

There is only one *más*: Spanish *que/de* comparative alternation

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Abstract Spanish has two forms of expressing comparatives: a clausal comparative introduced by *que* ('that') and a phrasal comparative introduced by *de* ('of'). Previous analyses such as Mendia (2019) have attributed this dichotomy to the comparative morpheme *más* ('more'): *más_{clausal}* is a generalized quantifier over degrees à la Heim (2001); *más_{de grees}* is a three place predicate that combines with a gradable predicate, a degree (introduced by *de*) and an individual. Based on data from extraposition of free relatives, ellipsis resolution and constituency I propose that we should get rid of this ambiguity. In fact, I advocate for a unified account of comparatives which assumes a single lexical entry for *más* (Bhatt and Pancheva 2004, Pancheva 2006, Wellwood 2019). I propose that treating *más* as a generalized quantifier over degrees is appropriate and follows from the fact that items such as *de* must have a lexical entry in the semantics: *de* denotes a function from degrees to sets of degrees. This analysis overcomes the challenges faced by previous approaches: primarily, it ensures that *más* and the PP form a constituent, resolves ellipses inside the standard of comparison (when the latter is a free relative) and allows for extraposition.

Keywords Syntax-semantics interface · degree semantics · phrasal and clausal comparatives · Quantifier Raising · Spanish

1 Introduction

There is a great amount of variation in the expression of comparative constructions cross-linguistically. While a degree expression is typically used to introduce comparison, i.e. *-er/more*, languages differ with respect to whether the standard of comparison is prepositional or clausal in nature. For instance, since the work of Hankamer (1973) there has been a debate regarding the status of comparative sentences in English. However, as argued by Lechner (2001), and more successfully by Bhatt and

Takahashi (2011), English only allows for clausal comparatives as shown by binding facts (See Bhatt and Takahashi (2011) for full details of the binding paradigm.). Other languages like Greek, as shown by Merchant (2009), have different morphemes to differentiate between a phrasal and a reduced clausal comparative (1a-1b):

- (1) a. I Maria pezi kiθara kalitera ap’oti pezi kiθara o
the Maria.NOM plays guitar better than.CLAUSAL plays guitar the
Giannis
Giannis.NOM
‘Maria plays the guitar better than Giannis plays the guitar’
b. I Maria pezi kiθara kalitera apo ton Gianni
the Maria.NOM plays guitar better than.PHRASAL the Gianni.ACC
‘Maria plays the guitar better than Giannis’
(Merchant 2009: 135-136, ex. 4 & 9a)

Spanish behaves like Greek in this respect (with the exception that the morpheme introducing the standard belongs to different roots). As illustrated in (2), there are two possible ways to express comparison of superiority or inferiority: with the complementizer *que* ‘that’, or with the preposition *de* ‘of’.¹

- (2) a. Góngora escribió más poemas **que** Cervantes
Góngora wrote more poems that Cervantes
‘Góngora wrote more poems than Cervantes’
b. Góngora escribió más poemas **de** la cuenta
Góngora wrote more poems of the count
‘Góngora wrote more poems than what’s normal’

What the precise status of these morphemes is and whether or not they differ semantically and syntactically is a topic of debate. Most of the literature in Spanish is primarily descriptive and does not provide a formal explanation of this difference. These works have focused on describing what the distribution of these two morphemes is, on the one hand, and on the intuitive semantic differences that *de* comparatives convey with respect to their *que* counterparts. From a syntactic point of view, there seems to be a controversy as to whether *de* takes full clauses (Price 1990), or DPs as complements (Brucart 2003). A similar controversy revolves around the syntactic status of *que*, which has been analyzed as taking both phrasal and clausal complements (Vela-Plo 2017) or only clausal (Mendia 2019).

In terms of their semantics, it is clear that what the standard morphemes introduce cannot be the same. For example, if we look at (3), if it was only syntax that mattered, the ungrammaticality of the sentence with *de* would be left unexplained.

- (3) Cervantes escribió más novelas {que/*de} Góngora
Cervantes wrote more novels that/of Góngora
‘Cervantes wrote more novels than Góngora’

1. The same facts that are discussed in the paper also hold with the inferiority degree quantifier *menos* ‘less’. Throughout the paper, I will use *más* for consistency.

Moreover, by looking at (4), we notice a minimal pair in terms of meaning: if the semantics of both comparative expressions was the same, the meaning difference would be unexpected here.

- (4) a. Juan compró *más que* dos libros
 Juan bought more than two books
 ‘Juan bought not only two books but he also something else (i.e. a magazine)’
 b. Juan compró *más de* dos libros
 Juan bought more of two books
 ‘Juan bought three (or more) books’

A recent proposal made by Mendia (2019), which I label here as *the Two “más” Hypothesis*, argues that this distinction follows (i) if in the syntax *que* takes a TP-like complement, while *de* takes a DP-like complement; and (ii) in the semantics *que* denotes a set of degrees of type $\langle d, t \rangle$ and *de* denotes a degree of type d . In order to capture this semantic difference, Mendia proposes that there are two separate lexical entries for the degree quantifier: one that denotes a generalized quantifier over degrees (Heim 2001, Bhatt and Pancheva 2004) that will take the *que* standard; and a three place predicate that takes a gradable predicate, a degree and *de* standard is interpreted in-situ (Kennedy 1997, 1999, 2007). However, the *Two “más” Hypothesis* faces serious empirical challenges with respect to extraposition, ellipsis resolution and constituency. Besides, there is the conceptual disadvantage that the same morpheme “*más*” is lexically ambiguous even though there is not morphosyntactic evidence that supports this claim.

The goal of this paper is to demonstrate that a uniform analysis of comparatives in Spanish is not only possible if assume that “*más*” is a generalized quantifier, but also empirically stronger and conceptually desirable. While I follow Mendia (2019) regarding what complements *que* and *de* take in the syntax, I diverge from his semantic analysis. I argue that a single lexical entry for “*más*” follows if *de* is not semantically vacuous but rather *de* takes the standard of type d as its argument and returns an element of the appropriate type $\langle d, t \rangle$ to combine with the comparative morpheme (Pancheva 2006). By doing so, the empirical gaps left by *The Two “más” Hypothesis* are solved.

The paper is organized as follows. In section 2 I present the basic data regarding comparative sentences in Spanish. The next section, section 3, is a summary of Mendia’s (2019) proposal where I outline the challenges it faces: extraposition, ellipsis resolution and constituency. Once these have been established, section 4 is concerned with my theory of comparatives. section 5 will come back to extraposition and its interaction with numerals in phrasal standards that on the surface seems problematic but that a closer examination shows the opposite. In section 6, I discuss some “odd ends” identified by Mendia (2019) and conclude that they are not problematic for either theory of comparatives. Finally, in section 6 I conclude the paper.

2 Syntactic and semantic requirements of clausal and phrasal comparatives

As outlined in the introduction, there is good evidence to believe that the syntactic and semantic status of *que* and *de* comparatives is different. In this section, I will present data that supports this distinct linguistic behavior. First, data concerned with their syntax are provided. Then, data that focuses on the semantics is given. These arguments have been taken from Mendia (2019).

2.1 TP-like vs. DP-like complements

The example in (2) repeated below for convenience shows that just by looking at the morphemes introducing the standard there is a difference in terms of the syntactic category each of them belong to: *que* is a complementizer and *de* is a preposition. Thus, it would not be unreasonable to conclude that *que* takes full clauses, e.g. TP, and projects a CP while *de* takes a nominal, e.g. DP, and projects a PP.

- (5) a. Góngora escribió más poemas **que** Cervantes
 Góngora wrote more poems that Cervantes
 ‘Góngora wrote more poems than Cervantes’
 b. Góngora escribió más poemas **de** la cuenta
 Góngora wrote more poems of the count
 ‘Góngora wrote more poems than what’s normal’

In fact, we can test these intuitions by applying three different diagnostics: the size of the standard, the (im)possibility of ellipsis within the standard, and the (im)possibility to combine with free relatives.

A reliable method to determine whether we are dealing with a phrasal or a reduced clause type of comparative is to look at the syntactic size of the standard. In other words, if more than one element is allowed inside the standard of comparison, then it must be clausal (6a). Phrasal comparatives do not allow more than one syntactic object (6b).

- (6) a. Esta semana Carmen compró más muebles **que** Julián la semana
 this week Carmen bought more furniture that Julián the week
 pasada
 past
 ‘Carmen bought more pieces of furniture this week than Julián did last week’
 b. *Esta semana Carmen compró más muebles **de** dos la semana pasada
 this week Carmen bought more furniture of two the week past
 Int.: ‘Carmen bought more pieces of furniture this week than two last week’

Besides, clausal complements should be able to undergo some sort of ellipsis (Reglero 2007, Brucart 2003) (7), as opposed to DP-like elements (8). This follows from

the hypothesis that ellipsis within the standard should be permitted under identity if the standard is in fact a clause.

- (7) a. Andrea dio más besos a Valen que Carmen dio a Luis
 Andrea gave more kisses to Valen that Carmen gave to Luis
 ‘Andrea kissed Valen more times than Carmen kissed Luis’
 b. Andrea dio más besos a Valen que Carmen ~~dio~~ a Luis
 c. Andrea dio más besos a Valen que Carmen ~~dio~~ a Luis
- (8) Andrea dio más besos a Valen de lo que Carmen *~~dice~~
 Andrea gave more kisses to Valen of DET.NEUT that Carmen says
 ‘Andrea kissed Valen more times than what Carmen says’

Moreover, the data in (8) shows that ellipsis is not permitted inside free relatives and maps onto the existing body of literature that argues for a DP analysis of free relatives. In fact, unlike *de* comparatives, *que* comparatives cannot introduce a free relative; they may introduce a headless relative clause instead (9):

- (9) Andrea dio más besos a Valen que { *lo que dice Carmen /
 Andrea gave more kisses to Valen that DET.NEUT that says Carmen
 los besos que dice Carmen }
 DET.MASC.PL kisses that says Carmen
 ‘Andrea kissed Valen more times than what Carmen says/ the times Carmen says she did’

That said, as Mendia (2019) showed, we can conclude that there is a syntactic requirement in Spanish comparatives: *que* introduces a clausal complement while *de* takes a DP-like complement.

2.2 The semantics of the standards

A closer look at their semantics reveals that what is being compared is also distinct. Although they both make reference to degrees, *que* compares “individuals” while *de* compares “degrees” or ‘measurable amounts’. One way to test for this difference, as proposed by Mendia (2019), is to use the demonstrative pronoun *eso* ‘that’, which can either refer to an individual or a degree. The subscript *d* will be used to indicate the demonstrative is denoting a degree; the subscript *e* will be used to indicate it is denoting an individual. Supporting context is given above the relevant examples:

- (10) [The shirt is older than 10 years]
 La camisa es más vieja { de / *que } eso_d
 the shirt is more old of that that.DEM
 ‘The shirt is older than [that = 10 years]’
- (11) [I have an old tee and an older shirt. Pointing at the tee.]

La camisa es más vieja { *de / que } eso_e
 the shirt is more old of that that.DEM

‘The shirt is older than [that = tee]’

(10) is comparing “degrees” (i.e. the age of the shirt is a measurable quantity); (11) is comparing “individuals” (i.e. the shirt and the tee). In addition to this, although we already saw in the previous section that free relatives cannot be the complement of *que* because they are DP-like elements, this restriction becomes even more apparent when the head of the free relative clause is a quantity denoting *wh*-element as *cuanto* ‘how much’. This follows from the previous literature on free relative clauses such as Gutiérrez-Rexach (2014) who argues that this kind of free relatives denote definite degrees.

- (12) La camisa tiene más años { de / *que } cuantos pensábamos
 the shirt has more years of that how-many thought.1PL
 ‘The shirt is older than what we thought’

Based on these data, I follow Mendiá (2019) and assume that, on top of the syntactic constraint, there is a semantic requirement:

- (13) Semantic requirement on comparatives:
 a. *que* takes an argument of type $\langle d, t \rangle$;
 b. *de* takes an argument of type d

The question that these two assumptions raise is whether a uniform analysis of the two types of comparatives is possible considering that the standards of comparison they introduce belong to different semantic types. One available answer is the one provided by the *Two “más” Hypothesis* (Mendiá 2019) that argues that such uniformity is not possible. Nevertheless, as I show below, there are some problems with this analysis which should make us revisit the issue. Contrary to *Two “más” Hypothesis*, I propose that uniformity is actually a possible, desired and more parsimonious alternative; and it can be achieved by making the following two claims:

- (14) a. The comparative morpheme *más* takes two arguments of type $\langle d, t \rangle$.
 b. The preposition *de* is not semantically vacuous.

These are not brute force stipulations: (14a) provides a uniform treatment of all comparatives and has been argued for by Heim (2001), Bhatt and Pancheva (2004), Wellwood (2019) among others; and (14b) enables it and is reasonable because expressions should not be semantically vacuous Pancheva (2006) has shown. This aligns with the claims made by Alrenga, Kennedy, and Merchant (2012) that the semantics of comparison is not only encoded by the degree quantifier, but also by the standard morpheme. In fact, as they argue, in those languages that mark the phrasal vs. clausal distinction, the difference lies in the standard morpheme and not in the comparative morpheme.

But before getting into the proposal, I will first concentrate on Mendiá’s (2019) *Two “más” Hypothesis*. I will summarize this analysis and then outline where it faces some empirical challenges.

3 Mendia's (2019) Two “*más*” Hypothesis

Mendia proposes what I have been referring to in this paper as the *Two “más” Hypothesis*. He makes use of a degree-semantics analysis that places the distinction between phrasal and clausal comparatives not in the standard morphemes but in the comparative marker *más*. This analysis follows the proposal put forward for English by Kennedy (2007) who argues for a dual distinction to capture the opposition between degrees and individuals.

On the one hand, clausal *más* is a generalized quantifier over degrees that in the syntax takes the *que* standard as its complement. This treatment of *más* follows the ‘classical analysis’ of comparatives (Bresnan 1973, Heim 2001, Bhatt and Pancheva 2004 a.o.). The tree structure for the comparative and the denotation for *más* are given in (15) and (17) respectively:

$$(15) \quad \begin{array}{c} \text{AP} \\ \swarrow \quad \searrow \\ \text{DegP} \quad \text{A} \\ \swarrow \quad \searrow \quad | \\ \text{Deg}^o \quad \text{CP} \quad \text{alto} \\ | \quad | \\ \text{más} \quad \text{que} \end{array} \quad (16) \quad \llbracket \text{más}_{cl} \rrbracket = \lambda P_{\langle dt \rangle} . \lambda Q_{\langle dt \rangle} . [\text{MAX}(Q) > \text{MAX}(P)]$$

Clausal *más* is the head of its own projection: a DegP which is merged in the specifier position of the AP. And, it takes the standard of comparison as its complement. In the semantics, *más* is a generalized quantifier over degrees of type $\langle \langle dt \rangle \langle dt \rangle, t \rangle$ that takes two arguments. The first argument is the clausal standard which is of type $\langle dt \rangle$. This is because there is movement of the covert comparative operator inside the standard that creating a set of degrees (Bresnan 1973, Chomsky 1977, Heim 2001 for an overview of the arguments). Regarding the second argument, given that the DegP is generated in a position that is a sister to a gradable predicate of type $\langle d, \langle et \rangle \rangle$, there is no way compositionally that the second argument of *más* is of the required type. Therefore, this is solved by assuming that there is QR to a node of type t creating a λd to abstract over.

The motivation for the QR analysis of clausal *más* is based on extraposition of the standard of comparison (17b) and the availability of scopal interactions between the degree quantifier and intensional operators (18).²

(17) Extraposition

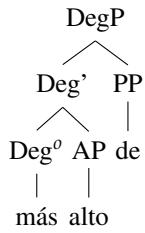
- a. Un samsung está más barato [que un iPhone] en MediaMarkt ahora
a samsung is more cheap that an iPhone in MediaMarkt now
‘A samsung is cheaper than an iPhone in MediaMarkt now’
- b. Un samsung está más barato en MediaMarkt ahora [que un iPhone]
a samsung is more cheaper in MediaMarkt now that an iPhone

2. In order to show scopal ambiguities *menos* has to be used. As shown by Heim (2001), using the superiority comparative morpheme leads to confounds and truth conditional equivalences between the surface and inverse scope readings. See Heim (2001) and Bhatt and Pancheva (2004) for further details.

(18) Scopal interactions with modals

- a. Pedro tiene que saltar menos alto que Juan
 Pedro has that to-jump less high that Juan
 ‘Pedro has to jump less high than Juan’
- b. MODAL > LESS: ‘The requirement is that Pedro must jump less high than Juan’
- c. LESS > MODAL: ‘The minimal height required for Pedro’s jump is lower than Juan’s jump’ (no upper bound limit)

On the other hand, phrasal comparatives, phrasal comparatives have a different syntactic and semantic structure: *más* is part of the Adejective’s extended projection (Abney 1987, Larson 1988, Corver 1990, 1997, Kennedy 2002 a.o.); and semantically, the degree morpheme is not a quantifier. The syntactic structure and lexical entry for phrasal *más* are given in (19) and (20) respectively:

- (19) 
- (20) $\llbracket más_{phr} \rrbracket = \lambda R_{\langle d, et \rangle} . \lambda d_d . \lambda x_e . MAX(\lambda d' . R(d')(x)) > d$

Under this Deg-headed approach, *más* takes a AP as complement, and then the standard is an adjunct as opposed to (15) where it was a complement. In the semantics, the degree head is interpreted in situ: it takes a gradable adjective, then it takes a degree which is the *de*-standard, and finally an individual.

This predicts that extraposition should not be expected. Although Mendia (2019) claims that this prediction is borne out, he does not consider the full paradigm here. It is true that extraposition when the standard is a numeral is not allowed (27). But other DP-like elements can appear in the standard and allow extraposition: inflected D head + NP (22a); a neuter D head + an adjective (22b); and free relatives (22c):

- (21) * Un samsung está más barato en MediaMarkt ahora [de \$100]
 a samsung is more cheap in MediaMarkt now of \$100
 ‘A samsung is cheaper in MediaMarkt now than \$100’
- (22) Un samsung está más barato ...
 a samsung is more cheap
 ‘a samsung is cheaper...’
 a. en MediaMarkt ahora de lo normal
 in MediaMarkt now of DET.NEUTnormal
 in MediaMarkt now than what’s normal’
 b. [...] en MediaMarkt ahora de la cuenta
 in MediaMarkt now of the.FEM.SG count
 ‘[...] in MediaMarkt now than its usual price’

- c. [...] en MediaMarkt ahora de lo que debería
 in MediaMarkt now of DET.NEUT that should.COND.3SG
 ‘[...] in MediaMarkt now than what it should be’

These examples indicate that there is a previously unnoticed generalization regarding phrasal comparatives that the *Two “más” Hypothesis* is unable to capture:³

(23) **The Phrasal Standard Extraposition Generalization**

Clausal extraposition of a phrasal comparative is allowed unless the complement introduced by the preposition is a bare numeral.

A second challenge that the *Two “más” Hypothesis* has to face is its incompatibility with the Ellipsis-Scope Generalization (Williams 1977, Bhatt and Pancheva 2004):

(24) **The Ellipsis-Scope Generalization**

The scope of a DegP containing elided material must contain the antecedent of the ellipsis.

This is typically explained by assuming that there is QR to a position where the ellipsis site c-commands its antecedent. However, if there is no QR because phrasal *más* has to be interpreted in situ, how would we explain ellipsis resolution in the free relative clause (25)?

- (25) a. Pedro conduce más rápido de cuanto debería {conducir
 Pedro drives more fast of how-much should.COND.3SG to-drive
~~d rápido~~}
 d fast
 ‘Pedro drives faster than what he should’
 b. Pedro quiere ser más alto de lo que pensamos {que
 Pedro wants to-be more tall of DET.NEUT what think.PRES.1PL that
 quiere ser ~~d alto/~~ ser ~~d altos~~}
 wants to-be d tall.SG.MASC to-be d tall.PL.MASC
 Pedro wants to be taller than what we all believe {he wants /to be}’

The examples in (25) are cases of Antecedent Contained Deletion (ACD) (May 1985, Fox 2002) that involve a modal verb (Sáez del Álamo 1990).⁴ As it has been argued, QR is a required mechanism to resolve the ellipsis site and avoid infinite regress. That said, the examples pose a serious problem to the treatment of phrasal *más* given the lexical entry in (20).

A third challenge for proposing two separate entries for the degree morpheme is concerned with the constituency. If *más* and the NP “books” are a constituent, (26a)

3. Whether this generalization applies to other languages that have phrasal comparatives or is particular to Spanish is unknown to me. Probing this is beyond the scope of this paper, and I would like to leave this question for future research.

4. One could argue that ACD is an instance of VP ellipsis. However, I will show later that ACD is not parasitic on the availability of VP ellipsis. In fact, Spanish does not allow VP ellipsis for independent reasons (Depiante 2001, Saab 2007) and still has ACD.

is unexpected: *más* should be followed by the NP which it takes as a complement in the syntax, never by the prepositional phrase. This example suggests that *más* takes the phrasal standard as a complement in the syntax and as its first argument in the semantics:

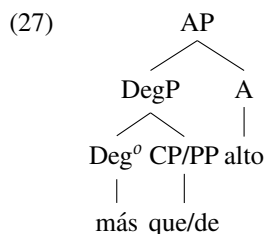
- (26) a. Compré [más de dos] libros
bought.1SG more of two books
'I bought more than two books'
- b. Compré más libros [de dos]
bought.1SG more books of two
'I bought more books than two'

Besides, if it is the case that *más* and the standard form a constituent, (26b) shows that some sort of local extraposition must have taken place. We know that this extraposition is not to the clausal level because of the ungrammaticality of (27).

Given the identified challenges, an alternative approach to the *Two "más" Hypothesis* is in order. I will develop my alternative analysis in the what is left of the paper. Instead of posing an ambiguity in the lexical meaning of the degree head, I will argue that we can get bridge the empirical gaps, and still account for the uncontroversial data, with a single entry for *más*: a generalized quantifier over degrees.

4 A uniform analysis: the *Single "más" Hypothesis*

Before getting into the details of the proposal, I want to mention that I am adopting the 'classical analysis' of comparatives (Bresnan 1973, Heim 2001, Hackl 2000, Bhatt and Pancheva 2004 a.o.) and Bhatt and Pancheva's (2004) late merger analysis of degree clauses. The former adopts a structure for comparatives like the one illustrated in (19) repeated below for convenience.



One might wonder whether the structure assumed for the DegP has the problem of how to explain the formation of suppletive comparative forms (*bueno* > *mejor* 'good > better') and also regular comparatives in languages like English which might be taken as cases of head movement or even spanning (Svenonius 2012, 2016) *big* > *bigger*. I would like to note a few things. First, A head movement account is not compatible with the structure assumed here. First of all, Head Movement is typically invoked when a head adjoins to a terminal node of the same extended projection: V-v-

T-C are all part of the extended projection of V.⁵ However, here, the adjective would need to target a head within a specifier. Another problem for the Head Movement analysis of synthetic comparatives is concerned with gradable adjectives modified by an adverbial as noted by Embick (2007: 14-15) and illustrated in 28 with the superlative:

- (28) a. John is the most amazingly smart person in the class.
 b. *John is the amazingly smart-est person in the class.

In (28a) the Degree operator scopes over the adverbial and the gradable adjective and so the synthetic form in (28b) is not allowed: the presence of the adverbial blocks the synthetic form. Even if we assumed that the Degree head is in the correct position for Head Movement (29), and that specifiers or adjuncts do not intervene for Head Movement as typically claimed, Head Movement of the Adjective *smart* to the Degree head would result in 30.

- (29) Deg [amazingly smart]
 (30) *John is the smart-est amazingly person in the class.

Given these facts, a possible solution under a DM framework is to assume a Local Dislocation rule that operates under linear adjacency. Local Dislocation, proposed by Embick and Noyer (2001) and further developed by Embick (2007), makes a terminal node become an affix of a linearly adjacent terminal. The rule looks like (31) taken from Embick (2007: 12):

- (31) $\text{Deg}[\text{COMP/SUP}] * [\dots X \dots]_A \rightarrow [\dots X \dots]_A \oplus \text{Deg}[\text{COMP/SUP}]$
 where the phonological form of $[\dots X \dots]_A$ meets the prosodic condition.

This rule states that when the degree terminal and a gradable adjective are linearly adjacent the former is affixed to the latter.

That said, and as pointed out by Bhatt and Pancheva (2004), the structure of the comparative can be as in (32) where the *t* stands for a trace of the extraposed standard of comparison. In that case, given that there is no overt material that intervenes between *-er* and the gradable predicate, they are linearly adjacent and thus Local Dislocation can take place.

- (32) [[-er *t*] smart]

In addition, the late merger account of the standard of comparison involves that the standard is not merged in the base position where the degree head is first merged, but instead the standard is merged after QR of *más/more* has taken place. Evidence for this, as argued extensively by Bhatt and Pancheva (2004), comes from Condition C effects and the scope of the comparison. I do not intend to review these arguments here, but what I would like to note is that the reason why Late Merger takes place is concerned with the interpretation of copies and the non-conservativity of degree

5. In the case of spans, since the Deg head and the A head belong to two different extended projections, spanning would be ruled out.

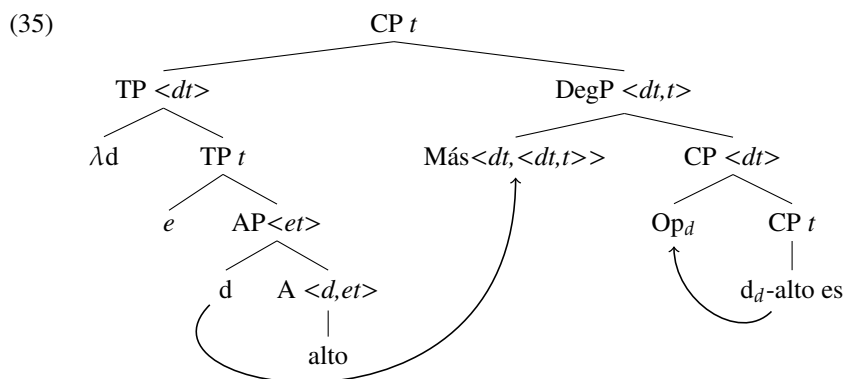
quantifiers (Fox 2001, 2002). If the degree clause was merged in the base position of the degree head this would create an object that is uninterpretable in the semantics. As Bhatt and Pancheva (2004) argue, if the standard of comparison is merged in the base position of the comparative morpheme, the standard would be interpreted twice: (i) as the restrictor of *más* 'more', and (ii) inside the second argument of *más* 'more'. On the contrary, if the standard of comparison is merged late, once the degree head has QR'ed, no copy of *er*'s restrictor will be found inside the second argument.⁶

In terms of the semantics, the classical analysis treats *más* as a generalized quantifier of type $\langle dt, \langle dt, t \rangle \rangle$ across the board. This is the only lexical entry for the comparative morpheme. It was given in (20) and is also repeated below:

$$(33) \quad \llbracket más \rrbracket = \lambda P_{\langle dt \rangle} . \lambda Q_{\langle dt \rangle} . [\text{MAX}(Q) > \text{MAX}(P)]$$

As already mentioned when describing clausal comparatives in the *Two "más" Hypothesis*, $\llbracket más \rrbracket$ takes two set-of-degrees arguments. A tree is provided to illustrate the sentence in (34). Extraposition has been included in the tree (35) but will not be included in subsequent derivations for ease of exposition.

- (34) Juan es más alto que Pedro
 Juan is more tall that Pedro
 'Juan is taller than Pedro'



As the structure in (35) shows, the Degree morpheme undergoes QR to the matrix TP leaving behind a trace of type *d* which the gradable predicate tall takes as its argument. At the sister node of the moved Degree morpheme, there is a λd which, when composed with TP, returns a $\langle dt \rangle$ element which serves as the second argument for the comparative morpheme.

6. See Bhatt and Pancheva (2004) for full details.

4.1 A semantic role for *de*

However, although this lexical entry for $\llbracket más \rrbracket$ appropriately computes the meaning for clausal comparatives given that the CP is of type $\langle dt \rangle$ (and this was successfully demonstrated by Mendiá (2019)), it would fail to compose with phrasal comparatives since, as I have assumed, they are of type d . This can be solved if we assume that the preposition *de* is not semantically vacuous (Stechow 1984, Rullmann 1995, Pancheva 2006). Instead it will take the standard of type d as its argument and return an element of the appropriate type to combine with the comparative morpheme. The lexical entry for the preposition is given in (36):

- (36) Lexical entry for *de*
 $\llbracket de \rrbracket = \lambda d'_{\langle d \rangle} . \lambda d_{\langle d \rangle} . [d' \geq d]$
 the set of degrees smaller than or equal to d' '

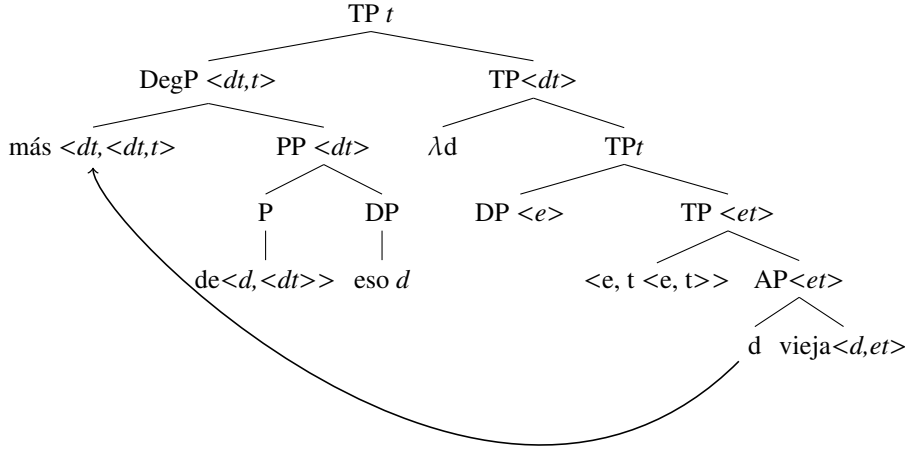
The lexical entry for the preposition *de* in (36) denotes a function from degrees d to sets of degrees $\langle dt \rangle$. What is more, the lexical entry in (36) reminds us of the meaning of the referential partitive preposition *de*, i.e. it takes a definite description of an individual (of type e), and returns a set of individuals (of type $\langle et \rangle$): (37). Thus, this follows Pancheva's (2006) thesis that (i) there is a parallelism between the domain of degrees and that of individuals, and (ii) the behavior of *-er/más* and *de* is parallel to that of a quantifier and its partitive first argument.

- (37) a. uno de los estudiantes
 one of the students
 b. $\llbracket de_{ref\ part} \rrbracket = \lambda x . \lambda y [y \text{ is part of } x]$

(Pancheva 2006: 13, ex. 33b)

An example of semantic composition is provided in (38) for the sentence in (11). Analogous to (35), the comparative morpheme is generated in the specifier of the AP. It then undergoes QR for type mismatch to a node of type t . After QR, the PP introducing the standard of comparison is late merged into the structure. Semantic composition takes place appropriately given that the PP provides a suitable argument for the comparative morpheme.

(38)



Given the structure for the comparative and lexical meanings of *más* and *de*, the proposal here makes the right predictions with respect to the constituency problem mentioned in Section 3: the gradable predicate or DP element and the comparative morpheme never form a constituent. The gradable predicate/DP projects its own XP and the DegP is merged in the specifier position of that XP just like what happens with clausal comparatives. As a result, the standard of comparison is merged as the complement of *más*. The semantic derivation of (26a) is given in (40). One must note that since we are not dealing with a gradable predicate, but an NP, we need to introduce a Measure Function (Bresnan 1973, Hackl 2000) that will make the NP a gradable predicate:

$$(39) \quad \llbracket Measure \rrbracket = \lambda P_{\langle e,t \rangle} . \lambda d_d . \lambda x_e [P(x) \wedge |x| \geq d]$$

$$(40) \quad \text{LF: } [TP_3 [DegP \text{ más } [PP \text{ de } \text{dos}]]]_{DegP} [TP_2 \lambda d [TP_1 \text{ pro}_y o [T \text{ compré } [DP_2 d [DP_1 Measure \text{ libros}]]]]]$$

- a. $\llbracket DP_1 \rrbracket = \lambda d . \exists x [\text{book}(x) \wedge |x| \geq d]$
- b. $\llbracket DP_2 \rrbracket = \exists x [\text{book}(x) \wedge |x| \geq d]$
- c. $\llbracket TP_1 \rrbracket = \exists x [\text{book}(x) \wedge \text{buy}(y, x) \wedge |x| \geq d]$
- d. $\llbracket PP \rrbracket = \lambda d . two \geq d$
- e. $\llbracket DegP \rrbracket = \lambda Q_{\langle dt \rangle} . [\text{MAX}(Q) > \text{MAX}(\lambda d . two \geq d)]$
- f. $\llbracket TP_3 \rrbracket = \exists x [\text{MAX}(\lambda d . [\text{book}(x) \wedge \text{buy}(y, x) \wedge |x| \geq d]) > \text{MAX}(\lambda d . two \geq d)]$
- g. Meaning = “There is a plurality of books s.t I bought them, and the cardinality of that plurality exceeds 2”. In other words, there is a number of books that I bought and that number is bigger than two.

The issue of constituency has now been solved and follows from an analysis of phrasal comparatives which is analogous to the analysis of clausal comparatives.⁷

4.2 Free relatives and ACD

I have shown how giving *de* a semantic value unifies the analysis of *más*. In this section I will demonstrate that free relatives and resolution of ellipsis inside of them conform to the analysis that I am advocating for.

Following Donati (1997) I assume that free relatives, unlike full relative clauses lack a DP layer embedding the clause. Moreover, their C^0 head is null. What is crucial is that the movement of the *wh*-operator to the left periphery of CP causes a relabelling of the whole clause which now becomes a DP. This operator movement can be overt as in (41a) or null as in (41b):

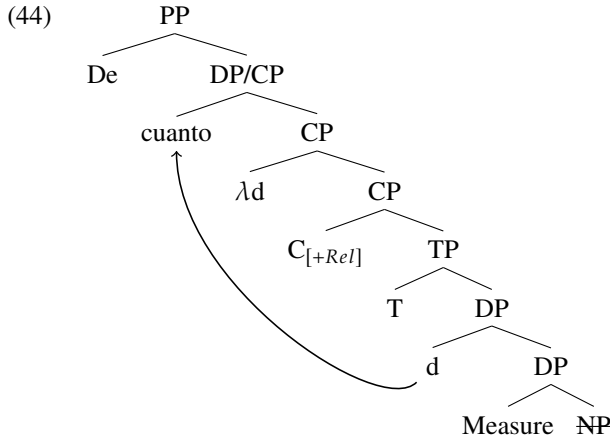
- (41) a. $[_{CP/DP} \text{cuanto}_i [_{C_{+Rel}} [_{TP} \text{yo compré } t_i]]]$
 b. $[_{CP/DP} [_{lo Op}]_i [_{C_{+Rel}} \text{que } [_{TP} \text{yo compré } t_i]]]$

For the purpose of this paper we can assume that the structure of both (41a) and (41b) is identical with respect to the base position of the DP that contains the operator, but different regarding the realization or absence of the operator itself: if it is overt as in (41a), no complementizer surfaces; if it is null, the complementizer surfaces as in (41b). What is important is that both $[lo Op]$ and $[C_{+Rel}]$ are quantity relative pronouns whose denotation is provided in (42):

- (42) $\llbracket [C_{+Rel} / lo \text{ que}] \rrbracket = \lambda P_{\langle dt \rangle} . \text{MAX}[\lambda d . P(d)]$
 (43) María compró más caramelos de cuantos compró Pedro
 María bought more candies of how-many bought Pedro
 ‘María bought more candy than what Pedro bought’

The lexical entry in (42) indicates that the type of the relative pronoun is $\langle dt \rangle$, $\langle dt \rangle$ just like *más*. Therefore, it must move to a node of type t to resolve type mismatch leaving a trace of type d in situ, and creating a λd as a result of this movement that it will take as its argument. A tree for (43) and its corresponding semantic derivation are provided in (44) and (45) respectively.

7. One may still wonder whether by giving *de* a lexical entry to return a type $\langle dt \rangle$ argument we have pushed the ambiguity problem into a different domain. Although a parallelism following Pancheva (2006) has been established with partitive constructions, one could even abstract more and say the following: *de* as a polymorphic type-shifter defined as a type $\langle \sigma \rangle$ where σ could be of any possible type (Charlow:2019). Thus, if σ is of type d , now we have $\langle d \rangle$. Thank you very much to Deniz Rudin for pointing this out to me.



- (45) LF: $[_{PP} \text{ de } [_{DP/CP} \text{ cuanto } [_{CP1} \lambda d [_{TP} \text{ Pedro compro } [_{DP} d \text{ Measure NP} \text{ caramelos}]]]]]$
- $\llbracket DP \rrbracket = \lambda d. \exists x [\text{candy}(x) \wedge |x| \geq d]$
 - $\llbracket TP \rrbracket = \exists x [(\text{candy}(x) \wedge \text{buy}(p, x)) \wedge |x| \geq d]$
 - $\llbracket CP1 \rrbracket = \lambda d. \exists x [(\text{candy}(x) \wedge \text{buy}(p, x)) \wedge |x| \geq d]$
 - $\llbracket DP/CP \rrbracket = [\lambda d. \exists x [\text{MAX}(\text{candy}(x) \wedge \text{buy}(p, x)) \wedge |x| \geq d]]$
 - $\llbracket PP \rrbracket = \lambda d. [\exists x [\text{MAX}(\text{candy}(x) \wedge \text{buy}(p, x)) \wedge |x| \geq d']] \geq d$

The type of the $\llbracket DP/CP \rrbracket$ in (45d) is d (i.e. a degree). But this cannot combine with $\llbracket \text{más} \rrbracket$ in (33) because it requires a set of degrees $\langle dt \rangle$. The preposition *de* lifts the type of its argument: a function from degrees to sets of degrees. (45e) then composes with $\llbracket \text{más} \rrbracket$ in (33).

With this in mind, we can now revisit the examples that contained an ellipsis site. The examples are repeated below:

- (46) a. Pedro conduce más rápido de cuanto debería {conducir
Pedro drives more fast of how-much should.COND.3SG to-drive
~~d rápido~~}
'Pedro drives faster than what he should'
- b. Pedro quiere ser más alto de lo que pensamos {que
Pedro wants to-be more tall of DET.NEUT what think.PRES.1PL that
quiere ser ~~d alto/~~ ser ~~d altos~~}
wants to-be d tall.SG.MASC to-be d tall.PL.MASC
Pedro wants to be taller than what we all believe {he wants /to be}'

These are cases of ACD (Sáez del Álamo 1990). Before getting into the details of these examples, a note with respect to ellipsis and ACD in Spanish is in order. Although it is in fact the case that traditional cases of ACD involve VP ellipsis (May 1985, Fox 2002), VP ellipsis is independently ruled out in Spanish. Only TP ellipsis is possible as the following example indicates assuming that there is Aux-to-T movement and that the participle remains low, i.e. vP .

- (47) a. Pedro ha escrito varios libros y María también ~~ha escrito varios~~
 Pedro has written various book and María also has written various
~~libros~~
 books
 b. *Pedro ha escrito varios libros y María también ~~ha escrito varios libros~~.
 ‘Pedro has written several books and and María has too’

The relevant cases to this paper involve a modal or some sort of intensional predicate such as *deber* ‘should’ or *pensar* ‘think’. These verbs allow their complements to be null when there is an identical antecedent:

- (48) Pedro está fumando mucho pero no { debería/ puede }
 Pedro is smoking much but not should.COND.3SG can.PRES.3SG
 ‘Pedro is smoking a lot but he really shouldn’t/can’t’

Traditionally these have been analyzed as cases of Hankamer and Sag’s (1976) Null Complement Anaphora (NCA) (Depiante 2000, Saab 2007). These are constructions in which a verb that takes an infinitive clause as a complement allows this complement position to be null. One argument that has been proposed for the NCA analysis of modal ellipsis constructions is the impossibility to extract from the ellipsis site, which is usually taken to be evidence for the claim that there is no silent syntax but a null proform. However, as Fernández-Sánchez (2020) indicates this is not completely accurate and provides evidence that extraction out of the ellipsis site is actually allowed:⁸

- (49) Pedro sabe qué libros puede leer y cuáles₁ no
 Pedro knows what books can.PRES.3SG read and which-ones not
 debería { leer _{t₁} }
 COND.3SG read
 ‘Pedro knows which books he can read and which ones he shouldn’t’

(Fernández-Sánchez 2020)

Examples like 49 can be analyzed as an instance of TP ellipsis on a par with sluicing constructions.⁹

What this leads to is the conclusion that ACD is not parasitic on the availability of VP ellipsis. Modal verbs like *poder* ‘can/could’ are raising verbs that behave like *parecer* and English ‘seem’ when they take an infinitival complement (Sáez del

8. Another argument used in the literature on NCA in Spanish is the ungrammaticality of clitic climbing and object fronting in these constructions which is taken as evidence for the lack of a syntactic gap (Depiante 2000). However, as Fernández-Sánchez (2020) indicates, examples like these should be taken with a grain of salt. In fact, he argues that the ungrammaticality of clitic climbing and object fronting does not entail that the gap lacks any syntactic structure. Instead, as proposed by Cardinaletti and Shlonsky (2004), for clitic climbing and object fronting to be allowed the modal verb should take a *v*/VP as complement. And, since VP ellipsis is not a possible option in Spanish, the ungrammaticality follows. See Fernández-Sánchez (2020) for details and relevant examples.

9. Further evidence for this comes from the fact that modal TP ellipsis does not allow voice mismatches, unlike VP ellipsis:

Álamo 1990, Fernández-Salgueiro 2005). Thus, we can assume that they take a TP complement.¹⁰ In fact, as the minimal pair from Sáez del Álamo (1990) shows, these verbs do license ACD in relative clauses:

- (50) a. He invitado a todos los chicos que pude
 Have.1SG.PRES invited to all the boys that could.1SG.PERF
 ‘I have invited every boy that I could’
 b. *He invitado a esos chicos que pude
 Have.1SG.PRES invited to these boys that could.1SG.PERF
 ‘I have invited these boys that I could’

(Sáez 1990: 199-200, ex. 15-16)

If we look at the kind of comparatives that I am analyzing here (46), we can apply the same logic. There is a modal or intensional element inside the free relative and a gap. Just like in (50a) in order to avoid infinite regress inside the gap the quantificational element has to move to a scope position. From this position, an appropriate antecedent will be plugged into the gap.

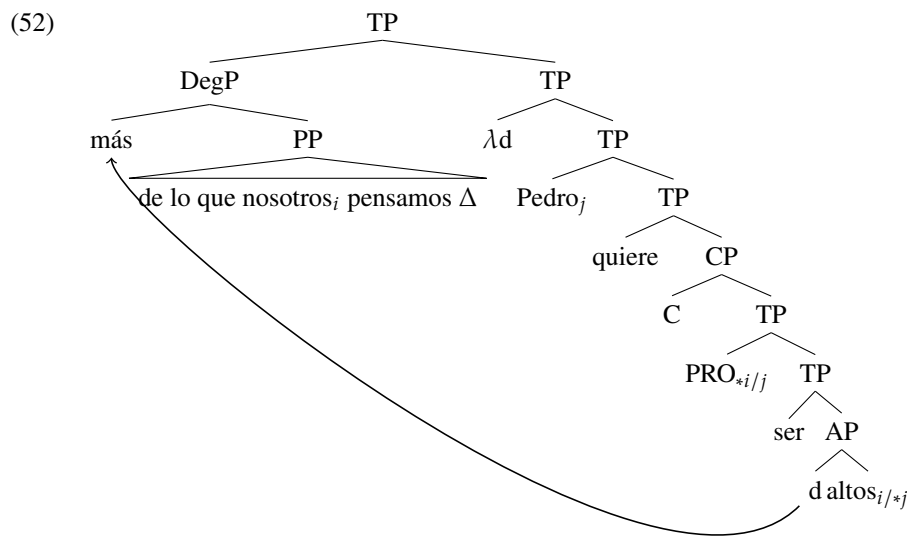
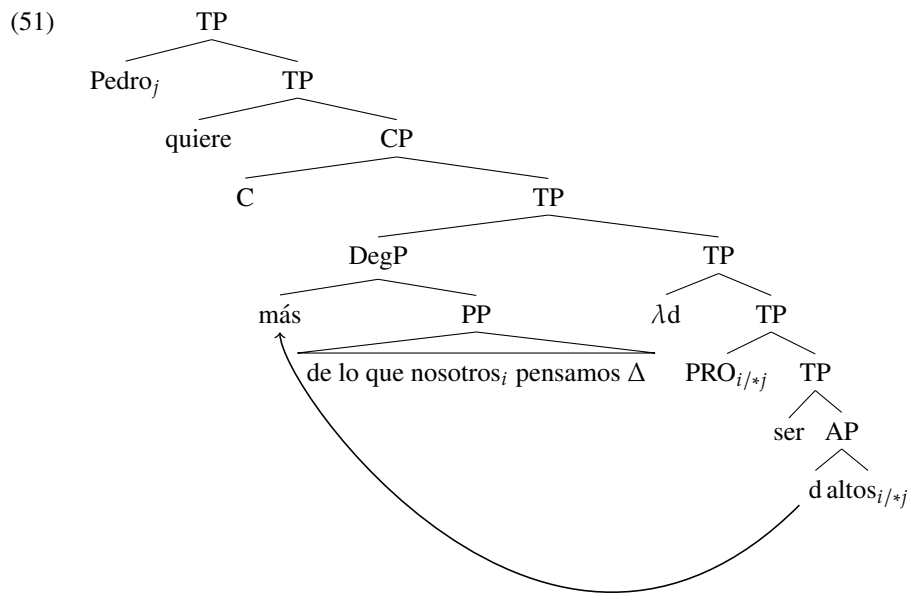
That said, we can now go back to (46b) which is ambiguous between two possible interpretations. These are obtained by making QR available to two different positions in the structure: narrow ellipsis by QRing to the non-finite TP, and wide ellipsis by QRing to the matrix TP above *querer*. The two possibilities are shown in (51) and (52).¹¹

For (51), since QR has taken place to the embedded TP above PRO, the ellipsis site has been resolved by copying that TP into the free relative. What is more, this entails that PRO is no longer coindexed with *Pedro* in the matrix clause but with the subject *nosotros* ‘we’ in the standard of comparison. Note that coindexation with *Pedro* is in fact impossible. On the contrary, in (52), QR of the DegP to the matrix TP renders a different result: the antecedent of the ellipsis is now the whole clause ‘Pedro wants to be d-tall’; thus the ellipsis site is repaired with such an antecedent. Given that the closest controller for PRO is *Pedro*, coindexation is allowed.

- (i) *Pedro sabe que libros pueden ser leídos y cuáles no debería
 Pedro knows what books can.3PL.PRES be read and which-ones not should.3SG.COND
 {~~Heer~~ _{ti}}
 read
 ‘*Pedro knows which books can be read and which ones he shouldn’t’

10. Epistemic *poder* ‘can/could’ can also take a CP and allow for hyperraising. See Fernández-Salgueiro (2005, 2008) for details).

11. I have chosen to illustrate (46b) because of the ambiguity manifested by coreference with PRO, but the same derivation would apply to (46a). The only difference is that there is only one possible landing site for the degree quantifier: above the matrix verb *conducir* ‘to drive’.



These data demonstrate that QR is a necessary mechanism to license the ellipsis site contained within the free relative. What is more, the Ellipsis-Scope Generalization in (24) is satisfied: the DegP must contain the antecedent of the ellipsis in its scope. In addition, the clausal extraposition facts of free relatives follow from this analysis.

4.3 The extraposition generalization: the case of numerals on the standard

In section 3 I presented a generalization that concerned the relation between clausal extraposition and phrasal comparatives. The generalization stated in (23) is repeated in (53) for convenience:

(53) **The Phrasal Standard Extraposition Generalization**

Clausal extraposition of a phrasal comparative is allowed unless the complement introduced by the preposition is a bare numeral.

Given the data that I have presented, there is indeed clausal extraposition with free relatives and non-numeral DPs. The question now is how do we explain the lack of clausal extraposition of phrasal comparatives with a numeral.

The semantics of *más* disallows for an in situ interpretation of the quantifier; *más* has to raise to a node of type *t*. But that node in the case of phrasal comparatives introducing a numeral cannot be high in the clause, e.g. TP. In order for this movement to happen and yet target a low position, this operation must be a “local” one. I follow Heim and Kratzer (1998: sec. 8.5) who independently argue that there is a DP-internal subject position where quantifiers can take scope. Under this view, the degree quantifier will undergo QR above that position. This has also been argued for in the domain of degrees by Matushansky (2002: Ch.5, 76-82) and defended by Bhatt and Pancheva (2004) and Bhatt and Takahashi (2011).¹² Thus, it is possible to merge the degree clause more locally, within the DP, after DP-internal QR of the degree head (55) for (54).

- (54) Pedro compró *más* libros de dos
 Pedro bought books more of two
 ‘Pedro bought more than two books’

- (55) Pedro compró [_{DP} [_{DegP} *t_{más}*] [_{NP} libros] [_{DP} [_{DegP} *más* [_{PP} de dos]]]]
- 

The quantifier *más* has undergone QR and extraposition as the movement path indicates. Then, in that position the PP is merged.

This solves the mystery of why numerals cannot be extraposed at the clausal level. In fact, as Matushansky (2002) points out, if there is ellipsis to be resolved (e.g. free relatives introduced by *de*, and, by and large, clausal standards introduced by *que*), the quantifier has to move to the clausal level. And this interpretation is

12. See Matushansky (2002) for a detailed review of the arguments and for a full semantic composition of the DP internally moved degree element.

expected under the model adopted here. Given that ellipsis requires a parallelism, we can therefore assume that the degree operator will target the clausal spine and adjoin to a node of type *t*. However, when *de* introduces a bare numeral (i.e. *de dos* ‘of two’; *de esa* ‘of that’), there is no ellipsis to be resolved and given Scope Economy considerations (Fox 2000), the closest available landing site of type *t* is the specifier above the DP internal subject position.

5 “Odd Ends”

In his paper, Mencia (2019): sec. 7.2) identifies a series of “odd ends” that are indeed puzzling given both the *Two “más” Hypothesis* and the *Single “más” Hypothesis*. These “odd ends” involve the following examples. Note that I am using here the label “alleged” to translate the meaning of the sentence. The reason for this will become clear shortly:

- (56) a. Me vinieron este año más desgracias de las desgracias
me.DAT came this year more misfortunes of the.FEM.PL misfortunes
que he soportado en toda mi vida
that have.1SG endured in all my life
Alleged: ‘This year I have suffered more misfortunes than all the misfortunes I have endured in my whole life.’

Sáez del Álamo (1999: 1133)

- b. *Compré más libros de los libros que compraste tú
Bought.1SG more books of the.MAS.PL books that bought you
Alleged: ‘I bought more books than you’

Gutiérrez Ordóñez (1994: 38)

- (57) *Pedro pescó más truchas de las sardinas que pesqué yo
Pedro fished more trouts of the.FEM.PL sardines that fished I
‘Pedro fished more trouts than I fished sardines’

Mencia (2019: 40, ex. 96)

In order to solve this problem, Mencia:2018 proposes two hypotheses: (i) by assuming both (56a) and (56b) contain a free relative, what this shows is a preference for NP ellipsis; and (ii) a comparison between different degrees in the same scale, along a dimension *D* is required. The first hypothesis would explain the ungrammaticality of (56b) but it would conflict with comparative deletion contexts introduced by *cuanto* and [D *que*]. Also the grammaticality of (56a) would be surprising, as Mencia himself notes. On the other hand, the second hypothesis would predict that the “quantities of trouts” and “quantities of sardines” belong to a different scale and are therefore unable to be compared.

However, there are two problems with the second hypothesis: (i) the sentences in (56) are supposedly establishing a comparison between different degrees in the same scale along the dimension of cardinality; (ii) why should quantities of trouts and

quantities of sardines in (57) belong to different scales if they are both comparing fish along the same dimension, i.e. cardinality?

I would like to note that (56) and (57) are not actually phrasal comparatives but part-whole denoting expressions. They are denoting a subset or superset relation between the head of the NP and the NP introduced by the preposition *de*: *de* here is not the standard morpheme introducing a comparison class.

In fact the alleged meaning of (56) is not felicitous under a comparative interpretation. In order for a comparison to be established *que* has to be used instead. However, they are grammatical under the following interpretations:

- (58) Context and interpretation of (56a):

In my life all the misfortunes I have experienced (at least once) include X, Y and Z. Well, this year I have experienced more of those same misfortunes.

- (59) Context and interpretation of (56b):

You bought a copy of *LGB*, a copy of *the MP* and a copy of *Barriers*. I bought 2 copies of each of the books you bought. Therefore one could felicitously utter “I bought more books (i.e. copies) of the books you bought” in this context.

One of the requirements of *de* is that it signals overt comparison with a degree. As Mendia, and I following him, puts it, *de* comparatives can only take arguments that are quantity denoting. Nevertheless, the standard introduced by (57) is not quantity denoting, rather it is comparing two sets of individuals: trouts and sardines. That said, The sentence is out because (i) the semantic requirement of *de* is not met; and (ii) the part-whole relation between the restrictor NP and the NP inside the *de*-phrase is not available (sardines and trouts are not in a subset-superset relation).

In short, these examples should not be confounded with true phrasal comparatives. Once the confound has been identified, they are easily accommodated into the theory of comparatives advocated here or the one proposed by Mendia (2019).

6 Conclusion

In this paper I have examined comparative constructions in Spanish which can be expressed by a phrasal (*de*) or a clausal standard (*que*). Though the degree morpheme is the same one: *más*. The *Two “más” Hypothesis*, proposed by Mendia (2019), argues that this alternation stems from the fact that the degree morpheme in Spanish is ambiguous between a generalized quantifier over degrees for clausal comparatives and a three-place predicate that is interpreted in situ for phrasal ones. I have shown that while this hypothesis has provided a rich understanding of Spanish comparative constructions, there are empirical challenges that it faces: extraposition, constituency and ellipsis resolution.

In order to solve these, I have proposed an alternative hypothesis, i.e. the *Single “más” Hypothesis*. Instead of introducing lexical ambiguity in the meaning of the comparative morpheme *más*, I have demonstrated that it is unnecessary to introduce lexical ambiguity in the meaning of the comparative morpheme. In fact, treating

is empirically adequate as we are able to account for the data analyzed by the *Two “más” Hypothesis* and the challenging data. The claim that *más* is uniform follows from the fact that items such as *de* must have a lexical entry in the semantics (Stechow 1984, Pancheva 2006): it denotes a function from degrees to sets of degrees. Therefore a uniform analysis of comparatives is more parsimonious and empirically, and conceptually, adequate.

What is more, such an analysis follows proposals like Wellwood (2019) that provide a single lexical entry for the comparative morpheme. In fact, as Alexis Wellwood (p.c.) notes an analysis like Mendiá 2019, and others before him, entails an ambiguity of sorts for *more/más*, itself unsupported in the morphosyntactic evidence across languages (Alrenga, Kennedy, and Merchant 2012).

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