

Relative superlatives and Deg-raising

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Abstract: We address the ongoing debate between raising and in-situ analyses of relative superlatives. We present some arguments in favor of the in-situ analysis of DP-internal relative superlatives: first, the in-situ analysis accounts straightforwardly for the use of the definite article; we show that a recent attempt to explain the use of THE under the raising analysis makes incorrect predictions. Secondly, there is evidence that only a sub-type of relative superlatives, that have certain peculiar properties, rely on raising; crucially, these superlatives lack the definite article. This divide among relative superlatives has first been proposed by Pancheva & Tomaszewicz (2012) for certain adnominal superlatives. We add another context which supports this divide – the predicative context, where relative superlatives which can only be interpreted by raising to the vicinity of the correlate can be found. Based on new data coming from Romanian, we show that these predicative superlatives have different properties from DP-internal relative superlatives, which can be explained if the former involve raising and the latter are interpreted DP-internally.

Keywords: relative superlatives; degree raising; definite article; predicative superlatives

1. Introduction: absolute vs. relative superlatives

In this paper we intend to contribute some new data and ideas to the ongoing debate concerning the analysis of relative superlatives. The distinction between an **absolute** and a **relative** (or **comparative**) reading of superlatives has been generally recognized in the semantic study of degrees ever since Szabolcsi (1986).¹ The two readings differ in the way the domain of entities whose degrees are compared is established. In the absolute reading, illustrated by the paraphrase in (1a), the set of entities whose

¹ The distinction had been drawn already in earlier work (Ross 1964; Bowers 1969; Jackendoff 1972) and rediscovered by Heim (1985); Szabolcsi (1986) (see Heim 1999).

degrees are compared is established on the basis of the DP-internal material, plus general contextual restrictions (among DP-internal material we include partitive PPs such as *of his achievements* in [*the most important of his achievements*], which are often used to specify the set of compared entities). In the *relative* reading, exemplified in (1b), DP-external material plays a crucial role in interpretation: the entities whose properties are compared are related via a (potentially complex) predicate, provided by the clause, to a set of individuals, for which we will use the term **contrast set**, following Farkas & É. Kiss (2000) (another term is **field of comparison**). The contrast set includes the referent of an item in the clause, different from the external argument of the adjective, called the **correlate**.

- (1) John climbed the highest mountain.
- a. absolute reading: John climbed mount Everest (or – a mountain higher than all the other mountains in a contextually restricted discourse domain)
 - b. relative (or comparative) reading: among several individuals who climbed a mountain, the mountain climbed by John is higher than the mountains climbed by anybody else

In the relative reading exemplified in (1b), the correlate is John, the contrast set includes John and several other individuals, e.g., {John, Paul, Mary, Claire}, and the relation is $\lambda x \lambda y . x$ climbed y ‘to be climbed by’.

The correlate usually is the focus of the clause (an observation which goes back to Ross 1964) – see (2) – or a *wh*-phrase (more exactly, the variable bound by the *wh*-operator; this holds not only for interrogatives, which might be subsumed under Focus, but also for relative *wh*-items, see (3)):

- (2) a. JOHN put the tallest plant on the table.
= John put on the table a plant taller than all the plants put by somebody else on the table.
correlate = John
- b. John put the tallest plant on the TABLE.
= John put a plant on the table that is taller than all the plants he put somewhere else.
correlate = on the table
- (3) We should console the girl who got the fewest letters. (Szabolcsi 1986)
= We should console the girl who got fewer letters than any of the other girls.
[the [girl [$\lambda x . x$ got the fewest letters]]]
correlate = x

The sensitivity to focus is due to the fact that the focus makes salient a set of alternatives, which provides the contrast set. However, if the context can

provide such a set of alternatives, it has been noticed that the restriction to focus or *wh*-variables can be suspended (thus, in (4), the context makes salient the set of competitors, which is used as a contrast set):

- (4) How does one win this contest? – By putting the tallest plant on the table.
 (Heim 1999, ex. 17)
 correlate = PRO

Other examples in which the correlate is not the focus are given in (5); in the Hungarian example (5a), provided by an anonymous reviewer as an ameliorated version of an example we took from Teodorescu (2009), the fact that the correlate is not under focus is shown by the position of the verbal particle *meg* with respect to the verb (a preverbal focus would have induced the verb-particle order). In our Romanian example (5b), the correlate is a second singular *pro* (whose features are expressed by the verbal inflection); a null pronoun cannot be under focus (an overt form being required in that case). The fact that we are dealing with a relative reading is ascertained by the choice of a quantitative superlative (*cele mai puține* ‘the fewest’), it being known that quantitative superlatives – *the fewest*, *the most* – only have relative readings (Szabolcsi 1986; Gawron 1995):²

- (5) a. János átúszta a legszélesebb folyót
 Janos across-swam the widest river
 és megmászta a legmagasabb hegyet. (Hung.)
 and PERF-climbed the highest mountain
 correlate = János
- b. Cine a făcut să primești cele mai puține voturi? (Ro.)³
 who has made SBJV receive.2SG SUP COMP few votes
 ‘Who made you receive the fewest votes?’
 = Who made you receive fewer votes than any of the others did?
 correlate = *pro*_{2SG}

² Regarding the superlative of *many*, the proportional reading of *most* has been derived from the absolute reading by Hackl (2009), but there is extensive cross-linguistic empirical evidence against treating proportional *most* as an absolute superlative modifier (Živanović 2007; Dobrovie-Sorin 2013; Dobrovie-Sorin & Giurgea 2015). For *fewest*, no absolute reading has ever been proposed.

³ The element *cel* will be glossed here as a superlative marker – SUP – although it is homophonous with the strong definite article. Evidence that *cel* is a superlative marker in the sequence *cel mai* is provided in section 5.4.

2. The raising analysis of relative superlatives

According to this analysis, proposed by Heim (1985; 1999) and Szabolcsi (1986), relative superlatives involve direct comparison between the members of the contrast set. This analysis was suggested by the parallelism with comparatives, where the entities that appear to be compared are not necessarily the entities to which the gradable property is directly assigned. Thus, in (6), the overtly expressed comparison is not between poems, the entities to which the property ‘good’ is applied, but between Alice and John:

(6) John writes better poems than Alice.

In order to derive the interpretation from such a structure, the degree operator must be placed in a position where it can directly apply to John and Alice, i.e., outside the DP [*better poems*]. The raising is assumed to be post-syntactic, applying on the LF-branch of the derivation. On the model of quantifier raising, the displaced -ER creates a degree-abstract (leaving a degree variable in the base position, bound by a lambda-operator), which can apply to the compared entities Alice and John:

(6') -ER ($\lambda d \lambda x . x$ writes d -good poems) (Alice) (John)

On the model of (6)–(6'), the relative reading of the superlative in (7) can be represented as in (7'), where “C” is the contrast set:

(7) John wrote the best poem

(7') -EST ($\lambda d \lambda x . x$ wrote a d -good poem) (John) (C)

Like for (6'), this reading requires raising of the degree operator outside its DP, in a position where it can be locally related to the correlate:

(8) John [-EST-C [$\lambda d \lambda x [x$ wrote a d -good poem]]]

-EST takes 3 arguments: the contrast set/comparison class, a relation between entities and degrees and an entity, which is the correlate, for relative superlatives, and the external argument of the NP, for absolute superlatives:

(9) $\llbracket \text{-EST} \rrbracket = \lambda C \lambda R_{\langle d, \langle e, t \rangle \rangle} \lambda x \exists d (R(d)(x) \wedge \forall y ((y \in C \wedge y \neq x) \rightarrow \neg R(d)(y)))$

- (9') [-EST] $(C)(R)(x)$ is defined iff (i) $x \in C$,
 (ii) $\forall y(y \in C \rightarrow \exists dR(d)(x))$,
 (iii) $\exists y(y \in C \wedge y \neq x)$ (adapted after Heim 1999)

(9) can also be written as

- (10) [-EST] = $\lambda C \lambda R_{\langle d, \langle e, t \rangle \rangle} \lambda x \forall y (y \in C \wedge y \neq x \rightarrow \max\{d: R(d)(x)\} > \max\{d: R(d)(y)\})$
 (Hackl 2009)

An important piece of evidence for a raising analysis, discovered by Heim (1999), is provided by intensional contexts. Heim noticed that (11) has three readings, paraphrased in (a), (b) and (c). The ambiguity between a and b can be explained by the relative scope between the DP containing the superlative and the intensional operator WANT: in the *de re* reading, in which the DP outscopes WANT, there is a specific mountain that John wants to climb:

(11) John wants to climb the highest mountain.

- a. *de re* reading: John wants to climb a certain mountain, which is higher than the mountains the others want to climb.

John [C-EST] $\lambda d \lambda x (\exists y. y$ is a d -high mountain and x WANT x climb y) = $\forall z [(z \in C \wedge z \neq \text{John}) \rightarrow (\max(d: \exists y. y$ is a d -high mountain and John wants to climb y) > $\max(d: \exists y. y$ is a d -high mountain and z wants to climb y)]

- b. 'downstairs' *de dicto* reading: John wants to climb a(ny) mountain that is higher than any of the mountains the others will climb = John wants that the mountain he will climb will turn out to be higher than the mountains climbed by all the others.

John WANT λw PRO [C-EST] $\lambda d \lambda x (\exists y. y$ is a d -high mountain in w and x climbs y in w) =

John wants $\lambda w \forall z [(z \in C \wedge z \neq \text{John}) \rightarrow (\max(d: \exists y. y$ is a d -high mountain in w and John climbs y in w) > $\max(d: \exists y. y$ is a d -high mountain in w and z climbs y in w)]

- c. 'upstairs' *de dicto* reading: John wants to climb any mountain that has a certain height; this height is greater than the height the others want the mountains they climb to have.

John [C-EST] $\lambda x \lambda d. (x$ WANT $\lambda w. (\exists y. y$ is a d -high mountain in w and x climbs y in w)) =

$\forall z [(z \in C \wedge z \neq \text{John}) \rightarrow (\max(d: \text{John wants } \lambda w \exists y. y$ is a d -high mountain in w and John climbs y in w)) > $(\max(d: z$ wants $\lambda w \exists y. y$ is a d -high mountain in w and z climbs y in w))]

In (b), as in *de dicto* readings in general, the existence of climbed mountains and the comparison between them is relativized to the worlds of John's wishes – which follows from WANT outscoping the DP. The third reading can be characterized as *de dicto* with respect to the DP but as *de re* with

respect to the comparison (-EST). In this reading, a comparison is made, in the real world, between the heights of the mountains climbed in the worlds of their wishes. As the DP and the degree operator appear to have different scope properties with respect to WANT (see the bold-faced part of the semantic representations above), it has been claimed that this reading can only be explained by raising of the degree operator outside the DP.

Note now another important feature of the representations above, which will play a major role in the rest of our article: in all these representations, the DP that contains the relative superlative, in spite of being headed by the definite article, has been interpreted as an indefinite. In order for the raising analysis to work, THE must be erased and replaced by \exists .

Although this appears to be problematic, Szabolcsi (1986) provided evidence that relative superlatives are indeed indefinite (these facts have also been presented as arguments for treating the difference between relative and absolute superlatives as **semantic** rather than merely pragmatic, having to deal with the way of choosing a contextually appropriate comparison class). Thus, they appear in contexts which normally disallow definites: *have* + relational nouns, existentials, and they allow extraction of the complement of a *picture*-noun:

- (12) a. Who has the smartest sister?
 a.' Who has (a/*the) sister?
 b. There were the fewest guests yesterday.
 b.' There were (??the) guests yesterday.
 c. Who did you take the best picture of?
 c.' Who did you take (a/*the) picture of?

In absolute superlatives, -EST has the same semantics but a different position: it remains DP-internal and its external argument (x in (9)) is the same as the external argument of the NP. As the superlative, in this case, introduces a property satisfied by only one entity, the DP is truly definite, therefore THE is interpreted as usual.

In the rest of the paper, we will argue that the presence of the definite article must be taken at face value, and, by way of consequence, the raising analysis is not adequate for all the instances of relative superlatives. We will show that the raising analysis holds only for superlatives which are not embedded under a definite article.

3. In-situ analyses

3.1. The definite article as an argument for an in-situ analysis

The main problem of the raising analysis is to account for the presence of the definite article in relative superlatives. This is not a peculiar property of English, but is a constant property of relative superlatives crosslinguistically, in languages with articles.

If the superlative is interpreted DP-internally, definiteness is expected: the external argument of the NP receives the property of being associated to the highest degree, and thus uniqueness obtains. A possible representation is given in (13)–(15): the comparison class (C) is built based on the contrast set (CS), the DP-internal material and the relation provided by the clause (this roughly follows Farkas & É. Kiss 2000 and Coppock & Beaver 2014, which will be discussed later); combining the superlative and the NP, a property is formed (*highest mountain*) which can be satisfied by a unique individual:

$$(13) C = \{y: \text{mountain}(y) \wedge \exists z \in CS . z \text{ climbs/wants to climb } y \text{ (in } w)\}$$

$$(14) \llbracket \text{highest} \rrbracket (C) = \lambda x.(x \in C \wedge \forall y \in C (y \neq x \rightarrow \text{height}(x) > \text{height}(y)))$$

$$(15) \llbracket \text{highest mountain} \rrbracket = \lambda x. (\text{mountain}(x) \wedge x \in C \wedge \forall y \in C (y \neq x \rightarrow \text{height}(x) > \text{height}(y)))$$

In the *de re* reading (see (11a)), C consists of mountains in the real world, that people want to climb. In the downstairs *de dicto* reading in (11b), C consists of mountains that people climb in a possible world w , bound by the operator introduced by WANT (w is a world of John's desires). A problem remains for (11c) – the upstairs *de dicto* reading can never be obtained.

For attempts to account for the upstairs *de dicto* reading under a DP-internal (*in situ*) analysis, see 3.4 below.

3.2. Varieties of in-situ analyses

Under Teodorescu's (2009) pragmatic account, (13) – the way of constructing the comparison class – belongs to pragmatics; the semantics only “sees” C as a free variable whose value is set by the context; there is thus no semantic distinction between absolute and relative readings.

The same view is endorsed by Sharvit & Stateva (2002) for the readings in (11'a–b), but they propose a distinct semantics for the upstairs *de*

dicto reading in (11'c), assigning a property denotation to the DP containing the superlative: from a contextually defined set of properties containing degrees (e.g., *be a 5000ft mountain*, *be a 4000ft mountain*, *be a 3000ft mountain*), the one is selected that has the same extension, in the worlds considered, as the property *be the highest mountain*.

Farkas and É. Kiss (2000) propose a semantics which makes explicit use of the correlate and the contrast set (*CS*). The relation between the correlate and the NP that contains the superlative is mediated by indices – besides *y*, representing the external argument of the NP, there is a second index *i*, that points to the correlate:

(16) [the [highest [mountain_{*i*}]]]

The semantics of the superlative assigns a property to the variable *y* by using the index *i* of the correlate and a function, provided by the (linguistic) context, that relates the members of the contrast set (see *i* and *j* in the formula below) to the members of the comparison class (the mountains, see *y* and *y'*):

(17) $[[\text{highest mountain}^i]] = \lambda y (\text{mountain}(y) \wedge y \in f_{\text{climb}}(i) \wedge \forall j \forall y' ((\text{mountain}(y') \wedge y' \in f_{\text{climb}}(j) \wedge j \neq i) \rightarrow \text{high}(y) > \text{high}(y'))))$ (Farkas & É. Kiss 2000, 54)

Coppock and Beaver (2014), building on this idea, replace the function *f* with a relation introduced as an argument of EST. They also introduce the contrast set as an argument (notated *C*). Since they do not use indices, no direct reference to the correlate is possible in the lexical entry of the superlative, therefore the entity belonging to *C* which stands in the relation *R* with the external argument is introduced as an existentially bound variable (see *y* in (18)); they also make use of the operator ∂ read as ‘defined iff’, which introduces definedness conditions (presuppositions; Beaver 2001 calls it “partiality operator”):

(18) $[[\text{-EST}]] = \lambda C_{\langle e, t \rangle} \lambda R_{\langle e, \langle e, t \rangle \rangle} \lambda G_{\langle d, et \rangle} \lambda x. \exists y [\partial [R(y, x) \wedge C(y)] \wedge \exists d [G(x, d) \wedge \forall y' \forall x' [(R(y', x') \wedge C(y') \wedge y \neq y') \rightarrow \neg G(x', d)]]]$ (Coppock & Beaver 2014, 48)

(19) $[[\text{highest mountain}]] = \lambda x. \text{mountain}(x) \wedge \exists y [\partial [\text{climb}(y, x) \wedge C(y)] \wedge \exists d [\text{high}(x, d) \wedge \forall y' \forall x' [\text{climb}(y', x') \wedge C(y') \wedge y \neq y'] \rightarrow \neg \text{high}(x', d)]]]$

With respect to these analyses, we note that superlatives appear to license “partitive” adjuncts referring to the context set – thus, the *of*-phrase in (20a) is not licensed in the absence of the superlative (20b); likewise the Romanian *dintre*-phrase in that position (20c–d):

- (20) a. He made the best speech of all the candidates.
 b. *He impressed of all the candidates.
 c. Are cel mai bun discurs dintre toți politicienii români.
 has SUP COMP good discourse among all politicians-the Romanian
 ‘(S)he has the best discourse of all Romanian politicians.’ (Ro., Internet ex.)
 d. *Nu a făcut nicio greșeală dintre toți politicienii români.
 not has made any mistake among all politicians-the Romanian

This can be taken as an argument that the context set is present in the semantic structure, as in Coppock and Beaver’s analysis, favoring a semantic account of the relative/absolute ambiguity over a pragmatic one.

3.3. The indefinite behavior under the in-situ account

Although we took definiteness marking as an important argument for a DP-internal analysis, we must consider the fact that, as we have seen in section 2, there are contexts in which DPs with relative superlatives pattern with indefinites – see the tests used by Szabolcsi (1986) in (12) above, which had provided initial support for the raising analysis, even before the discovery of the upstairs *de dicto* reading.

This problem was addressed by Coppock and Beaver (2012; 2014), who showed that there are other types of definites that pattern with indefinites with respect to those tests, and argued that two types of argumental definites must be distinguished, determinate and indeterminate (in addition to a third type, predicative definites). Determinate definites are of entity type (*e*) and carry a presupposition of existence, whereas indeterminate definites are existential generalized quantifiers (type $\langle\langle e, t \rangle, t\rangle$) and lack a presupposition of existence. Definiteness only introduces a uniqueness presupposition, common to all sub-types (*the* is ‘an identity function on properties, defined if the input property has at most one satisfier’):

- (21) THE = $\lambda P\lambda x[\partial[|P|\leq 1] \wedge P(x)]$ (Coppock & Beaver 2014, 178)

They argue that relative superlatives are definite, but indeterminate, which explains why they pattern with indefinites in certain respects. As evidence, they cite other definite DPs which lack presupposition of existence, as made clear by the following examples (in which uniqueness comes from *only*, *same* – see (22a–b) – or is an expectation based on world knowledge, as with the noun *heart* in (22c)):

- (22) a. Liz didn't give [the only brilliant talk]. (Coppock & Beaver 2014, 177)
 b. Sue and Jane both scored goals, so Jane didn't score [the only goal]_i. #It_i wasn't a bicycle-kick, either. (*ibid.*, 180, (11))
 c. I don't know whether iguanas have hearts, but is that the heart? – That's definitely not the heart. Iguanas don't have hearts. (Coppock & Beaver 2012, (11a, 12a))

Such definites indeed occur in contexts taken as indefiniteness diagnostics:

- (23) a. We don't have [the same birthday].
 b. Mary has the only lazy sister. (Le Bruyn et al. (2013), cited in Coppock & Beaver 2014, (34))

With respect to extraction (see (12c)), Coppock and Beaver note that this possibility is found with other definite DPs, especially with inherently unique definites (see (24b–d)):

- (24) a. Who did Ashley write that book about? (Coppock & Beaver 2014, (21))
 b. Who did Ashley participate in the coronation of? (*ibid.*, (22))
 c. Who did you take the first/second/next picture of? (*ibid.*, (24))
 d. Which country is she the Queen of? (*ibid.*, (25))

Likewise for the test in (12b), they note other definites occurring in existential constructions, even in the absence of the list reading (which is known to allow definites in existentials):

- (25) a. It is like the adult time of life, when there is the peak amount of vigor and vitality. (Coppock & Beaver 2014, (30a))
 b. When the two are equal, there is the optimal level of provision for public goods. (*ibid.*, (32a))

Besides the tests in (12), Szabolcsi (1986) motivated her treatment of relative superlatives as indefinites by paraphrases such as

- (26) John climbed the highest mountain. = John climbed a mountain that was higher than what anybody else climbed. (Szabolcsi 1986, (6))

But a paraphrase with indefinite + comparative is also available for absolute superlatives:

- (27) a. The spacecraft landed on the highest mountain on Mars. =
 b. The spacecraft landed on a mountain higher than all the other mountains on Mars.

An interesting question these examples raise is why the definite article is not obligatory in (27b), like in (27a). First, it is well-known that indefinites are possible even if there is a single entity in the world that satisfies the NP description, on condition that there is no presupposition that there should be entities satisfying this description (e.g., *John met a 132 year old man*). In (27b), the information on the existence of mountains on Mars is not backgrounded. Therefore, although the description ‘mountain higher than all the other mountains’ applies to a single individual, the definite article is not used. Now, we propose that things are different for (27a) because superlatives introduce comparison classes as part of their presupposed meaning (for *de dicto* readings, we should assume existence relativized to possible worlds).⁴ The fact that superlatives introduce presuppositions is acknowledged by most formal analyses of superlatives, both raising analyses – see (9') above, based on Heim (1999) – as well as in-situ analyses, such as Teodorescu’s (2009), reproduced below:

- (28) a. [est] $(C)(R)(x)$ is undefined unless $x \in C \wedge \exists y(y \neq x \wedge y \in C)$ (Teodorescu 2009)
 b. [est] $(C)(R)(x)$ is undefined unless $\forall x(x \in C \rightarrow \exists d(R(d)(x) = 1))$
 ‘ C must contain an element distinct from the external argument and all the elements in C must have the property at a certain degree.’

The definedness condition referring to the existence of an entity in the comparison class distinct from the external argument requires the existence of a comparison class to begin with. Therefore, we consider the existence of a comparison class as a presupposition of the superlative.

Now, since the superlative uniquely characterizes an entity from this presupposed comparison class, the use of the definite article, in spite of the novelty of the referent, is necessary.

As an anonymous reviewer pointed out, the fact that THE in relative superlatives is truly definite is supported by object agreement in Hungarian, which marks definiteness of the object: DPs with superlatives trigger definite object agreement forms, even in the relative reading:

⁴ Of course, (27b) also allows for the presence of the definite article, but this requires a context in which the existence of such a mountain is established, the description being used to identify it. What is important is that the indefinite article is also acceptable, in spite of the fact that the property is satisfied by only one referent, whereas for the superlative, the use of the definite article is compulsory (unless we know that there are several mountains of equal height which are higher than all the others).

- (29) a. Közülünk TE mászt-ad/*mászt-ál meg a legmagasabb
 out.of.us you climbed-2SG.DEF/climbed-2SG.INDEF PREVERB the highest
 hegy-et.
 mountain-ACC
 ‘Out of us, it is you who has climbed the highest mountain.’
- b. JÁNOS akar-ja/*akar meg-mász-ni a legmagasabb
 János want-3SG.DEF/want.3SG.INDEF PREVERB-climb-INF the highest
 mountain-ACC
 hegy-et.
 ‘It is János who wants the climb the highest mountain.’ (K. Szécsényi, p.c.)

To conclude, the presence of the definite article in relative superlatives remains an important problem for the raising analysis. The arguments based on indefiniteness tests prove to be inconclusive. In-situ analyses explain the definiteness of relative superlatives by the fact that the external argument of the NP receives a uniquely satisfied property and belongs to a presupposed set (the comparison class).

3.4. Note on upstairs *de dicto* readings

A remaining problem for in-situ analyses is the upstairs *de dicto* reading (see (11c)). Two types of solutions have been proposed, which we cannot treat here in detail: Sharvit and Stateva (2002), treating up-stairs *de dicto* superlatives as property-denoting, propose a special denotation of the definite article, which acts at the property level: from a contextually defined set of properties containing degrees (e.g., *be a 5000ft mountain*, *be a 4000ft mountain*, *be a 3000ft mountain*), the one is selected that has the same extension, in the worlds considered, as the property *be the highest mountain*. Coppock and Beaver (2014), without giving a formal treatment, argue that this type of reading may appear in intensional contexts independently of superlatives, e.g., in the example *Johnny thinks he is eating a non-kosher sandwich!*, which has an interpretation which is neither *de re* (there exists a particular sandwich Johnny is eating and which is non-kosher) nor simply *de dicto* (John’s thought is: ‘I’m eating a non-kosher sandwich!’), but paraphrases John’s thought using a property which the speaker knows is entailed by what John actually thinks (e.g., John thinks he is eating a bacon sandwich; likewise, in the upstairs *de dicto* reading, the actual reported thought is ‘I want to climb a 5000ft mountain’, and, in the appropriate context, the speaker paraphrases the wish as ‘(PRO) climb the highest mountain’).

4. THE is not part of the superlative

The reply of the proponents of the raising analysis to the problem of the use of the definite article has been to treat THE as part of the superlative. Szabolcsi (1986) already suggested that *the... -est* is a discontinuous morpheme that undergoes QR. This idea was further elaborated by Krasikova (2012). Her proposal – endorsed by Szabolcsi (2012) – is that THE in relative superlatives is part of the superlative DegP, acting as an iota-operator over degree properties. (30) gives the syntactic structure she assumes for DPs containing relative superlatives:

(30) [DP \emptyset_{indef} [NP [AP [DegP the max C] highest] mountain]] (after Krasikova 2012, 19)

The superlative DegP (originating as a specifier of the AP) raises to adjoin at the clausal level, above the correlate, to a propositional constituent that contains a focus.⁵ *C*, the comparison class, does not consist of individuals, but of degree sets, each of which is associated with a focus alternative (*C* is a subset of the focus value of the degree-abstract created by DegP-raising; this is notated by “ $\sim C$ ”, using Rooth’s 1992 “squiggle” operator; “*” symbolizes the pluralization operator, *D* is a variable over sets of degrees):

(31) [the max C] * [λd JOHN climbed [$\exists d$ -high mountain] $\sim C$] (Krasikova 2012, (20a))
 $C = \{D : \exists x[D = \lambda w \lambda d.x \text{ climbed a } d\text{-high mountain in } w]\}$ (*ibid.*, (20b))

Max restricts *C* to its maximal element, and THE picks up this maximal element:⁶

(32) $\max C = \lambda D_{\langle d, t \rangle} [C(D) \wedge \forall D' [C(D') \rightarrow D'(w) \subseteq D(w)]]$ (*ibid.*, (21a))
 ‘to be a set of degrees in *C* so that any other set of degrees in *C* is included in it’

(33) $[[\text{the}]] = \lambda Q: \exists! D[Q(D)].\iota D[Q(D)]$ (*ibid.*, (21b))

⁵ This analysis also covers quantitative superlatives, as gradable quantitatives such as *many/much* can combine with DegPs (see *as many, so many*); adnominal *more, most* can be seen either as the spell-outs of [-ER/-EST *many*] or as deletion of *much/many* after *more/most*; this internal make-up of adnominal *more* and *most* is transparent in Romanian (see also 5.4 below): *mai mult/mulți* ‘COMP much/many’ = adnominal *more*, *cel mai mult/cei mai mulți* ‘SUP COMP much/many’ = adnominal *most*. As for proportional *most*, we analyze it as a determiner (D or SpecD element) rather than a superlative (see footnote 2).

⁶ The reason why the highest degree is obtained in two steps, by applying *max* and *the*, instead of a single step, appears to be the intention to assign a semantic contribution to both the superlative morphology and the article.

- (34) the $(\max C) = \iota D[C(D) \wedge \forall D'[C(D') \rightarrow D'(w) \subseteq D(w)]]$
 ‘the unique set of degrees in C so that any other set of degrees in C is included in it’

The main problem this analysis faces is that there are examples of relative superlatives in which THE and the adjectival phrase (Deg + AP, which we will label DegP) clearly do not form a constituent. Thus, a cardinal may intervene between THE and the DegP in English and Bulgarian; such examples allow the relative reading, including Heim’s upstairs *de dicto* reading:

- (35) a. John read /needs to read [the [two [[longest] books]]].
 b. Ivan trjabva da pročete [dvete [[naj-dalgi] knigi]]
 Ivan must SBJV reads two-the SUP-long book
 ‘Ivan must read the two longest books.’ (Bulg.)⁷

In Romance languages, the DegP can appear in postnominal position, separated from THE by the noun. Relative readings, including the upstairs *de dicto* reading, are perfectly fine in such a configuration:

- (36) a. Cine trebuie să citească cartea de istorie cea mai lungă?
 who must SBJV read book-the of history SUP COMP LONG
 ‘Who must read the longest history book?’ (Ro.)
 b. Chi ha letto il libro più lungo?
 who has read the book more long
 ‘Who read the longest book?’ (It.)

Moreover, THE is not necessary for superlatives to receive a relative reading (this is a problem both for Krasikova’s account and for Szabolcsi’s (1986) analysis of *the...-est* as a discontinuous morpheme). Thus, predicative and adverbial superlatives may lack THE in English and Scandinavian and still have the relative reading – in the examples below, we indicate this reading by underlining the correlate:

- (37) John is angriest at Mary (Heim 1999)
 (38) a. Who sings best? [but also: Who sings the best?]
 b. Vem sjunger best? (Sw.)

⁷ According to I. Krapova (p.c.), the order ‘longest.DEF-two-books’ (*naj-dalgite dve knigi*) – the only order predicted by Krasikova’s account for the relative reading – cannot have the upstairs *de dicto* reading at all, it only allows a specific reading (i.e., relative *de re* or absolute).

Relative readings can also occur in DPs where definiteness is not marked by THE, but by other means, such as the possessive ‘determiner’ in German. An example such as (39) allows an interpretation where groups of friends associated with various places are compared (*wo...her* is the correlate); this interpretation is clearly distinct from the proportional one, in which ‘most’ translates as ‘the majority of’ (E. Remberger, p.c.):

- (39) Wo kommen meine meisten Freunde her? (German)
 where come.3PL my most friends from
- a. ‘Where does the largest number of my friends come from?’ (relative superlative)
 b. ‘Where do most (i.e., the majority) of my friends come from?’ (proportional)

Summing up, the presence of THE cannot be done away with by taking it as a mere superlative marker (either taking Deg as a complement or forming a discontinuous morpheme with -EST).

5. What a raising superlative really looks like

In this section we present a new argument against the raising analysis of adnominal relative superlatives, based on data from Romanian. The argument runs as follows: (i) a crucial difference between the DP-internal and the DP-external interpretation of superlatives is that in the first case, the external argument of the adjective and of the superlative coincide, whereas in the second, they do not (the external argument of the A is the same as the external argument of the N, a variable bound by the determiner heading the DP that contains the superlative, whereas the external argument of the superlative is the correlate); (ii) with predicative superlatives, Romanian marks the non-identity between the external argument of the A and the external argument of the superlative by allowing a non-agreeing superlative marker; (iii) this non-agreeing marker is never found in relative adnominal superlatives. As Romanian does not draw systematic distinctions between adjectival agreement in predicative and adnominal positions, from (ii) and (iii) we conclude that adnominal relative superlatives never involve a difference between the external argument of the superlative and the external argument of the adjective (and N). By (i), this means that adnominal relative superlatives do not rely on Deg-raising.

5.1. Restrictions on internal correlates

Before presenting our new data, we need to consider a constraint on possible correlates that is found in relative superlatives embedded in a definite DP but is suspended in predicative positions.

Pancheva and Tomaszewicz (2012) show that relative superlatives embedded under a definite D cannot have NP-internal correlates in English and Bulgarian (i.e., (40a) cannot mean that among albums of various bands that John has, the best ones are by U2, and so on):

- (40) a. *John has [the best albums by U2].
 b. *John met [the youngest students from London].
- (41) *Ivan ima [naj-dobri-te albumi na U2].
 Ivan has SUP-good-the albums by U2
 (Bulg., Pancheva & Tomaszewicz 2012, (19))

This is not a general ban on relative superlatives: it is not found in Bulgarian bare nouns or in Polish, a language which has no articles:⁸

- (42) a. Ivan ima naj-dobri albumi na U2.
 Ivan has SUP-good albums by U2
 ‘Among the albums Jan has, those of/by U2 are better than those of other artists.’
 (Bulg., *ibid.*, (15a))
- b. Iwan dal Marii naj-lepsze albumy U2
 Iwan gave Maria.DAT SUPERL-better albums.ACC U2. (Polish, *ibid.*, (15b))

Pancheva and Tomaszewicz explain this behavior by allowing both a raising and an in-situ analysis of superlative Deg. They argue that (i) in-situ interpreted relative superlatives are possible, but cannot have internal correlates, (ii) internal correlates as in (42) rely on Deg-raising and (iii) Deg-

⁸ In Bulgarian, D-less nominal phrases with superlatives, as in (42a), have the distribution of bare nouns (which only have a weak indefinite reading); thus, they are ruled out from the preverbal subject position:

- (i) *Naj-polezni sluzhbi ne funkcionirat dobre. (Bulg., I. Krapova, p.c.)
 SUP-useful services not function well
 Intended meaning: ‘The most useful services do not function well.’
- (ii) ²⁷Naj-hubavi knigi ot Proust sa diskutirani na seminar. (V. Aleksova, p.c.)
 SUP-good books by Proust are discussed in seminar
 Intended meanings: ‘The best books by Proust are discussed in this seminar (absolute or external correlate); The best books discussed in this seminar are those by Proust (internal correlate)’

raising is blocked by a definite D.⁹ Their explanation for (i), which cannot be reproduced here in detail, makes crucial use of the idea that the DP-internal -EST takes scope over the whole descriptive material of the DP (N + modifiers) – e.g., for (40a) we have:

(43) [the [-EST λd [d -good album by U2]]]

By definition (see (9') and (28) above), the members of the comparison class must satisfy to some degree the property expressed by the sister of -EST – e.g., for (43), we have:

(44) for all $y \in C$, there is a degree d such that y is a d -good album by U2

Thus, if the correlate is DP-internal (e.g., U2 in (40a) and (43)), it will occur in the common description that is applied to all the members of the comparison class (e.g., for (44), $\lambda x. \exists d. x$ is a d -good album by U2). But this is absurd, because the correlate is precisely the element that **distinguishes** that member of C that has the highest degree from the others. This is why an internal correlate, such as U2, is impossible, given (43).

The ban on DP-internal correlates naturally extends to AP-internal material, since the AP is part of the DP. But what if the AP is not embedded in a DP, but occupies a predicative position? In this case, we find that AP-internal correlates are possible in English – we have already encountered one in example (37), repeated below, where, unlike *by U2* in (40a), *at Mary* can be the correlate:

(45) John is angriest at Mary

5.2. Predicative superlatives and the absolute/relative contrast

One may question the relevance of predicative positions for the issue of Deg-raising of -EST. But a divide similar to that between absolute and relative superlatives exists among predicative superlatives: the comparison can be established either between the subject and other entities, or between another constituent of the clause and other entities (as we already saw for (45)):

⁹ A different explanation of the ban on internal correlates inside DPs, compatible with the raising analysis, has been proposed by Shen (2014): what is blocked is **simultaneous** raising of the PP (correlate) and DegP from the phase domain of the DP (Pancheva and Tomaszewicz had argued that the impossibility of internal correlates is not due to the fact that such correlates cannot raise, because they can in fact undergo overt raising as well as QR).

- (46) John is the happiest about this decision.
- a. John is happier about this decision than any of the other people ($C = \text{John and other people}$).
 - b. John is happier about this decision than about any of the other decisions ($C = \text{this decision and other decisions}$).

The reading in (a) resembles absolute readings in that the comparison class includes the external argument of the adjective (the subject) and no other contrast set is required for interpretation. Therefore we call it **quasi-absolute**. In (b), the comparison class resembles what we called the contrast set of relative readings in that it does not include the external argument of the adjective, but is established based on another constituent of the clause. We shall therefore use the term *relative* for this type of reading.

Now, it is clear that in relative predicative superlatives the external argument (henceforth, EA) of the superlative cannot be the same as the EA of the adjective: under all analyses of -EST, reference is made to a variable distinct from the EA which satisfies the gradable property to a smaller degree than the EA – see the formulae assumed by the in-situ analyses presented in section 3, resumed below, where we boldfaced the relevant part; for raising analyses, the EA of relative superlatives is always distinct from the EA of the adjective anyway (-EST applies directly to the correlate, whereas the A remains DP-internal, see (11)):

$$(47) \quad [-\text{EST}] = \lambda C \langle e, t \rangle \lambda R \langle e, \langle e, t \rangle \rangle \lambda G \langle d, et \rangle \lambda \mathbf{x} \exists y [\partial [R(y, x) \wedge C(y)] \wedge \exists d [\mathbf{G}(\mathbf{x}, d) \wedge \forall y' \forall \mathbf{x}' [(R(y', \mathbf{x}') \wedge C(y') \wedge y \neq y') \rightarrow \neg \mathbf{G}(\mathbf{x}', d)]]] \quad (\text{Coppock \& Beaver 2014, 48})$$

$$(48) \quad [\text{highest mountain}^i] = \lambda \mathbf{y} (\text{mountain}(y) \wedge y \in f_{\text{climb}}(i) \wedge \forall j \forall \mathbf{y}' ((\text{mountain}(y')y' \in f_{\text{climb}}(j) \wedge j \neq i) \rightarrow \mathbf{high}(\mathbf{y}) > \mathbf{high}(\mathbf{y}')))) \quad (\text{Farkas \& \acute{E}. Kiss 2000, 54})$$

But in relative predicative superlatives, the EA of the adjective is **constant** among the compared entity-degree pairs – see the interpretation of (46b), where the EA of the A is boldfaced (we used the entry for -EST in (10)):¹⁰

¹⁰ We use the notation ‘the maximal degree to which x satisfies D ’ instead of ‘the degree to which x satisfies D ’ following the practice that seems to be the most widespread nowadays, at least in the papers that concern superlatives (see Heim 1999; Hackl 2009; Krasikova 2012; Szabolcsi 2012; Coppock & Beaver 2014, etc.). The choice between the ‘at least’ and the ‘exact’ interpretation of degrees is irrelevant for our purposes. We can also write (49) as

(i) $y [(y \text{ is a decision } \exists y \neq \text{this decision}) \rightarrow \mathbf{id}.d = \text{happy}(\text{this decision})(\text{John}) > \mathbf{id}.d = \text{happy}(y)(\text{John})]$

- (49) $(\lambda x.\forall y [(y \text{ is a decision} \wedge y \neq x) \rightarrow \max\{d:\mathbf{John} \text{ is } d\text{-happy about } x\} > \max\{d:\mathbf{John} \text{ is } d\text{-happy about } y\}])(\text{this decision}) =$
 $\forall y [(y \text{ is a decision} \wedge y \neq \text{this decision}) \rightarrow \max\{d:\mathbf{John} \text{ is } d\text{-happy about this decision}\} > \max\{d:\mathbf{John} \text{ is } d\text{-happy about } y\}]$

We can thus conclude that in predicative superlatives the EA of the superlative is distinct from the EA of the adjective, as proposed by the raising analysis for relative superlatives in general. As shown in (49), -EST must apply to the correlate, which implies Deg-raising outside the predicative AP: the EA of -EST is the correlate, the EA of the AP is the subject:

- (50) [[this decision] [-EST [$\lambda d.\lambda x.$ John is d -happy about x]]]

We have thus established another context in which Deg and A must be interpreted with respect to different arguments: in addition to the adnominal relative superlatives not embedded under definite D, pointed out by Pancheva and Tomaszewicz (see (42)), we encounter this situation in relative predicative superlatives.

As the Deg-raising analysis of relative superlatives assumes that in all relative superlatives the EA of -EST is the correlate, being thus distinct from the EA of the AP, we expect adnominal and relative predicative superlatives to behave alike. But, as we have seen in the previous section, this is not the case: predicative relative superlatives allow AP-internal correlates, relative superlatives embedded in a definite DP disallow any internal correlate.

In the following sub-section, we will see that in Romanian the non-identity between the EA of -EST and of the adjective may be formally marked, by using a non-agreeing superlative marker. As this marker is never found in adnominal relative superlatives, it can be concluded that in adnominal relative superlatives the EA of -EST and A are not distinct, as proposed by in-situ analyses and contrary to the raising analysis.

5.3. Predicative superlatives in Romanian

Romanian superlatives have the form [*cel* + Comparative head *mai* + AP]. The element *cel* is identical to the strong form of the definite article (Romanian has a suffixal article – e.g., *caietul* ‘notebook-the’ – and also uses an independent, “strong” form in certain contexts – e.g., *cei doi băieți* ‘the two boys’) and marks the definiteness of the DP, like an article, when occurring in the DP-initial position (resembling the other Romance languages; for

important differences, that entitle us to treat *cel* as a superlative marker, see section 5.4 below):

- (51) O cometă a lovit [cea mai mare planetă a sistemului nostru solar].
 a comet has hit *cel*.FSG COMP big planet GEN system-the.GEN our solar
 ‘A comet hit the largest planet of our solar system’

Cel in principle agrees with the A and the EA of the AP. Although all grammars of Romanian claim that *cel* always agrees, some speakers prefer to use a non-agreeing form (*cel*, the masculine singular, which is a morphological default in Romanian)¹¹ in predicative relative superlatives. We find thus the following contrast – where underlining is used to mark the entity which is compared with other entities – the correlate for relative readings and the EA (the subject) for the quasi-absolute reading:

- (52) a. Copiii sunt cel/cei mai interesați de jucării. (relative)
 children-the are *cel*.MSG/*cel*.MPL COMP interested.MPL in toys
 ‘Among toys and other things, it is toys that (the) children are most interested in.’
 b. Copiii sunt cei mai interesați de jucării. (quasi-absolute)
 children-the are *cel*.MPL COMP interested in toys
 ‘Among (the) children and other groups, it is (the) children who are the most interested in toys.’

These data were first presented in Croitor (2012) and Croitor & Mîrzea-Vasile (2014), who concentrated on the agreement properties of *cel*.¹² Here, we point out the relevance of these data for the general semantic analysis of superlatives.

Further examples of relative predicative superlatives using non-agreeing *cel*, from Croitor & Mîrzea-Vasile (2014), are given under (51):

- (53) a. Din toată școala, antrenorul era cel mai încântat de Ana.
 from all school-the coach(F)-the.FSG was *cel*.MSG COMP pleased.FSG. by Ana
 ‘From the entire school, the coach was most pleased with Ana.’ (i.e., she was more pleased with Ana than she was pleased with other pupils in the school)

¹¹ With adjectives, the masculine singular form is used in non-agreeing contexts – with clausal subjects and as an adverb. Therefore, evidence for non-agreeing *cel* can only be found if the subject is not masculine (or neuter) singular (neuters in Romanian trigger masculine agreement in the singular and feminine agreement in the plural).

¹² For various attested examples of non-agreeing *cel*, see the Appendix.

- b. Dintre toți invitații, **cel** mai bucuroasă am fost că a venit Dana.
 from all guests-the *cel*.MSG COMP glad.FSG have.1 been that has come D.
 ‘From all the guests, I was (the) most pleased that Dana came.’ (i.e., the speaker was more pleased with Dana’s coming than with any other guest’s coming)

If agreeing *cel* is used here, some speakers feel a strong bias towards the quasi-absolute reading of the superlative:

- (54) a. Antrenoarea era **cea** mai încântată de Ana.
 coach(F)-the.FSG was *cel*.FSG COMP pleased.FSG. by Ana
 ‘It was the coach that was the most pleased with Ana.’
 (vs. ?‘The coach was more pleased with Ana than with the others.’)
- b. Eu am fost **cea** mai bucuroasă că a venit Dana.
 I ave been *cel*.FSG COMP pleased that has come Dana
 ‘I was the one who was the most pleased that Dana came.’
 (vs. ?‘I was more pleased with Dana’s coming than with any other’s coming.’)

In cases where the absolute-reading is clearly ruled out, some speakers find examples with agreeing *cel* unacceptable:

- (55) a. ^{??%}Toți copiii sunt **cei** mai interesați de jucării.
 all children-the are *cel*.MPL COMP interested in toys
 ‘All children are the most interested in toys.’
- b. Fiecare fetiță e {*cel*/^{??%}*cea*} mai interesată de păpuși.
 every little-girl is *cel*.MSG/*cel*.FSG COMP interested in dolls
 ‘Every little girl is (the) most interested in dolls.’

The universal ‘every’ in (55b), applying the property to all the individual members of the plurality, rules out a contrast set formed by these members; as for (55a), ‘all *X*’ is not appropriate for contrasting the group *X* with other groups, because ‘all’ activates the alternatives ‘a part of *X*/some *X*, most *X*’ etc.

Conversely, if an internal correlate is impossible and the superlative must have the quasi-absolute reading, agreeing *cel* becomes compulsory (see (56), where the universal rules out the complement of the A as a potential correlate):

- (56) Copiii au fost {*cei*/**cel*} mai încântați de fiecare cadou.
 children-the have been *cel*.MPL/*cel*.MSG COMP delighted by every present
 ‘The children were the most interested in every present.’

The use of a non-agreeing superlative marker with a relative predicative superlative is not limited to Romanian. It has also been noticed for French, where the superlative is built, in a similar way, of the definite article and the comparative (Grevisse 2008, 1229–1230):¹³

- (57) C'est au milieu de ses enfants qu'une mère est le plus heureuse.
 it is in-the middle of her children that a mother is the.MSG more happy.FSG
 'It is among her children that a mother is happiest.'
 = În mijlocul copiilor ei e cel mai fericită o mamă (Ro.)
 in middle-the children-the.GEN her is cel.MSG COMP happy.FSG a mother

5.4. On the morpho-syntax of Romanian superlatives

For an analysis of these facts, some background information about Romanian superlatives is needed.

As we have seen, Romanian superlatives are built by adding a definite article form to a comparative.¹⁴ But, compared to the other Romance languages, both the comparative marker and the article are more grammaticalized. Thus, *mai*, usually glossed as 'more', is always a Deg head followed by an adjective or adverb, it cannot function as a comparative quantitative (adjectival or adverbial) like French *plus*, Italian *più* or English *more* – thus, except for its affixal status, it rather corresponds to English *-er* than to *more* (therefore, we glossed it here as COMP):

- (58) a. mai *(mult) vin
 COMP much wine
 'more wine'
 b. O iubește mai *(mult).
 her loves COMP much
 'He loves her more.'

¹³ For other Romance languages, see the remarks at the end of section 5.4.

¹⁴ In many languages superlatives are built based on comparatives, and even where this connection is not transparent, regularities in suppletive forms show that there is an affinity between superlatives and comparatives, which led to the proposal that superlatives universally include a comparative constituent (Bobaljik 2012; Szabolcsi 2012):

(i) [SUPERL [COMPAR A]]
 -EST = -ER than all the others

Therefore we cannot analyze non-agreeing *cel* as relying on an adverb meaning ‘most’: in such a case, *mult* ‘much’ would be obligatory:¹⁵

- (59) Pe ea o iubește cel mai *(mult).
 OBJ her CL.ACC loves *cel* COMP much
 ‘Her, he loves the most.’

Cel, although it can still mark definiteness in DP-initial position (see (51) and (60a)), has become an obligatory marker of the superlative and can be divorced from definiteness. Thus, it occurs postnominally in definite DPs (see (60b)), a property which is also found in French (but not in Italian and Ibero-Romance), and it can also occur prenominaly between D and N, in definite (see (60c–d) and even indefinite DPs (see (60e)), something which is ruled out in the other Romance languages, including French:

- (60) a. [cei mai buni [copii]]
cel.MPL(+DEF) COMP good children
- b. copiii [cei mai buni]
 children-the *cel.MPL COMP good* (≠ It., Ibero-Romance)
- c. [cei doi [cei mai puternici] oameni din stat]
 the.MPL two *cel.MPL COMP powerful persons in state*
 ‘the two most powerful persons in the country’ (≠ It., Ibero-Romance, French)
- d. [al doilea [cel mai bogat] om din lume]
 the second *cel.MSG COMP rich man from world*
 ‘the second richest man in the world’ (≠ It., Ibero-Romance, French)
- e. [un [cel mai scurt] drum]
 a *cel.MSG COMP short way*
 ‘a shortest way’ (≠ It., Ibero-Romance, French)

¹⁵ Moreover, all the examples of non-agreeing *cel* we presented have adjectives (*bucuros* ‘happy’, *mândru* ‘proud’) and adjectival participles (*interesat (de)* ‘interested in’, *atrás (de)* ‘attracted by’, *încântat* ‘pleased by’ = ‘happy about’), which build a degree functional projection directly, without the help of *mult* – note that besides *mai* ‘-er’, they use the high degree word *foarte* ‘very’:

- (i) Maria e foarte interesată de povești.
 Maria is very interested in stories
- (ii) Poveștile o (*foarte) interesează (mult/*foarte) pe Maria
 stories-the CL.ACC very interest much/very DOM Maria
 ‘Stories interest Maria a lot.’

It is thus reasonable to assume that even when non-agreeing, *cel* belongs to the functional degree projection of the adjective, rather than to an adverbial adjunct.

Note that even in (60a), *cel* cannot be taken to be the definite article, followed by a comparative, because the definite article with preposed APs is realized as a **definite inflection** on the adjective, even if the adjective is not the first item in the AP (see (61a)), and this **also holds for comparatives** (Giurgea 2013) – thus, in (61b) we have a true example of the configuration [D [[Comp + AP] NP]], in which case D appears affixed on A:

- (61) a. [[atât de lăudata] poezie]
 so-much of preached-the poem
 ‘the so much appreciated poem’
- b. Tot în același scop, dar cu [[mult mai dificilul] obiectiv]
 also in the-same purpose but with much COMP difficult-the goal
 al recuperării Transilvaniei de nord-vest de la Ungaria,
 GEN recovery-the.GEN Transylvania-the.GEN of north-west from Hungary
 a fost editat albumul în două volume [...]
 has been issued album-the in two volumes
 ‘For the same purpose, but with **the much more difficult goal** of getting back
 Northwestern Transylvania from Hungary, the album [...] has been issued in 2
 volumes.’ (www.basarabia91.net/2011/07/)

The contrast between (61a) and (60a) shows that *cel* is part of the superlative even when it is used to mark the definiteness of the DP. We may thus conclude that *cel* is fully grammaticalized as a superlative marker in Romanian, being a different lexeme from the strong article *cel*. (Therefore, we used the gloss SUP in the examples in sections 1-4, before coming to the discussion of *cel*.)

As a strong definite article form, *cel* is also used in case of N-ellipsis with postnominal modifiers:

- (62) cei buni
 the.MPL good
 ‘the good ones’

If a superlative occurs in a DP with no overt N, *cel* suffices to mark the DP as definite; even if the superlative would occur postnominally in the presence of an overt N, due to the Head-Final-Constraint¹⁶ (63), in case

¹⁶ The head-final constraint, which applies in head-initial domains, bans pre-head modifiers that do not end in a lexical head. In the initial formulation, before the advent of functional categories (see Emonds 1976, who calls it the “Surface Recursion Restriction”, and Williams 1982, who calls it the “head-final filter”), it bans any post-head material in prenominal modifiers.

of ellipsis it can function as a DP-initial superlative, marking the DP as definite – presumably because the Head-Final-Constraint does not apply if the head that governs the modifier is covert (64):

- (63) a. [?][cei mai buni la matematică] copii
cel.MPL COMP good at math children
 b. copiii [cei mai buni la matematică]
children-the cel.MPL COMP good at mathematics
 ‘the children best at mathematics’

- (64) Am vorbit cu [cei mai buni la matematică].
have.1SG talked with cel.MPL COMP good at mathematics
 ‘I talked to those who are best at mathematics.’

A superlative occurring in predicative position is therefore potentially ambiguous between a DP-internal superlative with N ellipsis and a truly predicative superlative:

- (65) a. Copiii sunt [_{DegP} cei mai interesați de jucării].
children-the are cel.MPL COMP interested in toys
 ‘(The) children are most interested in toys’:
 – ‘more interested in toys than other people’
 – ‘more interested in toys than in other things’ (? for some speakers)
 b. Copiii sunt [_{DP} [_{DegP} cei mai interesați de jucării] \emptyset].
children-the are cel.MPL COMP interested in toys
 ‘(The) children are the most interested in toys’:
 – ‘more interested in toys than other people’
 – *‘more interested in toys than in other things’

Note now that the reading of (65b) corresponds to the quasi-absolute reading of a predicative superlative: as we have seen in section 5.1, an internal correlate in (65b) is ruled out (the ban on DP-internal correlates also holds in Romanian, see the next subsection), so the relative reading, with *jucării* ‘toys’ as the correlate, can only rely on a predicative superlative.

Note by the way that the Romanian facts presented here constitute an argument against Matushansky’s (2008) claim that superlatives are always adnominal, always relying on a null N when they appear to be predicative. The absence of agreement on *cel* correlated with an interpretation which cannot obtain adnominally clearly points to a truly predicative use of the

superlative in examples such as (52) and (53) (to make matters clearer, we glossed non-agreeing *cel* by SUP_{-AGR}):¹⁷

- (66) Copiii sunt [DegP cel mai interesați de jucării].
 children-the are SUP_{-AGR} COMP interested in toys

Note moreover that in those Romance languages where the article is never used as a superlative marker, such as Italian, the article must be absent with postcopular relative superlatives (which are identical in form with comparatives) – see (67a), which is intended as a translation of the French example in (57); the use of the article (which must agree, being a true D) only allows the (equivalent of the) quasi-absolute reading, as expected if the superlative is embedded in a DP with a null N, instead of being predicative (67b):

- (67) a. È tra i propri figli che una madre è (*il/*la) più felice. (It.)
 is among the own children that a mother is the.MSG/FSG more happy
 ‘It’s among her children that a mother is happiest’ (i.e., happier than in other circumstances).
- b. È tra i propri figli che una madre è la
 is among the own children that a mother is the.FSG
 più felice (della famiglia)
 more happy of-the family
 ‘It’s among her children that a mother is the happiest (in the family)’ (i.e., happier than other members of the family). (S. Cruschina, p.c.)

5.5. Non-agreeing *cel* and the analysis of relative superlatives

The data we presented in section 5.3 show that Romanian tends to mark the non-identity between the EA of -EST and of the A overtly, by using a non-agreeing superlative marker. We may analyze this as a distinction between an in-situ superlative [*cel*_{+Agr} *mai*], which at most raises to a DP-internal position (see section 5.1, the discussion around (49)) and shows agreement, and a raising superlative [*cel* *mai*], which lacks agree-

¹⁷ As superlatives can appear predicatively with non-agreeing *cel*, there is no reason to assume that they cannot do so when *cel* agrees. We assume thus that (63a) is a possible analysis. This is supported by the fact that, at least for some speakers, agreeing *cel* can freely be used with internal correlates when it is predicative (see the second interpretation of (63a)), although it cannot when it is adnominal (see also 5.5 below).

ment.¹⁸ (As we have not used a semantic decomposition of EST based on the comparative, we treat [*cel mai*] as a single unit. In any case, in the only attempt of decomposition we know about, Szabolcsi (2012), both parts – Sup and Comp – are raised in order to get the desired relative readings (see her (47)).¹⁹

According to the raising analysis of relative superlatives, the non-identity between the EA of EST and the EA of the A is also encountered in adnominal relative superlatives, being a general property of relative superlatives. As non-agreeing *cel* is associated with the distinction between the two EAs, the raising analysis predicts that non-agreeing *cel* should also occur in adnominal relative superlatives. But this is not the case. Even if we use a postnominal superlative, where *cel* is not involved in definiteness marking, non-agreeing *cel* is excluded, although the superlative allows all relative readings, including the upstairs *de dicto* reading (taken to be the strongest argument for a raising analysis):²⁰

- (68) Ion trebuie să citească cartea (de istorie) {cea/*cel} mai lungă.
 Ion must SBJV reads book(F)-the of history SUP.FSG/SUP.MSG COMP long.FSG
 ‘Ion has to read the longest (history) book.’

Under in-situ analyses, this behavior is expected, because in adnominal relative superlatives, like in absolute and quasi-absolute superlatives, the EA of -EST is identical to the EA of the AP.

¹⁸ This recalls Szabolcsi’s (1986) analysis of *the... -est* as a single morpheme. Whereas, as we have seen in section 4, this analysis is problematic for English and other languages, in Romanian it is supported by the data: *cel* and *mai* are always adjacent, *cel* always accompanies *mai* in superlatives and *cel* can lack agreement. As we have seen in section 5.4, only in DP-initial position *cel* also functions as a definiteness marker, giving the impression that it is a definite article.

¹⁹ In view of (65), one might consider a different account for the contrast between agreeing and non-agreeing *cel*, taking quasi-absolute readings as relying on DP-internal superlatives with a null N as in (65b) and correlating failure of agreement on *cel* with predicative status. But there is no support for this view in the system of Romanian: predicative and adnominal adjectival projections show the same agreement properties, absence of agreement is never used to mark a predicative position.

²⁰ Likewise, in Bulgarian, where adnominal raising superlatives are correlated with absence of the article, as argued by Pancheva & Tomaszewicz (see section 5.1), superlatives embedded in a definite DP do allow the upstairs *de dicto* reading (I. Krapova, p.c.):

- (i) IVAN trjabva da napishe naj-dülgoto essè.
 Ivan must SBJV writes SUP-long-the essay
 ‘IVAN must write the longest essay.’

The behavior of internal correlates discussed in 5.1 and 5.3 also supports in-situ analyses: internal correlates are possible in predicative position, where raising -EST is found, correlated with non-agreeing *cel* (see (52a), (54), (72)), and are excluded in adnominal superlatives:²¹

- (69) Am discutat cu [turiștii cei/*cel mai interesați de monumente].
 have.1 talked with tourists-the SUP.MPL/SUP.MSG COMP interested in monuments
 Intended meaning: 'I talked to those tourists that are more interested in monuments than in other things.'
- (70) a. *Ion are [cele mai bune albume de U2]/[albumele cele mai bune de U2].
 Ion has SUP/the COMP good albums by U2 albums-the SUP COMP good by U2
 Intended meaning: 'Ion's albums by U2 are better than his other albums.'
- b. *Ion s-a întâlnit cu [cei mai tineri studenți/
 Ion has met with SUP/the COMP young students
 studenții cei mai tineri din Londra].
 students-the SUP COMP young from London
 Intended meaning: 'The students Ion met who are from London are younger than the other students Ion met.'

The correlation between internal correlates and the predicative position is also found in English (see (45) in section 5.1). Interestingly, some speakers rule out *the* in this case – i.e., with relative superlatives – (M. Maiden, p.c.), but this is not general:

- (71) John is ([%]the) angriest at Mary.

The impossibility of using *the* is expected if *the* here is an article, the superlative being DP-internal, in a DP with a null N ('the person angriest at Mary'), as DP-internal superlatives rule out internal correlates.²² For the

²¹ Concerning (69), allowing an AP-internal correlate in adnominal position might in principle be possible if postnominal complement-taking adjectives (especially those derived from participles such as *interesat* 'interested', *atrás* 'attracted' etc.) introduce reduced relatives. In this case, the superlative can raise inside the reduced relative, so as to apply to the correlate:

- (i) [The people [angriest AT THEMSELVES]] are the topic of my research.
 [people [Op_i themselves_i [-EST [$\lambda d\lambda x$ [d -angry at x]]]]]

However, we have not been able to find attested examples of adnominal non-agreeing *cel* in such environments, and agreeing *cel* disallows the internal correlate reading according to our intuitions.

²² An anonymous reviewer points out that the internal correlate reading for the version with *the* of (71) is more acceptable if an overt N is added before the superlative:

speakers who allow *the*, we have to admit that *the* is no longer a determiner, but *can* be part of the superlative, as can be seen in the occurrence of *the* with adverbial superlatives (see Huddleston & Pullum 2002, 1167–1168).²³

To conclude, the distribution of non-agreeing *cel* in Romanian supports the view that DP-internal relative superlatives do not rely on raising of -EST outside the DP; as held by in-situ analyses, the EA of -EST and of the A is the same (the external argument of the NP), which nicely fits in with the use of the definite article.

6. General conclusions

We have presented some arguments against the raising analysis of (DP-internal) relative superlatives. One important problem of the raising analysis is the consistent use of the definite article in these DPs across languages. We have shown that this use cannot be explained by treating the article as part of the superlative, because relative readings are possible in contexts where the article is clearly in D and does not form a constituent with the superlative. Moreover, we have shown that *some* relative readings do rely on -EST raising in the vicinity of the correlate, but, crucially, they have properties different from relative superlatives embedded under a definite D: in Romanian, they are only possible in predicative positions, allow internal correlates and may take a non-agreeing superlative marker. We explained the absence of agreement by the fact that -EST and the adjective have different external arguments in this case. We classified predicative superlatives into quasi-absolute (where the EA of -EST and of the A coincide) and relative (where they differ). Under the raising analysis of relative superlatives, the EA of -EST and of the A always differ. But absence of agreement is never found in adnominal relative superlatives, which sup-

John is the person angriest at Mary. We consider that in this case, [*angriest at Mary*] is a reduced relative, in which the superlative, being predicative, has the same interpretative freedom as in *John is angriest at Mary*. In the absence of an overt N however (*John is the angriest at Mary*), the superlative, if used to license a null N, cannot be a reduced relative (in that case, as with other postnominal modifiers, one would have to use the pro-form *one* in the N position: *John is the one angriest at Mary*). Thus, either there is no null N and the superlative is the postcopular predicate, in case *the* is no longer a D (see comments below in the text), which holds for the speakers who allow an internal correlate here, or the superlative is adnominal and therefore an internal correlate is ruled out.

²³ The exact status of *the* in this case is an open question, which we leave for further research.

ports the in-situ analysis, in which the EA of -EST and of the A coincide. We added, thus, a new argument for Pancheva and Tomaszewicz's proposal of a divide between raising and in-situ relative superlatives.

Appendix: Attested examples of non-agreeing *cel*

As non-agreeing *cel* is not recognized by Romanian grammars, we present attested examples in support of the claims made in section 5.3:

- (72) a. "Bucharest City Tour" le prezintă turiștilor străini 26 de obiective turistice din Capitală, dar aceștia sunt *cel mai interesați* de Casa Poporului.
 "Bucharest City Tour" presents 26 touristic sites from the capital to foreign tourists, but they are most interested in The People's House' (= they are more interested in The People's House than in the other touristic sites).
 (www.romanalibera.ro)
- b. Culmea crizei imobiliare: în primul semestru al anului, companiile au fost *cel mai interesate* de birourile de lux.
 'The paradox of real estate crisis: in the first semester of the year, the companies were most interested in expensive offices' (= the companies are more interested in expensive offices than in other types of offices).²⁴ (www.business24.ro)
- c. Adesea, ne simțim *cel mai atrași de oameni* ce manifestă trăsături care nouă ne lipsesc.
 'We often feel most attracted by people who exhibit features that we lack' (= we are more interested in people who exhibit features that we lack than in other types of people).
 (oxanelu.blogspot.com)
- d. Află care este momentul în care ești *cel mai productiv*.
 'Find out the moment when you are most productive.'
 (teen.unica.ro/detalii-articol/stiri/100-lucruri-care-te-vor-face-fericita-instant.html)
- e. Astfel, ei vor putea afla momentele în care pot fi *cel mai productivi și eficienți*.
 'Thus, they will be able to find out the moments in which they can be most productive and efficient.'
 (curierulnational.ro)
- f. Întotdeauna o să fim *cel mai mândri de ceea ce am realizat prin propriile forțe*.
 'We'll always be proudest by what we achieved by ourselves.' (www.fiscalitatea.ro)
- g. Gerovitalul, inventat de medicul român Ana Aslan, este invenția de care ar trebui să fim *cel mai mândri*.
 'The Gerovital, invented by the Romanian physician Ana Aslan, is the invention we should be proudest about.'
 (www.ziare.com/magazin/inventii)

²⁴ The largest context confirms this interpretation: *Birourile din clasele superioare de calitate, respectiv A și B+, au fost cele mai cautate de către companii în primul semestru al acestui an* 'The offices of the high quality classes A and B+ have been the most in demand by the companies in the first semester of this year.'

- h. Se pare că lumea e *cel mai interesată* de această ofertă.
 ‘It seems that people are most interested in this offer.’ (ro-ro.facebook.com)

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