C]** [**t$_i$**-high mountain]] Absolute

b. LF: John [**[est$_i$ C]** [climbed [$_{DP}$(a) [**t$_i$**-high] mountain]]] Relative

The contrast in (2a-b) shows that *le plus* lit. 'the more', meaning 'the most', the superlative form of *beaucoup* 'many, much' cannot take an absolute reading. (2b) is acceptable only under a relative superlative reading (the comparison class consisting of a contextually restricted set of individuals which has Jean as one of its members). (2a) is built in such a way that a relative superlative reading is impossible.

But why is an absolute reading ruled out in (2)a? (note that no syntactic constraint can block an LF like (5)a) The reason is that the comparison class provided DP-internally consists of all the pluralities in the denotation of the NP, in this case "children"; in the absence of a criterion which may sort out some of these pluralities, the only plurality of children that is highest than all the others is the supremum of the set of all pluralities of children, i.e., the set of all the children. By applying the semantics of absolute

superlatives to quantitatives, we would thus obtain that 'most' means 'all', which is not what we observe. Some general well-formedness principle can be assumed, according to which a comparison class must not contain a supremum. In other words, comparison classes must be sets of unordered elements rather than join semi-lattices. Some elements in the comparison class may overlap, but accidentally, whereas in the set of pluralities that constitutes a plural denotation, such as *children*, for any two members *a* and *b* there exists a member *c* which includes both. The relative reading (see 2b) is non problematic since the elements in the comparison class are distinct, non-overlapping individuals. In sum, the unacceptability of the French example in (2)a is due to (i) the unavailability of the relative reading (due to the way in which the example is built) and (ii) the uninterpretability (semantic ill-formedness) of the absolute reading of quantitative superlatives: the NP-set is plural and as such it denotes a join semi-lattice, but join semi-lattices are not legitimate comparison classes.

4. Proportional *Most* is a quantificational Det. The analysis proposed above goes against Hackl's (2009) analysis of *most*, according to which proportional *most* relies on an absolute superlative reading. This leaves us with the quantificational-D analysis (due to Mostowski and currently assumed in Generalized Quantifier Theory), according to which *most* denotes the relation between two sets or, equivalently, a function from a set into a generalized quantifier (type <et, <et,t>>). We correlate this type of denotation with the D position which proportional *most* occupies, as indicated by the lack of *the*, which contrasts with its presence in the relative superlative reading. In other languages however, the definite article is compatible with the proportional reading (see Romanian, German or Hungarian, cf. also Szabolcsi 2012):

(6) Cei mai mulți elevi din clasa mea au plecat devreme. (Ro.)
the more many students in my class have left early. 'Most students in my class left early.'

We will show that in (6), the entire phrase [*cei mai mulţi*] occupies SpecDP, as *cel* is not the determiner of the whole DP here, but is part of the DegP (cf. its cooccurrence with other determiners, in Ro., e.g. *un cel mai scurt drum* 'a shortest way'; for the use of definite articles with DegPs, in order to build superlatives, see Krasikova 2011, which provides a semantic account). We will argue that the proportional reading depends on the quantitative superlatives occupying either the D position, as in English, or the SpecDP position, as in Romanian (note that if we change the order in (6) by placing the superlative after the N, the proportional reading disappears, and only the relative superlative reading is available). This constraint follows from the fact that the proportional reading involves a generalized quantifier-type denotation: proportional *most* must have access to the NP-restrictor on the one hand and to the DP-external nuclear scope on the other hand (the sister of the DP raised by QR).

5. *Le plus* is necessarily a measure phrase. Because of its morpho-syntax, *le plus de [NP]* 'the more ["most"] of NP' is necessarily a Measure Phrase/quantitative modifier (type <et>) rather than a Determiner (type <et,<et,t>>). Indeed, *le plus* takes an NP-complement preceded by *de* 'of', which signals a pseudo-partitive configuration. These configurations (illustrated in (8)) obey the following constraint crosslinguistically:

(7) In constituents of the form *XP of/de NP*, XP is necessarily a measure phrase (type <et>)

(8) [$_{MeasP}$XP] de NP : [3 grammes] de beurre, [deux verres] de vin, [trois mètres] de tissu, [trois douzaines] d'enfants, [beaucoup] de beurre/d'enfants, [le plus] d'enfants/de beurre '3 grams of butter, 2 glasses of wine, 3 meters of tissue, 3 dozens of children, a lot of butter/children, the largest number of children, the largest amount of butter'

Measure phrases can be preceded by Ds (e.g. *these two grams of butter*); when no overt D is present, we assume that an empty operator with the semantics of a choice function is projected under D:

(9) [$_{Det}$e] [$_{MeasP}$XP] (de) NP or [the/this] [$_{MeasP}$XP] de NP

We may thus conclude that *le plus* does not have access to the D-level, and therefore it cannot take the proportional reading.