

Chapter 1

Most vs. the most in languages where *the more means most*

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This paper focuses on languages in which a superlative interpretation is typically indicated merely by a combination of a definiteness marker with a comparative marker, including French, Spanish, Italian, Romanian, and Greek ('DEF+CMP languages'). Despite ostensibly using definiteness markers to form the superlative, superlatives are not always definite-marked in these languages, and the distribution of definiteness-marking varies across languages. Constituency structure appears to vary across languages as well. To account for these patterns of variation, we identify conflicting pressures that all of the languages in consideration may be subject to, and suggest that different languages prioritize differently in the resolution of these conflicts. What these languages have in common, we suggest, is a mechanism of Definite Null Instantiation for the degree-type standard argument of the comparative. Among the parameters along which languages are proposed to differ is the relative importance of marking uniqueness vs. avoiding determiners with predicates of entities that are not individuals.

1 Introduction

In French, placing a definite article before a comparative adjective suffices to produce a superlative interpretation:

- (1) Elle est **la plus grande**. (French)
she is the CMP tall
'She is **the tallest**.'



Table 1: Comparative and superlative degree of ‘tall’ in selected DEF+CMP languages

LANGUAGE	POS	CMP	SPRL
English	tall	taller	tallest
French	grande	plus grande	la plus grande
Spanish	alto	más alto	el más alto
Romanian	inalt	mai inalt	cea mai inalt
Italian	alto	più alto	il più alto
Greek	psilós	pio psilós	o pio psilós
Greek (alt 2)	psilós	psilóteros	o psilóteros

French is not alone; other Romance languages, as well as Modern Greek, Maltese and others, make do with the same limited resources. Some examples are given in Table 1.¹ This paper considers such languages, which we call DEF+CMP languages, against the background of a growing literature on cross-linguistic variation with respect to the relationship between definiteness-marking and the interpretation of superlatives.

When it comes to the superlatives of ordinary gradable adjectives like *tall*, the interpretive contrast of interest is the distinction between so-called *absolute* and *relative* readings of superlatives in the domain of quality superlatives. In Swedish, unlike English, this interpretive distinction is signalled morphologically with definiteness:

- (2) a. Gloria sålde **god-ast** **glass**. (Swedish)
 Gloria sold delicious-SPRL ice cream
 ‘Gloria sold **the most delicious ice cream.**’ (relative only)

¹ Besides Romance languages, languages reported to use this strategy include Modern Standard Arabic, Assyrian Neo-Aramaic, Middle Armenian, Modern Greek, Biblical Hebrew, Livonian, Maltese, Chalcatongo Mixtec, Papiamentu, Vlach Romani, Russian, and Tamashek (Bobaljik 2012; Gorshenin 2012). Note however that Gorshenin has rather liberal criteria for a given construction being of this type; for Russian, the example given is *Etot žurnal sam-yj interesnyj* ‘This magazine is the most interesting (one)’. Gorshenin (2012: 129) describes *sam-yj* as an “emphatic pronoun” and reasons that “this pronoun indicates uniqueness, particularity of the referent in some respect, and therefore it can be regarded as a functional equivalent of a determiner in the corresponding superlative construction”.

- b. Gloria sålde **den god-ast-e** **glass-en**.
Gloria sold the delicious-SPRL-WK ice cream-DEF
'Gloria sold **the most delicious ice cream.**' (relative or absolute)

As Teleman et al. (1999) discuss, (2a) means that Gloria sold more delicious ice cream than anyone else. It would not suffice for (2a) to be true for there to be a salient set of ice creams of which Gloria sold the most delicious. If someone else sold that ice cream as well, then (2a) would be false. In contrast, the English gloss and the definite-marked example (2b) could be true if both Gloria and someone else sold the ice cream that was more delicious than all other ice creams that are salient in the context. All that is required for that sentence to be true is that Gloria stands in the 'sold' relation to the ice cream satisfying that description.

In Heim's (1999) terms, (2a) has a *relative reading* (originally called a *comparative reading* by Szabolcsi (1986)), and (2b), along with the English gloss, is ambiguous between a relative reading and an *absolute reading*. Relative readings are typically focus-sensitive, implying a comparison between the focus (e.g. Gloria) and the focus-alternatives, and on such readings the superlative noun phrase behaves like an indefinite despite the frequent presence of a definite determiner (Szabolcsi 1986; Coppock & Beaver 2014). On an absolute reading, comparisons are made only among elements satisfying the descriptive content of the modified noun, and the definite behaves as a definite. The contrast between absolute and relative readings was discussed early on by Szabolcsi (1986) with reference to Hungarian, and has been taken up in a fair amount of recent cross-linguistic research, mainly focussed on English (Gawron 1995; Heim 1999; Hackl 2000; Sharvit & Stateva 2002; Hackl 2009; Teodorescu 2009; Krasikova 2012; Szabolcsi 2012; Bumford 2016; Wilson 2016), but also with reference to German (Hackl 2009), Swedish (Coppock & Josefson 2015), other Germanic languages (Coppock to appear), Hungarian (Farkas & É. Kiss 2000), Romanian (Teodorescu 2007), Spanish (Rohena-Madrado 2007), Arabic (Hallman 2016), and Slavic languages including Macedonian, Czech, Serbian/Croatian and Slovenian (Pancheva & Tomaszewicz 2012). This paper extends this line of research insofar as it considers the morphosyntactic realization of both types of readings in DEF+CMP languages.

The landscape of possible interpretations is slightly different when it comes to the superlatives of quantity words, like English *much*, *many*, *little* and *few*. In English, *the most* has a relative reading ('more than everybody else'), while bare *most* has what is called a *proportional* reading ('more than half', roughly). In this domain, there is an especially great deal of cross-linguistic variability. As Hackl (2009) shows, German *die meisten*, lit. 'the most', can be translated into English

either as *most* or *the most*. Even more dramatically, English and Swedish are near-opposites with respect to the impact of definiteness-marking on interpretation (Coppock & Josefson 2015); the definite quantity superlative definite *de flesta* has a proportional reading, corresponding to English *most*, while the bare *flest* has a relative reading, corresponding to English *the most*. Coppock (to appear) shows that every possible correlation between definiteness and interpretation is attested among the Germanic languages. So the quantity domain is one that appears to be particularly volatile.

We might expect the landscape of variation with respect to the definiteness-marking of superlatives to be rather dull and flat within the realm of DEF+CMP languages. If superlatives are formed with definiteness-markers, then definiteness-markers should always appear, regardless of what reading is involved. But this is not what we find.

We find in fact several departures from the dull and flat picture one might expect. First, as Dobrovie-Sorin & Giurgea (2015) discuss, French is one of the many languages of the world where quantity superlatives do not have a proportional interpretation.

- (3) De tout les enfants de mon école, je suis celui qui joue **le plus**
of all the kids of my school, I am the.one who plays DEF CMP
d'instruments.
of.instruments (French)
'Of all the kids in my school, I'm the one who plays the most
instruments.'
- (4) * **Le plus de cygnes** sont blancs. (French)
the more of swans are white
Intended: 'Most swans are white.'

Example (3) shows that the quantity superlative *le plus* can be used with a relative interpretation (comparing the speaker to other kids in the school); (4) shows that it does not have a proportional interpretation; this example does not mean 'most swans are white'. Such languages are surprising from the perspective of Hackl (2000; 2009), according to which the proportional readings of quantity superlatives are parallel to absolute readings of quality superlatives. Romanian and Greek are more well-behaved from that perspective; there, the superlative of 'many' (literally 'the more many') can have a proportional interpretation. For example, the following Greek sentence is ambiguous as indicated:

- (5) *Éfaga ta perissotera biskóta.* (Greek)
ate.1SG the much.CMP cookies
'I ate **the most cookies**' or 'I ate **most of the cookies**.'

This is one point of variation.

Another point of variation is which types of superlatives are accompanied by definiteness-marking. We can distinguish between the following types:

- Quality superlatives
 - Adjectival quality superlatives
 - * Predicative, as in *She is **(the) tallest***
 - * Adnominal; absolute reading, as in ***The tallest girl** left*
 - * Adnominal; relative reading, e.g. *I'm not the one with **the thinnest waist***
 - Adverbial quality superlatives, as in *She runs **the fastest***
- Quantity superlatives
 - Adnominal quantity superlatives
 - * Relative reading, as in *I ate **the most cookies***
 - * Proportional reading, as in *I ate **most of the cookies***
 - Adverbial quantity superlatives, as in *She talks **the most***

In French and Romanian, definiteness-marking appears on superlatives of all of these types. The same is not the case for Italian, Spanish and Portuguese. Despite forming quality superlatives through the combination of a definiteness-marker with a comparative form, these languages do not use definiteness-marking for adverbial superlatives or quantity superlatives on relative readings (and they generally do not allow proportional readings for quantity superlatives at all). Here is an example from Italian (cf. de Boer 1986, Dobrovie-Sorin & Giurgea 2015, i.a.):

- (6) *Probabilmente è Hans che ha bevuto più caffè.* (Italian)
probably it.is Hans who has drunk CMP coffee
'It is probably Hans who has drunk **the most coffee**.'

(A comparative interpretation, 'It is probably Hans who has drunk more coffee', is also available here, although the cleft construction strongly biases toward a superlative interpretation.) The same happens in Spanish and Portuguese.

In Greek, as illustrated below, there is a split between quantity and quantity adverbials ('talk the most' vs. 'talk the fastest'): Quantity adverbials are obligatorily definite-marked and quantity adverbials obligatorily lack definiteness-marking. All other superlatives have a definiteness marker, relative and proportional readings of quantity superlatives included.

So, in all of these languages, superlatives are generally formed by combining a definiteness-marker with a comparative, yet in some of these languages, superlatives may lack a definiteness-marker. This is certainly surprising if the superlative interpretation is supposed to rest fully in the hands of the definite determiner.

Generally, there are several analytical options we could consider for DEF+CMP superlatives. The one we have just ruled out (at least for some of these languages) is that the definite article itself is the marker of the superlative. Another is that the comparative is lexically ambiguous between a comparative and a superlative. Another would build on the stance argued for by Bobaljik (2012), where superlatives are composed of comparatives and a bit that means 'of all'. This latter piece could be taken to be silent in DEF+CMP languages; see Szabolcsi 2012 for a formal analysis of *the more* in English along these lines. A fourth possibility is that a superlative interpretation arises more or less directly from the composition of a comparative meaning and the meaning of the definite article, just as the surface form suggests.

We show that a moderate instantiation of the last-mentioned strategy is viable, both for DEF+CMP languages and for certain cases in English like *the more qualified candidate (of the two)*. In a nutshell, the standard argument of the comparative is saturated by a degree-type pronoun. So *the more qualified candidate*, for example, denotes the candidate in the contextually-given comparison class C that is more qualified than contextually-given d, for appropriately chosen value of d. This is hypothesized to be possible in all of the languages under consideration (and even English, manifest in expressions like *the taller one of the two*).

This is the common core. But there are conflicting pressures that lead to variation with respect to whether definiteness-marking occurs. On the one hand, there is pressure to mark uniqueness on phrases where uniqueness can be marked, and on the other hand, there is pressure to avoid definiteness marking on descriptions of entities other than individuals. Different languages prioritize differently when it comes to resolving these conflicts. We suggest furthermore that proportional readings arise through grammaticalization, but via different routes for different languages.

The following sections will present data from Greek, Romanian, French, and

Table 2: Declension of the definite article in Greek

Singular			
	Masc.	Neut.	Fem.
Nom.	o	to	i
Gen.	tou	tou	tis
Acc.	to(n)	to	ti(n)
Plural			
	Masc.	Neu.	Fem.
Nom.	oi	ta	oi
Gen.	ton	ton	ton
Acc.	tous	ta	tis

Ibero-Romance, in that order. These sections will lay out the basic facts concerning the morphosyntax of superlatives in these languages. After a summary in §5, compositional treatments of the various varieties will be sketched in §6.

2 Greek

We begin with Greek, where a definite article may combine with either a synthetic or periphrastic comparative to form the superlative. The synthetic and periphrastic variants are in free variation. For example, the comparative form of *psilós* ‘tall’ has two varieties, *psilóteros* and *pio psilós*, and these can both combine with a definite determiner to form a superlative. These two variants appear to be freely interchangeable, although the synthetic one may be slightly more commonplace. For all of the types of examples we elicited, many of which are presented below, both variants were judged to be acceptable.

2.1 Quality superlatives

In adnominal superlatives, there is always a definite article, which agrees in gender and number with the modified noun.² The definite article is present regard-

² For reference, the inflectional paradigm for the definite article is as in Table 2. We suppress the agreement features in our glosses for the sake of readability.

less of whether an absolute or relative interpretation is intended. Hence, the following example is ambiguous:³

- (7) O Stellios odigei to pio grigoro aftokinito.
the Stellios drives DEF CMP fast car
'Stellios drives **the fastest car.**'

The following is an example that strongly favors a relative interpretation; definiteness-marking is obligatory here as well.

- (8) Den eimai ego afti me ti leptoteri mesi stin oikogeneia.
not I self she with DEF thin.CMP middle in family
'I'm not the one with **the thinnest waist** in the family.'

Note that the periphrastic variety *ti pio lepsi mesi* 'the thinnest waist', lit. 'the more thin waist', is equally acceptable here according to our consultants.

Absolute and relative readings of adnominal superlatives are similar to each other and to ordinary adjectives with respect to syntactic behavior as well. Greek has a much-discussed construction in which the order of the adjective and the noun can be reversed called 'determiner spreading'; see Alexiadou (2014: 19) for an extensive list of references. The interpretive effect of determiner spreading is similar to that of placing an adjective postnominally in Romance: generally, it is restricted to restrictive modifiers (Alexiadou & Wilder 1998). But unlike in Romance, this construction involves an extra definite determiner:

- (9) a. to kokino to podilato
DEF red DEF bicycle
'the red bicycle'
b. to podilato to kokino
DEF bicycle DEF red
'the red bicycle'

Determiner spreading can involve superlatives; Alexiadou (2014) discuss the following example, which has an absolute reading, referring to a particular cat:

- (10) Spania haidevo tin mikroteri ti gata.
seldom pet DEF smallest the cat
'I seldom pet **the smallest cat.**'

³ Thanks to Haris Themistocleous and Stergios Chatzikyriakidis for judgments and discussion.

Intuitions appear to be somewhat murky when it comes to determiner spreading with relative readings, but the following variant of (8) was judged as acceptable by our consultants:

- (11) Den eimai ego afti me ti leptoteri ti mesi stin oikogeneia.
not be.1SG I she with the thin.CMP DEF waist in family
'I'm not the one with **the thinnest waist** in the family.'

This evidence suggests that the comparative adjective in an adnominal superlative may be structurally analogous to an ordinary adjective in a determiner-adjective-noun sequences, and that the article is in its ordinary position.

Adverbial quality superlatives are different, however; they do not involve a definite article:

- (12) I aderfi mou trechei pio grigora.
DEF sister my runs CMP fast
'My sister runs **the fastest**.'

- (13) Pios tragoudái pio kalá?
who sings more good
'Who sings the best?' (Dobrovie-Sorin & Giurgea 2015: 16, ex. (71))

Inserting a definite article before *pio* is not possible in this sentence, e.g. **I aderfi mou trechei to pio grigora*. As Dobrovie-Sorin & Giurgea (2015) point out, this shows that the definite article is not an integral part of superlative-marking in Greek.

2.2 Quantity superlatives

Like quality superlatives, quantity superlatives are formed through the combination of a definite article with a comparative form, which may be either periphrastic, as in (14), or synthetic, as in (15). These two examples have relative readings.

- (14) Apó óla ta paidiá sto scholeío, egó paízo ta pio pollá órgana.
of all DEF kids at school, I play DEF CMP many instruments
'Of all the kids in my school, I'm the one who plays **the most instruments**.'

- (15) Eimai aftos pou pinei **ton ligotero kafe**.
I he who drinks DEF little.CMP coffee
'I am the one who drinks **the least coffee**.'

Definiteness-marking is not optional here. Note that the word for 'many' is transparently contained within the superlative phrase in (14).

Definite-marked quantity superlatives are also regularly used for expressing a proportional interpretation. Here are some examples from our data:

- (16) **S-ta perissótera paidiá** sto scholeío mou arései na paízoun mousikí.
DAT-DEF many.CMP kids at school mine like to play music
'Most of the kids in my school like to play music.'
- (17) I mamá éftiaxe biskóta chthes kai éfaga **ta perissótera**.
the mom made cookies yesterday and ate DEF many.CMP
'Mom baked cookies yesterday and I ate **most of them**.'
- (18) Ípia epísis **to perissótero gála**.
drank also DEF much.CMP milk
'I drank **most of the milk**, too.'

Definiteness-marking is not optional here either.

Interestingly, there is a contrast between quality and quantity in the adverbial domain. Adverbial quantity superlatives appear to require a definite article:⁴

- (19) O Pavlos milaei **to ligotero**.
DEF Paul talks DEF little.CMP
'Paul talks the least'

Removing the definite article in (19) yields a comparative interpretation, 'Paul talks less'. Notice that *talk* is intransitive, so it is unlikely that *to ligotero* is serving as the object of the verb. Further evidence that the construction in question is really adverbial comes from the fact that definite-marked quantity superlatives can be coordinated with non-definite-marked adverbial quality superlatives:

- (20) O Pavlos milaei [pio grigora apo olus ke **to perisotero**].
DEF Paul talks [CMP fast of all.ACC and DEF much.CMP]
'Paul talks the fastest of all and the most'

⁴ Thanks to a reviewer for pointing this out, and to Stavroula Alexandropoulou for discussion.

Thus adverbial quantity superlatives pattern with adnominal quantity superlatives and quality superlatives, and differently from adverbial quality superlatives.

Although quantity superlatives look morphologically very much like quality superlatives, there is a slight difference in their syntactic behavior. Definiteness spreading appears to be somewhat less acceptable with quantity superlatives than with quality superlatives. None of our consultants were entirely comfortable with the following examples (although they were characterized as ‘syntactically perfect’), and some rejected them:

- (21) a. ?? *Éfaga ta perissotera ta biskóta.*
 ate.1SG DEF much.CMP the cookies
 Intended: ‘I ate **the most cookies**’ or ‘I ate **most of the cookies**.’
- b. ?? *Éfaga ta biskóta ta perissotera.*
 ate.1SG DEF cookies DEF much.CMP
 Intended: ‘I ate **the most cookies**’ or ‘I ate **most of the cookies**.’
- (22) a. ?? *Eimai aftos pou pinei ton ligotero ton kafe.*
 be.1SG him who drinks DEF little.CMP DEF coffee
 ‘I’m the one who drinks **the least coffee**.’
- b. ?? *Eimai aftos pou pinei ton kafe ton ligotero.*
 be.1SG him who drinks DEF coffee DEF little.CMP
 ‘I’m the one who drinks **the least coffee**.’

So definiteness-spreading appears to be somewhat more restricted in the quantity domain.

However, Giannakidou (2004) gives examples such as the following:

- (23) *i perissoteri i fitites efygan noris*
 DEF most DEF students left early
 ‘Most of the students left early.’

It is unclear to us whether this should be seen as an instance of determiner-spreading or a construction in which *i perissoteri* behaves as a quantifier for which *i fitites* serves as the restrictor. According to one native Greek speaker we have consulted, the variant in (23) is much better than a version in which the noun precedes the quantifier:

- (24) ? *i fitites i perissoteri efygan noris*
 DEF students DEF most left early

Example (24) is fully acceptable only with comma intonation separating *the students* from *the most*, and serves as an answer to the question *What happened with the students?*, rather than *Who left early?* We see an even stronger contrast with *ligotero* ‘less’, which doesn’t give rise to proportional readings.

(25) **ton ligotero ton kafe** ton ipia egho
DEF less DEF coffee it drink.1SG I
‘I drink the least coffee.’

(26) * **ton kafe ton ligotero** ton ipia egho
DEF coffee DEF less it drink.1SG I

Note that (25) is ungrammatical without the subject pronoun *egho*, even though Greek is normally a pro-drop language; this is presumably because of the requirement of focus for relative readings.

This evidence suggests that the structure in (23) is not actually a definiteness-spreading structure but actually one in which *i fitites* behaves like a partitive argument of *i perissoteri*. More generally, we take these facts to show that definiteness-spreading is not possible with quantity superlatives in Greek.

To summarize the situation for Greek: Definiteness-marking appears with every type of superlative *except* adverbial quality superlatives. This list includes adnominal quality superlatives on both relative and proportional readings, and both adnominal and adverbial quantity superlatives. Relative and proportional readings are available for adnominal quantity superlatives modifying both mass nouns and count nouns. There is also full agreement with the noun in all cases where there is a noun to agree with. So quantity superlatives are morphologically very similar to quality superlatives overall. However, quantity superlatives differ from quality superlatives with respect to definiteness-spreading, suggesting that the two types are not syntactically parallel.

3 Romanian

We turn now to Romanian, which is like Greek in some respects, but not in others. It uses DEF+CMP for both relative and proportional readings, but there is evidence that the definite article is more tightly knit with the comparative here than it is in Greek.

Table 3: Inflectional paradigm for *cel* in Romanian.

SINGULAR		
	MASCULINE, NEUTER	FEMININE
N., A.	cel	cea
G, D.	celui	celei
PLURAL		
	MASCULINE	FEMININE, NEUTER
N., A.	cei	cele
G., D.	celor	celor

3.1 Quality superlatives

Example (27) shows a predicative use of a superlative in Romanian, (28) an attributive use, and (29) an adverbial use.

- (27) Pentru că eram **cea mai entuziasmată**.
 for that I.was DEF CMP enthusiastic
 ‘Because I (fem.) was **the most enthusiastic**.’
- (28) A scris **cea mai frumoasă compunere**.
 has written DEF CMP beautiful composition.ACC
 ‘She wrote **the most beautiful composition**.’
- (29) Sora mea poate alerga **cel mai repede**.
 sister my can run DEF CMP fast
 ‘My sister can run **the fastest**.’

In (27) and (28), *cea* is a feminine singular form of *cel*. In (29), we have the invariant, default form.⁵ We will not gloss the agreement features, but simply refer the reader to the inflectional paradigm for the demonstrative in Table 3, taken from Cojocaru (2003: 53). Note also that the adjective *frumosă* ‘beautiful’ shows feminine singular agreement with the noun *compunere* ‘composition’.

⁵ Dindelman (2013: 315) points out that adverbial *cel* can receive dative case marking, so it is not entirely invariable.

We gloss *cel* here as DEF, in order to bring out the parallels with other DEF+CMP languages, but it should be kept in mind that this element is not the most direct correlate of English *the* in the language. *Cel* is not found in ordinary, simple definites; instead a suffix is used. For example, in (30a), we have feminine singular definite ending *-a*, modified from the stem-inherent *-ă*. We gloss this ending here as DEF as well.⁶

- (30) a. Carte-a e pe mas-a mare.
map-DEF is on table-DEF big
'The map is on the big table.'
- b. Carte-a e pe o masă mare.
map-DEF is on a table big
'The map is on a big table.'

Note also that in traditional grammar (e.g. Cojocaru 2003), *cel* is classified as a demonstrative, though it has additional functions as well. For instance, it can double a definite suffix (Alexiadou 2014):

- (31) Legile (cele) importante n'au fost votate
laws-DEF (DEF) important have not_BEEN voted
'The laws which were important have not been passed.'

See Alexiadou (2014: 53-62) for a recent discussion of this phenomenon and its relation to Greek determiner spreading.

As (31) implies, Romanian has two word order options for adjectives, including superlatives. This choice bears on the presence or absence of a definite suffix on the noun. If the adjective precedes the modified noun as in (28), repeated in (32a), this noun remains uninflected. If the noun precedes the adjective, as in (31) and (32b), the noun receives definiteness marking (Cojocaru 2003: 53).

- (32) a. A scris cea mai frumoasă compunere.
has written DEF CMP beautiful composition.ACC
'She wrote **the most beautiful composition.**'
- b. A scris compunere-a cea mai frumoasă.
has written composition-DEF DEF CMP beautiful
'She wrote **the most beautiful composition.**'

⁶ The full inflectional paradigm for the definite suffix is given in Table ??.

According to Teodorescu (2007), the prenominal variant (32a) and the postnominal variant (32b) have the same interpretive options. The following is an example favoring a relative interpretation; both orders are reportedly fine, although all four of the Romanian speakers we consulted spontaneously translated the sentence indicated in the English gloss using the prenominal variant (33a).⁷

- (33) a. Eu nu sunt cea din familie cu cel mai subțire talie.
I not be.1SG DEF from family.ACC with DEF CMP thin waist
'I am not the one in my family with **the thinnest waist.**'
- b. Eu nu sunt cea din familie cu tali-a cea mai subțire.
I not be.1SG DEF from family.ACC with waist-DEF DEF CMP thin
'I am not the one in my family with **the thinnest waist.**'

Note that postnominal adjectives typically receive an intersective interpretation (Cornilescu 1992; Teodorescu 2007; Marchis & Alexiadou 2009):

- (34) a. o poveste advărată
a story true
'a story that is true' (not 'quite a story')
- b. o advărată poveste
a true story
'a story that is true' or 'quite a story'
- c. Această poveste este advărată
this story is true
'This story is true.'

The postnominal adjective in (34a) has only the interpretation that the adjective in (34c) has, while the prenominal adjective can also have a non-intersective interpretation. If this applies to superlatives, then the fact that both relative and absolute readings of superlatives are possible in post-nominal position suggests that both relative and absolute readings are, or can be, restrictive readings.

Dobrovie-Sorin & Giurgea (2015) give a number of arguments that *cel mai* + AP form a constituent that sits in the specifier of DP. One is the striking fact that *cel* can be preceded by an indefinite article (Dobrovie-Sorin & Giurgea 2015: 15, ex. (64)):

⁷ Thanks to Gianina Iordachioaia for help and discussion.

3.2 Quantity superlatives

Now let us turn to quantity superlatives in Romanian. As with quality superlatives, definiteness-marking is ubiquitous, even with adverbials:

- (40) Personajele de care se râdea **cel mai mult** erau Leana și nea
characters of which they laughed DEF CMP much were Leana and uncle
Nicu.
Nicu

‘The characters they laughed at the most were Leana and uncle Nicu.’

And the DEF+CMP construction can have both proportional and relative readings in Romanian. Here are cases with relative readings (the latter from Teodorescu (2007: 11)).

- (41) Eu sunt cel care cânta la **cele mai multe instrumente**.
I am the which plays to DEF CMP much instruments
‘I am the one who plays **the most instruments**.’

- (42) Dan a băut **cea mai multă bere**.
Dan has drunk DEF CMP much beer
‘Dan drank **the most beer**.’

The following is a case with a proportional reading, using the partitive preposition *dintre*:⁸

- (43) **Cele mai multe dintre copiii** care merge la scoala mea place să se
DEF CMP much of kids.DEF who go at school mine like to REFL
joace muzica.
play music
‘**Most of the kids** who go to my school like to play music.’

We also find non-partitive uses:

- (44) **Cei mai mulți elevi** din clasa mea au plecat devreme
DEF CMP many students from class.the my have left early
‘**Most of the students** in my class have left early.’

⁸ The preposition *dintre* (*din* with singular complements) is used in Romanian to introduce an explicit comparison class in superlative constructions, e.g. *El scrie cel mai bine dintre toți*, ‘He writes the best of all’, lit. ‘He writes the more good among all’ (Cojocaru 2003: 169). *Dintre* is also used in quantificational partitive constructions, e.g. *Unul dintre ei prezintă proiectul* ‘One of them is presenting the project’.

- (45) **Cele mai multe lebede** sunt albe
DEF CMP many swans are white
'**Most swans** are white.'

But the syntactic position of the superlative phrase may not be the same as with quality superlatives: In contrast to quality superlatives, quantity superlatives are normally only permitted prenominally (Teodorescu 2007: 11).

- (46) *Dan a băut bere-a **cea mai multă**.
Dan has drunk beer-DEF DEF CMP much
Intended: 'Dan drank **the most beer**.'

Dobrovie-Sorin (2015) does give the example of a postnominal *cel mai mult-* construction in (47b), but says that it does not give rise to a relative or proportional reading, but "comparison between predefined groups", where the noun phrase refers to one of these groups.

- (47) a. **Cele mai multe lebede** sunt albe
DEF CMP many swans are white
'**Most swans** are white.'
- b. ? **Lebedele cele mai multe** sunt albe
swans.DEF DEF CMP many are white
'**The more/most numerous (group of) swans** are white.'

This reading is referential, and distinct from the proportional reading that arises in prenominal position, rather than quantificational.

Interestingly, (42) above does not have a proportional interpretation. According to Dobrovie-Sorin (2015), this is tied to the fact that a mass noun is involved. Indeed, in our data, a proportional interpretation, in the case of mass quantification, typically involves a 'majority' or 'part' noun instead, just as in other Romance languages:

- (48) Am baut **majoritatea laptelui**.
have drunk majority milk
'I drank **most of the milk**.'
- (49) Am baut **mai mare parte a laptelui**.
have drunk CMP big part GEN milk
'I drank **most of the milk**.'

Dobrovie-Sorin argues that *cel mai mult* functions as a complex proportional quantifier, one that expects a count down denotation as an argument. Providing further evidence for this view, she claims that a proportional reading is not *always* available for count nouns, either, pointing to a contrast in acceptability between (50) and (51):

(50) Cei mai mulți elevi din clasa mea au plecat devreme.
DEF CMP many students.DEF of class.DEF my have left early.

‘**Most students** in my class left early.’ (Dobrovie-Sorin 2015: 395)

(51) *Cei mai mulți băieți s-au adunat în sala asta.
DEF CMP many boys REFL-have gathered in room.DEF this.

‘**Most of the boys** have gathered in this room.’

(Dobrovie-Sorin 2015: 395)

She ascribes these differences to whether or not the nuclear scope is filled with a distributive predicate. The unacceptability of (51) is explained under the assumption that the subject noun phrase is quantificational rather than referential. This adds to the evidence in favor of Dobrovie-Sorin’s (2015)’s idea that *cel mai mult* has grammaticalized as a proportional determiner.

To summarize: Superlatives are always definite in Romanian. Evidence involving quality superlatives suggests that the definite element is integrated more closely with the comparative element than with the modified noun, i.e., lower down in the structure, not signalling definiteness at the level of the full nominal. Both relative and proportional readings are available for adnominal quantity superlatives, although the proportional readings are limited to count nouns. The existence of proportional readings only with count nouns as well as the unacceptability of collective predicates suggests that *cel mai mult* has grammaticalized into a proportional determiner (Dobrovie-Sorin 2015).

4 Ibero-Romance

4.1 Quality superlatives

Predicative adjectival superlatives in Italian, as in (52), and Spanish, as in (53), normally involve a definite article:

(52) Carla è la più intelligente di tutte queste studentesse. (Italian)
Carla is DEF CMP intelligent of all these students.

‘Carla is **the most intelligent** of all these students.’

(de Boer 1986: 53)

- (53) Ese carro es **el mejor**. (Spanish)
that car is DEF better
'That car is **the best**.'
(Rohena-Madrado 2007: 1)

One exception is noted by de Boer (1986: 53), who gives the following predicative example without definiteness-marking.

- (54) il giorno in cui il nostro lavoro era **più faticoso** (Italian)
DEF day in which DEF our work was CMP tiresome
'the day on which our work was **most tiresome**'

Here, even though the example is grammatically predicative, it has the flavor of a relative reading, comparing days rather than alternatives to the subject of the sentence *il nostro lavoro* 'our work'. The same example in French involves a definite article (Alexandre Cremers, p.c.):

- (55) le jour où notre travail était **le plus fatigant** (French)
DEF day when our work was DEF CMP tiresome
'the day on which our work was **most tiresome**'

Matushansky (2008a: 75) reports on a similar phenomenon in Spanish:

- (56) la que es **más alta** (Spanish)
DEF who is CMP tall
'the one who is **tallest**'
- (57) la que está **más enojada** (Spanish)
DEF who is CMP annoyed
'the one who is **most annoyed**'

In both these examples and in the Italian example (54), uniqueness is indicated with the help of a relative clause. These patterns suggest that superlatives require marking of uniqueness in some fashion, not necessarily with an accompanying definite article.

As in French, adnominal superlatives can appear both pre- and post-nominally in Italian:

- (58) a. La mamma fa i **biscotti più buoni** del mondo. (Italian)
 DEF mom makes DEF cookies CMP tasty of.DEF world
 ‘Mom bakes **the yummiest cookies** in the whole world.’
 b. La mamma fa i **più buoni biscotti** del mondo.
 DEF mom makes DEF CMP tasty cookies of.DEF world

Normally, there is no definite article on a postnominal superlative in Italian, although Plank (2003) reports that both of the following variants are acceptable, the latter “putting greater emphasis on the adjective”:

- (59) a. l’uomo **più forte** (Italian)
 DEF’man more strong
 ‘the **stronger / strongest** man’
 b. l’uomo **il più forte**
 DEF’man the more strong
 ‘the **strongest** man’

The following is an example of a postnominal superlative in Italian with a relative reading; here again there is no definite article:⁹

- (60) a. Non sono quello con **il girovita più sottile** in famiglia. (Italian)
 not am the.one with DEF waist CMP thin in family
 ‘I’m not the one with **the thinnest waist** in the family.’
 b. # Non sono quello con **il più sottile girovita** in famiglia.
 not am the.one with DEF CMP thin waist in family

Adverbial quality superlatives systematically lack definiteness-marking in Italian, as shown in the following example from de Boer (1986: 53):

- (61) Di tutte queste ragazze, Marisa lavora **più diligentemente**. (Italian)
 of all these kids Marisa works CMP diligently
 ‘Of all these kids, Marisa works **the most diligently**.’

⁹ According to Cinque (2010: 11-12), only the postnominal syntax is possible on relative readings. Here is a speculation as to how one might explain this in semantic/pragmatic terms: The prenominal position is normally hostile to non-restrictive modifiers in Italian (e.g. **la presenza mera* vs. *la mera presenza* ‘the mere presence’). Matushansky (2008b) proposes that the modified noun saturates the comparison class argument of a superlative, so that a superlative modifier combines with the noun via Functional Application rather than Predicate Modification. This kind of analysis would yield an absolute reading; suppose this is how absolute readings arise. Then absolute readings would be non-restrictive and relative readings would be restrictive. Placing a superlative postnominally could then serve as an indication that an absolute reading is not intended.

The same holds in Spanish (Rohena-Madrado 2007: 1-2):

- (62) Juan es el que corre **más rápido**. (Spanish)
Juan is DEF who runs CMP fast
'Joan is the one who runs **the fastest**.'

As Rohena-Madrado (2007) notes, the relative clause in (62) is necessary in order for a superlative interpretation to arise. The following example has only a comparative interpretation:

- (63) Juan corre **más rápido**. (Spanish)
Juan runs CMP fast
'Joan runs **faster**.'

Thus a superlative interpretation does not freely arise on its own here; uniqueness must somehow be signaled in the absence of a determiner.

4.2 Quantity superlatives

Naturally, we expect the definite article to mark the superlative degree with quantity superlatives as it does with quality superlatives. However, the definite article is sometimes absent even in superlative constructions. de Boer (1986: 53) gives the example in (64); our informants consistently gave us translations like that in (65) and (66) for sentences involving relative readings:

- (64) Dei nostri amici Luigi è quello che ha **più soldi**. (Italian)
of.DEF our friends Luigi is the.one who has CMP money
'Of our friends, Luigi is the one who has **the most money**.'
- (65) Ma probabilmente è Hans che ha bevuto **più caffè**. (Italian)
But probably it.is Hans who has drunk CMP coffee
'But it is probably Hans who has drunk the most coffee.'
- (66) Di tutti i ragazzi della mia scuola io sono quello che suona **più strumenti**.
of all DEF kids in.DEF my school I am the.one that plays CMP instruments (Italian)
'Of all the kids in my school, I'm the one who plays the most instruments.'

Hence there is no overt morphological distinction between ‘more coffee’ and ‘most coffee’.

Following Bosque & Brucart (1991), Rohena-Madrado (2007) uses comparative and superlative ‘codas’ to distinguish between comparative and superlative interpretations in Spanish:

(67) **el niño más rápido** (que todos nosotros) (Spanish)
 DEF boy CMP fast (than all we)
 ‘**the boy faster** (than all of us)’

(68) **el niño más rápido** (de todos nosotros) (Spanish)
 DEF boy CMP fast (of all we)
 ‘**the fastest boy** (of all of us)’

In the former, the boy is among ‘us’, but not in the latter. Using this technique, he shows that so-called ‘free’ superlatives in Spanish can be fronted before the verb, but comparatives cannot:¹⁰

(69) Juan es el niño que **más libros** leyó (de/*que todos ellos) (Spanish)
 John is DEF boy that CMP books read (of/*than all them)
 ‘Juan is the boy that read **the most books** (of/*than all of them).’

This evidence suggests that the comparative and the superlative interpretations are really distinct.

Similarly, *the most instruments* in ‘I’m the one who plays the most instruments’ and *the most coffee* in ‘Hans has drunk the most coffee’ are translated without definiteness-marking in other Ibero-Romance languages:

(70) Yo soy el que toca **más instrumentos**. (Spanish)
 Eu sou o que toca **mais instrumentos**. (Portuguese)
 Jo sóc qui toca **més instruments**. (Catalan)
 ‘I am the one who play **the most instruments**.’

(71) Hans es el que ha bebido **más café**. (Spanish)
 Hans quem bebeu **mais café**. (Portuguese)

¹⁰ ‘Free superlatives’ include adverbial superlatives like *más rápido* ‘the fastest’ and quantity superlatives like *más libros* ‘the most book’. In contrast, ‘incorporated superlatives’ such as *el niño más rápido* ‘the fastest boy’ are defined as being contained within an NP. The free/incorporated distinction in Spanish happens to draw a line between adnominal quality superlatives on the one hand and quantity and adverbial superlatives on the other.

Hans és probablement qui ha begut **més** cafè. (Catalan)
 ‘Hans is the one who has drunk **the most coffee.**’

Adverbial quantity superlatives also lack definiteness-marking:

(72) ... Uno che lavora **più** di tutti e parla **meno** di tutti. (Italian)
 ... one who works CMP of all and speaks little.CMP of all
 ‘... one who works **most** of all and speaks **least** of all’

(73) Alberto es el que trabaja **más**. (Spanish)
 Alberto is DEF that works CMP
 ‘Alberto is the one who works **the most.**’

Unlike in French and Romanian, a definite article would be ungrammatical preceding the comparative word here. Rather, adverbial quantity superlatives the pattern of adnominal quantity superlatives here (as in all of the languages under consideration, in fact).

The DEF+*CMP* construction is generally not used to express proportional readings. Proportional *most* is generally translated using other types of constructions, such as ‘the greater part’:

(74) **Alla maggior parte dei bambini** nella mia scuola piace suonare.
 of.DEF big.CMP part of.DEF kids in my school like play
 ‘**Most of the kids** in my school like to play (music).’ (Italian)

The same holds for the entire Ibero-Romance subfamily, as far as we can see, including Spanish, Portuguese, and Catalan. For example, ‘Most of the kids’ in ‘Most of the kids in my school like to play music’ is translated using a majority noun in these languages:

(75) **La mayoría de los niños...** (Spanish)
A maioria das crianças... (Portuguese)
La majoria dels nens... (Catalan)
 ‘**Most of the kids...**’

However, according to Dobrovie-Sorin & Giurgea (2015: 20), “Italian allows the article and a proportional meaning in the *partitive* construction”:

(76) **Il più degli uomini** predicano ciascuno la sua benignità (Italian)
 the more of.DEF men preach each the his kindness
 ‘Most men preach their own kindness.’

Dobrovie-Sorin & Giurgea (2015: 21) also write that this is possible with no overt partitive complement.

- (77) Gli ospiti sono partiti. I **più** erano già stanchi. (Italian)
DEF guests have left DEF CMP were already tired
'The guests left. **Most (of them)** were already tired.'

This shows that to the extent that proportional readings for quantity superlatives are allowed in Italian, they are signalled with the definite article. In this respect, Italian is like Swedish: definite for proportional and non-definite for relative. But this construction appears more restricted than Swedish *de flesta* 'most', given that it can only occur with partitive complements. Our Spanish and French informants do not accept the DEF+CMF construction in the same environment, so this appears to be specific to Italian among the Ibero-Romance languages.

To summarize: Italian and other Ibero-Romance languages use definiteness-marking for adnominal quality superlatives, and ordinary predicative quality superlatives, but not quantity superlatives, adverbial superlatives, or predicative quality superlatives embedded in phrases uniquely characterizing a given discourse referent. Proportional readings are generally not available for quantity superlatives, with the exception of *il più* in Italian accompanied by a partitive complement.

5 Summary

Table 4 gives a summary of the definiteness-marking patterns we have observed. For a set of languages in which superlatives are formed with the help of a definite article, there is a remarkable diversity of definiteness-marking patterns on superlatives.

The contrasts raise a number of questions, including:

- Why do quantity superlatives in Ibero-Romance lack definiteness-marking, in contrast to Greek, Romanian, and French?
- Why are adverbial superlatives marked definite in French and Romanian, but not Italian, and why is there a split among adverbial superlatives in Greek?
- Why is definiteness-marking absent on predicative superlatives in relative clauses in Italian, but not in French?

- Why do Greek and Romanian allow proportional readings for DEF+CMP but not Spanish or French, and why is it limited to partitive environments in Italian?

We cannot address all of these issues adequately here. However, we will suggest a certain perspective that may bring some of this apparent chaos to order.

The perspective is as follows. The variety of different definiteness-marking patterns we see suggests that the grammars of these languages may be pulled between a number of competing pressures. One pressure is to mark uniqueness of a description overtly. Another pressure, we suggest, is to avoid combining a definite determiner with a predicate of entities other than individuals, such as events or degrees. In conjunction with certain additional assumptions regarding the semantics of various types of superlatives, these pressures result in a dispreference for certain patterns. These assumptions are made explicit in the following section.

6 Formal analyses

6.1 Quality superlatives

6.1.1 Prenominal quality superlatives

To derive a superlative meaning for DEF+CMP constructions, let us start with the assumption that the basic meaning for a comparative like Greek *pio* is a function from measure functions to degrees to individuals to truth values, roughly

Table 4: Definiteness-marking in superlatives in DEF+CMP languages.

	Greek	Romanian	French	Italian	Spanish
Qual./pred.	+	+	+	+	+
Qual./pred. (rel. clause)	+	+	+	–	–
Qual./prenom.	+	+	+	+	+
Qual./postnom.	+	+	+	–	–
Qual./adv.	–	+	+	–	–
Quant./prop.	+	+	NA	+	NA
Quant./rel.	+	+	+	–	–
Quant./adv.	+	+	+	–	–

following Kennedy (2009), Alrenga et al. (2012), and Dunbar & Wellwood (2016), among others.¹¹

$$(78) \quad pio \rightsquigarrow \lambda g \lambda d \lambda x . g(x) > d$$

Here g denotes a measure function, a function that maps individuals to degrees. A gradable adjective like *long* is assumed to denote such a function.¹² Modulo lambda-conversion, this yields the following translation for *pio grigoro* ‘faster’:

$$(79) \quad pio \text{ grigoro} \rightsquigarrow \lambda d \lambda x . \text{FAST}(x) > d$$

The next ingredient is a meaning shift that we refer to as Definite Null Instantiation, in homage to Fillmore (1986). It takes any function and saturates its argument with an unbound variable.¹³

¹¹ This presentation glosses over the fact that not all comparatives are alike. An illustration of this point of particular relevance to the case at hand are the detailed studies of comparison in Greek by Merchant (2009; 2012), where there are three morphosyntactic strategies for marking the standard: (i) the preposition *apo* ‘from’ introducing a phrasal standard; (ii) a genitive case marker, also introducing a phrasal standard; and (iii) a complex standard marker *ap-oti* ‘from-wh’ which introduces both reduced and unreduced clausal standards. Merchant (2012) concludes that if all of the work is to be done by the comparative, then three different lexical entries for the comparative are needed. But there is hope for a unified analysis; the two phrasal comparatives differ only in the order in which they take their arguments, and Kennedy (2009) shows that one of the phrasal meanings can be derived from the clausal meaning. Moreover, Alrenga et al. (2012) offer a new perspective on the division of labor between the comparative and the standard marker, allowing for a unified view on the comparative morpheme across these constructions, with differences attributed to the standard markers. They use a lexical entry like (78) for the comparative, and clausal and phrasal standard markers each combine with it appropriately in their own way. In light of this work, we may continue to operate under the assumption that (78) constitutes a viable candidate for a unified treatment of the comparative morpheme across different types of constructions and across the languages under consideration.

¹² The arrow \rightsquigarrow signifies a translation relation from a natural language expression (part of an LF representation) to an expression of a typed extensional language; we thus adopt an ‘indirect interpretation’ framework, in which expressions of natural language are translated to a formal representation language. Within this framework we assume the standard rule of Functional Application:

- (i) **Functional Application** (Composition Rule)
 If $\alpha \rightsquigarrow \alpha'$ and $\beta \rightsquigarrow \beta'$, and α' is of type $\langle \sigma, \tau \rangle$ and β' is of type σ , and γ is a phrase whose only constituents are α and β , then $\gamma \rightsquigarrow \alpha'(\beta')$.

¹³ Note that this meaning shift depends on the assumption that the \rightsquigarrow relation is not a function; a given natural language expression can have multiple translations into the formal language and they need not be equivalent. See Partee & Rooth (1983) for precedent for this assumption.

(80) **Definite Null Instantiation** (Meaning Shift)

If $\alpha \rightsquigarrow \alpha'$, and α' is an expression of type $\langle \sigma, \tau \rangle$, then $\alpha \rightsquigarrow \alpha'(v)$ as well, where v is an otherwise unused variable of type σ .

Applying this gives the following, where **d** is an unbound degree-type variable:

$$(81) \quad \textit{pio grigoro} \text{ (after DNI)} \rightsquigarrow \lambda x . \text{FAST}(x) > \mathbf{d}$$

We have written **d** in bold-face in order to draw attention to the fact that it is unbound. (We could of course have chosen a variable other than **d**; all we needed was a degree variable that is not otherwise used.) This description can combine with a noun like *aftokinito* ‘car’ using Predicate Modification to produce:

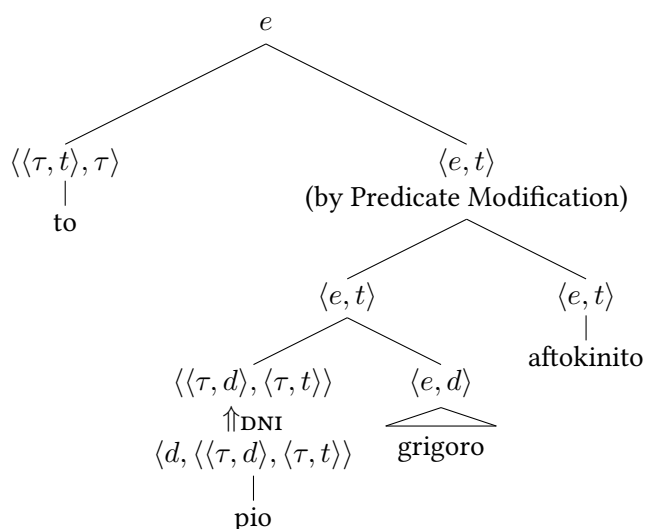
$$(82) \quad \textit{pio grigoro aftokinito} \\ \rightsquigarrow \lambda x . \text{FAST}(x) > \mathbf{d} \wedge \text{CAR}(x)$$

If there is a unique fastest car, then there will be a way of choosing a value for **d** in such a way that this description picks it out. Hence, given an appropriate choice of value **d**, the definite article should be able to combine with this description to pick out the most qualified candidate. Normally, the range of potential referents will be limited to a class **C**, which we may suppose is referenced by the definite determiner.

$$(83) \quad \textit{to} \rightsquigarrow \lambda P_{\langle \tau, t \rangle} . \iota x_{\tau} . P(x) \wedge \mathbf{C}(x)$$

where τ is a variable over types, constrained in specific ways by different languages. Applied to *pio grigoro aftokinito*, this denotes the unique car in **C** that is faster than **d**. The structure of the derivation is as follows:

(84)



This clearly gives an absolute superlative reading. What about relative readings such as (8), with *ti leptotteri mesi* ‘the thinnest waist’? The analytical landscape is quite different under the assumption that there is no superlative morpheme. One influential analysis of the absolute vs. relative distinction, due to Szabolcsi (1986) and developed in Heim (1999), holds that relative readings arise through movement of *-est* at LF to a position adjacent to the constituent of the sentence corresponding to one of the elements being compared, typically the focus. With no *-est* to undergo movement, this analytical route is not available to us.

A prominent class of alternatives to the movement view is that *-est* remains *in situ*, the absolute vs. relative contrast resulting from different settings of the comparison class (Gawron 1995; Farkas & É. Kiss 2000; Sharvit & Stateva 2002; Gutiérrez-Rexach 2006; Teodorescu 2009; Pancheva & Tomaszewicz 2012; Coppock & Beaver 2014; Coppock & Josefson 2015). This type of approach is more amenable to the assumptions that we have made here. Although we have no superlative morpheme to provide a comparison class, the definite article is restricted to a contextually-determined domain C, and the contrast could concern the value of that contextually-set variable. On an relative reading of *the fastest car*, for example, C might consist of cars standing in a salient correspondence relation to the focus alternatives.

Heim (1999) notes that so-called ‘upstairs *de dicto*’ readings pose a challenge for the *in situ* approach. The problem is that *John wants to climb the highest mountain* can be true in a context where there is no specific mountain that John

wants to climb, nor does John's desire pertain to the relative heights of mountains climbed by various competitors; it just so happens that he wants to climb a 5000 mountain (any such mountain), and the ambitions of the others in the context with respect to the heights of mountains they want to climb are not so great. This reading can be obtained by scoping just *-est* over the intensional verb *want*. Such a reading is apparently available in at least Greek and French, according to our informants.

Various responses to that challenge have been offered. Sharvit & Stateva (2002) offer an *in situ* theory designed to handle these readings, but it relies on a non-standard definite determiner, so that solution is not directly compatible with our analysis. Solomon (2011) points out that upstairs *de dicto* readings can be handled if the comparison class is thought to be a set of degrees rather than individuals. This is more amenable to the assumptions we have made, and would only require us to allow for the possibility that the definite article combine directly with a *d*-saturated version of *COMP* that compares degrees rather than individuals and serve to pick out a specific degree.

Other routes may be compatible with the analysis as it stands. Coppock & Beaver (2014) argue that the 'upstairs *de dicto*' phenomenon is part of a more general phenomenon that requires an explanation anyway, namely cases like *Adrian wants to buy a jacket like Malte's*, discussed by Fodor (1970) and in much subsequent literature under the heading of 'Fodor's puzzle'. If indeed upstairs *de dicto* readings can be seen as an instance of Fodor's puzzle, then the problem can be explained away. Another alternative is offered by Bumford (2016), who posits a sort of definiteness that is subordinated to the modal element. Although Bumford's theory of the definite article is different from the simple one we have sketched here, his suggested approach for dealing with intensional contexts may be viable even in the context of a more standard analysis. In any case, we believe it is an open question whether upstairs *de dicto* readings can indeed be managed in the context of an *in situ* approach using the sort of approach to the definite article that we have taken here, and the success of our analysis in dealing with them depends on a general solution to this problem.

Another fact to be accounted for is the fact that, as Szabolcsi (1986) pointed out, superlatives on relative readings behave like indefinites, suggesting that they are, in Coppock & Beaver's (2015) terms, *indeterminate*. We refer to Coppock & Beaver (2014) for ideas on how to capture the indeterminacy of relative readings in the context of an *in situ* analysis.

Another question that this proposal raises is how to rule out overt standard phrases with comparatives that combine with definite articles. These are entirely

ungrammatical:

- (85) * Elle est la plus belle que {Marie, j'ai imaginé}.
she is the CMP beautiful than {Marie, I've imagined}

The same is true for definite comparatives in English, as Lerner & Pinkal (1995) observe:

- (86) George owns the faster car (*than Bill)

Lerner & Pinkal (1995) also observe that this is part of a larger pattern, where weak determiners allow overt standard arguments and strong determiners disallow them:

- (87) George owns a/some/a few faster car(s) than Bill.

- (88) * George owns every/most faster car(s) than Bill.

Beil (1997) offers an explanation of this contrast on the basis of the fact that strong determiners have a domain that has to be presupposed in previous context. Xiang (2005) offers an alternative explanation, on which strong quantifiers induce an LF intervention effect blocking the movement that the *than* phrase needs to undergo. This idea is quite compatible with the present analysis. In a case where Definite Null Instantiation has applied, the target of comparison does not need to undergo movement, so no intervention effect is predicted to arise.

6.1.2 Postnominal quality superlatives

In all of the languages we have seen, there are constructions in which the superlative occurs post-nominally; here are some examples repeated from the discussions above.

- (89) Spania haidevo **tin mikroteri ti gata**. (Greek)
seldom pet DEF smallest DEF cat
'I seldom pet **the smallest cat**.'
- (90) A scris **compunere-a cea mai frumoasă**. (Romanian)
has written composition-DEF DEF CMP beautiful
'She wrote **the most beautiful composition**.'
- (91) celui de la familie avec la **taille la plus fine** (French)
the.one of the family with the waist DEF CMP fine
'the one in the family with the thinnest waist.'

- (92) La mamma fa i biscotti più buoni del mondo. (Italian)
 DEF mom makes DEF cookies CMP tasty of.DEF world
 ‘Mom bakes **the yummiest cookies** in the whole world.’

In Greek, Romanian and French, the postnominal superlative is accompanied by a second definiteness-marker. (This is specific to superlatives only in Romanian and French.) For such cases, it is convenient to adopt Coppock & Beaver’s (2015) predicative treatment of the definite article, whereby it denotes a function from predicates to predicates, presupposing uniqueness but not existence. It is also important for our purposes to restrict the domain of a definite determiner to a salient comparison class C . Thus we adopt the following lexical entry for Romanian *cel*, for example.

- (93) $cel_C \rightsquigarrow \lambda P \lambda x . \partial(|P \cap C| \leq 1) \wedge P(x) \wedge C(x)$

(Here ∂ is the ‘partial’ operator, whose scope is presupposed material. It evaluates to the ‘undefined’ truth value unless its scope is true.) With this, we derive the following the interpretation for the superlative phrase in (90):

- (94) $cel_C \text{ mai frumoasă}$
 $\rightsquigarrow \lambda x . \partial(|\lambda x' . \text{BEAUTIFUL}(x') > \mathbf{d} \wedge C(x)| \leq 1) \wedge \text{BEAUTIFUL}(x) > \mathbf{d} \wedge C(x)$

This description characterizes a composition x in C that is the only one whose beauty exceeds \mathbf{d} . Combining this phrase with the definite article on the noun yields a derivation of the following form for the the full noun phrase (we assume that the suffix *-a* in *compunere-a* ‘the composition’ is interpreted in D, and we represent it as an iota operator for simplicity, although it can also be given a treatment along the lines of (93)):

- (95)
-

6.2 Quantity superlatives

The picture is much richer when it comes to quantity superlatives. In all of the languages we have considered, quantity superlatives differ at least to some extent from quality superlatives, if not with respect to definiteness-marking (as in Italian) then with respect to definiteness-spreading in object position (Greek), use of a pseudopartitive construction (French), or pre- vs. postnominal word order (Romanian). We therefore posit that quantity superlatives are of a different semantic type from quality superlatives (across the board), namely: predicates of degrees, rather than individuals. We have adopted a measure function approach to the semantics of gradable predicates, so that an adjective like *tall* for example is translated as an expression of type $\langle e, d \rangle$, mapping an individual to a degree. The parallel treatment for a quantity word like *much* or *many* would then be $\langle d, d \rangle$; just as *tall* maps an individual to its height, *much* maps a quantity to its magnitude. The magnitude of a quantity might as well be seen as the quantity itself, so we will simply treat quantity words as identity functions on degrees. Thus for Greek, we have:

$$(96) \quad \textit{pollá} \rightsquigarrow \lambda d . d$$

$$(97) \quad \textit{pio pollá} \text{ (after DNI)} \rightsquigarrow \lambda d' . d' > \mathbf{d}$$

Now, we cannot use Predicate Modification to combine with the noun. (And this predicts that definiteness spreading should be problematic.) Let us assume that what happens instead is that the degree predicate is linked to the nominal predicate by the same glue that holds a pseudopartitive together. We implement this with the composition rule called Measure Identification in (98). The result is a predicate that holds of some individual x if the nominal predicate holds of x and x has an extensive measure satisfying the degree predicate.

(98) Measure Identification (Composition Rule)

If γ is a subtree whose only two immediate subtrees are α and β , and $\alpha \rightsquigarrow D$, where D is of type $\langle d, t \rangle$, and $\beta \rightsquigarrow P$, where P is of type $\langle \tau, t \rangle$, where τ is any type, then

$$\gamma \rightsquigarrow \lambda v . D(\mu_i(v)) \wedge P(v)$$

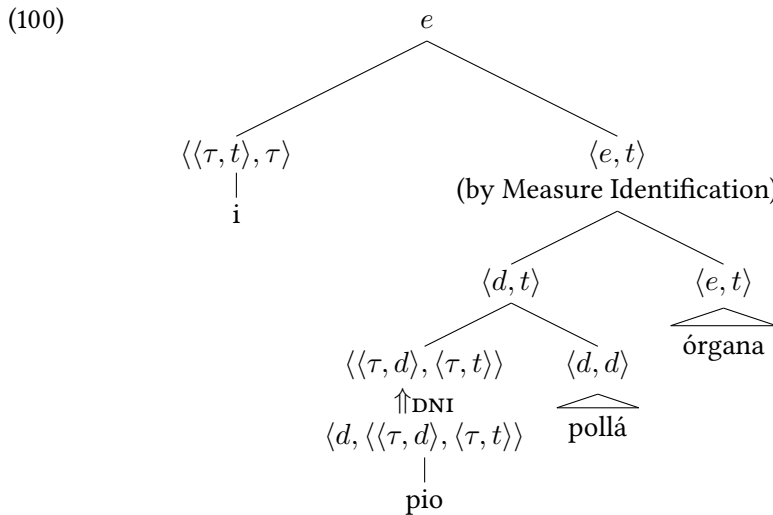
where v is a variable of type τ and μ_i is a free variable over measure functions (type $\langle \tau, d \rangle$).

We use μ_i to denote a contextually-salient measure function along the lines of Wellwood (2014), with i as a free variable index presumed to be constrained by

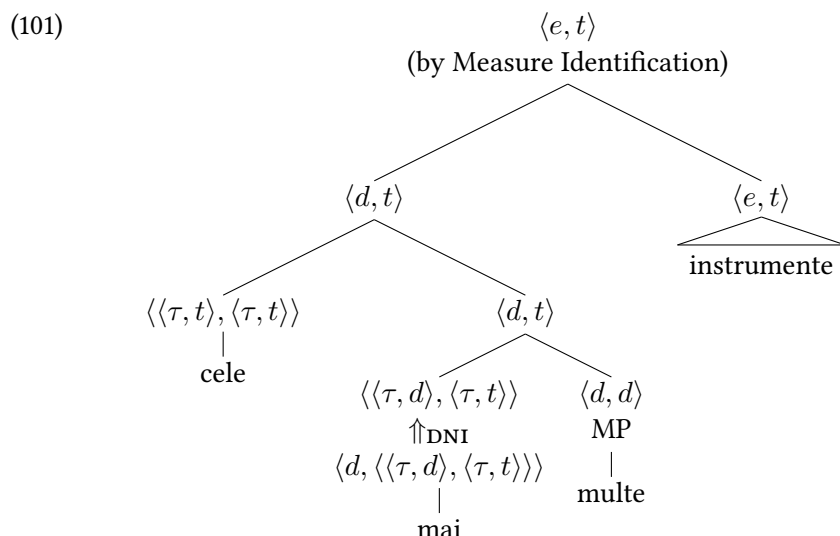
context. So given a predicate of degrees D and a predicate of individuals P , this operation yields $\lambda x . D(\mu_i(x)) \wedge P(x)$. Here is an example (assuming the plural is translated using the cumulativity operator $*$; cf. Link (1983)):

(99) *pio pollá órgana* $\rightsquigarrow \lambda x . \mu_i(x) > \mathbf{d} \wedge * \text{INSTRUMENT}(x)$

This is the right sort of thing to combine with a definite article as long as \mathbf{d} is chosen appropriately. The definite article introduces a comparison class C . So *ta pio pollá órgana* will be predicted to denote the plurality of instruments in C whose contextually-relevant extensive measure is \mathbf{d} . The structure of the derivation is thus as follows:



In Romanian, the definite element *cel* forms a constituent with the comparative element and the quantity word to the exclusion of the noun. We therefore posit the following structure for the semantic derivation:



The meaning for this expression as a whole characterizes a plurality of instruments whose measure is greatest among any of the degrees in the context. In the case of a relative reading, the set of degrees that are salient in the context are aligned in a one-to-one relationship with some salient set of individuals, typically those individuals that are alternatives to the focussed constituent.

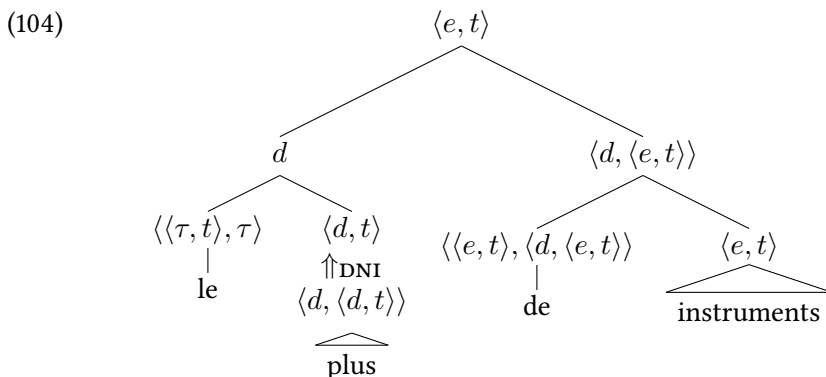
French has yet a different structure, involving a pseudopartitive.

- (102) Je suis celui qui joue le plus d'instruments. (French)
 I am the-one who plays DEF CMP of-instruments
 'I am the one who plays the most instruments.'

Since French does not use a word for *many* parallel to Greek *pollá* or Romanian *mult*, we might posit either a silent underlying form with the same meaning, or we might imagine that French simply makes do without such an element. In the latter case, it is convenient to treat *plus* using the simplest imaginable lexical entry for comparison (Heim 2006; Beck 2012), namely:

- (103) $plus \rightsquigarrow \lambda d . \lambda d' . d' > d$

Given this, we have the following derivation:

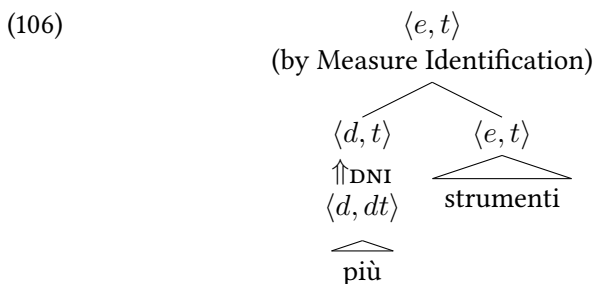


We assume that the Meas head acts as glue, linking the degree denoted by *le plus* with the denotation of the noun phrase such that the noun phrase is constrained to have an extensive measure of that degree. The resulting denotation is just the same as that posited for Romanian.

Finally, we come to Italian, which has the simplest overt form, as shown in (66) above, repeated here:

- (105) ... che suona **più strumenti**. (Italian)
 ... that plays CMP instruments
 ‘... who plays the most instruments.’

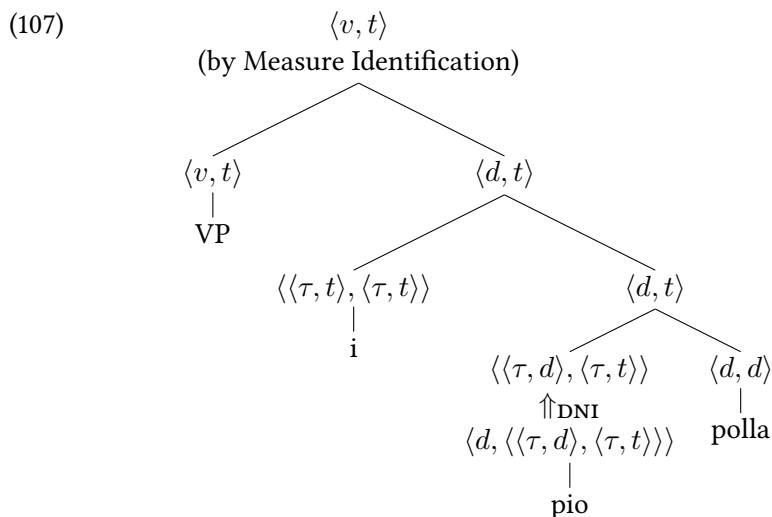
One possible analysis is as follows, using a lexical entry for *più* like the one given for French *plus* above.



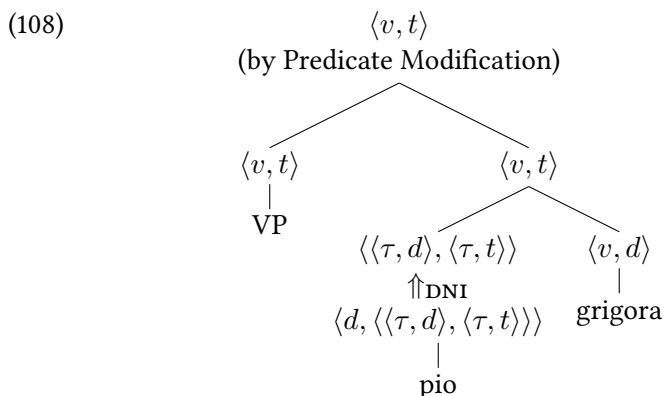
The predicate that this derives holds of any plurality of instruments x whose quantity exceeds d . This of course does not necessitate that there be no larger plurality of instruments in the context, so we have not captured a superlative interpretation. Assuming the same analysis carries over to Spanish, it remains an open question why superlatives undergo fronting and comparatives do not.

6.3 Adverbial superlatives

For adverbial quantity superlatives, we start with the assumption that a verb phrase denotes a property of events, translating to an expression of type $\langle v, t \rangle$, and that the DEF+CMP construction combines with it via Measure Identification. For example, in Greek:



Adverbial quality superlatives, on the other hand, involve gradable predicates that measure events:



We suggest that this difference in type underlies the contrast between quantity and quality adverbial superlatives in Greek: The Greek definite determiner applies to predicates of type $\langle d, t \rangle$ but not ones of type $\langle v, t \rangle$. In Italian, neither

type of adverbial superlative is marked definite; this can be understood as an aversion to definiteness-marking on predicates of both types. In French and Romanian, on the other hand, both types are definite, and this can be understood under the lens of a maximally polymorphic definite determiner.

6.4 Proportional readings

Proportional readings for quantity superlatives are not fully available in French, Spanish, or Italian, but they are available in Greek and Romanian. From a larger typological perspective, Greek and Romanian are the odd ones out; most languages lack proportional readings for the superlative of ‘many’ (Coppock et al. 2017). In line with Coppock et al. (in prep), we suggest that this is related to our proposal that quantity words typically denote predicates of degrees rather than individuals, and their comparatives likewise compare degrees rather than individuals. A definite determiner that combines directly with the comparative of a quantity word after Definite Null Instantiation produces a phrase denoting a degree or amount that is greatest among some contextually-salient set of degrees. Thus for example *le plus* in *le plus d’instruments* would have a denotation like ‘the greatest number’ or ‘the greatest amount’. Notice that the phrase *the greatest number* only has a relative reading. Consider:

(109) Maria has visited the greatest number of continents.

This cannot mean that Maria has visited more than half of the continents. If *le plus* means the same thing as *the greatest number*, then it, too, should only have relative readings. According to Coppock et al. (in prep), the reason that such cases have only relative readings is related to a general constraint on the interpretation of superlatives. This view makes a distinction in principle between the entities that are actually measured by the gradable predicate to which superlative morphology attaches, the *measured entities*, and what they call the *contrast set*, following Coppock & Beaver (2014). On relative readings, the contrast set and the measured entities are distinct and related by a salient association relation given by the sentence. On absolute readings, they are conflated. Coppock et al. (in prep) posit a constraint on the contrast set, according to which it must consist of individuals. When the gradable predicate measures degrees rather than individuals, the contrast set must be distinct from the set of measured entities; hence a relative reading is forced.

How, then, do proportional readings arise? Dobrovie-Sorin & Giurgea (2015) suggest that they arise through grammaticalization, which requires full grammatical agreement (present in both Greek and Romanian), and is preempted by

the pseudopartitive construction that French uses with relative readings. On this perspective, it is a matter of historical accident whether a given language has developed a proportional determiner from a quantity superlative. We are sympathetic to this view. We would only note that if indeed Greek and Romanian involve different constituency relations when it comes to relative readings, as suggested above, then the putative grammaticalization process must be of a different nature for the two languages. We would like to suggest that in Greek, proportional readings arise through a process like that envisioned by Hoeksema (1983), where the quantity word comes to denote a gradable predicate of (plural) individuals, and the comparison class for the superlative is constituted by two non-overlapping pluralities, one consisting of atoms that satisfy the predicate in question and one consisting of atoms that do not. Such an analysis is consonant with the idea that the definite determiner is in its ordinary position in Greek, rather than more tightly integrated with the comparative marker. In Romanian, on the other hand, there is a constituent containing the definite article, the comparative marker, and the quantity word; this phrase could potentially be reanalyzed as a complex determiner.

7 Conclusion and outlook

We have suggested that superlative interpretations arise in DEF+CMP languages with the help of an interpretive process called Definite Null Instantiation for the target argument of a comparative. It is reasonable to ask whether this process is restricted to DEF+CMP languages or available more broadly. We suggest that it is available at least somewhat more broadly, and that English is one of the languages that avails itself of it, in constructions like *the taller of the two* (discussed from a formal semantic perspective by Szabolcsi (2012)). Why English doesn't generally form superlatives using this strategy could be explained in terms of markedness; since there is a dedicated superlative morpheme in English, it should be used whenever the comparison class contains more than two members.

The pattern of variation suggests that a number of competing pressures are at play. One pressure is to mark uniqueness of a description overtly. Another pressure is to avoid combining a definite determiner with a predicate of entities other than individuals, such as events or degrees. We have assumed that quality adverbs denote gradable predicates of events, and that quantity words denote predicates of degrees. The pressure to avoid combining definite determiners with predicates of events rules out definiteness-marking on adverbial quality superla-

tives, and similarly for predicates of degrees and quantity superlatives.

In Optimality Theoretic terms, we might conceive of these forces as constraints that we could label $*_{\text{DEF}/d}$ ('do not use a definite determiner with a predicate of degrees'), $*_{\text{DEF}/v}$ ('do not use a definite determiner with a predicate of events') and MARK-UNIQUENESS. Italian ranks the former two over the latter:

$$*_{\text{DEF}/d}, *_{\text{DEF}/v} > \text{MARK-UNIQUENESS}$$

while French ranks the latter over the former two:

$$\text{MARK-UNIQUENESS} > *_{\text{DEF}/d}, *_{\text{DEF}/v}$$

An adverbial superlative like *le moins fort* (French, lit. 'the less fast') violates $*_{\text{DEF}/v}$ but not MARK-UNIQUENESS, while one like *más rápido* (Spanish, lit. 'more fast') violates MARK-UNIQUENESS but not $*_{\text{DEF}/v}$. Greek draws the line at adverbial quality superlatives, which suggests that it ranks MARK-UNIQUENESS over $*_{\text{DEF}/v}$, but not over $*_{\text{DEF}/d}$:

$$*_{\text{DEF}/d} > \text{MARK-UNIQUENESS} > *_{\text{DEF}/v}$$

Intuitively, MARK-UNIQUENESS should require that any descriptive phrase which is presupposed to apply to at most one individual is marked with a lexical item that conventionally signals this presupposition. But there may be slightly different shades of this constraint for different languages. Recall that in Italian (and Spanish), the definite article is normally used in predicative superlatives, presumably to distinguish between the comparative and the superlative interpretations. But the relative clause construction serves to mark uniqueness in some sense, rendering the definite article unnecessary. This sort of explanation could be made more precise by imagining a version of the MARK-UNIQUENESS constraint in Ibero-Romance that imposes slightly different requirements. Suppose that in Ibero-Romance, the operative MARK-UNIQUENESS constraint may be satisfied in some cases where a candidate phrase with unique descriptive content is not actually marked as unique, as long as it is embedded in a larger phrase with unique descriptive content which *is*. So Ibero-Romance might have a 'once per discourse referent' rule, while French might have a 'once per phrase' rule. Syntactic restrictions would presumably also come into play.

This hypothesized difference could also apply to bare postnominal superlatives, which are found in Italian but not French. This idea would have to be evaluated in light of previous ideas regarding this contrast. According to Kayne (2004), the reason has to do with the licensing of bare nouns in general. Alexiadou (2014: 74-75) suggests an approach appealing to the richness of agreement

features. Matushansky (2008a) argues that superlatives are always attributive modifiers of nouns, so a nominal structure is projected around a superlative in the postnominal case; perhaps Italian does not do that. We leave it to future research to compare among these possible explanations for the difference.

Future research on this topic should also bring into the discussion a wider range of languages that use this strategy. For example, Plank (2003) briefly discusses the very interesting case of Maltese, which makes use of fronting to distinguish the superlative degree (110c) from the comparative (110b).

- (110) a. il-belt il-qawwi
DEF-city DEF-powerful
'the powerful city'
- b. il-belt l-aqwa
DEF-city DEF-powerful.CMP
'the more powerful city'
- c. l-aqwa belt
DEF-powerful.CMP city
'the most powerful city'.

As Plank (2003: 361-362) points out, "Paradoxically, as a result of this fronting, NPs with superlatives thus end up less articulated than NPs with other adjectives in normal postnominal position." Plank posits that "Just like *le plus jeune homme* [...] in French, [superlatives in Maltese] are in fact under-articulated: there ought to be two definiteness markers on the initial superlative, one by virtue of it being a superlative, another by virtue of it being NP-initial." Further issues for future work include whether and how the approach we have taken here, in terms of competing pressures, can be fruitfully applied to Maltese and other DEF+CMF languages.

Abbreviations

CMF: comparative

SPRL: superlative

DEF: definite

WK: weak ending

Acknowledgements

We are very grateful to our consultants who have been so generous with their time, and to the organizers and participants of the Definiteness Across Languages conference in Mexico City, July 2016. Extra special thanks are due to Stavroula Alexandropoulou for help with the Greek judgments. This research was carried out under the auspices of the Swedish Research Council project 2015-01404 entitled *Most and more: Quantity superlatives across languages* awarded to PI Elizabeth Coppock at the University of Gothenburg.

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