B O R E A L I S
An International Journal of Hispanic Linguistics

SCALAR PROPERTIES OF NEGATIVE POLARITY SUPERLATIVES*

Ulises Delgado
Universidad Complutense de Madrid

ABSTRACT. Most theories agree that polarity sensitivity must be related to scalarity one way or another. Superlatives are a good example of this, since their "endpoint nature" allows for them to be in negative contexts with a quantitative interpretation (Fauconnier 1975a). In this paper, I follow Fauconnier's work in distinguishing two different types of negative polarity superlatives and I show how they manifest in Spanish. This language behaves differently than English, what allows us to reach different conclusions from those of Fauconnier. In this sense, I argue that what I have called 'pragmatically polarity sensitive superlatives' are just ordinary superlative phrases (i.e. definite expressions), while those named 'minimizer superlatives' are kind of indefinite expressions where the DegP works as a complex minimizer. Thus, I will defend that both types of negative polarity superlatives have scalar properties of a different nature: while for the former the quantitative reading is pragmatically driven, for the latter it is semantically driven. In the same line, we will be able to rethink a generalization established by Bosque (1980) regarding the DegP distribution in polarity-sensitive superlatives.

Keywords. superlatives; negative polarity; scalar implicatures; minimizers

RESUMEN. La mayoría de las teorías coincide en que la polaridad debe estar relacionada, de un modo u otro, con la escalaridad. Las superlativas son un buen ejemplo de esto, dado que su naturaleza de "extremo" escalar les permite aparecer en contextos negativos con una interpretación cuantitativa (Fauconnier 1975a). En este artículo sigo a Fauconnier en distinguir dos tipos distintos de superlativas de polaridad negativa y muestro cómo se manifiestan en español. Esta lengua difiere del inglés en varios aspectos, lo que nos permitirá llegar a conclusiones distintas de las de Fauconnier. En este sentido, defenderé que las que he denominado 'superlativas polares pragmáticas' son superlativas ordinarias (*i. e.*, expresiones definidas), mientras que las llamadas 'superlativas minimizadoras' son un tipo de expresión indefinida cuyo SGrado funciona como un minimizador complejo. Así, argumentaré a favor de que ambos tipos de superlativas polares poseen propiedades escalares de naturaleza distinta: mientras que para las primeras la lectura cuantitativa surge como el resultado de un proceso pragmático, para las segundas forma parte de su propio significado. En esta misma línea, estaremos en disposición de reformular una generalización establecida por Bosque (1980) sobre la distribución del SGrado en las superlativas polares.

Palabras clave. superlativas; polaridad negativa; implicaturas escalares; minimizadores

* I am grateful to Antonio Fábregas for inviting me to participate in this volume of *Borealis*. I would also like to express my gratitude to Raquel González, Cristina Sánchez, attendants to the Grammar Reading Group at the department of Lengua Española y Teoría de la Literatura in the Complutense University and two anonymous reviewers for comments, discussions, and suggestions. Of course, all disclaimers apply. Support for this research has been provided by the Spanish Ministerio de Ciencia e Innovación under the auspices of FPU17/03860 project.

 Borealis: An International Journal of Hispanic Linguistics, 2020, 9 / 1. pp. 1-33. http://dx.doi.org/10.7557/1.9.1.5358

1. Introduction

It is a well-known fact, since at least Fauconnier (1975a, b), that scalar properties of superlatives make them suitable for being used as polarity-sensitive expressions (see also Partee 1986; Israel 1996, 2011; Hoeksema & Rullmann 2001; a.o. The phenomenon has been showed up in Spanish by Bosque 1980 and Sánchez López 1999). In this regard, see the following examples in Spanish, where we deal with negative polarity superlatives (NP-superlatives henceforth):

(1) a. Este problema no lo resolvió el más listo
this problem not ACC.3sg solved.3sg the more clever
'This problem wasn't solved by the cleverest guy'
b. Eusebio no resolvió el problema más simple
Eusebio not solved.3sg the problem more simple
'Eusebio didn't solve the simplest problem'

At first, the authors cited above agree that these sentences are ambiguous between an absolute and a quantitative reading[1], where the superlative is interpreted with an existential meaning, tantamount to *nadie* 'nobody'/'NPI-anybody' or *nada* 'nothing'/'NPI-anything':

(2) a. Este problema no lo resolvió el más listo (= (1a))
i. ABS. READING: 'There is a person who didn't solve this problem, and (s)he is the cleverest one'
ii. QUANT. READING: 'Nobody solved this problem'
b. Eusebio no resolvió el problema más simple (= (1b))
i. ABS. READING: 'Eusebio didn't solve a problem, which is the simplest one'
ii. QUANT. READING: 'Eusebio didn't solve any problem'

This second interpretation is dependent on the presence of a negative licenser, here is why these superlatives are seen as negative polarity-sensitive expressions. Thus, removing negation leads to the disappearance of the quantitative reading, and then we only have the absolute interpretation[2]:

(3) a. Este problema lo resolvió el más listo
this problem ACC.3sg solved.3sg the more clever
'This problem was solved by the cleverest guy'
↛ 'This problem was solved by everybody'

[1] Not to be confused with the very well-known ambiguity between absolute and comparative readings, which I will talk briefly about in §3.3, although the absolute reading coincides in both cases.

[2] Polarity-sensitive superlatives also have a positive polarity counterpart, where the quantitative meaning disappears in presence of negation. This meaning has a universal flavour, instead of an existential one:

(i) Este problema lo resuelve el más tonto
this problem ACC.3sg solve.3sg the more dumb
'This problem can be solved by the dumbest' (and therefore, by everybody)
(ii) Eusebio resuelve el problema más complicado
Eusebio solve.3sg the problem more complicated
'Eusebio solves the most complicated problem' (and therefore, any other problem)

Therefore, if the sentences in (3) had a quantitative meaning, we would expect it to be of a universal type. I will not take care of these types of examples for reasons of space, although I will occasionally refer to them.

b. Eusebio resolvió el problema más simple
Eusebio solved.3sg the problem more simple
'Eusebio solved the simplest problem'
↛ 'Eusebio solved every problem'

Giannakidou points out that for superlatives «'polarity' seems to be associated with the availability of a certain reading, not with rendering an expression grammatical» (2002: 4). Thereby she argues that this phenomenon cannot be accounted as a truly case of polarity sensitivity, since this in the narrow sense does not give rise to limited interpretation, but to limited distribution. In this sense, superlatives in (1) differ from well-studied negative polarity items (NPIs) as English *any*, Dutch *ook maar iets* or Greek *tipota* in so far as these give rise to ungrammaticality in absence of negation[3] (examples taken from Giannakidou 2002):

(4) a. I did *(not) see anything
b. *(Niemand) heeft ook maar iets gezien (Dutch)
nobody has anything seen
'Nobody saw anything'
c. Ta pedhia *(dhen) idhan tipota (Greek)
the children not saw anything
'The children didn't see anything'

Nevertheless, Spanish shows a class of NP-superlatives whose distribution is dependent on the presence of a negative context, and therefore they are polarity-sensitive in the narrow sense claimed by Giannakidou:

(5) a. Los políticos *(no) tienen el más mínimo interés en resolver la crisis
the politicians not have.3pl the more minimum interest in solve the crisis
'Politicians do not have any interest in solving the crisis'
b. *(No) hubo el menor problema
not there.was the less problem
'There was no problem'

At first, sentences in (5) lack an absolute reading, so they are not ambiguous. Thus (5a), for example, cannot be interpreted as 'Politicians do not have a very little problem in solving the crisis', although *mínimo* refers to minimum quantity. In other words, the only possible reading for them is the quantitative one, as glosses show[4].

[3] For the time being I will talk about negation as the licenser of NPIs, although different types of contexts license them, and not all of them are necessarily negative. I will get rid of the discussion about whether the common semantic property of NPIs triggers is downward monotonicity (cf. Fauconnier 1975a, b; Ladusaw 1979; ven der Wouden 1997; a.o.) or non-veridicality (cf. Zwarts 1995; Giannakidou 1998, 2011; a.o.). In section §3.1.6 I will slightly deal with this, since different kinds of NP-superlatives are licensed by different kinds of contexts.

[4] The same that (1)-like NP-superlatives have a positive polarity counterpart, (5)-like ones have a free choice side, so they can also have a FC-*any* reading in generic contexts:

(i) El menor problema lo asusta
the less problem ACC.3sg scare.3sg
'Any problem scares him'
(ii) La más mínima sorpresa lo pone contento
the more minimum surprise ACC.3sg put.3sg happy
'Any surprise makes him happy'

Thereby Spanish distinguishes two different types of NP-superlatives: on the one hand, those in (1) are negative polarity expressions in a broader sense, so they have limited interpretation. On the other hand, those superlatives in (5) are negative polarity expressions in the narrow sense, so they have limited distribution, just like NPIs *any*, *ook maar iets* or *tipota*. Furthermore, both share a quantitative reading, but this is mandatory only for the latter. Let us call these last NP-superlatives 'minimizer superlatives' (later it will become clearer why I have chosen this name). (1)-like ones will be called 'pragmatically polarity-sensitive superlatives' (PPS-superlatives). When I use 'NP-superlatives' I will be referring to both groups indistinctly.

Although I have not said yet what the characteristics are for an NP-superlative to be classified into one group or the other, for the time being it is enough noting that minimizer superlatives have a restricted paradigm, since *mínimo* 'minimum' and the syncretic *menor* 'least' (cf. (5a) and (5b), respectively) do not form PPS-superlatives. In section §3 we will extend this paradigm and we will establish more differences between the two groups[5].

Taking all this data into account, the purpose of this paper is twofold: first, I intend to show further evidence for the distinction of the two types of NP-superlatives in Spanish, which has never been done before as far as I know. In doing so we will see that Spanish seems to mark formally the distinction between PPS-superlatives and minimizer superlatives through the position of the DegP. Secondly, I will study how scalar properties of superlatives work in order to get the quantitative meaning. In this second purpose I will especially focus on minimizer superlatives, although the comparison between the two types will be regular.

The paper is organized as follows: first, in section §2 I give some necessary theoretical background. In §3 I show evidence for distinguishing the two types of NP-superlatives in Spanish, since both behave in the opposite way with respect to certain syntactic and semantic phenomena. Then, in §4 I focus on the semantics of NP-superlatives, with special attention to minimizer ones, so we can see the origin of the distinction and how each kind behaves regarding scalar inferences. Finally, some concluding remarks are given in §5.

2. Theoretical background: scalarity and polarity

The relationship between scalarity and polarity was first pointed out in Fauconnier's (1975a, b) seminal works on polarity items. He suggested that in so far as superlatives denote scalar endpoints, they are able to trigger inferences which are responsible for their quantitative readings[6].

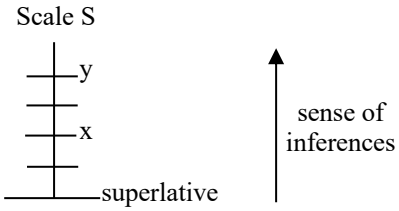
Some authors have claimed that both uses of *any* (as an NPI and as an FCI) can be accounted for under the same properties (e.g. Kadmon & Landman 1993; Chierchia 2006, 2013). I also will leave aside these cases for future research.

[5] The existence of two classes of NP-superlatives is not new, since it has been previously noted by Fauconnier (1975a) for English, although he did not name them in any way. However, there are very important differences between English and Spanish minimizer superlatives. As an example, they do not show limited distribution in the former language, so the distinction comes through other tests. I will not take care of English examples until section §4, where I will compare the mechanisms of both languages to form minimizer superlatives. First, I will deal with how these behave in Spanish, in order to make things as clear as possible.

[6] In fact, given that these superlatives are similar to the polarity item *any* in many aspects, Fauconnier also claimed that the Scalar Principle that he formulated was applicable to this item. After him, some authors have suggested a unified account for all NPIs (especially Chierchia 2006, 2013). Regarding scalar properties of NPIs, Israel (1996, 2011) has developed a theory mainly based on Fauconnier's Scalar Principle and he also claims that scalarity is the main property which makes NPIs polarity-sensitive

In general terms, Fauconnier's proposal is that if a proposition P is true when predicated of an element *x* (a 'propositional schema' in his terms) in some pragmatic scale S, then P will be true predicated of any other element *y* such that *y* is higher than *x* in S. Thus, if P is true for the lowest element in S (what may be expressed by a superlative), it will be true for every element in S. This is known as the Scalar Principle (Fauconnier 1975b: 114):

(6) Scalar Principle
If *x* is lower than *y* in some pragmatic scale S, then P(x) pragmatically implies P(y)



We can briefly exemplify this procedure with the sentence in (1a). In this case, the scale relates to the propositional schema λx.solve_the_problem'(x), where *x* stands as a variable over students with some degree of intelligence. Here the most intelligent person (the one denoted by the superlative *el más listo*) is located at the highest point of the scale. However, for (1a) to mean 'Nobody solved this problem' we need the superlative to be in the lowest position, as (6) claims. And, in fact, this is what we get by inserting negation, since it reverses entailment relations, given its nature as a downward-monotone operator. Thereby, we get *el más listo* to be in the lowest point of the scale, now associated to the propositional schema λx.¬solve_the_problem'(x). Since this position, our superlative can trigger inferences for getting the meaning 'nobody', given that it pragmatically implies any other element in a scale linked to *not solving a problem*.

But what kind of relationship should be between the propositional schema and the superlative for the ordering in the scale? Israel (2011: 58) points out that orderings in pragmatic scales concern likelihood in the following sense: the higher an element is in the scale, the more likely it will make true the proposition. In this sense, it is more likely that the smartest person solves a problem, in the same way that it is more unlikely that the same person screws up. This precisely explains that the same superlative may occupy an extreme position regarding some propositional schema, while occupying the opposite regarding a different one. Thus, as we have just seen, *el más listo* occupies the highest position when we consider the propositional schema λx.solve_the_problem'(x). However, it occupies the lowest point in the scale when the propositional schema is λx.screw_up'(x), as in the following examples:

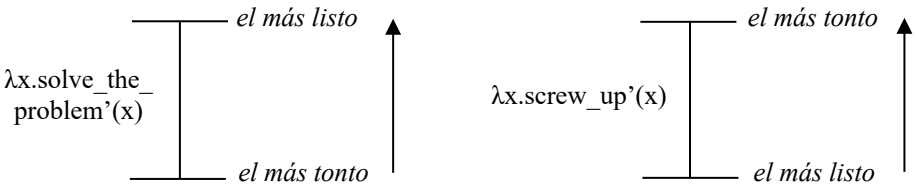
(7) a. El más listo mete la pata en esto
the more clever put.3sg the paw in this
'The cleverest guy screws up on this'
→ 'Everybody screws up on this'

expressions. However, this kind of approach has received critics based on different empirical data which cast doubt a unified explanation for all NPIs (see for example Giannakidou 2011). In this paper I am only concerned on polarity-sensitive superlatives and how they work, leaving aside the question of whether a unified explanation is possible or not for all polarity-sensitive items.

b. El más tonto no mete la pata en esto
the more dumb not put.3sg the paw in this
'The dumbest guy does not screw up on this'
→ 'Nobody screws up on this'

Since *el más listo* occupies the lowest position for λx.screw_up'(x), it is suitable for forming positive polarity expressions with universal meaning, as in (7a). On the contrary, a negative polarity expression (with existential meaning) must be formed with the opposite extreme: *el más tonto* 'the dumbest guy', which occupies the lowest extreme regarding λx.¬screw_up'(x). Bellow I illustrate the differences between pragmatic scales for (1a) and (7):

(8)



At this point it is convenient to note that what we are calling 'quantitative reading' for PPS-superlatives is actually an implicature, and not a reading itself (if we understand this term as the semantic interpretation of the sentence). In this sense, there is no actual case of ambiguity between an absolute and a quantitative reading, since for the latter to be gotten, the former must be true. This idea was in Fauconnier's mind when he treated scales as pragmatic objects. As a prove for this, take into account that the quantitative reading can be cancelled, as is the case with implicatures. When it is cancelled, only the absolute reading is available:

(9) a. Este problema no lo resolvió el más listo de la clase, aunque
this problem not ACC.3sg solved.3sg the more clever of the class, although
sí lo resolvieron otros alumnos
yes ACC.3sg solved.3pl other pupils
'This problem wasn't solved by the cleverest guy in the class, although other students solved it' ↛ 'Nobody solved this problem'
b. Eusebio no resolvió el problema más simple, pero sí resolvió otros
Eusebio not solved.3sg the problem more simple, but yes solved.3sg others
'Eusebio didn't solve the simplest problem, but he solved others' ↛ 'Eusebio didn't solve any problem'

Above I suggested that elements are ordered in pragmatic scales along a likelihood dimension. This reminds of the focus operator *even*[7]. As it is well known, this element carries the following two presuppositions when used as an NPI (I adopt definitions from Rooth 1985: 153, who treats *even* as a propositional operator):

(10) a. EXISTENTIAL PRES.: $\exists p \in C[p \neq a \wedge \neg p]$
b. SCALAR PRES.: $\forall p \in C[p \neq a \rightarrow likelihood(a) > likelihood(p)]$
Where *a* stands for the assertion and *C* is a contextually given set of propositions

[7] The relation between Fauconnier's pragmatic scales and the *even* effect has been previously noted in Fauconnier (1975a: 364) and Rooth (1985: 149).

The existential presupposition (10a) says that at least other alternative proposition (different from the assertion) is false. Furthermore, NPI-*even* also carries a scalar presupposition (10b), which says that the asserted proposition is more likely to be true than the alternatives. Bellow I offer an example illustrating how these presuppositions work:

(11) a. John didn't even say *hello*
b. EXISTENTIAL PRES.: There is something else John didn't do
c. SCALAR PRES.: Saying *hello* was the most likely thing for John to do

In fact, the insertion of *ni siquiera* (Spanish NPI-*even*) in a sentence carrying a PPS-superlative "forces" the quantitative reading. In more accurate terms, what happens is that this reading changes its status from an implicature to being part of the semantics of the sentence (as the presuppositions of *ni siquiera* require). We can easily prove this, since the insertion of *ni siquiera* prevents us from cancelling the quantitative reading, as was the case in (9). In these cases, I will talk about 'semantic quantitative reading':

(12) a. Este problema no lo resolvió ni siquiera el más listo de la clase,
this problem not ACC.3sg solved.3sg NPI-even the more clever of the class,
(#aunque sí lo resolvieron otros alumnos)
although yes ACC.3sg solved.3pl other pupils
'This problem couldn't be solved even by the smartest person in the class, (#although it was solved by other pupils)'
b. Eusebio no resolvió ni siquiera el problema más simple, (#aunque sí
Eusebio not solved.3sg NPI-even the problem more simple, although yes
resolvió otros)
solved.3sg others
'Eusebio didn't solve even the simplest problem, (#although he solved other ones)'

Summing up, the quantitative reading of PPS-superlatives is an implicature gotten by a pragmatic process. This implicature is similar to the presuppositions carried by *ni siquiera*. In fact, the quantitative reading may also arise semantically when we insert this focus operator, not being cancellable in this case.

Until now we have exemplified how pragmatic scales work with PPS-superlatives. Fauconnier also uses this tool for English minimizer superlatives. However, since these show some peculiarities, he is forced to make some stipulations on the nature of the pragmatic scales where their quantitative reading is inferred. For sake of clarity, I will discuss this in section §4, once we have seen what properties minimizer superlatives have in Spanish.

It has been argued by several authors (specially Giannakidou 1998 *et seq*.) that scalarity cannot be the unique source for polarity sensitivity. This does not matter for our purposes, since Giannakidou does not deny that it can be one of the two lexical semantic sources for polarity (along with referential deficiency). Scalarity is then related to an "*even* reading". However, as we saw in section §1, Giannakidou rejects PPS-superlatives to be negative polarity expressions in the strict sense since they do not give rise to limited distribution, but to limited interpretation (notwithstanding the "*even* flavour" of their quantitative reading). So, where is scalarity formally manifested for NPIs? This seems to be related to some languages (as Hindi, see Lahiri 1998) which

use *even* particles to form their NPIs (see also Giannakidou 2007 for an exhaustive study on *even* and its uses). We will be able to prove that scalar properties of minimizer superlatives make them suitable as polarity-sensitive expressions in the narrow sense as well.

3. Two types of NP-superlatives and the role of the DegP

Previously we have determined that there are two different types of NP-superlatives in Spanish. Those we have called 'minimizer superlatives' are characterized by the following properties: (i) they are formed on the adjective *mínimo* or with the syncretic form *menor*, and (ii) they are polarity expressions *stricto sensu* (they show limited distribution). In this section I will show further differences between the two groups.

Bosque (1980) studied the DegP distribution of NP-superlatives and he established the following generalization[8]:

(13) Generalization on superlative DegP distribution (Bosque's version)
Only polarity sensitive superlatives allow for the prenominal position of their DegP.

This adequately describes the following contrast, where the prenominal position of the DegP is only available in presence of negation, hence when the superlative may be a negative polarity expression and therefore allowing for a quantitative reading (note that, at first, these would be PPS-superlatives, given that they are not formed with *mínimo* or *menor*):

(14) a. Eusebio no resolvió el problema más simple (= (1b))
Eusebio not solved.3g the problem more simple
'Eusebio didn't solve the simplest problem'
→ 'Eusebio didn't solve any problem'
b. Eusebio no resolvió el más simple problema
Eusebio not solved.3sg the more simple problem
'Eusebio didn't solve the simplest problem'
→ 'Eusebio didn't solve any problem'
c. *Eusebio resolvió el más simple problema
Eusebio solved.3sg the more simple problem
Intended: 'Eusebio solved the simplest problem'

Furthermore, when the DegP is in prenominal position, the quantitative reading is mandatory. Thus, the prenominal DegP changes the status of the quantitative reading, which goes from being an implicature to being part of the meaning of the expression[9]. In this regard, (14b) must be interpreted as 'Eusebio didn't solve any problem', without ambiguity with the absolute reading, and that interpretation is not cancellable:

(15) Eusebio no resolvió el más simple problema, (#pero sí resolvió otros)
Eusebio not solved.3sg the more simple problem, but yes solved.3sg others
'Eusebio didn't solve any problem, (#but he solved some of them)'

[8] The terminology is adapted. For the original formulation, see Bosque (1980: 112).
[9] Many authors have pointed out that the prenominal position for nominal modifiers restricts the number of possible readings (cf. Bosque 1996, 2001; Bosque & Picallo 1996; Cinque 2010; Fábregas 2017). In this sense, the behaviour of superlatives is as expected.

Nevertheless, Bosque's generalization needs to be revised, in view of two facts. First, not every NP-superlative allows its DegP for being in prenominal position. The following sentences seem considerably worse than (14b):

(16) a. *Este problema no lo resuelve el más listo alumno
this problem not ACC.3sg solve.3sg the more clever pupil
'This problem cannot be solved by the cleverest student'
b. *Este bote de pepinillos no lo abre el más fuerte hombre
this canister of pickles not ACC.3sg open.3sg the more strong man
'This pickle canister cannot be opened by the strongest man'

Secondly, minimizer superlatives are only admissible with a prenominal DegP, so Bosque's generalization does not apply to them as a possibility, but as a necessity:

(17) a. *Los políticos no tienen el interés más mínimo en resolver la crisis
the politicians not have.3pl the interest more minimum in solve the crisis
Intended: 'Politicians have no interest in solving the crisis'
b. *No hubo el problema menor
not there.was the problem less
Intended: 'There was no problem'

So, this is the picture: on the one hand, minimizer superlatives clearly need their DegP to be in prenominal position and, consequently, they only have the quantitative reading (cf. (17)). On the other, PPS-superlatives seem to be divided into two groups: some of them clearly reject prenominal DegPs and they only allow for postnominal ones (cf. (16)); others, which I will call the "rebellious group", apparently fit both paradigms (cf. (14))[10]. These observations cast doubt Bosque's generalization, which claimed every NP-superlative to admit a prenominal DegP (as a possibility).

In this paper I defend that this picture is not quite accurate, and that the DegP distribution plays an important role in the distinction between the two types of NP-superlatives in Spanish. Thus, prenominal DegPs will be related to minimizer superlatives, while postnominal DegPs will be, at first, associated to PPS-superlatives. This would require us to say that the superlative in (14b) is a minimizer one, whereas the one in (14a) is not, and indeed this is what I will claim. Remember that support for this is the fact that (14b) behaves like minimizer superlatives regarding limited distribution. We will discuss further evidence in §3.2, but first I will show some semantic and syntactic constraints which affect in a different way to minimizer and PPS-superlatives.

3.1. Further differences between minimizer superlatives and PPS-superlatives

3.1.1. Cancelability and admission of *ni siquiera*

Above we saw that minimizer superlatives are negative polarity expressions in the narrow sense, given that they give rise to limited distribution. This seems to be related to the fact that they only have a quantitative reading. In this sense, they behave like whether they had a *ni siquiera* operator, given that the quantitative reading is part of their meaning and not an implicature. Therefore, it cannot be cancelled:

[10] Although I have exemplified this with only one adjective, *simple*, the rebellious group is indeed a group: more adjectives share this behaviour. We will extend the paradigm in §3.2.

(18) a. Los políticos no tienen el más mínimo interés en resolver la crisis
the politicians not have.3pl the more minimum interest in solve the crisis
(#aunque sí tienen un poco)
although yes have.3pl a bit
'Politicians don't have any interest in solving the crisis, (#although they have a little bit)'
b. No hubo el más mínimo problema, (#aunque sí hubo alguno)
not there.was the more minimum problem, although yes there.was some
'There was no problem, (#but there was some problem)'

So, Spanish minimizer superlatives have a semantic quantitative reading even if *ni siquiera* is not present, contrary to PPS-superlatives. I will refer to this property as the 'inherent *even*-like meaning' of minimizer superlatives. It must be noted that these also admit the presence of *ni* (apocope of *ni siquiera*). However, speakers feel odd the construction with the whole focus operator:

(19) a. Los políticos no tienen ni (??siquiera) el más mínimo interés en
the politicians not have3.pl NPI-even the more minimum interest in
resolver la crisis
solve the crisis
'Politicians don't have (??even) any interest in solving the crisis'
b. No hubo ni (??siquiera) el más mínimo problema
not there.was NPI-even the more minimum problem
'There was (??even) no problem'

Herburger (2003) studied how *ni siquiera* carries its presuppositions and she concluded that *siquiera* is the focus operator, while *ni* is a semantically vacuous word. This last conclusion is not so clear to me, since NPI-*even* may have a coordination component (Giannakidou 2007: 56), what we can easily find in *ni*, which precisely acts independently as a coordination conjunction. Anyway, assuming that the focus meaning is in *siquiera* could lead us to think that this operator is incompatible with minimizer superlatives precisely because these are inherently *even*-like. This would explain why speakers feel redundant sentences like (19).

3.1.2. Indefiniteness: existential sentences and extraction

The following examples show that while PPS-superlatives meet the expected regarding the definiteness effect (cf. Milsark 1977; Leonetti 2008; McNally 2011), minimizer superlatives do not. In fact, this last group is admissible in existential contexts:

(20) a. *No hay el chico más listo que resuelva este problema
not there.is the guy more clever that solve.3sg this problem
Intended: 'There isn't the cleverest guy who solves this problem'
b. *No hay el problema más simple en resolver esto
not there.is the problem more simple in solve this
Intended: 'There isn't the simplest problem in solving this'
(21) a. No veo que haya el menor interés
not see.1sg that there.is the less interest
'I don't see that there is any interest'

b. No hubo el menor problema (= (5b))
not there.was the less problem
'There was no problem'

This contrast points out that minimizer superlatives, whatever the reason is, behave like indefinite expressions, notwithstanding their (necessary) definite shape. Further evidence for the indefinite behaviour of minimizer superlatives comes from extraction operations[11]:

(22) a. *¿[En qué]$_i$ no tienes el problema más simple t_i?
in what not have.2sg the problem more simple
b. *¿[De dónde]$_i$ no resuelve este problema el chico más listo t_i?
of where not solve.3sg this problem the guy more clever
(23) a. ¿Qué$_i$ no tenías la menor intención de resolver t_i?
what not had.2sg the less intention of solve
'What didn't you have any intention to solve?'
b. ¿[En qué]$_i$ no hubo el más mínimo problema t_i?
in what not there.was the more minimum problem
'What there was no problem to?'

Extraction from a definite phrase is not admitted, hence why sentences in (22) are ungrammatical. However, extraction from a minimizer superlative is not problematic (cf. (23)), what points out again that these expressions have an indefinite meaning. See Szabolcsi (1986) for extraction data from superlatives.

3.1.3. Insertion of coda

Minimizer superlatives do not allow insertion of coda (italics in the examples), namely the element which denotes the set from which the outstanding individual is extracted. On the other side, PPS-superlatives admit it without any problem:

(24) a. Este problema no lo resuelve el más listo *de la clase*
this problem not ACC.3sg solve.3sg the more clever of the class
'This problem cannot be solved by the cleverest guy in the class'
b. Eusebio no resuelve el problema menos complicado *del libro*
Eusebio not solve.3sg the problem less complicated of-the book
'Eusebio doesn't solve the simplest problem of the book'
(25) a. Los políticos no tienen el más mínimo interés (**de todos*) en
the politicians not have.3pl the more minimum interest of all in
resolver la crisis
solve the crisis
Intended: 'Politicians have no interest (of all interests) in solving the crisis'
b. No hubo el menor problema (**de todos*)
not there.was the less problem of all
Intended: 'There was no problem (of all problems)'

We can define the superlative coda as an element which restricts the domain of quantification of the superlative operator (cf. Gutiérrez-Rexach 2010: 205). The fact

[11] Thanks to an anonymous reviewer for suggesting this test.

that codas are not allowed in minimizer superlatives indicates that these constructions cannot be restricted[12].

3.1.4. Restrictions on the modified noun

Although PPS-superlatives seem to be possible with any class of nouns, minimizer superlatives show an interesting restriction: at first, they cannot contain plural or matter-referring mass nouns:

(26) a. No se beben ni el agua más deliciosa
not SE drink.3pl NPI-even the water more delicious
'They don't drink even the most delicious water'
b. No resuelven ni los problemas más sencillos
not solve.3pl NPI-even the problems more simple
'They don't solve even the simplest problems'

(27) a. *No encontraron el más mínimo petróleo
not found.3pl the more minimum oil
Intended: 'They didn't find any oil'
b. *No resolvieron los más mínimos problemas
not solved.3pl the more minimum problems
Intended: 'They didn't solve any problems'

On the contrary, mass nouns whose denotation is a measurable property, as *interés* 'interest', *relevancia* 'relevance' or *importancia* 'importance', are fine in minimizer superlatives:

(28) a. Este trabajo no tiene el más mínimo interés
this work not have.3sg the more minimum interest
'This work has no interest'
b. Su aportación no tuvo la más mínima relevancia
his/her input not had.3sg the more minimum relevance
'His/her input had no relevance'
c. No tiene la menor importancia
not have.3sg the less importance
'It has no importance'

The distinction between what we can call 'scalar mass nouns' (those in (28)) and other typical matter-referring mass terms has been pointed out in several recent works as Nicolas (2010), Hinterwimmer (to appear), Francez & Koontz-Garboden (2017) or Sánchez Masià (2017). Spanish minimizer superlatives provide further evidence for the relevance of this distinction.

[12] Since Kadmon & Landman (1993), some authors have assumed that NPI-*any* is a domain widening element in so far as it extends the domain of quantification (see also Chierchia 2004, 2006). In this sense, the following sentence would invite the hearer to think that the speaker does not have even rotten potatoes, although these are not usually considered:

(i) I don't have any potatoes

Given the similarities between minimizer superlatives and NPI-*any*, we can think of the absence of coda also as a mark of domain widening: since the coda restricts the domain of quantification, it would be incompatible with a minimizer superlative, which precisely widens that domain.

Regarding singular count nouns, judgments are not so consistent. Remember that the minimizer superlative in (5b) contained a count noun, although in this context one could also think of a measure of 'problematicity', instead of having individual problems. However, the following context requires counting, and some speakers find it good, whereas others do not:

(29) ?Eusebio no resolvió el más mínimo problema
Eusebio not solved.3sg the more minimum problem
'Eusebio didn't solve any problem'

On the other hand, sentences in (30), which also require counting, are hardly admissible:

(30) a. *No se compró el más mínimo zapato
not SE bought the more minimum shoe
Intended: '(S)he didn't buy any shoe'
b. *No aprendió a tocar el más mínimo instrumento
not learned.3sg to touch the more minimum instrument
Intended: '(S)he doesn't know to play any instrument'
c. *Ayer no leí el más mínimo libro
yesterday not read.1sg the more minimum book
Intended: 'I didn't read any book yesterday'

So, *problema* in (29) supposes a problem. In this article I will be mainly focused on minimizer superlatives built on scalar mass terms as those in (28). However, I will admit the grammaticality of (29), since this will allow me to clarify the differences between both types of NP-superlatives later.

3.1.5. Substitution by opposite-direction superlatives

Also, it is notable that PPS-superlatives may be substituted *salva veritate* by their opposite-direction superlatives (by 'opposite-direction superlative' I mean the one whose degree quantifier points the opposite direction on the scale, while the DP keeps its denotation). However, minimizer superlatives do not allow this substitution:

(31) a. Este problema no lo resuelve el menos tonto de la clase
this problem not ACC.3sg solve.3sg the less dumb of the class
'This problem cannot be solved by the less dumb pupil in the class'
b. Eusebio no resuelve el problema menos complicado
Eusebio not solve.3sg the problem less complicated
'Eusebio doesn't solve the less complicated problem'

(32) a. *Los políticos no tienen el menos máximo interés en resolver la crisis
the politicians not have.3pl the less maximum interest in solve the crisis
Intended: 'Politicians don't have any interest in solving the crisis'
b. *No hubo el menos grande interés
not there.was the less big interest
Intended: 'There was no interest'

3.1.6. Licensing contexts[13]

Until now I have referred to NP-superlatives as being dependent on negation. However, this is only partially accurate. Other non-negative contexts license NPIs, and the same happens for minimizer superlatives (in italics the licenser):

(33) a. ¿Tienes la menor idea de lo que ha pasado*?*
have.2sg the less idea of DET that has passed
'Do you have any idea about what has happened?'
b. *Si* tuvieses el menor problema, me avisas[14]
if had.2sg the less problem, ACC.1sg notify.2sg
'If you had any problem, call me'
c. *Nunca* tuvo el menor problema
never had.3sg the less problem
'(S)he never had any problem'
d. *Ninguno* resolvió el más mínimo problema
none solved.3sg the more minimum problem
'None solved any problem'
e. Lo hizo *sin* el menor interés
ACC.3sg did.3sg without the less interest
'He did it without any interest'

The interrogative in (33a) is a nonveridical context (Giannakidou's 1998, 2011 terminology), the protasis of the conditional in (33b) is a downward-monotone context, and licensing expressions in (33c, d, e) are antiadditive, in Zwarts' (1996, 1998) words[15]. However, the first two do not seem to license the quantitative reading of PPS-superlatives:

[13] Thanks to Raquel González for discussions on this issue.

[14] As a reviewer points out, the licensing of minimizer superlatives in interrogatives and conditionals is surprising since Spanish does not usually allow for NPIs in these contexts:

(i) *¿Tienes ninguna idea de lo que hacemos aquí?
have.2sg NPI-any idea of DET what do.1pl here
(ii) *Si tuvieses ningún problema, llámame
if had.2sg NPI-any problem call-me

Note that Spanish is a Negative-Concord language, but minimizer superlatives are not negative expressions, what could explain for their licensing in interrogatives and conditionals if we assume that n-words as *ninguno* 'none' bear some [uNeg] feature that must be checked for Agreement with a negative licenser (see Zeijlstra 2004, 2008 for this type of approach). Minimizer superlatives would not have this feature and then there is no need for Agreement with a negative licenser.

[15] Both classical negation and antiadditive contexts are downward-monotone expressions, and therefore they make inferences from sets to subsets. However, while the former meets the four De Morgan's laws, the latter only meet three of them. This makes classical negation being antimorphic, in Zwart's terminology. Antimorphic expressions are a subset of antiadditive ones. These are the formal definitions (see also Zwarts 1995, 1998; van der Wouden 1997; González Rodríguez 2009; Giannakidou 2011 for more detailed explanations):

(i) DOWNWARD-MONOTONICITY
a. $f(X) \cup f(Y) \subseteq f(X \cap Y)$
b. $f(X \cup Y) \subseteq f(X) \cap f(Y)$
(ii) ANTIADDITIVITY
a. $f(X) \cup f(Y) \subseteq f(X \cap Y)$
b. $f(X \cup Y) \subseteq f(X) \cap f(Y)$

(34) a. #$_Q$¿Tienes la idea más simple?
have.2sg the idea more simple
'Do you have the simplest idea?'
b. #$_Q$Si tuvieses el problema más simple, me avisas
if had.2sg the problem more simple, ACC.1sg notify
'If you had the simplest problem, call me'

Sentences in (34) are grammatical and interpretable, however they lack a quantitative reading, what I signal by "#$_Q$". Note that *siquiera* (without the negative concord element *ni*) is admitted in these examples. However, here the item receives an 'at least' meaning and there are no signs of the quantitative reading:

(35) a. ¿Tienes siquiera la idea más simple?
have.2sg NPI-even the idea more simple
'¿Do you have at least the simplest idea?'
b. Si tuvieses siquiera el problema más simple, me avisas
if had.2sg NPI-even the problem more simple, ACC.1sg notify
'If you had at least the simplest problem, call me'

Regarding antiadditive contexts, the behaviour is not so regular. Thus, for some speakers *nunca* 'never' and *ninguno* 'none' may license the quantitative reading of PPS-superlatives (cf. (36a, b)): for example, if Juan never solves the simplest problem, someone can easily infer that he never solves more complex problems. However, the quantitative reading cannot arise with the preposition *sin* 'without' (cf. (36c)):

(36) a. Juan nunca resuelve el problema más simple
Juan never solve.3sg the problem more simple
'Juan never solves the simplest problem' → 'Juan never solves any problem'
b. Ninguno resolvió el problema más simple
none solved.3sg the problem more simple
'None solved the simplest problem' → 'None solved any problem'
c. #$_Q$Lo hizo sin el interés más pequeño
ACC.3sg did.3sg without the interest more small
'He did it without the smallest interest' ↛ 'He did it without any interest'

---

c. $f(X) \cap f(Y) \subseteq f(X \cup Y)$

(iii) ANTIMORPHICITY
a. $f(X) \cup f(Y) \subseteq f(X \cap Y)$
b. $f(X \cup Y) \subseteq f(X) \cap f(Y)$
c. $f(X) \cap f(Y) \subseteq f(X \cup Y)$
d. $f(X \cap Y) \subseteq f(X) \cup f(Y)$

Giannakidou's critics to the downward-monotonicity approaches come precisely from licensing contexts which do not support this property, as interrogatives (the downward-monotone status of *if*-clauses has also been questioned). Thus, she extends licensers to nonveridical contexts. An expression is nonveridical if it does not presuppose the truth of a proposition *p* (Giannakidou 2011: 1676):

(iv) a. A propositional operator *F* is veridical iff *Fp* entails or presupposes that *p* is true in some individual's model M(x); p is true in M(x) if M(x) ⊂ p.
b. If (i) is not the case, *F* is nonveridical.

So, despite of examples of (36a, b) –whose judgments are not so regular among speakers that I have consulted–, we can see that the plenty of contexts which license the presence of minimizer superlatives contrasts with the limited number of contexts which trigger the quantitative reading for sentences containing PPS-superlatives[16].

3.1.7. Interpretation

Until now we have talked about the two types of NP-superlatives as whether they meant 'any' in the same way. However, there are interpretative differences between a sentence which contains a PPS-superlative and another that contains a minimizer one. In order to see this, look at the following examples. While (37a) has a PPS-superlative, (37b) contains a minimizer superlative:

(37) a. Eusebio no resolvió el problema más simple
Eusebio not solved.3sg the problem more simple
'Eusebio didn't solve the simplest problem'
b. Eusebio no tenía el más mínimo interés
Eusebio not had.3sg the more minimum interest
'Eusebio had no interest'

From sentence (37a) we infer that the lack of problem solving is not due to lack of time or reluctance, but to Eusebio's inability to solve problems. In other words, we establish a generalization on Eusebio's problem-solving skills, and the sentence is tantamount to *Eusebio no fue capaz de resolver el problema más simple* 'Eusebio wasn't able to solve the simplest problem'.

However, sentences which contain minimizer superlatives do not show this behaviour. Thus, (37b) does not doubt Eusebio's ability to have interest, but it simply expresses that he had no interest at all, whatever the reason was for this. In this sense, with minimizer superlatives we do not establish a generalization on a situation, but we rather express absence of a (minimum) quantity or degree, regardless of what the reasons are for this lack.

Thus, there is a remarkable interpretative difference between both types of NP-superlatives: PPS-ones relate to an 'ability' property, whereas minimizer superlatives relate to a 'quantity' property.

In the last pages we have been able to prove that minimizer superlatives and PPS-superlatives show a very different behaviour regarding some syntactic and semantic phenomena. This shows the necessity for the distinction between two types of NP-superlatives in Spanish. I summarize these differences in the following table:

[16] Nevertheless, it must be noted that, surprisingly, minimizer superlatives are not generally admitted in some downward-monotone contexts as *pocos* 'few' or *raramente* 'seldom':

(i) ??Pocos políticos tienen el más mínimo interés en resolver la crisis
Few politicians have.3pl the more minimum interest in solve the crisis
'Few politicians have any interest in solving the crisis'
(ii) ??Raramente hay el más mínimo interés en resolver la crisis
seldom there.is the more minimum interest in solve the crisis
'Rarely there is any interest in solving the crisis'

Again, not all informants share the same judgment on the grammaticality of these sentences.

Table 1. Differences between minimizer and PPS-superlatives

	Minimizer superlatives	**PPS-superlatives**
Polarity	Limited distribution	Limited interpretation
Cancelability	×	✓
Definiteness effect	×	✓
Coda	×	✓
Restrictions on N	[–count], [–mass]*	[+pl], [+mass]
Replaceability with opposite-direction superlatives	×	✓
Licensing triggers	DE contexts* and interrogatives	Some DE contexts
Interpretation	Quantity	Ability

*With restrictions

Besides these differential properties, in the next subsection I will show that Spanish formally marks the distinction between both types of NP-superlatives through the DegP position.

3.2. The rebellious group (or how to solve the simplest problem)

Once we have showed that several tests prove the existence and the different behaviour of two types of NP-superlatives, it is time to come back to the problem set aside at the beginning of the section: the rebellious group.

Above I suggested that two NP-superlatives like those that appear in (14a) and (14b) –repeated here with the original numeration– fit different groups despite of their apparent similarity. Specifically, I suggested that the superlative in (14b), which shows a prenominal DegP, is indeed a minimizer superlative, although it is not formed on the adjective *mínimo* or with the syncretic form *menor*.

(14) a. Eusebio no resolvió el problema más simple (= (1b))
Eusebio not solved.3sg the problem more simple
'Eusebio didn't solve the simplest problem'
b. Eusebio no resolvió el más simple problema
Eusebio not solved.3sg the more simple problem
'Eusebio didn't solve the simplest problem'
c. *Eusebio resolvió el más simple problema
Eusebio solved.3sg the more simple problem
'Eusebio solved the simplest problem'

As an evidence for treating the superlative in (14b) as a minimizer superlative, remember that it is an inherent *even*-like expression, since the quantitative reading cannot be cancelled (cf. (15), repeated here):

(15) Eusebio no resolvió el más simple problema, (#pero sí resolvió otros)
Eusebio not solved.3sg the more simple problem, but yes solved.3sg others
'Eusebio didn't solve any problem, (#but he solved some of them)'

Furthermore, removing negation in (14b) leads to ungrammaticality (cf. (14c)), so the NP-superlative seems to be a negative-polarity expression in the narrow sense, also as minimizer superlatives.

In fact, in my opinion (14b) shares all the characteristics of sentences which contain minimizer superlatives: they do not necessarily involve lack of ability (cf. (38a))[17], the superlative can appear in existential contexts (cf. (38b)), it does not admit coda (cf. (38c)), it does not admit plural nouns (cf. (38d)), it is not replaceable by its opposite-direction superlative (cf. (38e)) and it can be licensed by contexts different from classical negation (cf. (38b, f)):

(38) a. Eusebio no tuvo el más simple problema en ayudarnos
Eusebio not had.3sg the more simple problem in help-us
'Eusebio didn't have any problem in helping us'
b. De haber el más simple problema, nos enteraríamos
of there.be the more simple problem, us find.out-us
'If there was any problem, we would find out'
c. Eusebio no resolvió el más simple problema (*de todos)
Eusebio not solved.3sg the more simple problem of all
'Eusebio didn't solve any problem'
d. *Eusebio no resolvió los más simples problemas
Eusebio not solved.3sg the more simple problems
Intended: 'Eusebio didn't solve any problems'
e. *Eusebio no resolvió el menos difícil problema
Eusebio not solved.3sg the less difficult problem
Intended: 'Eusebio didn't solved any problem'
f. Si tuvieses el más simple problema, avísame
if had.2sg the more simple problem, notify-ACC.1sg
'If you had any problem, call me'

What these tests show is that whenever the DegP *más simple* is in prenominal position, the superlative will work as a minimizer superlative. However, we saw in (16) that not every NP-superlative is able to have a prenominal DegP. In fact, the number of adjectives that form superlative DegPs likely to be in prenominal position is very restricted. In addition to *simple*, we also find at least *leve* 'faint', *ligero* 'light', *remoto* 'remote', and *pajolero* 'damned'. The reader can prove by him/herself that all of them pass the tests for being minimizer superlatives, instead of PPS-superlatives (in order to speed things up, I use existential contexts when possible)[18]:

[17] *Tener un problema* 'having a problem' is a stage-level predicate and, as a consequence, it does not admit generalizations (cf. Krifka *et al*. 1995), a characteristic of sentences with PPS-superlatives, since they need to establish generalizations on abilities. Note that the quantitative reading is not possible with the following sentences, where we have stage-level predicates and PPS-superlatives:

(i) #$_Q$Juan no tiene el problema más simple
Juan not have.3sg the problem more simple
'John hasn't got the simplest problem'
(ii) #$_Q$Juan no sabe el idioma más simple
Juan not know.3sg the idiom more simple
'Juan doesn't know the simplest language'

[18] Interestingly, minimizer superlatives with the noun *idea* are not admitted in existential contexts (cf. (i)), although the noun can easily fit these contexts when properly quantified (cf. (ii), (iii)):

(39) a. No hubo el más leve murmullo
not there.was the more faint murmur
'There wasn't the faintest murmur'
b. No había el más ligero rastro
not there.was the more light trace
'There was no trace'
c. No tienes la más remota idea
not have.2sg the more remote idea
'You don't have the most remote idea'
d. No tenía la más pajolera idea
not had.3sg the more damned idea
'(S)he didn't have the most remote idea'

So, this allows us for clarifying the picture outlined above: NP-superlatives divide into two clear distinct groups, which behave in a very different way regarding some semantic and syntactic issues. In Spanish, this distinction is formally marked through the position of the DegP: minimizer superlatives necessarily have prenominal DegPs, whereas PPS-superlatives feel better with postnominal DegPs. Whenever a DegP seems to fit both positions, optionality is not naïve.

Now we are willing to modify Bosque's generalization in the following terms:

(40) Generalization on superlative DegP distribution (second version)
Minimizer superlatives need prenominal DegPs.

Also, examples such as the ones in (14) and (39) allow us for extending the paradigm of adjectives which form minimizer superlatives: in addition to *mínimo* (and the syncretic form *menor*), we also have *simple*, *leve*, *ligero*, *remoto* and *pajolero*[19]. Whereas the first belongs exclusively to the paradigm (it cannot form PPS-superlatives), the others are likely to form both types of NP-superlatives. However, we can think that the position of the DegP will not allow for ambiguity.

(i) *No hubo la más {mínima/remota/pajolera} idea
not there.was the more {minimum/remote/damned} idea
'There wasn't the most remote idea'
(ii) Hubo una idea
there.was a idea
'There was an idea'
(iii) No hubo ninguna idea
not there.was NPI.any idea
'There was no idea'

Although this test fails, it is easily demonstrable that these superlatives work as minimizer superlatives. For example, their quantitative reading cannot be cancelled:

(iv) No tenía la más remota idea, (#pero tenía alguna)
not had.1sg the more remote idea but had.1sg some
'I didn't have the most remote idea, (#but I had some idea)'

At the moment, I have no explanation for the ungrammaticality of (i). Anyway, as a reviewer points me out, *remota* in *la más remota idea* seems a collocation, whereas *la más pajolera idea* is kind of an idiom, so these could be fixed expressions.

[19] We find a similar situation in English. Fauconnier (1975a) presents a list with the following terms: *faint*, *remote*, *slight*, *small* and *tiny*, in addition to the syncretic superlative *least*.

Now, two natural questions arise. First, why minimizer superlatives need prenominal DegPs? Secondly, what do all the adjectives that form minimizer superlatives have in common? In this article I will not deal with the first question, although in the next subsection I will study what consequences the prenominal DegP has for minimizer superlatives and to what extent it plays a role in the distinction between these and PPS-superlatives. The second question will be addressed in section §4.

3.3. The prenominal DegP

In (40) we have established as a generalization that minimizer superlatives need a prenominal DegP. On the other side, we have seen that prenominal DegPs seem to be ungrammatical for other types of superlatives at first, although I have avoided to claim this as a generalization. In fact, Fábregas (2017), following Cinque's (2010) observations on Italian, takes these examples for grammatical:

(41) a. ¿Quién ha escalado la más alta montaña? (Fábregas 2017: 33)
who has climbed the more high mountain
'Who has climbed the highest mountain?'
b. El más alto chico de entre los estudiantes (Fábregas 2017: 42)
the more high guy of between the students
'The tallest guy among the students'

Furthermore, I have also found these examples from different sources[20]:

(42) a. Las más relevantes becas predoctorales
the more relevant grants predoctoral
'The most relevant predoctoral grants'
[http://portalvirtualempleo.us.es/becas-predoctorales/]
b. El más estricto reformatorio juvenil que existe
the more strict reformatory juvenile that exist.3sg
'The strictest reformatory school that exists'
c. En lo más alto de la más alta torre
in the more high of the more high tower
'In the highest place of the highest tower'

Speakers that I have consulted judge (41) as very odd and find examples from (42) too "literary", so the grammaticality of these examples is not so clear. Anyway, a speaker who admits these examples will also presumably accept the grammaticality of PPS-superlatives with prenominal DegPs as (16) –here repeated, with change in judgement–:

(16) a. ?Este problema no lo resuelve el más listo alumno
this problem not ACC.3sg solve.3sg the more clever pupil
'This problem cannot be solved by the cleverest person'
b. ?Este bote de pepinillos no lo abre el más fuerte hombre
this canister of pickles not ACC.3sg open.3sg the more strong man
'This pickle canister cannot be opened by the strongest man'

[20] Example (42a) is taken from the website *Portal Virtual Empleo* [consulted 02/11/2020]. I heard (42b) in the TV series *The Simpsons* (superintendent Chalmers *dixit*), and (42c) is in the very well-known beginning of the movie *Shrek* (2001), whose English version says "In the highest room of the tallest tower".

However, these superlatives could not be treated as minimizer superlatives in any case, since they do not pass the tests for being identified as such:

(43) a. *No hay el más listo alumno que resuelva este problema
not there.is the more clever student that solve.3sg this problem
Intended: 'There isn't the cleverest student who solves this problem'
b. ?Este problema no lo resuelve ni el más listo alumno
this problem not ACUS.3sg solve.3sg NP-even the more clever student
de la clase
of the class
'This problem cannot be solved by the cleverest student in the class'
c. ?Este problema no lo resuelven ni los más listos alumnos
this problem not ACUS.3sg solve.3pl NP-even the more clever pupils
'This problem cannnot be solved by the cleverest students'
d. ?Este problema no lo resuelve ni el menos tonto alumno
this problem not ACUS.3sg solve.3sg NPI-even the less dumb student
'This problem cannot be solved by the less stupid student'
e. ?¿No está aquí el más listo alumno?
not be.3sg here the more clever student
'Isn't here the cleverest student?'
↛ 'Isn't here any student?'

In view of these facts, we can say that the prenominal DegP is a necessary but not sufficient condition for minimizer superlatives. PPS-superlatives could also have prenominal DegPs in some contexts, but this would be a derived position for them, and it would not involve the same consequences as in a minimizer superlative.

Cinque (2010) and Fábregas (2017) defend that a prenominal superlative DegP precisely breaks the well-known ambiguity between comparative and absolute readings of superlatives in favour of the latter[21]. Very roughly, what this means is that (44a) –with postnominal DegP– could have the two readings in (44b, c), while (41a) –with prenominal DegP– only could have the absolute one:

(44) a. ¿Quién ha escalado la montaña más alta?
who have.3sg climbed the mountain more high?
'Who has climbed the highest mountain?'
b. ABSOLUTE READING: 'who did climb a higher mountain than any other mountain?'
c. COMPARATIVE READING: 'who did climb a higher mountain than what anybody else climbed?'

Given the generalization in (40), we would expect that minimizer superlatives only had an absolute reading, and we can prove that this is what happens indeed[22]:

[21] This ambiguity has been subject of many debates since Szabolcsi (1986). The most successful explanation was given by Heim (1999), although many authors have offered different answers in order to avoid some problems derived from Heim's proposal: Farkas & Kiss (2000), Gutiérrez-Rexach (2006, 2010), Krasikova (2012), among many others.

[22] I assume that a minimizer superlative could be paraphrased as *the smallest degree of N*, due to its quantity meaning.

(45) a. Eusebio no tenía el más mínimo interés (= (37b))
Eusebio not had.3sg the more minimum interest
'Eusebio had no interest'
b. ABSOLUTE READING: 'Eusebio didn't have a smaller degree of interest than any other degree of interest'
c. COMPARATIVE READING: #'Eusebio didn't have a smaller degree of interest than what any other person had'

As we can see, using a minimizer superlative prevents us from comparing people having a degree of interest, but rather we compare degrees themselves, in order to get the smallest one. So, we can conclude that the prenominal DegP of minimizer superlatives reflects an absolute reading, what Cinque and Fábregas predict.

Moreover, if data from (41) and (42) are correct –remember that their grammaticality is not sure–, then we cannot conclude that the distinction between minimizer superlatives and PPS-superlatives is formally marked through the DegP position in Spanish, since we can expect that some speakers admit (16). Rather, we can only ensure that minimizer superlatives need prenominal DegPs in Spanish (as it is claimed in (40)), but we cannot say anything about the DegP distribution of superlatives in general, and the distinction between both groups of NP-superlatives must be accounted for through other tests, such as those indicated above (admission in existential contexts, admission of plural nouns, etc.).

4. Quantity meaning and the interpretation problem

Fauconnier (1975a) pointed out that both sentences in (46) can be felicitously uttered for describing a situation where Ernest did not hear any noise:

(46) a. Ernest did not hear the loudest noise (Fauconnier's 1975a (121))
→ 'Ernest didn't hear any noise'
b. Ernest did not hear the faintest noise (Fauconnier's 1975a (14))
→ 'Ernest didn't hear any noise'

The striking thing about these examples is that *loudest* and *faintest* represent opposite ends of the same pragmatic scale, in Fauconnier's terms. Despite this, both can trigger the necessary inferences to give rise to the quantitative reading with the same propositional schema, namely *Ernest not hearing x*. Note that this is expected with (46a), but not with (46b): at first, that Ernest cannot hear very faint sounds should not prevent him from hearing louder and, therefore, audibly more perceptible sounds. In this sense, (46b) apparently violates the Scalar Principle.

Fauconnier realized that *faintest* in (46b) is a minimizer superlative (in our terms), given that it expresses «nonexistence of the object» (1975a: 367) and it passes minimizer superlatives tests as being admissible in existential contexts[23]:

(47) There wasn't the faintest noise (Fauconnier's 1975a (14'))

[23] Fauconnier's tests for identifying minimizer superlatives differ from mines, and they are relative to the English grammar. Thus, for example, they can be modified by *at all* (cf. (i)), contrary to PPS-superlatives (cf. (ii)):

(i) I don't have the slightest reason at all to believe you (Fauconnier's 1975a (145))
(ii) *Tommy won't eat the most delicious food at all (Fauconnier's 1975a (146))

In fact, we can verify that the same dichotomy does not take place in Spanish unless *leve* 'faint' is in a prenominal superlative DegP (cf. (48c)), a property that we showed belongs to minimizer superlatives:

(48) a. Ernesto no oyó el ruido más fuerte
Ernesto not heard.3sg the noise more strong
→ 'Ernest didn't hear any noise'
b. Ernesto no oyó el ruido más leve
Ernesto not heard.3sg the noise more faint
↛ 'Ernest didn't hear any noise'
c. Ernesto no oyó el más leve ruido
Ernesto not heard.3sg the more faint noise
→ 'Ernest didn't hear any noise'

But how do we solve the problem that both *fuerte*/*loud* and *leve*/*faint* are opposite ends of the same pragmatic scale? Do (46b) and (48c) violate the Scalar Principle as it seems? Since we know that these sentences contain minimizer superlatives, these questions may be reformulated in the following way: how do minimizer superlatives get their meaning?

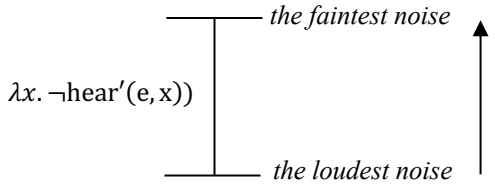
Note that, contrary to Spanish, minimizer superlatives have no formal mark in English and therefore they look just like a variant of PPS-superlatives. This leads Fauconnier to explain minimizer superlatives as whether they worked also on pragmatic scales. Specifically, he argues that there are two different types of pragmatic scales. Following Hoeksema & Rullmann (2001), I will call them "existential" and "proposition-related" scales. Minimizer superlatives relate to the first ones, whereas PPS-superlatives relate to the latter.

Furthermore, minimum quantities are placed at the highest end of an existential scale. If we apply likelihood as the dimension guiding pragmatic scales (as we did in §2), then we could say that a minimum quantity is more likely to be true regarding existence. As a matter of fact, *one* (the smallest quantity in the natural numbers series) is always logically entailed by any other number[24]. Fauconnier argues that minimizer superlatives bear a minimum quantity feature, so these superlatives will be located at the highest end of existential scales. Once we insert negation, entailment relations are reversed and the minimizer superlative ends at the bottom of the scale, from where it pragmatically implies any other element regarding a nonexistence proposition. This nonexistence proposition is inferred from the assertion.

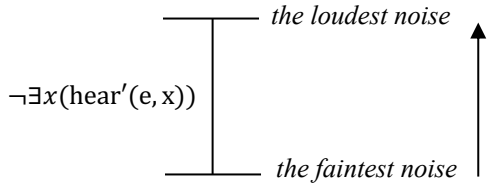
In this way, Fauconnier saves the Scalar Principle, which is not violated by minimizer superlatives as it seemed. Rather, the Scalar Principle is applied on a different type of scale, an existential one. Below I illustrate how (46a)/(48a) and (46b)/(48c) work under Fauconnier's theory (where *e* stands for a constant for *Ernest*):

[24] As the careful reader may have observed, *one* is indeed *logically* (and not pragmatically) entailed by any other number, what suggests that existential "pragmatic" scales de not exist. This is precisely what I will argue below, but let me first end with Fauconnier's argumentation.

(49) PROPOSITION-RELATED SCALE



EXISTENTIAL SCALE



(46a) Ernest didn't hear the loudest noise (46b) Ernest didn't hear the faintest noise
(48a) Ernesto no escuchó el ruido más fuerte (48c) Ernesto no escuchó el más leve ruido

Moreover, Fauconnier (1975a: 368) and Hoeksema & Rullmann (2001: 165, n. 2) argue that the fact that minimizer superlatives are admissible in existential contexts is related to the fact that they work on existential scales. However, none of them offers a clear explanation for how these two phenomena should be related.

In the next subsection I will show problems derived from working with pragmatic scales for minimizer superlatives, as well as problems for PPS-superlatives. Then, in subsection §4.2 I will reorganize the data we have in order to propose a more coherent explanation.

4.1. Problems with pragmatic scales

Regarding minimizer superlatives, some problems arise when we use pragmatic scales. First, existential scales are not related to the assertion, but to an existential proposition which is inferred from the former. Roughly speaking, the minimizer superlative in (46b)/(48c) is not valued regarding to the statement *Ernest doesn't hear x*, but to *There isn't x*. In order to allow this, it is necessary to say that minimizer superlatives do not presuppose the existence of the object. However, it remains unexplained why sentences containing minimizer superlatives give rise to this existential proposition as an inference from the statement.

Secondly, Spanish minimizer superlatives reject a pragmatic explanation because they are inherently *even*-like. This means that the quantitative reading is not the result of a pragmatic process of implicatures computation, but rather it is part of the semantic meaning of the expression. Recall from (18) that the quantitative reading is not cancellable with minimizer superlatives, what we would expect whether it was an implicature:

(18) a. Los políticos no tienen el más mínimo interés en resolver la crisis,
the politicians not have.3pl the more minimum interest in solve the crisis
(#aunque sí tienen un poco)
although yes have.3pl a bit)
'Politicians don't have any interest in solving the crisis, (#although they have a little bit)
b. No hubo el más mínimo problema, (#aunque sí hubo alguno)
not there.was the more minimum problem although yes there.was some
'There was no problem, (#but there was some problem)'

Given that minimizer superlatives have no formal mark in English (as the prenominal position is in Spanish), there is no formal way to distinguish them from PPS-superlatives. Therefore, no licensing gives rise to an absolute reading, instead to ungrammaticality. Surely this fact was what made Fauconnier to think that minimizer superlatives get their quantitative reading through a pragmatic process.

However, the observations we have made go against a pragmatic approach to minimizer superlatives. But even if we try to modify how pragmatic scales work with minimizer superlatives in order to avoid these problems (something that does not seem plausible, given Spanish data), pragmatic scales present problems with PPS-superlatives as well. Although in this section I am mainly concerned on how minimizer superlatives get their meaning, I would like to make a remark about how pragmatic scales work under Fauconnier's system.

In §3.1.7 we saw that for sentences containing PPS-superlatives the quantitative reading has an ability meaning. Since PPS-superlatives relate to abilities, the quantitative reading is dependent on the relationship that we can establish between the arguments of the predicate. Thus, it is not possible to get the quantitative reading with the following examples, given that we cannot establish an ability relation between the subject and the object:

(50) a. #$_{Q}$Eusebio no resolvió el problema que tenía más palabras
Eusebio not solved.3sg the problem that had.3sg more words
'Eusebio didn't solve the problem with more words'
b. #$_{Q}$Segismundo no se lo dijo a la persona más alta
Segismundo not SE ACC.3sg said.3sg to the person more tall
'Segismundo didn't tell it to the tallest person'
c. #$_{Q}$Rigoberta no se comió la fruta más verde
Rigoberta not SE ate.3sg the fruit more green
'Rigoberta didn't eat the greenest fruit'

While *resolver un problema* 'solving a problem' can be associated (through a likelihood relation) to the complexity of the problem, it is not normally related to the number of words the problem has. In the same way, abilities related to *decir algo* 'telling something' do not depend on the hearer's height, nor abilities of *comer fruta* 'eating fruit' depend on the colour of the fruit.

This is so because the possibility of computing the implicature depends on both the subject and the object in the sense that they must maintain an ability relationship. In this sense, the quantitative reading is an implicature which parts from the asserted proposition, and thereby pragmatic implicatures should not be relations between superlative expressions, but rather between propositions: the asserted and other propositional alternatives. In fact, recall that for an implicature to be computed it is necessary for the absolute reading to be true, and thereby the PPS-superlative must denote an individual, as definite DPs usually do.

Further arguments for treating PPS-superlatives as individual-denoting expressions come from the fact that the same implicature can be obtained with proper names, as the following examples show:

(51) a. Este problema no lo resuelve Albert Einstein
this problem not ACC.3sg solve.3sg Albert Einstein
'Albert Einstein doesn't solve this problem'
→ 'Nobody can solve this problem'
b. Mr. Bean no mete tanto la pata
Mr. Bean not put.3sg so.much the paw
'Mr. Bean doesn't screw up so much'
→ 'Nobody screws up so much'

Given his/her knowledge of the world, the hearer can place Albert Einstein as a very intelligent man and Mr. Bean as a very dumb guy, and then it is possible for him/her to infer the quantitative reading as an implicature for both sentences.

This (along with the fact that PPS-superlatives do not give rise to any strange phenomenon, as we could verify in §3.1) allows us for claiming that PPS-superlatives are indeed ordinary individual-denoting superlatives and, therefore, they are not actually polarity-sensitive expressions. In this sense, it is not possible for them to form ordered sets, given that individuals do not maintain implication relations, either logic or pragmatic. In simpler words, *el problema más difícil* 'the most difficult problem' cannot entail or imply *el problema más simple* 'the simplest problem', in the same way that Albert Einstein does not entail or imply Mr. Bean in any way.

This matter is clearly related to the fact noted in section §2: PPS-superlatives can be posited at different extremes of pragmatic scales regarding what propositional schema we are considering, something that would not be expected if PPS-superlatives could form scales in a natural way. What this reflects is that the quantitative reading is not inherent to the superlative (as it is with minimizer superlatives), but it rather depends on the whole sentence. Note that in section §2 we stated that the quantitative reading was an implicature, and implicatures arise from propositions, not from DPs.

This leads us to make a clarification on what we mean when we use the expression *quantitative reading*. For minimizer superlatives, this is their inherent meaning. However, for PPS-superlatives themselves there is no actual quantitative reading, but this seems to be an implicature related to the whole proposition. Consequently, superlatives should not form pragmatic scales, but rather these should be formed with propositions (something that I think was in Hoeksema & Rullmann's 2001 minds when they named pragmatic scales related to PPS-superlatives "proposition-related scales").

4.2. Scalar properties of minimizer superlatives

In this subsection I will rough out an alternative analysis of minimizer superlatives that does not depend on pragmatic inferences. Rather, I will focus on the degree properties of both the adjective in the DegP and the scalar mass noun it modifies as those responsible for the quantitative meaning of the superlative.

Remember from §3.1.7 that minimizer superlatives have a quantity meaning in so far as they refer to a minimum quantity under the scope of negation (i.e. they refer to the absence of this quantity). Thus, the superlative in (5a) –here repeated– denotes a minimum "quantity" of interest, and the existence of this quantity is denied:

(5) a. Los políticos no tienen el más mínimo interés en resolver la crisis
the politicians not have.3pl the more minimum interest in solve the crisis
'Politicians do not have any interest in solving the crisis'

In this regard, minimizer superlatives behave just like minimizers, negative polarity expressions which also denote a minimum value related to quantity (cf. Bolinger 1972; Horn 1989; Vallduví 1994)[25]. However, nouns forming minimizer superlatives are mass

[25] Examples of minimizers are the expressions in italics:

(i) No le importa (*ni*) *un pimiento*
not DAT.3sg matter.3sg NPI-even a pepper
'(S)he doesn't give a damn'

nouns (cf. §3.1.4) and therefore they are not susceptible of being counted (cf. (52)). Consequently, a paraphrasis with a minimizer as those that appear in note 25 is not possible (cf. (53)):

(52) a. *{dos/tres/quinientos…} intereses
two/three/five-hundred interests

(53) *Los políticos no tienen ni un interés en resolver la crisis
the politicians not have.3pl NP-even a interest in solve the crisis
Intended: 'Politicians don't have even one interest in solving the crisis'

So, when we talk about "quantity" we are not referring to cardinality or amounts of interests. Rather, what seems to be in consideration in (5a) is a "degree" of the property denoted by the noun, namely a value on a scale.

Scales have been extensively studied in the adjectival domain, since gradable adjectives are assumed to introduce a degree argument which can be saturated by degree expressions (cf. Cresswell 1977; Heim 2000; Kennedy & McNally 2005, a.o.). Precisely, many of the mass nouns which form minimizer superlatives have an adjectival correlate which denotes a gradable property:

(54) a. *interés* 'interest' → *interesante* 'interesting'
b. *paciencia* 'patience' → *paciente* 'patient'
c. *satisfacción* 'satisfaction' → *satisfecho* 'satisfied'

In the adjectival domain, modification by adverbial minimizers is possible whenever these find a threshold standard in the adjective's denotation (see Sassoon 2012; Sassoon & Zevakhina 2012). Interestingly, these adverbial minimizers (italics in the following examples) are formed on the same root as the adjectives which form minimizer superlatives (cf. §3.2):

(55) a. El vaso está *ligeramente* lleno
the glass be.3sg slightly full
'The glass is slightly full'
b. Tengo el sueño *levemente* alterado
have.1sg the dream slightly altered
'My sleep is slightly disturbed'
c. El jefe está *mínimamente* satisfecho
the boss be.3sg minimally satisfied
'The boss is minimally satisfied'

An adjective as *alterado* 'disturbed' in (55b) denotes a property with a minimally required degree (this is called a "partial" adjective in Rotstein & Winter 2004). Consequently, an NP as *un sueño alterado* 'a disturbed sleep' denotes a minimally disturbed entity. Following Sassoon (2012) and Sassoon & Zevhakina (2012), I will assume that the role of the minimizer is to increase the precision level of gradability, that is to say that we get a finer-grained scale, so we can distinguish more degrees.

(ii) No tiene (*ni*) *un duro*
not have.3sg NPI-even a cent
'(S)he doesn't got a cent'

On minimizers in Spanish, see Vallduví (1994).

Hence *un sueño levemente alterado* denotes just the same that *un sueño alterado*, but on a finer-grained scale, so the minimal degree is more precise.

Sassoon exemplifies how her granularity hypothesis works with the following example: imagine we have two t-shirts, one of them with some little specks of dust. Under normal circumstances, none of them falls into the extension of *dirty t-shirt*. However, the expression *minimally dirty t-shirt* may denote the shirt with the little specks. This is so because the adverbial minimizer gives rise to a finer-grained scale, so little specks that were not considered before now become relevant.

Considering all these ingredients, my proposal for the quantitative meaning of minimizer superlatives is as follows. Scalar mass nouns, contrary to matter-referring mass nouns, denote concept properties with some scalar meaning (cf. Francez & Koontz-Garboden 2017; Sánchez Masià 2017)[26]. Thus, scalar nouns as *interés*, *paciencia* and *satisfacción* denote concept properties with a minimally required degree. In this sense, if someone has an interest in something, a minimal degree of interest has been achieved.

These nouns are sensitive to degree modification depending on their scalar structure. Adjectival minimizers work as their adverbial correlates, so the NPs in (56) differ from those without minimizer modification in the following sense: the former have finer-grained scales.

(56) a. Un ligero interés
a slight interest
'Some slight interest'
b. Una mínima paciencia
a minimum patience
'Some minimal patience'
c. Una mínima satisfacción
a minimum satisfaction
'Some minimal satisfaction'

Thereby the difference between having patience and having some minimal patience is that the latter expresses that the achieved minimal degree is more precise than the minimal degree of the former.

The next step in composing the meaning of minimizer superlatives is to insert the superlative quantifier. When this modifies the adjective minimizer, we obtain a complex minimizer which requires the minimum degree in the scale associated to the noun (cf. Heim 1999):

(57) a. El más ligero interés
the more slight interest
'The slightest interest'
b. La más mínima paciencia
the more minimum patience
'The slightest patience'

[26] Since it is not in my interest for this article to state my proposal in formal terms, I will use the expressions *scale* and *degree* without assuming any particular syntax or semantics. For example, Moltmann (2009) argues in favour of scalar mass nouns having no degree argument. Sánchez Masià (2017) agrees with her, but she proposes that a degree argument is introduced by a functional head (following a proposal by Solt 2015). I will leave these formal matters for future research.

c. La más mínima satisfacción
the more minimum satisfaction
'the slightest satisfaction'

So, the difference between (56a) and (57a), for example, is the following: in the first case, any degree of interest sufficiently close to the minimum will be enough to denote a nonempty set. However, a minimizer superlative as (57a) explicitly refers to a unique degree: the minimum. And we have thus gotten our purpose: the quantitative reading of the minimizer superlative.

As the reader can see, there is no need for pragmatic mechanisms to get the quantitative reading of minimizer superlatives, since this is directly derived from the meaning of the elements that make up the superlative. In this sense, the quantitative reading of minimizer superlatives is semantically driven, contrary to that of PPS-superlatives.

5. Concluding remarks

In this paper I have explored how superlative constructions work as polarity-sensitive expressions in Spanish. In doing so, we have could prove that it is necessary to distinguish between two different types of NP-superlatives, as was already pointed out by Fauconnier (1975a) for English. One of them, that I have called 'pragmatically polarity-sensitive superlatives', seem to show limited interpretation as a polarity effect. However, I have showed that these are ordinary superlatives indeed, given that they do not show any unexpectable restriction. Moreover, the quantitative reading that they seem to receive is actually an implicature which arises from the whole proposition where they are placed.

On the other hand, the other group –named 'minimizer superlatives'– shows very interesting properties in Spanish, what allows us for getting different conclusions from those of Fauconnier. Firstly, their polarity sensitivity has a limited distribution effect (contrary to what happens in English), what makes them negative polarity expressions in the narrow sense. This limited distribution seems to be related to the prenominal position of their DegP, which is grammatical for ordinary superlatives only in some contexts.

English minimizer superlatives do not differ from PPS-superlatives. This led Fauconnier to treat their polarity sensitivity as a pragmatic phenomenon too. However, Spanish data support for a different analysis. In this paper I have proposed that the quantitative reading of minimizer superlatives is not pragmatically driven, but semantically driven. In this sense, my proposal is based on the idea that they are complex minimizers referring to a minimum quantity (a degree, in the cases we have studied). The minimizer meaning comes through a compositional semantic process which can be sketched up in the following way: first, a scalar mass noun is related to some scale with a minimally required degree. Any degree close to this minimum serves for denotation. Secondly, a complex minimizer (the superlative DegP) modifies the noun, giving rise to a finer-grained scale. Since the complex minimizer has a superlative meaning, the only degree which serves for denotation is the minimum degree in the finer-grained scale.

Furthermore, the analysis of Spanish NP-superlatives carried out in this paper is a breakthrough regarding the previous work by Bosque (1980). This author had established a generalization on the DegP distribution of NP-superlatives. Further observations have allowed us to modify this generalization in the following terms: «minimizer superlatives need prenominal DegPs» (cf. (40)). In order to get this, I have

previously showed that some NP-superlatives, against what it seems, are minimizer superlatives, given that they properly pass the tests for it.

Ulises Delgado
Departamento de Lengua Española y Teoría de la Literatura
Facultad de Filología – edificio D
Universidad Complutense de Madrid
Plaza Menéndez Pelayo s/n, 28040 Madrid
ulisesde@ucm.es

References

Bolinger, D. (1972). *Degree words*. The Hague: Mouton de Gruyter. https://doi.org/10.1515/9783110877786

Bosque, I. (1980). *Sobre la negación*. Madrid: Cátedra.

Bosque, I. (1996). On specificity and adjective position, in J. Gutiérrez & L. Silva (eds.), *Perspectives on Spanish linguistics*, vol. 1, Department of Linguistics, UCLA, pp. 1-14.

Bosque, I. (2001). Adjective position and the interpretation of indefinites, in J. Gutiérrez-Rexach & L. Silva (eds.), *Current issues in Spanish syntax and semantics,* Mouton-De Gruyter, pp. 17-38. https://doi.org/10.1515/9783110850536.17

Bosque, I. & C. Picallo (1996). Postnominal adjectives in Spanish DPs. *Journal of Linguistics* 32(2), pp. 349-385. https://doi.org/10.1017/S0022226700015929

Chierchia, G. (2004). Scalar implicatures, polarity phenomena, and the Syntax/Pragmatics interface, in A. Belleti (ed.), *Structures and beyond*. Oxford: Oxford University Press, pp. 39-103.

Chierchia, G. (2006). Broaden your views: implicatures of domain widening and the "logicality" of language. *Linguistic inquiry* 37, pp. 535-590. https://doi.org/10.1162/ling.2006.37.4.535

Chierchia, G. (2013). *Logic in grammar. Polarity, free choice, and intervention*. Oxford: Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199697977.001.0001

Cinque, G. (2010). *The syntax of adjectives*. Cambridge: MIT Press. https://doi.org/10.7551/mitpress/9780262014168.001.0001

Cresswell, M. J. (1977). The semantics of degree, in B. Partee (ed.), *Montague Grammar*, pp. 261–292. New York: Academic Press. https://doi.org/10.1016/B978-0-12-545850-4.50015-7

Fábregas, A. (2017). The syntax and semantics of nominal modifiers in Spanish: interpretation, types and ordering facts. *Borealis: an international journal of Hispanic linguistics* 6(2), pp. 1-102. https://doi.org/10.7557/1.6.2.4191

Farkas, D., & K. É. Kiss (2000). On the comparative and absolute readings of superlatives. *Natural language and linguistic theory* 18, pp. 417-455. https://doi.org/10.1023/A:1006431429816

Fauconnier, G. (1975a). Pragmatic scales and logic structure. *Linguistic Inquiry* 6(3), pp. 353-375.

Fauconnier, G. (1975b). Polarity and the scale principle. *Proceedings of the Chicago Linguistics Society* 11, pp. 188-199.

Francez, I., & A. Koontz-Garboden (2017). *Semantics and morphosyntactic variation: qualities and the grammar of property concepts*. Oxford: Oxford University Press. https://doi.org/10.1093/acprof:oso/9780198744580.001.0001

Giannakidou, A. (1998). *Polarity sensitivity as (non)veridical dependency*, Amsterdam and Philadelphia: John Benjamins Publishing. https://doi.org/10.1075/la.23

Giannakidou, A. (2002). Licensing and sensitivity in polarity items: from downward entailment to (non)veridicality. Ms., University of Chicago. Available at http://home.uchicago.edu/~giannaki/pubs/cls.giannakidou.pdf

Giannakidou, A. (2007). The landscape of EVEN. *Natural language and linguistic theory* 25, pp. 39-81. https://doi.org/10.1007/s11049-006-9006-5

Giannakidou, A. (2011). Negative and positive polarity items, in K. von Heusinger, C. Maienborn & P. Portner (eds.), *Semantics: an international handbook of natural language meaning*. Berlin: De Gruyter Mouton, pp. 1660-1712.

González Rodríguez, R. (2008). *La polaridad positiva en español*. PhD dissertation, Universidad Complutense de Madrid.

Gutiérrez-Rexach, J. (2006). Superlatives quantifiers and the dynamics of context dependence, in K. von Heusinger & K. Turner (eds.), *Where semantics meets pragmatics*. Amsterdam: Elsevier, pp. 237-266.

Gutiérrez-Rexach, J. (2010). Characterizing superlative quantifiers, in P. Cabredo Hofherr & O. Matushansky (eds.), *Adjectives: formal analyses in syntax and semantics*. Amsterdam and Philadelphia: John Benjamins Publishing, pp. 187-231. https://doi.org/10.1075/la.153.06gut

Heim, I. (1999). Notes on superlatives. Ms., MIT. Available at http://www.sfs.uni-tuebingen.de/~astechow/Lehre/SS08/Superlative.pdf

Heim, I. (2000). Degree operators and scope. *Proceedings of SALT* 10: 40-64. https://doi.org/10.3765/salt.v10i0.3102

Herburger, E. (2003). A note on Spanish *ni siquiera*, *even*, and the analysis of NPIs. *Probus* 15: 237-256. https://doi.org/10.1515/prbs.2003.009

Hinterwimmer, S. (to appear). A comparison of abstract and concrete mass nouns in terms of their interaction with quantificational determiners, in L. Tovena & F. Moltmann (eds.), *Mass/count in linguistics, philosophy and cognitive science*. Amsterdam: John Benjamins.

Hoeksema, J. & H. Rullmann (2001). Scalarity and polarity: a study of scalar adverbs as polarity items, in J. Hoeksema, H. Rullmann, V. Sánchez-Valencia & T. van der Wouden (eds.), *Perspectives on negation and polarity items*. Amsterdam and Philadelphia: John Benjamins, pp. 129-171. https://doi.org/10.1075/la.40.07hoe

Horn, L. (1989). *A natural history of negation*. Chicago: University of Chicago Press.

Israel, M. (1996). Polarity sensitivity as lexical semantics. *Linguistics and philosophy* 19, pp. 619-666. https://doi.org/10.1007/BF00632710

Israel, M. (2001). Minimizers, maximizers, and the rhetoric of Scalar Reasoning. *Journal of semantics* 18(4), pp. 297-331. https://doi.org/10.1093/jos/18.4.297

Israel, M. (2011). *The grammar of polarity: pragmatics, sensitivity and the logic of scales*. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511975288

Kadmon, N., & F. Landman (1993). Any. *Linguistics and philosophy* 16, pp. 353-422. https://doi.org/10.1007/BF00985272

Kennedy, C., & L. McNally (2005). Scale structure and the semantic typology of gradable predicates. *Language* 81(2): 345-381. https://doi.org/10.1353/lan.2005.0071

Krasikova, S. (2012). Definiteness in superlatives. *Amsterdam Colloquium 2011*, pp. 411-420. https://doi.org/10.1007/978-3-642-31482-7_42

Ladusaw, W. (1979). *Polarity sensitivity as inherent scope relation*. PhD dissertation, University of Texas.
Lahiri, U. (1998). Focus and negative polarity in Hindi. *Natural language semantics* 6, pp. 57-123. https://doi.org/10.1023/A:1008211808250
Leonetti, M. (2008). Definiteness effects and the role of the coda in existential constructions, in A. Klinge & H. H. Müller (eds.). *Essays on nominal determination*. Amsterdam and Philadelphia: John Benjamins, pp.131–162. https://doi.org/10.1075/slcs.99.09leo
McNally, L. (2011). Existential sentences, in K. von Heusinger, C. Maienborn & P. Portner (eds.), *Semantics: an international handbook of natural language meaning*. Berlin: De Gruyter Mouton, pp. 1829-1847.
Milsark, G. (1977). Toward an explanation of certain peculiarities of the existential construction in English. *Linguistic analysis* 3(1): 1-29.
Moltmann, F. (2009). Degree structure as trope structure: a trope-based analysis of positive and comparative adjectives. *Linguistics and philosophy* 32: 51-94. https://doi.org/10.1007/s10988-009-9054-5
Nicolas, D. (2010). Towards a semantics for mass expressions derived from gradable expressions. *Recherches linguistiques de Vincennes* 39: 163-198. https://doi.org/10.4000/rlv.1857
Partee, B. (1986). The airport squib: *any*, *almost*, and superlatives, in B. Partee (ed.), *Compositionality in formal semantics*. Massachusetts: Blackwell Publishing, 2003, pp. 231-240.
Rooth, M. (1985). *Association with focus*. PhD dissertation, University of Massachusetts.
Rotstein, C., & Y. Winter (2004). Total adjectives vs. partial adjectives: scale structure and higher-order modifiers. *Natural language semantics* 12(3): 259-288. https://doi.org/10.1023/B:NALS.0000034517.56898.9a
Sánchez López, C. (1999). La negación, in I. Bosque & V. Demonte (dirs.), *Gramática descriptiva de la lengua española*. Madrid: Espasa, pp. 2561-2634.
Sánchez Masià, M. (2017). *Adverbial adjectives and nominal scalarity*. PhD dissertation, Universitat Autònoma de Barcelona.
Sassoon, G. (2012). A *slightly* modified economy principle: stable properties have non stable standards. *Proceedings of the IATL* 27. Bingley, MA: MIT Working Papers in Linguistics. https://doi.org/10.3765/salt.v22i0.2639
Sassoon, G., & N. Zevakhina (2012). Granularity shifting: experimental evidence from degree modifiers. *Proceedings of SALT* 22: 226–246.
Solt, S. (2015). Q-adjectives and the semantics of quantity. *Journal of semantics* 32(2): 221-273. https://doi.org/10.1093/jos/fft018
Szabolcsi, A. (1986). Comparative superlatives. *MIT Working Papers in Linguistics* 8: 245-266.
Vallduví, E. (1994). Polarity items, n-words and minimizers in Catalan and Spanish. *Probus* 6: 263-294. https://doi.org/10.1515/prbs.1994.6.2-3.263
Van der Wouden, T. (1997). *Negative contexts: collocation, polarity and multiple negation*. London and New York: Routledge.
Zeijlstra, H. (2004). Sentential negation and negative concord. PhD dissertation, University of Amsterdam.
Zeijlstra, H. (2008). Negative concord is syntactic agreement. Ms., University of Amsterdam.
Zwarts, F. (1995). Nonveridical contexts. *Linguistic analysis* 25: 286-312.

Zwarts, F. (1996). A hierarchy of negative expressions, in H. Wansing (ed.), *Negation: a notion in focus*. Berlin: De Gruyter, pp. 169-194. https://doi.org/10.1515/9783110876802.169

Zwarts, F. (1998). Three types of polarity, in F. Hamm y E. Hinrichs (eds.), *Plurality and quantification*. Dordrecht: Kluwer, pp. 177-238. https://doi.org/10.1007/978-94-017-2706-8_5