

The Romance of modal superlatives as degree descriptions*

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Abstract In this paper, I present a novel compositional analysis of modal predicative superlatives, that is, predicative superlatives accompanied by modal adjectives such as *possible*, as that in (1).

- (1) Mary wanted to be the prettiest possible.

I argue that they are elliptical *bona fide* degree-relative clauses denoting maximal degrees and whose semantic contribution is similar to that of Measure Phrases. This account will require a novel composition of the superlative which involves the formation of an ordered set and the selection of a maximal element. I argue that not only is this account able to derive their peculiar semantics (dispensing us from the *ad hoc* components that previous accounts posited), but it can also capture the morphosyntax of these constructions, especially in Romance languages, which turn out more informative than English in this respect.

Keywords: modal superlatives, degree constructions, Romance, definiteness, relative clauses

1 Introduction

In this paper, I defend a novel compositional analysis of modal superlatives, that is, superlatives accompanied by certain modal adjectives, such as *possible*, that give rise to the so-called modal superlative reading. The existing literature on modal superlatives mainly deals with cases such as (2) and (3) where the superlative adjective modifies a head noun (see Larson (2000), Schwarz (2005) and Romero (2013)). It is well established that when *possible* appears prenominally (as in (3)), the combination of superlative predicates and the modal adjective can also have a regular modifier reading.

- (2) Don tried to hire the kindest girl possible.
(3) Don tried to hire the kindest possible girl.

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- a. Regular modifier reading: ‘Don tried to hire the kindest x such that x is possibly a girl’
- b. Modal superlative reading: ‘Don tried to hire as kind a girl as it was possible for him/one to hire’

This paper is concerned with a particular type of modal superlative that was not discussed before and that I refer to as a modal predicative superlative (MPS henceforth). (4) is a MPS in English whereas (5) and (6) provide examples of MPSs in Italian and Spanish. As I will show, these Romance languages play an important role in the proposal I put forth.

- (4) Mary wanted to be the kindest possible.
- (5) Maria voveva essere il/quanto più preparata possibile.
 Maria wanted to.be the.SG.M/how.much more preparedSG.F possible
 ‘Maria wanted to be the most prepared possible.’
- (6) María quería estar lo más preparada posible.
 Maria wanted to.be it.SG.M more prepared.SG.F possible
 ‘Maria wanted to be the most prepared possible.’

The superlatives in (4)-(6) differ from (2)-(3) in that they are not associated with a nominal projection. That is, the postcopular phrases in (4)-(6) are assumed not to contain a noun phrase.¹ The absence of a nominal phrase will dispense us from having to discuss the syntactic distribution of the modal adjective relative to the nominal head, including the properties of the regular modifier reading. Since this interpretation is only possible in the presence of a nominal phrase, this paper will not have anything to say about it.

As we will see in more detail in Sections 2 and 3, MPSs have peculiar semantic and syntactic properties that uniquely apply to them. First, they can be paraphrased using an equative construction. That is, *the A-est possible* is very close in meaning to ‘as A as possible’. This is a typical feature of amount relatives and it is not shared by non-modal superlatives. Second, they have a cluster of peculiar morphosyntactic features that distinguish them from other superlatives. Romance languages will turn out to be more informative than English in this respect.

In a nutshell, I account for these facts as follows. I argue that MPSs are unique in that they involve an elliptical *bona fide* degree (or amount) relative clause which denotes a single degree and whose semantic contribution is similar to that of a Measure Phrase. This account will require a novel composition of superlatives which involves the formation of an ordered set and the selection of a maximal element. I argue that not only is this account able to derive their peculiar semantics (dispensing

¹ For discussion of this assumption see Loccioni (2018).

us from the *ad hoc* components that previous accounts posited), but it can also capture the morphosyntax of these constructions. As an example, it can account for the presence of the definite determiner, which none of the existing analyses interpret in the usual way.

The rest of the paper is organized as follows. Section 2 discusses the unique interpretative properties of modal superlatives and presents the previous accounts of that. Section 3 introduces the relevant Romance data that will play a role in the proposal, which is developed in Section 4. Section 5 offers some general discussion of the consequences and loose ends of the analysis. Lastly Section 6 concludes.

2 The interpretation of modal superlatives and previous accounts

2.1 The “equative force” of modal superlatives

Semantically, modal superlatives are unique in that they have what Schwarz (2005) calls “equative force”. That is, they can be paraphrased using an equative construction as shown in (7).

- (7) (Yesterday) Mary was the kindest {possible/ she could be}
≈ (Yesterday) Mary was as kind as {possible/ she could be}

This is a typical feature of so-called *amount (or degree) relatives* which are relative clauses interpreted as a property of amounts or degrees. Two famous examples of this types of relatives are given in (8) and (9) (see Carlson (1977), Heim (1987), Grosu & Landman (1998) Grosu & Landman (2013), a.o for discussion).

- (8) It will take us years to drink the champagne that they spilled that evening.
≈ It will take us years to drink as much champagne as they spilled that evening
adapted from Heim (1987)
- (9) John put in his bag [every book he could].
≈ John put in his bag as many books as he could Grosu & Landman (2013)

The sentence (8) is most naturally interpreted as referring to an *amount* of champagne and not to a specific champagne, even if an *object* interpretation is available. Same for (9) which, on its most natural interpretation, says that John put in his bag as many books as he could fit in.

A consequence of the fact that *the A-est possible* roughly means ‘as A as possible’ is that MPSs are compatible with ties. That is, (7) is judged true as long as in no accessible world is Mary kinder that she wanted to be. It turns out that modal superlatives are unique in this respect. None of the non-modal predicative superlatives have “equative force”. They have instead stronger truth conditions that



Figure 1 The “zen flavor” of modal superlatives.

result in incompatibility with ties. In order to show the difference, let me consider two different types of non-modal predicative superlatives. They are provided in (10). The first type is one where the comparison class is overtly provided by a relative clause containing an NPI element. It is shown in (10-a). In the second type the superlative associates with a focus element that provides the alternatives (*yesterday* in (10-b)).

- (10) a. Yesterday, Mary was the kindest she has ever been
 b. Mary was the kindest *yesterday*_F
 ≠ Yesterday Mary was as kind as on a day when she was the kindest

The reader may have already noticed that (10-a) and (10-b) have a very similar interpretation, despite their different surface structures. In particular, the NPI element in (10-a) *ever* seems to play a role similar to that of the focused phrase *yesterday* in (10-b), as explicitly suggested by Howard (2014). They both introduce alternatives. Importantly, both sentences in (10) require that yesterday was the *only* time where Mary was kind to that unparalleled level. The same uniqueness requirement does not extend to MPSs, which have weaker truth conditions. Consider (7). The speakers’ intuitions are that it does not mean that yesterday Mary was kinder than she could be. On the contrary (7) is judged true as long as in no other accessible world was Mary kinder than she was in the actual one. In other words, the uniqueness requirement associated with the time variable in (10) does not extend to the world variable in (7).

In the next section I review the existing accounts of modal superlatives and I show how they derive the peculiar semantics of these constructions.

2.2 Previous accounts

In the literature, there are three main accounts of English modal superlatives: (i) Larson (2000), (ii) Schwarz (2005) and (iii) Romero (2010), (2013). They all focused

on DPs with a nominal projection (like (2), (3) and (11-a) below) and did not discuss predicative cases like (4). Here only the features of their accounts that are relevant for MPSs are discussed.

Larson (2000) analyzed the modal predicate *possible* in (11-a) as a postnominal reduced relative clause with an infinitival complement. This is shown in (11-b). The elided clause contains an antecedent-contained deletion (ACD) gap \blacktriangle (shown in (11-c)) that is resolved by extracting the noun phrase containing the ellipsis site from the antecedent and reconstructing \blacktriangle with an infinitive form of the matrix clause (as in (11-d)).

- (11) a. John bought the largest present possible
 b. John bought the largest present [_{RC} possible for him to buy *t*]
 c. John bought the largest present [_{RC} possible \blacktriangle_{ACD}]
 d. [_{DP_i} the largest present [*Op_i* possible [for John to buy *t_i*]]] [John bought *t_i*]

Larson (2000) does not provide a semantic account for (11-a) and seems to have in mind a standard individual-based relative clause for postnominal *possible*. That would not be able to account for MPSs, where no nominal head is present. A way to adjust Larson's analysis to extend to these data is to interpret [*possible* \blacktriangle] as an amount relative clause. As we will see that is exactly what Romero (2013) proposes and that I will also adopt as part of my proposal. Before turning to her account, let me briefly review the second approach to modal superlatives, due to Schwarz (2005).

Schwarz (2005) argues that *-est possible* should be treated as a non-decomposable lexical item which is taken to denote a degree operator with the same categorial status as *-est*. The two degree operators are assigned the meanings in (12) and (13). In (12), P and Q range over properties of degrees whereas **Q** is a contextually determined set of properties of degrees. In (13), P ranges over intensional degree properties; w and w' range over possible worlds; and R is an accessibility relation between possible worlds.

$$(12) \quad \llbracket \text{est} \rrbracket = \lambda P_{\langle d, st \rangle}. \exists d [P(d) \ \& \ \forall Q \in \mathbf{Q} [Q \neq P \rightarrow \neg (Q(d))]]$$

$$(13) \quad \llbracket \text{est possible} \rrbracket^w = \lambda P_{\langle s, dt \rangle} [\forall d [\exists w' [wRw' \ \& \ P(w')(d) = 1] \rightarrow P(w)(d) = 1]]$$

Since (11-a) is assigned the LF in (14-a) (where A is the abstract indefinite determiner associated by Szabolcsi (1986) to relative interpretations of superlatives), it produces the truth conditions (14-b). It says that in no other accessible world did John buy a present larger than the one he bought in w.

- (14) a. [_{DegP} est possible] λ_1 [John bought A [_{AP} e₁ large] present]
 b. $\forall d [\exists w' [wRw' \ \& \ \text{John bought a d-large present in } w'] \rightarrow \text{John bought } d]$

a d-large present in w]

Schwarz's (2005) machinery could be used to derive the meaning of MPSs. Consider (15), which is a simplified version of (4) (simplified to avoid the complications of the control structure of *want*). The logical form and truth conditions of (15) are given in (16-a) and (16-b).

(15) Mary is the kindest possible

- (16) a. $[_{DegP} \text{ est possible }] \lambda_1 [\text{Mary is } [_{AP} d_1 \text{ kind }]]$
 b. $\forall d [\exists w' [wRw' \ \& \ \text{John is a d-kind in } w'] \rightarrow \text{Mary is d-kind in } w]$

(16-b) says that in no accessible world is Mary kinder than she is in the actual world. This derives truth conditions equivalent to '(at least) as pretty as possible', which is a desirable result. Note, however, that this is due to the stipulated meaning that Schwarz (2005) assigned to *-est possible*. Under his analysis, the "equative force" of modal superlatives is not derived from the meaning of bare *-est*, as the two operators are taken to be independent from each other. Ideally, the meaning of *-est possible* should be derived compositionally from the meaning of *-est* and the meaning of *possible*, but Schwarz (2005) assumes that such a derivation "is unlikely to succeed". As we will see, Romero's analysis is an attempt to provide such a compositional analysis. I turn to her account next.

In her analysis of modal superlatives, Romero (2013) builds on both Larson (2000) and Schwarz (2005). First, she follows Larson (2000) in taking *possible* to head a reduced relative clause with an ACD gap, but she interprets the constituent [possible \blacktriangle] as a relative clause ranging over degrees and not over individuals:

(17) [λd [possible \blacktriangle_{ACD}]]

Second, she claims that a shifted version of (17) (see below) overtly expresses the comparison class and first argument argument of *-est*. For the superlative morpheme, she uses the two-place lexical entry in (18) (see Romero (2010) for discussion of why a two-place lexical entry may be preferable).

(18) $[[-est]] = \lambda Q_{\langle dt, t \rangle} . \lambda P_{\langle d, t \rangle} . \exists d [P(d) \ \& \ \forall Q \in \mathbf{Q} [Q \neq P \rightarrow \neg (Q(d))]]$

Note that (18) differs from the lexical entry that Schwarz (2005) assumes (see (12)) in that: (i) \mathbf{Q} is an argument of the superlative morpheme rather than being contextually determined, and (ii) quantification is over degree sets rather than degree properties. This latter point is also an element of diversion from Heim's (1999) original proposal and it turns out to play a central role in Romero's compositional analysis, as I will show later.

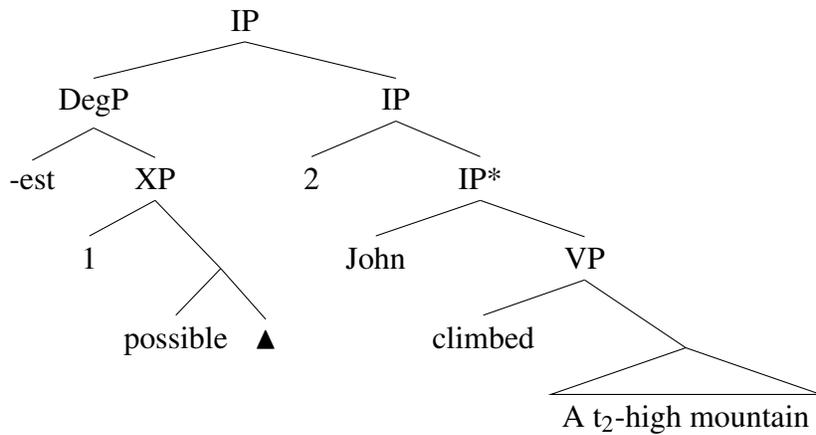
The SHIFT operation spelled out in (19) takes the set of degrees [λd [possible

▲]] and turns it into a set of upper-bound degree sets (of type $\langle dt, t \rangle$), making it into a suitable argument for *-est*:

$$(19) \quad \text{SHIFT}_{\langle d,t \rangle \rightarrow \langle dt,t \rangle}^\downarrow = \lambda D_{\langle d,t \rangle} . \lambda D'_{\langle d,t \rangle} . \exists d' [D(d') \ \& \ D' = \lambda d'' . d'' \leq d']$$

Lastly, the DegP [*-est* 1 possible ▲] moves out of the host NP to gain sentential scope, as shown in tree structure below for the example sentence in (20). In this way the ACD gap is resolved and a suitable second argument for *-est* is created.

(20) John climbed the highest possible mountain



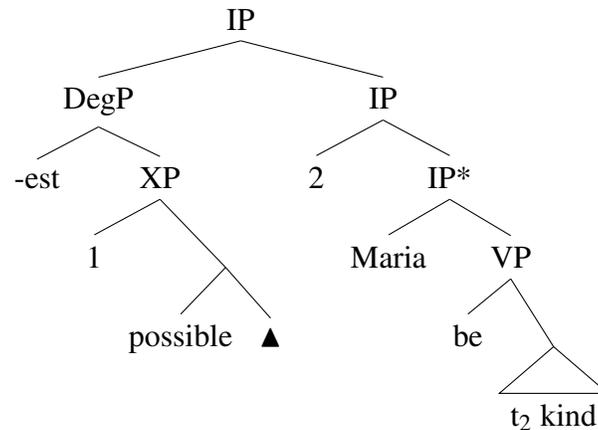
Romero’s LF for (20) is given in (21-a) and the corresponding truth conditions in (21-b)

- (21) a. **LF:** [-est [1 possible \langle for John(/him) to climb A t_1 -high mountain \rangle]] [2 John climbed a t_2 -high mountain]
- b. $[[(20)] = 1$ iff
 $\exists d [\exists x [\text{mount}(x) \ \& \ \text{climb}(j,x) \ \& \ \text{high}(x,d)] \ \& \ \forall D' [(\exists d' [\diamond \exists x [\text{mount}(x) \ \& \ \text{climb}(j,x) \ \& \ \text{high}(x,d')] \ \& \ D' = \lambda d'' . d'' \leq d'] \ \& \ D' \neq \lambda d . \exists x [\text{mount}(x) \ \& \ \text{climb}(j,x) \ \& \ \text{high}(x,d)]] \rightarrow \neg D'(d)]]$
 “There is a degree (of height) d s.t. John climbed a d -high mountain and there is no degree higher than d s.t. it is possible for John to climb a mountain of that height”

(20) derives truth conditions similar to Schwarz’s. It says that it is not possible for John to climb a mountain higher than the one he climbed. Romero’s machinery can also be used quite successfully to derive the meaning of MPSs. To illustrate how this works, I will consider (15) (repeated in (22)) once again. In this case the first

argument for *-est* would be the shifted version of [1 possible < for Maria/one to be t_1 kind >] and the second argument would be the set of degrees [2 Maria is t_2 kind]. The details are given below.

(22) Mary is the kindest possible



(23) **LF:** [[-est [1 possible < for Maria/one to be t_1 kind >]] [2 Maria is t_2 kind]]

- (24) a. $\llbracket \llbracket 2 \text{ Maria is } t_2 \text{ kind} \rrbracket \rrbracket = \lambda d. [\text{kind}(m,d)]$
 b. $\llbracket \llbracket 1 \text{ possible} < \text{for Maria/one to be } t_1 \text{ kind} > \rrbracket \rrbracket = \lambda d. \diamond [\text{kind}(m, d)]$
 c. **SHIFT** ($\llbracket \llbracket 1 \text{ possible} < \text{for Maria/one to be } t_1 \text{ kind} > \rrbracket \rrbracket$) = $\lambda D'. \exists d' [\diamond [\text{kind}(m, d')] \& D' = \lambda d''. d'' \leq d']$
 d. $\llbracket \llbracket (15) \rrbracket \rrbracket = 1$ iff $\exists d [\text{kind}(m, d)] \& \forall D' [(\exists d' [\diamond [\text{kind}(m, d')]] \& D' = \lambda d''. d'' \leq d') \& D' \neq \lambda d. [\text{kind}(m,d)]] \rightarrow \neg D'(d)$
 “There is a degree d s.t. Mary is d -kind and there is no degree higher than d s.t. it is possible for Mary to be *that* kind”

We derived an appropriate interpretation that matches speakers’ intuitions. (22) is true if Mary in the actual world is kind to a degree such that it is not possible for her to be kinder than *that*. That is, in no accessible world is Mary kinder than she is in the actual world. In some of these worlds, however, she could be as kind as she is in the actual one. The reader can easily verify that this treatment has the welcome result of allowing ties.

Crucially, this particular interpretation is the result of the fact that quantification is taken to be over degree sets. Quantification over degree properties instead would not be able to derive the “equative force” of modal superlatives. The reason why quantification over degree sets is successful (whereas using degree properties would not be) boils down to the fact that degree sets that have the same extension are

indistinguishable. Assume for example a model with a total of 5 worlds: w_0 (the actual world), w_1 , w_2 , w_3 and w_4 and a scenario where Mary is as kind in w_0 as she is in w_4 . In any other world she is less kind than that. In this scenario, the degree operator in (18) would not be able to distinguish between the following (extensionally identical) sets of degrees:

- (25) a. λd .Mary is d-kind in w_0
 b. λd .Mary is d-kind in w_4

If (25-a) and (25-b) are identical, then (25-b) would be not computed as one of the sets (25-a) is compared against. This is because the superlative only takes into account degree sets that are distinct from [λd . [Mary is d-kind in w_0]]. For this reason, (24) would map to True.

If quantification over degree properties is used instead, *-est* would be able to distinguish between the intentions of (25-a) and (25-b). As a result, it would derive truth conditions that are too strong, namely that (24) would be true only if there is no other possible world in which Mary is as kind as she is in w_0 . In our context, then, (24) would map to False.

Hence, quantification over degrees derive the “equative force” of modal superlatives. Unfortunately this also means that it cannot be extended to non-modal cases (such as (10-a) and (10-b)), because it would derive wrong truth conditions. In the case of (10-a) (repeated in (26)) for example, it would derive the meaning roughly paraphrased in (26-b) instead of (26-a), contrary to intuitions.

- (26) Yesterday, Mary was the kindest she has ever been
 a. \approx Mary was kinder yesterday than she was in any other relevant time
 b. $\not\approx$ Yesterday, Mary was as kind as she has ever been

This is again due to the fact that *-est* would not be able to distinguish between identical degree sets. As the reader can verify for herself, for the correct truth conditions to obtain, we need to quantify over degree properties.²

To conclude this section, both Schwarz (2005) and Romero (2013) are able to derive the desired “equative” interpretation of modal superlatives, but they do so at the expense of having some *ad hoc* components in their analysis. In the case of Schwarz (2005), *-est possible* is considered a non-decomposable degree operator, whose meaning is unrelated to the meaning of bare *-est*. This does not seem a desirable component of the analysis. In the case of Romero (2013), a more familiar meaning for *-est* is assumed but with a particular type of quantification (over degree sets) that could not be extended to other non-modal superlatives.

To add to that, they both inherit a well-known problem shared by any Heimian

² For discussion of this point, see Howard (2014).

scopal theory of superlatives, which is that the definite determiner is not interpreted in the usual way. In the semantic compositions above, it has merely existential force. This is particularly surprising in the case of Romance modal superlatives given the data I am going to present in the next section. As I will show, modal superlatives turn out to be the only case of predicative superlatives that allows the presence of an overt definite determiner in languages like Italian and Spanish.

3 Morphosyntactic properties of Romance Modal Superlatives

In the previous section we observed that modal superlatives have unique semantic properties. That is, they are the only ones to have “equative force” and therefore to be compatible with ties. On the other hand, if we consider English data alone, they do not look morphosyntactically very different from other non-modal superlative phrases. In all the examples below, for instance, the predicate appears with a definite determiner. Sentences (27-a) and (27-b) appear particularly similar. In both cases, the superlative embeds a relative clause structure.

- (27) a. Yesterday Mary was the kindest {possible/ she could be}
 b. Yesterday Mary was the kindest she has ever been
 c. Mary was the kindest YESTERDAY

This is where languages like Italian and Spanish turn out to be useful in allowing one to identify some morphosyntactic properties that uniquely belong to modal superlatives and that are not shared by their non-modal counterparts. I turn to these languages next.

First of all, the Italian (and Spanish) counterparts of (27) do not have the same grammaticality status as English. This is shown in (28), where I present Italian data.³ Whereas the modal superlative in (28-a) is fully acceptable, (28-b) and (28-c) are ungrammatical.

- (28) a. Maria è stata il più carina che poteva (con i clienti)
 Mary was the.M more nice.F that she.could with the costumers

³ It may be useful to inform (or remind) the reader that Romance languages lack a morphological distinction between *more* and *most* and the superlative interpretation seems to arise as a combination of a definite marker and a comparative morpheme only.

- (i) a. Nino è più alto (di Lenuccia)
 Nino is more tall than Lenuccia
 ‘Nino is taller (than Lenuccia)’
 b. Nino è il più alto
 Nino is the more tall
 ‘Nino is the tallest’

- ‘Mary was the nicest she could be (with the costumers)’
- b. *Ieri, Maria è stata { il/ la/ Ø } più carina che fosse
 Yesterday, Mary was the.M the.F more nice she has.SUBJ
 mai stata.
 never been
- c. *Ieri Maria era { il/ la/ Ø } più carina
 Yesterday Maria was the.M the.F more nice

In (28-a) the determiner does not agree in gender with the adjective *carina*, ‘nice/pretty’. This type of mismatch is only attested in modal superlatives:

- (29) Maria era la/* il più carina
 Maria was the.F the.M more nice
 ‘Maria was the nicest one’

Consider (28-c) next. There, an unsuccessful attempt is made to convey the relevant relative reading using three strategies: (i) the non-agreeing determiner *il*, (ii) the feminine determiner *la* or (iii) no overt determiner. The first option results in ungrammaticality altogether whereas the other two are grammatical but not under the intended interpretation. In particular an agreeing determiner would deliver an absolute interpretation (where Maria is compared to other relevant female people) whereas the absence of a determiner would result in a comparative reading. These two options are shown below.

- (30) Ieri Maria era la più gentile
 Yesterday Maria was the.F more kind
- a. Maria was kinder than any other relevant female person
 b. *Maria was kinder yesterday than she was on any other relevant day
- (31) Ieri Maria era più gentile
 Yesterday Maria was more kind
 ‘Yesterday Maria was kinder/*the kindest’

From the perspective of [Loccioni \(2018\)](#), (30) shows that in this case the superlative must be attributive and cannot have a purely predicative construal. In other words, the postcopular superlative in (30) modifies a null head noun and the determiner agrees in gender with the nominal head.

- (32) la più gentile N

Leaving attributive superlatives on the side, what we can infer from the facts above is that whereas an MPS can appear as the sentential predicate in Italian (see (28-a)), non-modal predicative superlatives cannot (as shown in (28-c)).

More generally, in Italian and Spanish the predicative superlatives which underlay relative readings are possible only DP-internally and they are dependent on the presence of a higher definite determiner (again, see Loccioni (2018) for discussion). They cannot be spelled out with their own determiner to appear as the main sentential predicate (see (28-c)). This does not extend to MPSs. Not only can they appear with an overt determiner as sentential predicates as we just saw, but they are also compatible with an indefinite determiner at the higher DP level. This is shown in (33-a). (33-b) shows that the same is not possible in non-modal cases.

- (33) a. Elena ha bisogno di una torta il più grande possibile.
 Elena has need of a cake the more big possible
 ‘Elena needs the biggest possible cake.’
 b. *Elena ha bisogno di una torta il più grande.
 Elena has need of a cake the more big
 int. ‘Elena needs the biggest cake.’

Moreover, in MPSs the nominal phrase can be cliticized to the exclusion of the predicate, as shown in (34-a). The same does not extend to non-modal superlatives.

- (34) a. La voglio il più grande possibile
 CL I.want the more big possible
 ‘I want it (to be) the biggest possible’
 b. *La voglio il più grande
 CL I.want the more big
 int. ‘I want it (to be) the biggest’ [ref. to some *torta*, cake]

Overall these data clearly suggest that Romance MPSs show a level of syntactic independence that their non-modal counterparts do not have. Unlike other predicative superlatives in Romance, they form a syntactic constituent that is headed by a definite determiner and that can appear as the sentential predicate.

In addition to that, MPSs look suspiciously similar to other (free) amount relatives in these languages. Compare the Spanish MPS in (35) with the free relatives in (36) that are normally taken to denote a single degree. Among other properties, they both appear with the neutral/pronominal form of the determiner, *lo*.

- (35) María quería estar lo más preparada (que fuera) posible
 Maria wanted to.be it.M.S more prepared.S.F that was possible
 ‘Maria wanted to be the most prepared possible’
 (36) Susana es más preparada de [lo que lo es María]
 Susana is more prepared of the that it is Mary
 ‘Susana is more prepared than Mary is’

In Italian the *wh* word *quanto*, ‘how much’ can be used in MPSs as an alternative to the definite determiner. *Quanto* is also used in *than*-complements, which are normally assumed to denote single degrees (as show in (38)).

- (37) Lila è più delicata di [quanto non (lo) sia Lenuccia]
 Lila is more gentle *di* how(much) EXPL.NEG CL be.SUBJ Lenuccia
 ‘Lila is taller than Lenuccia (is).’
- (38) Lila voleva essere [quanto più delicata possibile]
 Lila wanted to.be how(much) more gentle possible
 ‘Lila wanted to be the gentlest possible.’

To sum up, Romance languages like Spanish and Italian clearly show that MPs are morphosyntactically unique. They seem to form an independent syntactic constituent, which can be headed by a definite determiner and can appear in positions were their non-modal counterparts are not able to. Overall they look very similar to constituent that are normally taken to be degree descriptions. In the next section I argue that they are in fact *bona fide* degree relatives which denote maximal degrees that saturate the degree of the adjective directly.

4 Modal superlatives are degree descriptions

I take the facts mentioned above to suggest that the degree phrase in these modal cases is a free relative that denotes a single *maximal* degree and not a set of degree sets (as in Romero (2013)). The role of the DegP is to provide a degree that saturates the degree slot of the adjective. In this respect the DegP has a similar contribution as that of the Measure phrase *5 feet* in (39-a).

- (39) a. Elena wants to be [5 feet] tall
 b. Elena wants to be [the -est possible ▲] kind

This particular treatment reproduces what Mendia (2017) proposes for degree relatives such as the one in (40), which does not involve a superlative morpheme but arguably some process of maximalization.

- (40) Pedro es lo alto que es Juan.
 Pedro is the tall that is Juan
 ‘Pedro is as tall as Juan’ Mendia (2017)

Mendia argues that the free relative *lo alto que es Juan* provides a degree argument for a second occurrence of the adjective *alto* that is deleted under identity (as shown in (41)). He assigns to *lo* the semantics of MAX in (42) and to the free relative the interpretation in (43).

(41) [AP [DP lo [CP [DP *Op_{wh}*alto] [C' que es Juan]]] [AP <alto>]]

(42) $\llbracket \text{MAX} \rrbracket = \lambda N_{\langle dt \rangle} . \iota d [d \in N \ \& \ \forall d' [d' \in N \ \& \ d \neq d' \rightarrow d' < d]]$

(43) $\text{MAX}(\lambda d.tall(d, Juan))$

I adopt a similar structure for MPSs in Romance. Unlike Mendia, however, I place the measure/degree phrase on the right, as in Romance they normally follow the adjective (exemplified by Italian here).

(44) a. L' uomo era alto [*MP* due metri]

The man was tall two meters

b. The man was [*MP* two meters] tall.

Zamparelli (2000)

The resulting structure for the predicate in (45) is provided in (46).

(45) Lenuccia è il più gentile possibile.

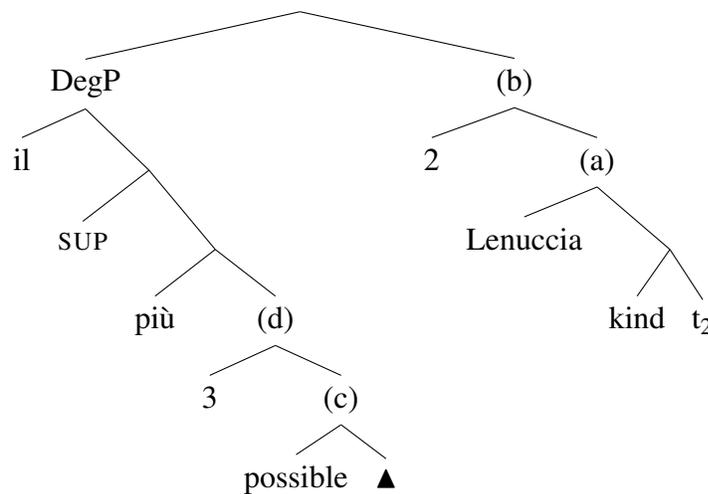
Lenuccia is the more kind possible

'Lenuccia is the kindest possible.'

(46) [AP [AP <gentile>] [*DegP* il [più [CP [*Op_{wh}* gentile] [C' possibile]]]]]]

The main steps of the semantic derivation of (45) are given below. First, as in Larson (2000), I assume that it contains an ACD gap. I take from Romero (2013) the insight that abstraction in the gap is over degrees and that the gap is resolved by QRing the *DegP* and reconstructing the \blacktriangle with the lowest clause ((a) in the example below).

(47)



In the calculation of the meaning of the the Degree Phrase, I diverge from the standard assumption of treating the superlative as an atom and I break it down into

two distinct components: (i) a comparative morpheme that creates a total ordering of degrees and (ii) an ordinal-like element SUP that turns the ordered set into a singleton containing the maximal degree.

Finally, the definite determiner performs a “uniqueness test” and returns the unique maximal degree. Note that the two operations in (i)-(ii) *plus* the function played by the definite determiner are assumed to mimic *de facto* what MAX (as given in (42)) could do. In (50-e), the result of applying, *il*, SUP and *più* to the set denoted by (50-d) will be noted as MAX(N). This is done for the sake of simplicity and readability. The three operations should be thought as distinct.

$$(48) \quad il \circ SUP \circ più = MAX$$

The structure in (49) is fed to semantic interpretation. The semantic composition of the Degree phrase is spelled out in (50).

$$(49) \quad [LF] = [[MAX 3 \text{ possible } \langle \text{for Lenuccia to be } t_3\text{-kind} \rangle] [2 \text{ Lenuccia (is)} t_2\text{-kind}]]$$

$$(50) \quad \begin{aligned} \text{a.} & \quad \llbracket \text{Lenuccia kind } t_2 \rrbracket = \text{kind}(\text{Lenuccia}, g(2)) \\ \text{b.} & \quad \llbracket 2 \text{ Lenuccia kind } t_2 \rrbracket = \lambda d. \text{kind}(\text{Lenuccia}, d) \\ \text{c.} & \quad \llbracket \text{possible } \langle \text{for Lenuccia (to be) kind } t_3 \rangle \rrbracket = \diamond[\text{kind}(\text{Lenuccia}, g(3))] \\ \text{d.} & \quad \llbracket 3 \text{ possible } \langle \text{for Lenuccia (to be) kind } t_3 \rangle \rrbracket = \lambda d. \diamond[\text{kind}(\text{Lenuccia}, d)] \\ \text{e.} & \quad \llbracket \text{DegP} \rrbracket = \llbracket MAX 3 \text{ possibile } \langle \text{for Lenuccia to be } t_3\text{-kind} \rangle \rrbracket = \\ & \quad MAX(\lambda d. \diamond[\text{kind}(\text{Lenuccia}, d)]) = \\ & \quad \iota d. \diamond[\text{kind}(\text{Lenuccia}, d)] \ \& \ \forall d' [\diamond[\text{kind}(\text{Lenuccia}, d)] \ \& \ d \neq d' \rightarrow d' < d] \end{aligned}$$

As shown in (50-e), the DegP ends up denoting a unique maximal degree. Given the semantics of MAX, $\llbracket MAX(\lambda d. \diamond[\text{kind}(\text{Lenuccia}, d)]) \rrbracket$ should be thought as a shorthand for:

$$(51) \quad \iota d[\diamond[\text{kind}(\text{Lenuccia}, d)] \ \& \ \forall d' [\diamond[\text{kind}(\text{Lenuccia}, d')] \ \& \ d \neq d' \rightarrow d' < d]]$$

We are now ready to calculate the meaning of the root node. The unique maximal degree denoted by the DegP measures the degree of the property denoted by *kind*. In particular, DegP will be taken as an argument by its sister (b), which is of the appropriate type, $\langle d, t \rangle$. The whole sentence then asserts that Lenuccia is *that* kind, where *that* is equal to the maximal degree such that she cannot possibly be kinder than that. This is shown in (52):

$$(52) \quad \begin{aligned} \llbracket (45) \rrbracket & = \llbracket (b) \rrbracket(\llbracket \text{DegP} \rrbracket) \\ & = 1 \text{ iff } \text{kind}(\text{Lenuccia}, MAX(\lambda d. \diamond[\text{kind}(\text{Lenuccia}, d)])) \end{aligned}$$

When the degree phrase is defined,⁴ this derives the same truth conditions as Romero (2013). It does so interpreting the degree phrase as a degree description of type *d*.

Note that both the uniqueness test and maximalization happen in immediate succession, at the degree level. This explains why it is hard to provide a comparative paraphrase to these constructions: they do not compare entities. It turns out that modal superlatives are unique in this respect. From the current perspective, modal superlatives are the only ones that involve a true d(egree)-interpreted amount relative.

5 General discussion and loose ends

This paper contributes to the point partially made by Howard (2014) that the two relative clauses in (53) cannot be given the same treatment. The question of whether a unified treatment is possible was left open by Romero (2013).

- (53) a. Mary was the kindest [she could be].
 b. Mary was the kindest [she has ever been].

Not only do they have very distinctive semantic properties but they also differ morphosyntactically, at least in languages such as Italian and Spanish. In this paper I argued that their properties are the result of a derivation where maximalization and the uniqueness test happen at the degree level in immediate succession. This returns a degree description (of type *d*) which can be fed to the adjective.

Modal superlatives can thus be thought of as partitives constructions over degrees. In this respect, they are parallel to partitives over individuals such as (54).

- (54) the prettiest of his sisters

In the same way in which (54) takes the comparison class overtly, so do modal superlatives. Unlike our modal cases, however, (54) denotes a unique individual and not a maximal degree. In order to capture the morphosyntactic partitive nature of modal superlative, a novel compositional analysis was proposed in this paper. I composed modal superlatives in four main steps. First, the comparison class of degrees is formed. Second, the comparison component of the superlative creates a total ordering of degrees. Third, the ordinal-like element SUP turns the ordered

⁴ The fact that the existence of a unique maximal degree is required in order for the relative clause to be defined could potentially be a problem, as pointed out to me by Yael Sharvit. An example of a problematic case is provided by sets where no maximal element can be identified. Take as an example the set of prime numbers. Unless we contextually restrict the set of numbers under consideration, *the largest prime number* fails to refer. Here, I avoid this problem by assuming that the context always plays the role of restricting the set of degrees under consideration to a finite set. I set aside for future investigation any potential side-effects of this decision.

set into a singleton containing the maximal degree. Lastly, the determiner performs a uniqueness test and returns the unique maximal degree. This is a new way of analyzing superlatives that takes the morpho-syntax of these constructions into account.⁵ On the other hand, an analysis based on the Heimian meaning of *-est* in (18) (and repeated in (55)) would not capture the shape of these constructions.

$$(55) \quad \llbracket \text{-est} \rrbracket = \lambda \mathbf{Q}_{\langle dt, t \rangle}. \lambda \mathbf{P}_{\langle d, t \rangle}. \exists d [\mathbf{P}(d) \ \& \ \forall \mathbf{Q} \in \mathbf{Q} [\mathbf{Q} \neq \mathbf{P} \rightarrow \neg (\mathbf{Q}(d))]]$$

Many questions are left open to future research. Let me mention two. First, it is unclear why the strategy underlying modal cases is not available to non-modal superlatives. Second, my analysis of modal superlatives as free degree relatives does not explain why the comparative or superlative morpheme is needed in order to get maximality. Let me be more specific about these two issues for which, unfortunately, I do not have explanations to offer at this point.

We noted that MPSs are the only ones which have equative force as a result of a particular derivation where a degree relative is formed. A similar strategy where maximalization and the uniqueness test happen in immediate succession at the degree level is not available in a non-modal case such as (53-b). If an analysis of the modal as an existential quantifier over possible worlds is on the right track, why does existential quantification over individuals and times work differently? In other words, why is the degree description in (56-a) a possible one, but not the one in (56-b)?

- (56) a. $\text{MAX}(\lambda d. \exists w' \in \text{Acc}_w: \text{kind}(\text{Mary}, d) \text{ in } w')$
 b. $*\text{MAX}(\lambda d. \exists t \text{ kind}(\text{Mary}, d) \text{ at } t)$

If (56-b) was a possible logical form for (53-b), then the sentence could mean ‘yesterday, Mary was as kind as those times when she was the kindest’, which does not seem to align with speakers’ intuitions.⁶

The second open question has to do specifically with the type of analysis I put forth. I argued that modal superlatives in Romance should be analyzed as free relative clauses that denote a maximal degree and I adopted a very similar structure to the one that Mendia (2017) defends for other free relatives that do not involve superlative import.

If [*lo que lo es María*] in (36) and [*lo más guapa posible*] in (35) both

⁵ For a (parallel) compositional analysis of partitive constructions such as (54), see Loccioni (2018).

⁶ However, an LF where $\text{DEGP} > \exists t$ seems to be available in some copular sentences like (i):

- (i) The most cannolis John has ever eaten in a day is 10.

How these cases should be formally analyzed is a question that I leave open for future research.

denote a maximal degree (as shown below) one could wonder what the role of the comparative/superlative morpheme is, if any. We may expect to be able to form a degree description with the modal and without the comparative morpheme. However, this expectation is not met and *lo guapa posible* is not a possible degree description in Spanish.

- (57) a. lo que lo es María = $\text{MAX}(\lambda d.\text{pretty}(\text{María},d))$
 b. lo más guapa posible = $\text{MAX}((\lambda d.\diamond\text{pretty}(\text{María},d))$
 c. *lo guapa posible = $\text{MAX}((\lambda d.\diamond\text{pretty}(\text{María},d))$

6 Conclusion

In this paper I presented a novel analysis of modal superlatives that was motivated by both their peculiar interpretation (their “equative force”) and their morphosyntactic properties. Specifically, I argued that they involve a *bona fide* elliptical degree relative. Internally, the degree phrase was analyzed as a partitive construction over degrees, parallel to partitive constructions over individuals such as *the tallest of the boys*. As in the case of other morphologically partitive constructions, the comparison class is overtly specified in modal superlatives. In order to capture the morphosyntactic properties of modal superlatives, I put forth a novel composition which involves the formation of an ordered set and the selection of a maximal element. Once ellipsis is resolved, the relative clause refers to a maximal degree which plays the role of a Measure Phrase. That is, it directly saturates the degree slot of the adjective.

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