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On the Attributive Nature of Superlatives

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Abstract. The standard view of superlatives treats them as a subkind of adjectives. However, in many languages, superlatives require the presence of a determiner, even in the predicate position. This leads to an apparent contradiction, since it is independently known that determiners syntactically combine with extended NP projections and are excluded with APs. This issue is resolved if superlative adjectives always appear in an attributive (modificational) position. Superlative phrases without an overt noun (e.g., in the predicative position) modify a null head noun. I show that this hypothesis immediately explains the restrictions on the distribution of superlatives in languages as diverse as Russian, French, German, Dutch, Breton, Spanish and Portuguese. I propose that the modificational nature of superlative adjectives can be derived from their semantics, and I argue that such a proposal yields a natural explanation of the behavior of superlatives in Hebrew and Persian. Finally, I discuss the interaction between this theory and the standard, movement-based analyses of comparatives and superlatives and provide an explanation for apparent counterexamples.

1. Introduction

It is well known that adjectives can appear in two positions: attributive, where they modify an (extended) NP,[1] as in (1); and predicative, where they do not do so. In the latter case, the adjective may function as the main predicate (2a), a secondary depictive (2b), or a resultative (2c) predicate, or a predicate of the small clause embedded under an ECM (2d) or raising (2e) verb.

(1) a. the **white** book — attributive
b. a **blue** sea
c. a/the **more recent** changes

(2) a. The book is **white**. — main
b. Polly came back all **white**. — depictive
c. The clown's face was painted **white**. — resultative
d. They considered the pigment **white**. — ECM
e. Snow seemed **white**. — raising

A priori, comparative and superlative xAPs have the same distribution and can appear in both attributive and predicative positions:[2]

[1] I use the term xNP (or xAP) when the exact level of the extended projection (DP, NP, NumP, etc.) is irrelevant or unknown.

[2] I leave the adverbial use of superlatives aside, for the most part. The hypotheses advanced here have wide-ranging implications for adverbial and PP superlatives, most of which I will disregard here in order to keep the length of this paper within reasonable limits. For some discussion see section 10.2.

(3) a. a **whiter** book attributive
b. the **whitest** book

(4) a. This book is/seems **whiter** (than that one). predicative
b. This book is/seems **the whitest**.

However, the default view that superlative extended APs (xAPs) can be predicative runs into problems when their external syntax is considered. The major problem with this approach is the fact that superlatives must appear with a definite article (though they may appear bare in some languages or in certain contexts; see sections 10.1 and 10.6 for details).[3] This requirement is suspended only in presence of a possessive or a negative quantifier such as *no*.[4]

(5) a. This story is **the** best. English
b. This theory is **the** most interesting.

(6) a. Cette histoire est **la** meilleure. French
this-F.SG story.F is the-F.SG better-F.SG
'This story is the best.'
b. Cette théorie est **la** plus intéressante.
this-F.SG theory.F is the-F.SG CMP interesting-F.SG
'This theory is the most interesting.'

(7) Deze stoel is **de** kleinst-e Dutch
this chair is the-C smallest-AGR
'This chair is the smallest.'

It is standardly assumed that the presence of an article depends on the presence of a nominal projection (which can result from c-selection by D^0 or from a semantic requirement). The presence of a definite article with superlatives therefore indicates either nominalization (i.e., a null affix turning the superlative adjective into a noun) or the projection of a null head noun in syntax (but see Broekhuis 1999:4.2 for a different view on the basis of Dutch).[5]

I follow Ross 1964 in assuming that the definite article can be projected in (5)–(7) because the superlative there involves projection of an anaphoric null noun like *one* (arguments against the nominalization hypothesis are given in

[3] The combination of the superlative morpheme with the definite article does not guarantee the superlative meaning (see Fauconnier 1975 and Rando & Napoli 1978 for counterexamples).

[4] I use CMP to gloss the comparative morpheme (bound or free), SUP to gloss the superlative affix, and MOST/LEAST to gloss the free-standing superlative words possibly containing more than one morpheme.

[5] The nominalization hypothesis is in fact advanced by some traditional grammars (Spanish, at least).

section 8.1). I argue that the assumption that a superlative phrase always contains a noun provides a natural explanation for a wide range of facts from different languages. In case of nonargument superlatives like in (5)–(7) this assumption necessitates a clarification of terminology. Accordingly, I will use the term "superlative xAP" for the xAP containing the superlative morpheme, and the term "superlative phrase" for the xNP containing a superlative xAP:

(8) This story is [$_{xNP}$ **the best** Ø $_{NP}$].
   a. superlative xAP: *best*
   b. superlative phrase: *the best Ø*

As is clear from the discussion so far, the focus here is on the syntax of the superlative *morpheme*. The basic superlative meaning (the external argument can be attributed the relevant property to a degree higher than any other entity in a given comparison set (see Heim 1999) can be expressed by a variety of language-specific tools:

(a) Superlative morpheme: *most*/*-st* in English, *haxi* in Modern Hebrew, *sam-*, *nai-* and *-ejš-* in Russian, etc.
(b) Comparative morpheme with a degree phrase containing a universal quantifier of the type *than every (other) NP*, as in Buli (Matushansky 2003, see also section 10.5).
(c) Adverbials such as *number one* (Japanese), which might be identical to ordinals.[6]

It is clear that superlatives and comparatives have much in common, as do superlatives and ordinals, but I will only be concerned with the type (a) and leave types (b) and (c) for future research. Henceforth the term "superlative" will only be used here to describe morphological superlatives.

The paper is organized as follows. I argue, on a language-by-language basis, that predicative superlative phrases always involve an attributive superlative xAP modifying a null noun.[7] I show that this assumption naturally resolves a number of otherwise puzzling issues in the crosslinguistic syntax of superlatives (sections 2–7). In section 8 I discuss my reasons for dispreferring the nominalization hypothesis. I then argue that superlative xAPs must be attributive because of the semantics of the superlative morpheme (section 9). Section 10 addresses various apparent exceptions and irregularities in the

[6] Ordinals (*first*, *second*,…), sequentials (*next*, *last*, *former*, and *latter*) and the adjectives *same* and *other*, which also can license a null noun, often have superlative or comparative morphology and/or syntax, but there are differences (e.g., ordinals can appear with an indefinite article, as in *She bought a third house today*). I leave nonintensional obligatorily attributive adjectives other than superlatives aside here.

[7] In fact, I would like to claim that the obligatorily attributive character of superlative xAPs is a special case of a more general semantic requirement. Section 9 discusses how this hypothesis should really be stated and an important qualification of the syntax of superlatives that this entails.

superlative syntax and argues that they should not be construed as evidence against the hypotheses advocated here.

2. English

It has become an accepted strategy to begin investigations into Universal Grammar with English. I will use English to argue that (a) superlatives can modify a null noun and (b) they must do so. As in the majority of languages to be discussed here (except Russian, which has no overt marking of definiteness), the first indication that English superlative phrases contain a nominal head is the presence of the definite article.[8] The fact that superlative phrases must be definite is due to the semantics of the superlative morpheme, which presupposes uniqueness (see Heim 1999). However, it is easy to show that the definite article is not part of the superlative morpheme (see also Kayne 2004). First of all, the definite article disappears in the presence of a possessive or the negative quantifier, exactly in the same way it does with other uniquely referring xNPs:

(9) a. **Beethoven's head** is unusually large.
b. **A mathematician's best work** is done in their youth.

(10) a. There is **no sun** today.
b. There is **no largest number**.

Secondly, another adjective marginally can precede a superlative, and the article must then precede the entire xNP:

(11) a. #the previous **most brilliant/best** mathematician
b. #the next **lightest** supersymmetric particle
c. #a former **most wanted** fugitive

I conclude that the definite article is not part of the superlative morpheme and therefore a syntactic explanation of its presence must be found. The simplest hypothesis is that a nominal head is present in a superlative phrase.

2.1 Superlatives License Null Nouns

It is well known that under certain discourse conditions, an xNP in an argument position may not contain an overt noun (an effect known as NP-ellipsis):[9]

[8] Section 10.2 discusses the two cases where the superlative definite article may be absent: lists and comparison over stages of the same individual.

[9] Unlike VP-ellipsis, NP-ellipsis can be licensed by an extralinguistic antecedent, as in (12b). Exact conditions on NP-ellipsis licensing, whether syntactic or semantic, will not be discussed here—see Corblin 1990, Lobeck 1993; 1995, Sleeman 1993; 1996, Kester 1996, Borer and Roy 2005, and Cabredo Hofherr 2005, among others, for discussions of NP-ellipsis licensing in English and Romance.

(12) a. Alice had one flamingo, and the queen, [$_{xNP}$ two Ø].
b. Do you want [$_{xNP}$ these Ø]?

Although NP-ellipsis in English is impossible with most types of APs, other languages are more liberal:

(13) Context: Do you want a/the red dress or a/the blue one? NP-ellipsis
a. la/une rouge French
the/a red
b. la/una roja Spanish
the/a red
c. krasnoe Russian
red-LF-N.SG-ACC/NOM
d. (et ha-) aduma Hebrew
ACC DEF red

The semantic content of the null noun in NP-ellipsis environments (its "identification") is provided by the context. Whatever syntactic mechanism licenses null nouns in NP-ellipsis, it is available for superlative phrases in argument positions—superlative xAPs license a null noun:

(14) Context: Which dress would you like?
a. I want the cheapest. English
b. Je veux la moins chère. French
I want the less expensive-F.SG
c. Quiero la más barata. Spanish
want-1SG the CMP cheap-F.SG
d. Ja xoču samoe deševoe. Russian
I want MOST-F.SG cheap-N.SG
e. ani roca et haxi zola Hebrew
I want ACC MOST cheap-F.SG

I surmise that since superlative xAPs can license a null noun in argument positions in English and all other languages considered here, they should be able to license a null noun when the superlative phrase is in the predicate position.

2.2 Stacking

A further piece of evidence that superlative phrases without an overt head noun are nonetheless xNPs comes from stacking. It is a well-known

crosslinguistic generalization that adjectives (and modifiers in general) cannot be modified by other adjectives:[10]

(15) a. Don José and Escamillo are young *(men) very different from each other.
b. Carmen is beautiful (*wilful).

The generalization has no exceptions with prenominal adjectives. However, postnominal modifiers, such as xAPs denoting a temporary property (discussed by Bolinger 1967), passive participles, PPs and nonreduced relative clauses, can appear with superlative xAPs, as well as with some of the adjectives discussed in footnote 6, in absence of an overt noun (cf. Ross 1964):[11]

(16) The problem had several solutions—ours was considered…
a. *(a/the) cheap available/on the market/(that) we could think of — positive adjective
b. the cheapest available/on the market/(that) we could think of — superlative xAP
c. *the cheapest mathematical/good/functional — with prenominal APs

(17) Our product was chosen because it was…
a. the cheapest ready for shipment — temporary property
b. the cheapest prepared in advance — passive participle
c. *the cheapest easy to stack — reduced relative/right-branching xAP

I link the fact that postnominal xNP modifiers can appear with some xAPs (superlative xAPs and other adjectives discussed in fn. 6) but not with others to the fact that only these xAPs can license a null noun.[12]

[10] In Russian, nearly all nonmodal adjectives can license NP-ellipsis (see Babby 1973, 1975), and thus NP-ellipsis may occur in an xNP containing more than one adjective, creating an impression of adjective stacking (Babby, to appear):

(i) Bol'šoj nož – edinstvennyj režuščij Ø$_{NP}$ v dome.
big knife only cutting in house
'The big knife is the only one in the whole house that cuts.'

[11] Bhatt (2002) discusses the interpretation of superlatives and ordinals in combination with relatives (*the first/best book that Tolstoy wrote*) and comes to the conclusion that the superlative/ordinal DP has to be base-generated inside the relative clause. See also Heycock, to appear, and Bhatt and Sharvit 2005.

[12] It should be noted that not all xAPs that license NP-ellipsis allow a postnominal modifier:

(i) *The problem had several solutions—we discussed **three** available/on the market/(that) we could think of.

I leave aside here the issue of what factors affect "adjective stacking" in English and in other languages.

2.3 Superlative VP-modifiers

The determiner in superlative phrases could also be licensed without hypothesizing a null noun, given that argument (and maybe even predicate) superlatives have a discourse antecedent. If the determiner can somehow be licensed by the fact that its features are identified by this antecedent, a null noun becomes superfluous, from the formal point of view. However, this proposal will not work for adverbial and PP superlatives, which have no obvious discourse antecedent (see Corver and Matushansky 2006 for some discussion) and yet appear with a definite article, suggesting the presence of a null noun:

(18) a. Senna drove **the fastest**. adverbial superlatives
b. Callas sang **the loudest**.

(19) a. Alice found herself **at ✓her/*its/*the/*Ø loneliest**.
reflexive PP superlatives
b. She sang **at ✓her/*its/*the/*Ø loudest**.

(20) a. **At *your/*its/✓the/✓Ø worst/best**, you will be beaten.
pronominal PP superlatives
b. She arrives on Sunday **at *her/*its/✓the/*Ø earliest/latest**.
c. There were thirty people **at *their/*its/✓the/✓Ø most/least**.

It would seem that adverbial superlatives such as (18) and PP superlatives such as (19) and (20) argue against the nominal head analysis since no overt noun can appear in this position (see section 10.2 for a discussion of superlatives whose external argument is not an individual in the sense of Carlson 1977). On the other hand, PP superlatives such as (19) and (20) show that a noun is required: neither a preposition nor a possessive are compatible with a bare adjective:[13]

(21) a. *at (her/its/the) lonely/good/better
b. *(at) her/its/the lonely/good/better

Superlative VP modifiers provide the first example of an environment where a null noun is required by a superlative. It remains to be shown that nominal modification is the only structure in which superlative xAPs may appear.

2.4 Differentials and Factor Phrases

Differentials and factor phrases, exemplified in (22) and (23), are usually viewed as arguments of comparative and superlative xAPs (von Stechow 1984). With the former they can appear either as measure NPs to the left of the

[13] Ross (1964) also observes that PP superlatives can contain a possessive and suggests that their attributive analysis would be desirable, but does not pursue the matter further. As with adverbial superlatives, no overt noun can appear in a PP superlative.

adjective or as measure *by*-PPs on the right xAP-periphery. It is unlikely that the two possibilities are transformationally related:

(22) a. Thumbelina is **two inches** taller than Tom Thumb. differential
b. Thumbelina is taller than Tom Thumb **by two inches**.

(23) a. Thumbelina is **three times** taller than Tom Thumb. factor phrase
b. Thumbelina is taller than Tom Thumb **by the factor of three**.

In attributive comparatives, however, differentials and factor phrases can appear as *by*-PPs only:

(24) a. Thumbelina is a (*two inches/*three times) taller doll than Tom Thumb.
b. Thumbelina is a taller doll than Tom Thumb **by two inches/by the factor of three**.

The grammaticality of (24b) shows that the prohibition on measure phrases inside xNPs is not the result of their semantics.[14] Superlative phrases behave like attributive comparatives: as Stateva (2002, 2003) observes, they allow differentials and factor phrases only as *by*-PPs:

(25) a. *Thumbelina is the two inches/three times tallest (of/among the dolls).
b. *Thumbelina is two inches/three times the tallest (of/among the dolls).
c. Thumbelina is the tallest (doll) by ??(at least) two inches/by the factor of three.

Stateva (2003) proposes that the ungrammaticality of (25a, b) is due to the fact that the bare measure phrase and the superlative morpheme occupy the same position: Spec,DegP. My alternative explanation is that the superlative xAP is attributive, and, as noted by Abney 1987, measure phrases are not allowed xNP-internally—not even for absolute adjectives (except in a compound):[15]

[14] It is likely that the prohibition on measure phrases inside attributive xAPs has something to do with the known English constraint against prenominal right-branching xAPs (the so-called head-final filter; see Emonds 1976, Kajita 1977, Williams 1982, Giorgi & Longobardi 1991, and van Riemsdijk 2001 for exceptions and discussion).

[15] Abney (1987:214–215f.) also observes that whereas plural measure phrases are ungrammatical in attributive xAPs, singular measure phrases are impossible in the predicate xAPs:

(i) a. a six inch(*es) long pencil
b. The pencil is six inch*(es) long.

I speculate that the contrast may suggest that xNP-internal singular measure phrases are not part of the attributive xAP but rather modify the whole xNP, as in (ii):

(ii) a six-inch(*es) pencil

Unfortunately, this proposal still leaves unexplained why *long* is interpreted as an absolute adjective (i.e., *six inches long*) rather than as positive one (longer than the contextually determined norm).

(26) a. Thumbelina is **two inches** tall.
b. *Thumbelina is a **two inches** tall girl.
c. Thumbelina is a **two-inch** (tall) girl.

If correct, this explanation requires that superlative xAPs be obligatorily attributive—had a purely predicative structure been available, the constraint against measure phrases inside xNPs need not have applied. I conclude that a superlative xAP must be attributive, and will return to measure *by*-PPs in superlatives in section 9.2.

2.5 Anaphoric so

The behavior of the anaphoric pronominal predicate *so* points in the same direction. As observed in Corver 1997 and Stateva 2002, 2003, anaphora involving *so* is possible with comparatives, but not with superlatives:

(27) a. The panda is a charming animal, but the lemur is *more so*.
b. *There are many charming animals, but lemurs are *the most so*.

I suggest that the reason is that *so* cannot appear as a noun modifier, comparative or not:

(28) a. *The panda is a charming bear, and the lemur is a *so* primate.
b. *The panda is a charming bear, and the lemur is a *more so* primate.

If superlative xAPs must be attributive, the ungrammaticality of the superlative phrase in (27b) is due to the same reason as the ungrammaticality of (28): *so* is not a nominal modifier. Once again, these data show that predicative superlative phrases contain a nominal head.

2.6 Summary

The English data demonstrate two facts: (a) that superlative xAPs can license a null noun, and (b) that superlatives without an overt head noun *must* do so (as shown by the ungrammaticality of superlative phrases containing prenominal measure phrases (differentials or factor phrases) or the predicative *so*, and by the syntax of VP-modifiers).

Before addressing the question of why superlative xAPs must function as modifiers (section 9), I will examine the data from other languages (German, Dutch, French, Spanish, Portuguese, Breton, and Russian) that demonstrate that the phenomenon is not English-specific: crosslinguistically, superlatives cannot function as predicates.

3. German and Dutch Agreement versus Concord

In German and in Dutch, agreement functions differently from concord: while adjectives in the predicate position show no morphological agreement with the

subject, attributive adjectives show agreement with the head noun (concord). I will show that the behavior of superlative xAPs falls uniformly in the attributive range.

German attributive adjectives are morphologically derived from predicative adjectives by adding a vowel, as in (29a). This attributive marking is not a concord phenomenon, since no formal properties of the xNP play a role here:[16]

(29) a. Das ist eine schön*(-e) Schlange. German
this is a-F beautiful-AGR snake.F
'This is a beautiful snake.'
b. Diese Schlange ist schön(*-e).
this snake is beautiful-AGR
'This snake is beautiful.'

In Dutch, concord marking on an attributive adjective is triggered by definiteness, plurality or gender. The concord marker *-e* appears on prenominal attributive adjectives unless the xNP containing them is [neuter][indefinite][singular], though some (semantically defined) adjective-noun combinations do not fall under this generalization (Odijk 1992, Menuzzi 1994, Kester 1996 and Broekhuis 1999, among others):

(30) a. een klein(*e) stoeltje [neuter][indefinite][singular]
a small-AGR chair-DIM.N
'a small little chair'
b. een klein*(e) stoel ~~[neuter]~~[indefinite][singular]
a small-AGR chair.C
'a small little chair'
c. het klein*(e) stoeltje [neuter]~~[indefinite]~~[singular]
the small-AGR chair-DIM.N
'the small little chair'
d. klein*(e) stoeltjes [neuter][indefinite]~~[singular]~~
small-AGR chair-DIM.N-PL
'small little chairs'

Importantly, whatever the ϕ-features of the subject, predicative adjectives are unmarked:

(31) Deze stoel is klein(*e)/ blauw(*e)/ goed(*e).
this chair.C is small-AGR/blue-AGR/good-AGR
'This chair is small/blue/good.'

[16] The declension of the adjective traditionally assumed to be influenced by the determiner (the so-called weak vs. strong declensional pattern; see, e.g., Zwicky 1986). However, Schlenker 1999 argues that this pattern is in fact influenced not only by the determiner but also by the preceding adjectives.

(29b) and (31b) show that German and Dutch have no mechanism for triggering agreement between the subject and the AP predicate. Nonetheless, superlative phrases in predicate position show attributive marking:[17]

(32) a. Das ist **die** schönst*(e) Schlange. German
this is the-F beautiful-SUP-(AGR) snake
'This is the most beautiful snake.'
b. Diese Schlange ist **die** schönst*(e).
this snake is the-F beautiful-SUP-(AGR)
'This snake is the most beautiful.'

(33) Deze stoel is **de** kleinst**e**/best**e**/blauwst**e**. Dutch
this chair is the-C.SG smallest-AGR/best-AGR/bluest-AGR
'This chair is the smallest/best/bluest.'

Where does the concord morphology in (32b) and (33) come from? While for the Dutch example in (33) one could argue that the marking is due to definiteness (however licensed), this option is unavailable for German. The entire pattern is, however, easily explained under our view that in (32b) and (33) the superlative xAP modifies a null noun—the attributive marking on the superlative adjective then comes as no surprise.

The fact that agreement marking on superlative phrases is obligatory shows that predicate superlative phrases must be analyzed as containing a head noun. Since NP-ellipsis is even freer in German and Dutch than it is in English (see Nerbonne et al. 1990, Nerbonne and Mullen 2000, among others), in particular, with superlatives, the availability of null nouns and their licensing are independently motivated.

3.1 Definite Comparatives

A possible alternative account of Dutch and German attributive marking on superlative phrases in predicate positions is that all adjectives are subject to agreement in the predicate position, but only superlative adjectives show morphological (overt) agreement marking. This hypothesis is refuted by the fact that definite comparatives (which are semantically superlatives over a set of two) show attributive marking, whereas indefinite/regular ones do not:[18]

[17] Attributive marking in Dutch seems optional in superlative phrases that appear in the predicative position and in adverbial superlatives. I return to this issue in section 10.2.

[18] What seems like an easy transition from a comparative meaning (X exceeds Y in the property P) to the superlative one (for every $y \in Y$, X exceeds y in the property P) is in fact fairly difficult to encode formally (see Stateva 2002, 2003; Matushansky & Ruys 2006 for some discussion). That this transition must be so encoded is shown by languages where superlatives are not marked by special morphology (e.g., Romance), and by the suppletion facts discussed in Bobaljik 2006.

(34) a. Diese Schlange ist schöner(*e). German
this snake is beautiful-CMP-AGR
'This snake is more beautiful.'
b. Diese Schlange ist die schöner*(e)
this snake is the beautiful-CMP-AGR
'This snake is the more beautiful (one).'

(35) a. Deze stoel is groter(***e**). Dutch
this chair is big-CMP-AGR
'This chair is bigger.'
b. Deze stoel is de groter*(**e**).
this chair is the-C big-CMP-AGR
'This chair is the bigger one.'

Examples (34) and (35) show that the question is not about morphology—the comparative form in the predicate position is morphologically the same as that in the attributive one, but only the form with the superlative meaning shows attributive marking in the predicate position. This suggests that it is the superlative semantics that requires the null noun—an issue to be examined in section 9.

3.2 The Article

It is not unimaginable that the gender and number features that trigger concord marking in Dutch and attributive marking in German are valued on the (definite) article and are transmitted to the superlative adjective, both in the predicative and attributive positions. Suppose we have some explanation for how the article comes to be projected when D^0 is usually considered to subcategorize for an xNP as a complement—after all, the general tendency has been to consider the superlative definite article as a morphological or syntactic quirk, not requiring any justification. Is there anything else to say?

The first objection to this hypothesis is the fact that superlative phrases in the predicate position can appear with a possessive, which, by the way, is unmarked for ϕ-features:

(36) a. I consider this poem my best.
b. Ik vind deze film mijn beste Dutch
I find this film my best-AGR
'I find this film the best.'

Whatever hypothetical mechanism postulated to license the definite article without a noun will also have to license a possessive in the same circumstances.

3.3 Summary

Dutch and German, in which attributive and predicative adjectives show different marking, argue that superlative adjectives, which always show attributive marking, are necessarily attributive. The behavior of definite comparatives (semantically, superlatives over a set of two) also shows that the superlative xAP must modify a noun, as does the compatibility of nounless predicate superlatives with a possessive.

4. French

French superlatives are not morphologically distinguished from comparatives. It is the presence of a definite article that signals a different semantics for both synthetic and analytic superlatives:[19]

(37) a. une meilleure histoire
a better story.F
'a better story'
b. la meilleure histoire
the better story.F
'the best story'

(38) a. une histoire plus intéressante
the story.F CMP interesting
'a more interesting story'
b. l' histoire la plus intéressante
the story.F the SMP interesting
'the most interesting story'

I will begin the discussion of Romance superlative xAPs with the demonstration that there, too, a superlative xAP can license a null head noun. Then I will show that the projection of an xNP is obligatory with superlatives.

4.1 Argument Positions

Conditions on NP-ellipsis are considerably more relaxed in French than in English (see Kester 1996, Sleeman 1993, etc.), and superlative phrases in argument positions easily permit it:

[19] The appearance of a second article in DPs containing postnominal superlatives in (38b) is a French-specific phenomenon (see Kayne 2004). There are two possible reasons why there is only one article in ''predicative'' superlatives based on such obligatorily postnominal adjectives as *intéressant* 'interesting': haplology (i.e., the deletion of one of two identical segments appearing in a sequence, see also section 10.6) or linearization (i.e., the hypothesis that a superlative need not be postnominal with a null head noun). It is also possible that the null noun in such superlatives is a complex construct such as *celui* (see Cabredo Hofherr 2005 for a discussion of the two kinds of ''NP-ellipsis'' in French), in which case the first definite article is incorporated into the (null) pronoun.

(39) Après la course, les meilleurs/ les plus
after the race the-PL best-PL the-PL CMP
rapides recevront un prix.
quick-PL receive-FUT-3PLa prize
'After the race, the best/the fastest will receive a prize.'

Clearly, although this fact shows that a superlative phrase in the predicate position *can* contain a null noun, it does not show that a superlative xAP has to be attributive. But since a null head noun can be licensed by a superlative, there is no reason not to extend this analysis to nonargument positions. However, before claiming this it is necessary to show once again that what is licensed by a superlative xAP is indeed a noun.

4.2 Prepositional Superlatives

We have analyzed and dismissed the hypothesis that ϕ-features on the superlative xAP come from the definite article. An alternative is the hypothesis that these features are somehow bestowed on the superlative adjective (which has the ability to bear them) and then transmitted to the article. Besides the persistent question of where the article comes from when it is traditionally assumed to c-select an xNP complement, French provides an empirical argument against this hypothesis:

(40) a. Quelle maison est **la** plus à gauche?
which house.F is the-F CMP to left
'Which house is the leftmost?'
b. Quel bâtiment est **le** plus à gauche?
which building.M is the-M CMP to left
'Which building is the leftmost?'

Since PPs do not inflect for gender, the only possible source of gender on the article in the predicate of (40) is the null head noun. It can be further demonstrated that the gender on the article cannot be due to specificity, referentiality, or analyzing the article as a pronoun à la Postal 1969. To do so, it is enough to make our superlative phrase the predicate of a relative clause. The predicate of a relative clause cannot have the semantic type ⟨e⟩ and the structure in (41) cannot be reanalyzed as an equative (cf. **the book that is "Tom Jones"*). Exactly the same point could be made by a small clause with superlative PP.

(41) Pour gagner prenez celui qui est le plus à droite.
for win take that-M which is the-MCMP to right-F
'To win, take the one that is the rightmost.'

Since the entire xNP *celui qui est le plus à droite* is not referential or human in this context, the gender marking on the article of the superlative phrase is not pragmatic either.

Nonlocative PPs that can contain the superlative/comparative morpheme *plus* include *en forme* 'in shape', *en retard* 'late', etc. None of these PPs license NP-ellipsis in French by themselves—instead, a combination of a demonstrative and a personal pronoun (*celui* = ce + lui 'that + he', *celle* = ce + elle 'that + she', etc.), is required (see Corblin 1995 and Cabredo Hofherr 2005):

(42) a. *La/une à gauche est à moi
the/a to left is to me
b. *Une plus à gauche est à moi
a more to left is to me
c. Celle à gauche est à moi
DEM.F.SG to left is to me
'The one to the left is mine.'

The only reason why a null noun is possible in (41) is the superlative. Importantly, neither the definite article alone nor the comparative morpheme *plus* can license a null noun. I take this to mean that a superlative xAP contains a phonologically null morpheme, which in combination with the comparative yields the superlative meaning and forces the definite article (cf. Stateva 2003).

To summarize, French does not provide any new evidence in favor of our theory or against it, but it allows us to dismiss some of the alternative theories.

5. Breton

Breton provides further evidence that superlative xAPs must be attributive, arising from the fact that NP-ellipsis is disallowed in definite DPs in Breton. Instead, the place of the lexical head noun is taken by the dummy definite head noun *hini* (plural *re*), whose closest English equivalent is *that* (Mélanie Jouitteau, p.c.; Kervella 1995, translated by Mélanie Jouitteau):

(43) an *(hini) ruz
the N.DEF red
'the red one'

Now superlative phrases in the predicate position necessarily contain this head noun:

(44) Paol a zo an *(hini) bras-añ.
Paul PRT is the *N.DEF large-SUP
'Paul is the tallest.'

Nonsuperlative xAPs in the predicate position do not require any head nouns:

(45) a. Bras on.
large am
'I am tall.'
b. Paol a zo bras-oc'h (evit ar re all).
Paul PRT is large-COMP (for the N.DEF.PL other)
'Paul is taller (than others).'

I take the obligatoriness of a definite head noun in predicate superlative phrases to mean that the superlative xAP there is attributive rather than predicative. If superlative phrases must contain a head noun, the particularity of Breton is that this noun is obligatorily overt in the predicate superlative phrases as well.

6. Russian

Russian has three kinds of superlatives, distinguished by the morpheme used to create them: a synthetic superlative formed by the elative suffix *-ejš-*, an analytic superlative formed by adding the superlative adjective whose root *sam-* also has an emphatic meaning akin to 'by oneself', and the analytic superlative in *nai-*, formed by the superlative words *naibolee* 'MOST' and *naimenee* 'LEAST'.[20] Of these three superlatives exemplified in (46), only the analytic superlative in *sam-* is truly productive in modern Russian: the superlative suffix *-ejš-* is restricted with respect to the roots with which it can combine, and analytic superlatives in *nai-* are restricted to formal Russian (Corbett 2006:205).

(46) umnaja 'clever'
a. umn- ejš- aja *-ejš-* superlative
clever ELATIVE LF-F.NOM
b. samaja umnaja *sam-* superlative
MOST-LF-F.NOM clever-LF-F.NOM
c. naibolee umnaja *nai-* superlative
MOST clever-LF-F.NOM

In this section I discuss the syntax of the synthetic superlative in *-ejš-* and the analytic superlative in *sam-*. The analytic superlative in *nai-* is discussed in section 10.5.

[20] Both *naibolee* and *naimenee* are morphosyntactically complex, since they contain the augment *nai-*, which can also be optionally added to the analytic superlative in *-ejš-*, without a clear change of meaning. See section 10.5 on both issues.

6.1 Predicate Superlative Phrases

Like other languages discussed above, Russian allows superlative phrases without an overt noun in the postcopular position:

(47) a. Marija byla samaja umnaja
Maria was MOST-LF-F.NOM clever-LF-F.NOM/
/samoj umnoj
/MOST-LF-F.INSTR clever-LF-F.INSTR
'Maria was the most intelligent.'

b. Verino rešenie bylo nailučšee/
Vera's solution.N was NAI-best-LF-N.NOM/
nailučšim.
NAI-best-LF-N.INSTR
'Vera's solution was the best.'

A postcopular superlative phrase can be marked nominative or instrumental, as is in the general case for Russian postcopular xNPs. While the status of the nominative is controversial, the general consensus is that instrumental marks predication (Wierzbicka 1980, Rothstein 1986, Bailyn & Rubin 1991, Matushansky 2000, and Babby 2003, among others). This is important because it allows us to make sure that the postcopular xNP is a predicate:

(48) Marija byla umnaja ženščina/ umnoj
Maria was clever-LF-F.NOM woman.F-NOM/ clever-LF-F.INSTR
ženščinoj
woman.F-INSTR
'Maria was an intelligent woman.'

My argument for the obligatory presence of the null head noun in such superlatives comes from the morphological shape of the superlative (''long-form'', as opposed to ''short-form''). I start with demonstrating that Russian, like the languages discussed above, allows null nouns.

6.2 Null Nouns in Russian

Independent evidence for the existence of null nouns in Russian comes from the fact that NP-ellipsis is allowed with just about any nonsyncategorematic adjective:

(49) Daj mne krasnuju/ elektricheskuju/ francuzskuju $Ø_{NP}$.
gve me red electric French
'Give me the red/electric/French one.'

Russian NP-ellipsis is extremely productive, as witnessed by the fact that it can occur even in DPs with more than one modifier (from Babby, to appear):

(50) a. Ee xolodnye kak led guby vstretilis' s ego
her cold as ice lips met with his
pylajuščimi.
burning
'Her lips, cold as ice, met with his burning lips.'

b. Bol'šoj nož – **edinstvennyj režuščij** v dome.
Big knife only cutting in house
'The big knife is the only one that cuts in the whole house.'

Since the mechanism is readily available, the superlative phrases in the predicate position in (47) can be argued to contain a null noun. A stronger statement, namely that they *must* do so, follows from an independently motivated hypothesis that long-form adjectives are necessarily attributive—and superlatives are necessarily long-form.

6.3 Short-form Adjectives

As is well known, Russian adjectives come in two forms: long and short. These forms differ by a suffix (on the morphophonology of Russian long-form adjectives, see Halle & Matushansky 2006).

(51) a. krasiv-aj-a
beautiful-LF-F.SG.NOM

b. krasiv-oj-e
beautiful-LF-N.SG.NOM

Short-form adjectives can only appear in the predicate position (Babby 1973, 1975; Siegel 1976, Nichols 1981, Bailyn 1994, and Pereltsvaig 2001, among others):[21]

(52) a. Teorija byla xoroša. short form
Theory was-F.SG good-F.SG-SF

b. Teorija byla xorošaja. long form
theory was-F.SG good-F.SG-LF
'The theory was good.'

[21] This is simplified. Short-form adjectives are best with *be* but can also be marginally used with semicopulas and as subject-controlled secondary predicates:

(i) napilsja pjan, kak pavian
got-drunk.M.SG drunk-SF.M.SG like baboon
'got drunk like a baboon'

(ii) ostalsja živ
remained-M.SG alive-SF.M.SG
'remained alive'

I set this complication aside here; see Corbett 2006 for discussion.

(53) *xoroša/✓xorošaja teorija
good-F.SG-SF/good-F.SG-LF theory

The distinction between the long- and short-form adjectives in Russian strongly resembles the distinction between the attributive and predicative forms in Germanic (section 3). I will use the predicative nature of Russian short-form adjectives to provide a new argument for the obligatorily modificational status of superlatives in Russian.

6.4 Long-form Adjectives are Always Attributive

On the basis of the semantics and the syntax of long-form adjectives Babby (1973, 1975), Siegel (1976), and Bailyn (1994) argue that they are always attributive. Thus, examples like (54b), where a long-form adjective appears in the postcopular position, should be viewed as parallel to (54a), with a null head noun that the long-form adjective modifies:

(54) a. Marija byla umnaja ženščina/
Maria was clever-LF-F.NOM woman.F-NOM/
umnoj ženščinoj.
clever-LF-F.INSTR woman.F-INSTR
'Maria was an intelligent woman.'
b. Marija byla umnaja/ umnoj.
Maria was clever-LF-F.NOM/ clever-LF-F.INSTR
'Maria was intelligent.' (lit. 'an intelligent one')

If this view is correct, then in the predicate position long-form adjectives should behave like xNPs—and this is in fact the case.

6.4.1 *Semantic arguments*

Siegel 1976 observes that a short-form adjective in the postcopular position must have an intersective interpretation (referent-modification in the terms of Bolinger 1967), while long-form adjectives in the same position can be nonintersective (reference-modification, in the terms of Bolinger 1967). Examples are from Babby, to appear:

(55) a. Kitajskij jazyk truden. absolute interpretation
Chinese language difficult-SF-M.SG
'Chinese is difficult.'
b. Kitajskij jazyk trudnyj. relative interpretation
Chinese language difficult-LF-M.SG-NOM
'Chinese is a difficult language.'

Another semantic effect caused by the presence of a null noun in long-form adjectives is the interpretation of the adverb *relatively*. As observed by Eddy Ruys (p.c.) the adverb *relatively* is treated differently with attributive adjectives and with predicative ones. When occurring xNP-internally, *relatively* is usually interpreted as relativizing the adjective with respect to the noun. Thus (56a) but not (56b) can be used if one is looking for an object small enough to fit into a purse:

(56) a. This spaceship is relatively small. (small for a spaceship, small compared to other things)
b. This is a relatively small spaceship. (small for a spaceship)

If long-form adjectives in the postcopular position are always attributive with a null xNP, we expect that the Russian equivalent of *relatively* would be interpreted relative to that null xNP—and such is in fact the case: (57a) but not (57b) can be used if one is looking for something cheap; (57b) requires us to be comparing dresses.

(57) a. Èto plat'je sravnitel'no/ otnositel'no dëševo.
this dress comparatively/ relatively cheap-SF-N.SG
'This dress is cheap compared to other things under consideration.'
b. Èto plat'je sravnitel'no/ otnositel'no desëvoe.
this dress comparatively/ relatively cheap-LF-N.SG-NOM
'This dress is cheap compared to other dresses under consideration.'

It should be noted, however, that both interpretational differences reflect tendencies rather than absolute judgments (see Langendoen & Bever 1973 for the availability of reference-modification in the predicate position).

6.4.2 *Syntactic arguments*

The argumentation in favor of the attributive status of long-form adjectives follows the same general strategy, which is to find instances where long-form and short-form adjectives in the predicate position do not behave the same and then show that the behavior of long-form adjectives can be assimilated to the behavior of xNPs.

The behavior of number-marking in the imperatives illustrated in (58a) and (58b) provides a clear argument in favor of the obligatorily attributive nature of long-form adjectives. The short-form adjective in (58a) agrees in the syntactic number with the subject, a polite form of the second-person pronoun (formally equivalent to the second-person plural pronoun), despite the fact that semantically, the subject is singular. In (58b), the long-form adjective shows singular marking, as does the nominal predicate in (58c):

(58) a. Ivan, vy *molod/✓molody Siegel 1976:295
Ivan you.PL young-SF-M.SG/young-SF-PL
'Ivan, you are young.'
b. Ivan, vy molodoj/*molodye
Ivan you.PL young-LF-M.SG/*PL
'Ivan, you are young.'
c. Ivan, vy artist/*artisty
Ivan you.PL artist-SG/*PL
'Ivan, you are an artist.'

In the same vein is another observation due to Siegel (1976): imperatives with *byt'* 'be', except those with a hortatory meaning, only allow short-form adjectives:

(59) Bud' ostorožen/*ostorožnyj/#ostorožnym! Siegel 1976:296
be-IMP careful-SF-M.SG/*LF-M.SG-NOM/*LF-M.SG-INSTR
'Be careful!'

It is easy to see that in Russian, nonhortatory *be* imperatives are infelicitous with nominal predicates as well:

(60) Bud' *učitel'/#učitelem!
be-IMP teacher-NOM/INSTR
'Be a teacher!'

Certain contexts license both nouns and long-form adjectives with imperatives, and in this case *be* is interpreted as *become* or *behave as* (the eventive interpretation of *be*, also known as *ACT-be*) with an instrumental predicate:

(61) Esli xočeš' lečit' – bud' vračom, esli
if want-2SG cure-INF be-IMP doctor-INSTR if
zarabatyvat' –bud' juristom.
earn-INF be-IMP lawyer-INSTR
'If you want to cure people, become a doctor—if you want to earn money, be a lawyer.'

(62) Esli xočeš' byt' sčastlivym, bud' im.
if want-2SG be-INF happy-LF-M.SG-INSTR be-IMP him-INSTR
'If you want to be happy, be so.' (Koz'ma Prutkov)[22]

[22] The use of a pronoun as a predicate anaphor is only possible with a predicate that is either an xNP or a long-form adjective; short-form adjectives do not allow it (Babby, to appear). This appears to be another argument in favor of the hypothesis that long-form adjectives are always attributive, but such use of pronouns is restricted to masculine xNPs or xAPs, and with very few predicates.

Siegel suggests that the contrast in (59) is due to the fact that long-form adjectives appear with the lexical verb *be*, which is stative and does not normally occur in imperatives, while short-form adjectives appear with a dummy tense-supporting *be*. A simpler explanation for the contrast is that, as generally acknowledged (see Carlson 1977), NPs are individual-level, while APs can be either stage- or individual-level. An individual-level predicate is infelicitous with the true imperative *be* because such predicates are not compatible with a change in state implied by an imperative. An immediate advantage of attributing the contrast in (59) to individual-/stage-level interpretation is that it explains how the meaning of *be* has to change for nouns and long-form adjectives to become felicitous.

Other arguments in favor of the obligatorily attributive nature of long-form adjectives are less straightforward. While they seem to work out on the purely intuitive level, it is not always evident how to express the relevant intuition formally. For example, certain subjects only permit short-form adjectives in the predicate (Švedova 1952 via Babby, to appear; Isacenko 1963 via Babby 1973; Siegel 1976; Corbett 2006):

(63) Prostranstvo beskonečno/*beskonečnoe. Babby 1973:360
space infinite-SF-N.SG/*LF-N.SG
'Space is infinite.'

(64) Vse jasno/*jasnoe Siegel 1976:297
everything clear-SF-N.SG/*LF-N.SG
'Everything is clear.'

(65) Prixodit' domoj očen' prijatno/*prijatnoe. Siegel 1976:297
come-INF home very pleasant-SF-N.SG/*LF-N.SG
'It is very pleasant to come home.'

Siegel (1976) attributes the contrasts in (63)–(65) to the fact that long-form adjectives are interpreted as relative to a particular class (provided by the null noun), and the subjects in (63)–(65) "fail to admit of a superset to which they belong." Intuitively, this explanation is correct—a long-form adjective is impossible in (63)–(65) because the null noun required for a long-form adjective must have a contextually supplied denotation and the context cannot provide a suitable denotation in (63)–(65). To simplify grossly, (63)–(65) are excluded for the same reason (66) is.

(66) a. *Space is (an) infinite one. ✓with a contextual antecedent for *one*
b. *Everything is a clear one.
c. *To come how is a pleasant one.

However, to understand what is really going on we need to determine how the denotation of the null noun in Russian and of *one* in English is fixed (especially given the fact that they do not have the same syntax), and why

(63)–(66) do not allow the adjective in the predicate xNP to be interpreted nonrestrictively. Since answering both questions is clearly beyond the scope of this paper, I leave the topic for future research (but see Matushansky 2006b).

The fact that impersonal adjectives of weather or physical state do not have long forms has also been taken to demonstrate that long-form adjectives are necessarily attributive (see Babby 1973, 1975):

(67) a. (Utrom) bylo solnečno(*e).
morning-INSTR was-N.SG sunny-N.SG(-LF)
'It was sunny in the morning.'
b. Utro bylo solnečno*(e).
morning-NOM was-N.SG sunny-N.SG(-LF)
'It was a sunny morning.' (lit. 'The morning was sunny.')

(68) Lene ploxo/*ploxoe.
Lena-DAT bad-SF-N.SG/*LF-N.SG.NOM
'Lena is unwell.'

At first blush, the constraint follows naturally from the theory that long-form adjectives are necessarily modificational. If long-form adjectives modify a null head noun, it is unclear what this noun would refer to in the case of impersonal predicates. However, to make the argument complete it is necessary once again to explain how the denotation of the null noun is obtained.

Since other syntactic arguments in favor of the obligatorily attributive nature of long-form adjectives (lack of short forms for relational, subsective, and modal adjectives [Švedova 1970, Vinogradov 1952, etc.]; the incompatibility of long-form adjectives in the postcopular position with infinitival complements [Babby 1973, 1975; Siegel 1976], etc.) are similarly flawed (see also Matushansky 2006b for some apparent counterevidence), I leave them aside here. What is important for the present discussion is the fact that these arguments all strongly suggest that a long-form adjective in Russian must be attributive (but see Babby, to appear, for an alternative).

In this light, the fact that only long-form adjectives can form analytic superlatives in *sam-* or synthetic superlatives in *-ejš-* (see section 10.5 for a discussion of analytic superlatives in *nai-*) is correctly predicted by the hypothesis that superlatives are necessarily modificational:

(69) a. sam-*(aj)-a krasiv-*(aj)-a (ženščina) analytic
MOST-LF-F.SG.NOM beautiful-LF-F.SG.NOM woman-NOM
b. (nai)-krasiv-ejš-*(aj)-a (ženščina) synthetic
over-beautiful-SUP-LF-F.SG.NOM woman-NOM

If Russian long form-suffix is equivalent to attributive marking in German and superlatives are obligatorily attributive (sometimes with a null head noun), superlatives should only appear in the long form.

6.5 Superlative Adverbs

Russian adverbs, which are in most though not all cases phonologically identical to neuter short-form adjectives (see Vinogradov 1952, Švedova 1970), don't have superlative forms in *sam-* or *-ejš-* (although (70b) is grammatical if *-ejš-* interpreted as elative):[23]

(70) a. Nabokov krasivo/ interesno pišet.
Nabokov beautifully/ interestingly writes
'Nabokov writes beautiully/interestingly.'

b. *Nabokov samo krasivo/ krasivejše samo
Nabokov MOST beautifully/ beautiful-SUP MOST
interesno/ interesnejše pišet.
interestingly/ interesting-SUP writes

c. Nabokov pišet krasivee/ interesnee vsex.
Nabokov writes beautiful-CMP/ interesting-CMP all-GEN
'Nabokov writes more interestingly than anyone.'

The fact that other languages (e.g., English and French) allow superlative adverbs (whose form may be different from superlative adjectives) suggests that the explanation must not be very profound.

(71) a. Senna drove the **fastest**.
b. He arrived the **last**.

(72) Ce mot la décrit **le mieux**.
this word her describes the best.ADV
'This word describes her (the) best.'

I believe that the explanation lies with the null head noun, obligatory in superlatives. As discussed in section 2.3, the head noun of adverbial superlatives cannot be interpreted as anaphoric to a discourse antecedent or contextually supplied. Let us assume that Russian only allows null nouns if they can be interpreted anaphorically (in argument positions) or contextually (in predicates). I can provide no deep reason for this constraint, except by suggesting that long-form adjectives require concord with interpretable ϕ-features, which an adverbial null noun would be unable to provide.

6.6 Summary

Russian resembles German and Dutch in that it morphologically distinguishes attributive and predicative adjectives. The standard hypothesis that long-form

[23] The synthetic forms *lučše* 'better', *xuže* 'worse', and *men'še* 'less' cannot be interpreted as superlatives when they are adverbial (cf. *lučšij* 'best', *xudšij* 'worst', and *men'šij* 'least').

adjectives must be modificational while short-form ones never are explains why superlative adjectives in *sam-* and *-ejš-* only have the long-form and also sheds some light on the unavailability of superlative adverbs in Russian.

The different behavior of adverbs in Russian versus English, French, and the like suggests that their syntax is not the same in these languages.

7. Spanish and Portuguese

As is well known (see Roldán 1974, Luján 1981, Lema 1992, Schmitt 1992, Costa 1998, Marin Gálvez 2000, among others), Spanish and Portuguese have two copulas, *ser* and *estar*. Leaving aside the use of *ser* and *estar* as auxiliaries, their distribution is constrained both syntactically (only *ser* can be used with nominal predicates and only *estar* can be used with locative PPs),[24] and semantically (*estar* implies more transience of the adjectival predicate, though coercion in either direction is always possible). Though examples below are from Spanish, the same facts obtain in Portuguese:

(73) a. María Callas ✓es/*está una cantante. NP-predicate
Maria Callas is a singer
'Maria Callas is a singer.'
b. María Callas *es/✓está en Roma. locative PP-predicate
Maria Callas is in Rome
'Maria Callas is in Rome.'

(74) a. María Callas ✓es/*está alta. individual-level AP
Maria Callas is tall
'Maria Callas is tall' (*estar* is ok if interpreted as 'being tall').
b. María Callas *es/✓está disponible. stage-level AP
María Callas is available
'Maria Callas is available.'

Given that adjective choice decides whether the copula is *ser* or *estar*, it is unexpected that superlatives, of both individual- and stage-level adjectives, can only appear with *ser* while maintaining their interpretation as individual- or stage-level, respectively, as shown in (75). The only exception to this generalization (Maria Luísa Zubizarreta, p.c.) will be discussed in section 10.4.

(75) María Callas es/*está la más alta/disponible.
Maria Callas is the CMP tall/available
'Maria Callas is the tallest/the most available.'

[24] Carlson (1977) observes that NP predicates are always individual-level, while Becker (2000) notes that copula omission in child English strongly distinguishes NPs and PPs (while APs are in between).

This pattern follows naturally if superlative xAPs are always attributive: the predicates in (75) must be xNPs with a null head noun. The superlative phrase should then behave like a nominal predicate and only *ser* is expected, in full accordance to fact. Given how easily Spanish and Portuguese allow NP-ellipsis (Lobeck 1993, 1995; Sleeman 1993, 1996; Kester 1996, etc.), the availability of such a null noun is independently motivated.

Once again, the Spanish data show that modifying a noun is the only structure in which superlative xAPs may appear, rather than one of such structures. If superlative xAPs could have been projected as predicates, their stage- or individual-level interpretation would have been expected to play a role in the choice of the copula.

8. The Null Noun Hypothesis

The crosslinguistic evidence we have considered shows that the superlative phrase is necessarily an xNP, which would account for:

- the impossibility of measure phrase differentials/factor phrases, and of the anaphoric *so* in English superlatives
- the concord marking on Dutch and German superlatives in the predicate positions
- the possibility of modifier stacking with superlatives
- the existence of prepositional superlatives
- the impossibility of some superlatives in Russian
- the obligatoriness of the individual-level copula *ser* in Spanish and Portuguese with all superlatives.

Crucially, many of these phenomena argue that superlatives *must* be NP-internal (i.e., these effects cannot be explained if superlatives may optionally project outside of an xNP). I have assumed throughout that in the predicative position the superlative phrase is nominal as a result of there being a noun that the superlative xAP modifies. One argument in favor of the hypothesis that predicative superlative phrases without an overt noun involve NP-ellipsis is the fact that a null noun is available and can be licensed in an argument position (where the projection of a nominal head is much more difficult to deny) by a superlative adjective (as well as by others). Importantly, nothing was said about the licensing mechanism of NP-ellipsis (see Corblin 1990; Lobeck 1993, 1995; Sleeman 1993, 1996; Kester 1996; Cabredo Hofherr 2005, etc.).

An alternative explanation of the obligatorily nominal nature of the superlative phrase is that superlative adjectives can be freely combined with a null nominalizing affix (n^0) and nominalization is obligatorily in the predicate position. I will first discuss reasons for dispreferring this hypothesis, and then address the issue of the featural makeup of the anaphoric null noun in predicative superlative phrases.

8.1 Null Affix or Null Head?

The hypothesis that a nominal head is present in any superlative phrase is compatible with two possible sources for this head when no overt noun is present: the superlative adjective may be nominalized (i.e., contain a null n^0 suffix) or a null nominal head may be projected. In this subsection I argue that predicative superlative phrases involve a null noun rather than null-derived nominalization.[25]

The main syntactic distinction between NP-ellipsis and null-derived nominalization is the fact that the former is licensed by a discourse antecedent of the null noun, whereas the latter is not (see also Borer & Roy 2005):

(76) a. **The rich** are not like you and me. nominalization
b. **The vivid blue** of this painting comes from a lapis lazuli pigment.
c. **The difficult** we do immediately, **the impossible** takes a little longer.

One environment where the nominalization analysis is inapplicable is NP-ellipsis, which may also occur in predicative superlative phrases. The availability of *one*-insertion, as in (77a),[26] argues against a nominalization analysis, since *one* is the overt equivalent of the nominal head involved in NP-ellipsis. However, the existence of cases like (77b,c) (see also section 10.2) suggests that not all cases of predicative superlative phrases can be accounted for by assuming a discourse-anaphoric null noun:

(77) a. This book seems **the least expensive** (one).
b. I am **happiest** (*one) when I am doing syntax.
c. Senna arrived **the fastest**.

It was already shown that superlative xAPs can license null nouns, so the problem in examples like (77b,c) is the identification of the semantic content rather than licensing. Either null nouns can be identified in environments other than NP-ellipsis, or predicative superlative xAPs involve a nominalization.

Another argument against null-derived nominalization comes from the fact that in general, null-derived nominalization is subject to several morphological

[25] I disregard here the possibility that some superlatives involve nominalization and others, a null noun, on the grounds that it does not seem to be falsifiable. Although such an ambiguity (either crosslinguistic or intralinguistic) can be used to derive some superlative idiosyncrasies in certain languages, I leave the question for future research.

[26] *One*-insertion is impossible without modification (ia), and obligatory in the presence of an adjective (ib). (ic) shows that *one* is optional with superlatives (as well as with ordinals, cardinals, sequentials, certain quantifiers, and the adjectives *same* and *other*):

(i) Speaking of aliens…
a. I met those/two (*ones) yesterday.
b. I met two really weird *(ones).
c. I met the worst (ones).

Since we are primarily concerned with null nouns here, I leave the distribution of *one* aside, but see Ross 1964 on *one*-insertion in superlatives.

peculiarities. First of all, it is conditioned by lexical semantic class of the source stem. Thus in English, color adjectives can undergo null-derived nominalization into names of colors, while shape adjectives cannot:

(78) a. The reds/blues/greens/whites are a bit pale.
b. *The rounds/rectangulars/triangulars/hexagonals are lopsided.

Alternatively, the lexical semantic class of the resulting adjective can be constrained. Thus in English, adjectives can turn into abstract notions (76c) or denotations of groups of humans (76a), and Russian has null-derived deadjectival nominalization into names of premises as well (English possessives like *(at) the doctor's* appear to fall into the same class):

(79) a. stolovaja posuda Russian
table $_{\text{Adj}}$-F dishes
'dinnerware'
b. stolovaja
dining-room

It is easy to see that predicative superlative phrases do not involve any particular lexical semantics of either the source adjective or the hypothetical resultant noun. Moreover, additional stipulations would have to be made for analytic superlatives (*most intelligent*).

Besides being lexically restricted, nominalization permits plural marking in English, unlike NP-ellipsis. Indeed, null nominalizing affixes usually come with particular number specifications (but see Borer & Roy 2005 on nationality nominalizations [*Americans*, *the Chinese*]):

(80) a. The rich *is/✓are not like you and me.
b. The vivid blue of this painting ✓comes/*come from a lapis lazuli pigment.

Superlatives, on the other hand, are compatible with both plural and singular agreement:

(81) a. After the competition, **the best**/the winners are going to receive a prize.
b. Do you like these cars? **The best**/the Mercedes belongs to my mother.

The fact that the ''nounless'' superlatives in the subject position trigger verbal agreement in (81) suggests that we are dealing with a null NP rather than a nominalizing suffix. This analysis can be extended to postcopular superlative phrases (whether predicative or referential is difficult to tell here), which are

compatible with both singular and plural subjects, unlike the null-derived nominalizations:

(82) a. I consider my sister the best.
b. I consider my parents the best.

(83) a. If these are **the rich of the village**, how rich are the poor?
b. *If this is **the rich of the village**, how rich are the poor?

Another natural objection to the null-derived nominalization hypothesis is the question of why the nominalizing affix has to be null. This issue does not arise for the null noun hypothesis, as the hypothesized null noun in predicative superlative phrases can always be replaced by an overt one. However, this objection is rather weak, since abstract nominalizations such as "the impossible" are also null-derived.

Similar problems arise for another potential objection to the nominalization hypothesis. It is well known that a superlative xAP may not be a single morphological word: phonologically heavy or modified adjectives give rise to analytic superlatives as in (84) (see Embick & Noyer 2001 for some discussion). The nominalization hypothesis then has to assume that the nominalizing morpheme in question can attach to what is more than a single morphological word:

(84) a. Mary is the [most [amazingly smart]] person I know.
b. most interesting, most beautiful

This argument is rather weak, given the existence of such bracketing paradoxes as *atomic scientist* (Williams 1981), which already suggest that complex syntactic structures can serve as input to morphological processes. A stronger morphological argument against the nominalization hypothesis comes from the impossibility of overt morphological derivation based on superlative xAPs. On the one hand, no overt nominalizing suffix can appear outside the superlative suffix, as shown for some productive English nominalizing suffixes in (85a). On the other hand, superlatives do not serve as input for denominal derivation, as shown by (85b).

(85) a. *best-hood, *nicest-ity, *fastest-ness, *reddest-ship…
b. *cruellest-al, *tallest-y, *smartest-ous…

More generally, superlative adjectives cannot participate in morphological derivation.[27] An explanation could be that no affix can take a superlative adjective as its input. That this explanation is not sufficiently general is shown by Dutch compounding. A superlative can never be the left member of a

[27] A possible explanation for this is that the superlative morpheme has to QR (as in Heim 1999) and cannot do so from a word-internal position (Eddy Ruys, p.c.). However, it will be shown (section 9) that the theory of superlatives advocated here is in general incompatible with superlative QR.

compound, although this option is productively available to nouns. This also suggests that superlatives are not nominalizations (Eddy Ruys, p.c.):[28]

(86) a. *tallestish (A→A), *cleverest-ly (A→Adv or N→A)… English
b. *kaal-kop* 'a baldie' (lit. 'bald-head') → **kaalst-kop* Dutch

Even if we assume that the superlative morpheme must be most external (for whatever reason), this would make null-derived nominalization even less likely.

I conclude that the null noun hypothesis should be preferred over the nominalization one. The fact that under the assumptions of bare phrase structure (Chomsky 1994) this null head noun corresponds to an N^0 and an NP simultaneously is not relevant here.

8.2 ϕ-features on $Ø_{NP}$

One possible objection to the null noun hypothesis is the fact that the superlative phrase in the predicate position seems to agree:

(40) a. Quelle maison est **la** plus à gauche? French
Which house.F is the-F CMP to left
'Which house is the leftmost?'
b. Quel bâtiment est **le** plus à gauche?
which buidling.M is the-M CMP to left
'Which building is the leftmost?'

It is generally assumed that nouns but not adjectives have inherent gender features, which is why xNPs do not agree and xAPs do. To maintain the hypothesis that the superlatives in (40) contain a null noun it seems necessary to either assume the existence of more than one null noun in French (one for each set of ϕ-features), or to have one null noun, which is underspecified for ϕ-features, and permit it to value its ϕ-features anaphorically, from a discourse antecedent. Importantly, in neither case does the null noun in question have uninterpretable ϕ-features, or in other words, no syntactic agreement between the null noun and its antecedent takes place.

Since the null noun postulated here is anaphoric, it is natural to treat it as an NP-pronoun (cf. Lobeck 1995, Nerbonne et al. 1990, Nerbonne & Mullen 2000, Corblin 1990 and Cabredo Hofherr 2005 on NP-ellipsis). Unsurprisingly, the issue of gender arises for regular DP-pronouns as well. On the one hand, the pronouns in (87) could be argued to have their *φ*-features in the lexicon, and on the other, these *φ*-features are obviously not interpretable in the usual sense (i.e., the [+ feminine] pronoun in (87a) does not denote a feminine entity), but rather inherited from a discourse antecedent:

[28] The only exceptions that I am aware of are the English *mostly*, and the Dutch *minstens* (min-st+ens) 'at least' and *hoogstens* (hoog-st+ens) 'at most'. Cases like the English *to best* can be argued not to involve a true superlative but rather an elative.

(87) a. Notre maison est là. **Elle** est belle.
our house.F is there 3F.SG is beautiful-F
'Our house is there. It is lovely.'
b. Notre bâtiment est là. **Il** est beau.
our buidling.M is there 3M.SG is beautiful-M
'Our building is there. It is lovely.'

While with overt DP-pronouns four different lexical entries could be argued for, with null DP-pronouns, i.e., *pro* in languages like Spanish, Italian, or Chinese (see Jaeggli & Safir 1989 for discussion) the matter is less clear: is there one *pro*, which is underspecified for gender ϕ-features, or several?[29]

To simplify matters, I will assume that both NP- and DP-pronouns are lexically specified for gender and number.[30] However, gender marking in Dutch and German predicate superlative phrases seems to suggest that anaphoric gender marking may be optional: the gender marked on the superlative in the predicate position may fail to be the same as that of the subject:

(88) Deze stoel is **de** kleinst**e**/best**e**/blauwst**e**. Dutch
this chair is the-C.SG smallest-AGR/best-AGR/bluest-AGR
'This chair is the smallest/best/bluest.'

(89) Deze stoel is **het** kleinst**e**/best**e**/blauwst**e**.
this chair is the-N.SG smallest-AGR/best-AGR/bluest-AGR
'This chair is the smallest/best/bluest.'

However, the interpretations of (88) and (89) are different. As far as I could determine, the superlative phrase in (89) means something like 'the smallest/best/bluest entity'. As long as the only entities under consideration are chairs, by default (89) would mean the same as (88), but once we introduce other objects, the truth conditions will be different. We therefore observe that when the NP-pronoun is unmarked for gender, it is not anaphoric.

To summarize, the apparent agreement between the predictive superlative phrase and the subject stems from the fact that the null noun is an NP-pronoun, whose features are anaphoric to its antecedent. No agreement takes place between the subject and the predicative superlative.

9. Motivation for Modification

In this section I address the question of why superlative xAPs must be attributive. I argue that the requirement cannot be attributed to syntax and must therefore be due to semantics.

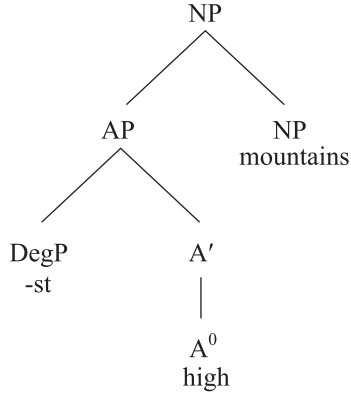
[29] To further complicate the issue, is *pro* underspecified for person and number as well as gender? In Romance person and number though not gender can be recovered from verbal inflection (see Rizzi 1982 for argumentation that verbal inflection licenses *pro* in Romance), but this is not the case for Chinese and Japanese null subjects (see Huang 1984).

[30] Yatsushiro and Sauerlan (to appear) argue that feminine profession names in German have an uninterpretable gender feature. Interestingly, their argument is based on the behavior of these nouns in predicative superlative phrases.

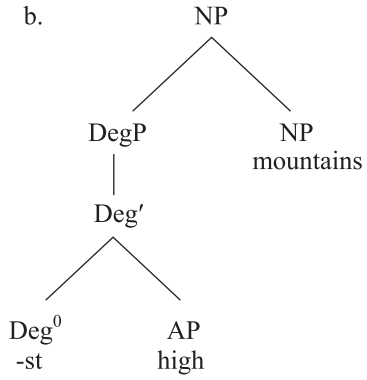
9.1 Syntax

One possible venue of research is to attribute the obligatorily attributive nature of the superlative morpheme to syntax. Two structures are available xAP-internally where it comes to the structural relation between the superlative morpheme in (90) and the adjective it combines with. In (90a), adopted in Bowers 1975, Jackendoff 1977, Bhatt and Pancheva 2004, and most semantic literature on comparatives and superlatives, the superlative morpheme projects as a specifier of the AP. In (90b), argued for in Bowers 1987 and Corver 1990, 1991, 1997, the superlative morpheme is a head taking the AP as a complement:[31]

(90) a.



b.



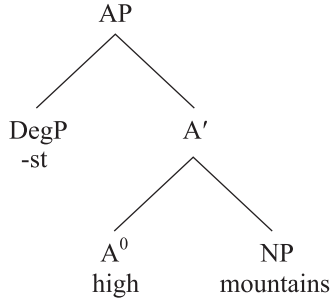
[31] None of the syntactic configurations discussed here can be used to argue for a syntactic mechanism of NP-ellipsis licensing in superlatives. I leave this issue aside here.

If the attributive xAP is treated as an adjunct, then it is an island: no syntactic relation can be established between the contents of the xAP and what it is adjoined to. Even if the xAP is treated as a specifier, there is no independent motivation for a c-selection relation between the head of a specifier and the head (if anything, it is the other way around).

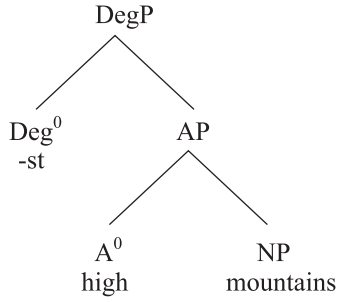
Syntax is usually assumed to establish relations between constituents on the condition of c-command. It is easy to see that in neither tree in (90) does the superlative morpheme c-command the NP. Therefore, a different, nonstandard syntactic configuration must be assumed in order to argue that the requirement that a superlative be attributive is syntactic. Thus, Heim (1999:fn. 7) proposes that the superlative morpheme must appear at least as high as the adjective-NP combination (see also section 9.2), either because it is merged there (cf. Berman 1973, Abney 1987) or as a result of movement.

We begin with Abney's proposal, where a prenominal adjective is a head taking the rest of the xNP as a complement (Abney 1987):

(91) a.



b.



Neither configuration in (91) can account for the fact that prenominal adjectives can have complements in some languages (e.g., Russian or Dutch), and the fact that the entire subtree behaves like an xNP rather than like an xAP is unaccounted for (see Svenonius 1993, Matushansky 2002 for further arguments).

Suppose now that the superlative morpheme ends up c-commanding the noun as a result of movement. It then becomes imperative to provide a

motivation for this movement—a trigger that would require the superlative morpheme to adjoin to an NP. Of course a technical solution such as postulating a relevant feature on the superlative morpheme can be proposed, but it appears to be unmotivated outside the present case.

Although the few proposals enumerated above do not exhaust the logical space of possible solutions, I contend that no alternative syntactic account of the obligatorily attributive nature of superlatives can be derived from independently motivated assumptions, and therefore conclude that the reason lies in the semantics of superlatives.

By giving the superlative xAP the semantic type $\langle\langle e, t\rangle, \langle e, t\rangle\rangle$, we can ensure that it requires an $\langle e, t\rangle$ argument, and the NP that it combines with would provide one. Like such intensional adjectives as *fake* and *former*, a superlative xAP would then take its sister as an argument, which would make it imperative for it to be attributive.[32] The question is now whether such semantics is independently justified and what its consequences would be.

9.2 Attributive Semantics

Heim (1999) observes that superlatives are context-dependent:

(92) All of these candidates are acceptable. But John is the most impressive.

Following von Fintel (1994), Heim (1999) suggests that the superlative morpheme is like other quantifiers in that it contains a phonetically unrealized predicate variable that appears next to the determiner at LF and receives a value from the context of utterance:

(93) a. John is the [C-st] impressive
b. $C = \{x: x \text{ is one of these candidates}\}$

Given that the lexical entry for the superlative morpheme (due to Heim 1999) contains a universal quantifier,[33] the C argument slot provides its domain restriction:

(94) $[[\text{-st}]](C)(R)(x) = 1$ iff $\exists d \in D_d\ [R(d)(x) \wedge \forall z \in C\ [\ z \neq x \rightarrow \neg R(d)(z)]]$
$[[\text{-st}]](C)(R)(x)$ is defined only if $x \in C$ and $\forall y \in C\ \exists d\ R(d)(y)$

[32] Strictly speaking, the proposal that the superlative xAP is a semantic modifier does not guarantee that it must be attributive. To rule out Heim's structures, an additional assumption is needed that an xAP of this type cannot take a contextually provided null argument (and then combine with the xNP that it modifies via Predicate Modification). However, this assumption is needed anyway for *former presidents* and *alleged murderers*.

[33] Ross 1964:17 observes that superlatives can combine with exceptive phrases:

(i) The shortest chapter except for the summary is the introduction.

As argued by von Fintel (1993) and Hoeksema (1996), exceptive phrases depend on universal quantification, which supplies further evidence for the presence of a universal quantifier in (94).

The lexical entry in (94) presupposes that scalar predicates are downward monotonic in the sense of Gawron (1995) and Heim (1999):

(95) A function $f_{\langle d, \langle e, t\rangle\rangle}$ is downward monotonic iff $\forall x \forall d \forall d'$ $[f(d)(x) \wedge [d' < d \rightarrow f(d')(x)]]$

Downward monotonicity means that if a scalar predicate holds of an entity to one degree, it also holds of it to all lower degrees (e.g., if a person is 2 meters tall, they are also 1.99 meters tall, 1.98 meters tall, etc.). As a result, to make sure that an entity possesses the property R to a degree higher than any other entity in the comparison set C all we need to ensure is that there is a degree *d* such that only this entity possesses the property R to this degree *d*. This is the meaning of the identity statement in (94): if there exists an entity that is "more R" than any other entity in C, this is the external argument.

While the R argument slot is filled by the AP the superlative morpheme combines with, the C argument slot, providing the comparison set for the superlative, could be filled in overt syntax by the xNP that the superlative modifies (as opposed to the null contextually supplied variable, as assumed by Heim).[34] If so, the obligatorily attributive nature of superlative xAPs would receive a natural explanation, and the argument ordering in (94) should be changed:

(96) $[[\text{-st}]] = \lambda R \in D_{\langle d, \langle e, t\rangle\rangle} . \lambda C \in D_{\langle e, t\rangle} . \lambda x \in D_e . \exists d \in D_d [R(d)(x) \wedge \forall z \in C [z \neq x \rightarrow \neg R(d)(z)]]$
$[[\text{-st}]] (R)(C)(x)$ is defined only if $x \in C$ and $\forall y \in C \exists d\ R(d)(y)$

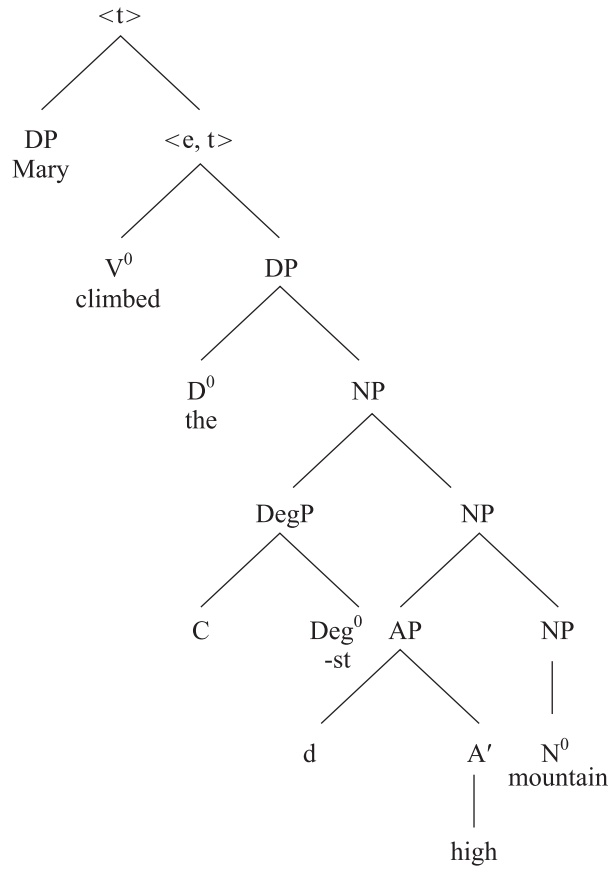
The hypothesis that the C argument slot of the superlative morpheme is satisfied overtly by the xNP that the superlative xAP modifies has several advantages in addition to explaining the obligatorily attributive nature of superlative xAPs established above. First, it accounts for the fact that attributive superlative xAPs cannot be interpreted intersectively (Heim 1999):

(97) the highest mountain [simplified]
a. = the unique x such that x is the highest among mountains
b. ≠ the unique x such that x is the highest and x is a mountain

[34] Farkas and É. Kiss (2000:436) presuppose that the comparison set C is provided by the xNP the superlative AP modifies, but provide no arguments for this, although they note that if the xNP modified by the superlative contains a PP or a relative clause, the comparative reading is unavailable.

Heim 1999 obtains this nonintersectivity as a result of obligatory QR of the superlative morpheme out of the AP and to a level above the noun (clause-level, perhaps DP-internal):[35]

(98)



[35] Irene Heim (p.c.) notes that if the nonexistent intersective reading of (97b) were available, it would either be truth-conditionally identical to the nonintersective one in (97a) (if the tallest entity happens to be a mountain) or trigger a presupposition failure. In the latter case, the nonintersective meaning could be chosen over the undefined one for pragmatic reasons. However, the lack of the intersective reading is also suggested by the fact that attributive superlative phrases as in (ia) seem to require the presupposition in (ib):

(i) a. Of all the toys on display I only bought **the most expensive car**.
b. There was more than one car on display.

This fact follows if the comparison set of the superlative morpheme is the denotation of the xNP that the superlative xAP modifies: (ib) is simply a (pragmatic) constraint that C should contain more than one element for comparison to succeed. But if the comparison set could have been simply *all the toys on display*, the presupposition in (ib) is inexplicable.

As mentioned above, no apparent trigger for this movement of the superlative morpheme exists. Furthermore Heim's semantics in (94) permits the superlative morpheme to be interpreted in-situ, so QR cannot motivate DP-internal movement of the superlative morpheme either. The proposal that the superlative morpheme takes the xNP as an argument makes it unnecessary.

Finally, this proposal sheds some light on the syntax of measure *by*-phrases in superlatives: unexpectedly, they appear not only DP-finally (as they do in attributive comparatives, discussed in section 2.4) but also DP-initially (David Pesetsky, p.c.):

(99) a. Alice showed up with **by far the most beautiful woman** I have ever seen.
b. Thumbelina is the tallest (doll) **by two inches/by the factor of three**.

In attributive comparatives, where the *by*-PP is DP-final, it can be argued to merge as a modifier of the prenominal comparative and then right-extrapose (see Bhatt & Pancheva 2004 for a countercyclic Merge analysis of right extraposition in comparatives). However, the fact that in superlatives *by far* can appear DP-initially is incompatible with this approach. However, if the superlative morpheme takes both the AP and the xNP as arguments, the measure *by*-PP can be merged DP-externally and linearized either to the left or to the right.[36]

9.3 Hebrew

An additional argument in favor of the hypothesis that the superlative morpheme takes its second argument (the comparison set) overtly comes from Hebrew. Modern Hebrew has three possible ways of expressing a superlative, of which the first two are felt to be archaic or literary:

(100) a. ha- gadol ba- olam — synthetic/null-derived
DEF big in+DEF world
'the biggest in the world'
b. ha- gadol bə yoter (ba- olam) — analytic in *bəyoter*
DEF big in CMP in+DEF world
'the biggest (in the world)'
c. haxi gadol (ba- olam) — analytic in *haxi*
MOST big in+DEF world
'the biggest (in the world)'

[36] I disregard here the semantic contribution of the definite article. The fact that (a) it is vacuous or superfluous in superlatives (the uniqueness/maximality comes from the superlative morpheme itself) and (b) it can be omitted in some environments (see Borthen 1998 and section 10.1) suggests that it can be viewed here as a definiteness marker. Note that this problem arises also for Abney's structures in (91) and Heim's structure in (98).

The first variant is morphologically undistinguishable from the positive form, except for the definite article. However, since in literary and Biblical Hebrew comparative adjectives are also surface-identical to the positive form, as in (101), the null-derived superlative can be argued to arise exactly as in Romance (where superlatives are distinguished from comparatives only by the presence of the definite article):

(101) Eti (yoter) gdola mi axota.
Eti CMP large from sister+3F.SG
'Eti is taller than her sister.'

Like Hebrew analytic superlatives in *haxi* and *bəyoter* discussed in sections 10.5 and 10.6, the null-derived superlative can license a null noun:[37]

(102) ha- qqaTon ?et- ?avi:nu ha-yyo:m
DEF-small-M.SG ACC father+1PL DEF-day
'the youngest is this day with our father' (Gen. 42:13)

More relevantly for the matter under discussion, the null-derived superlative can license a partitive.[38] What is important is that Hebrew partitives are expressed via the so-called construct state, which is also used for other constructions commonly involving Genitive. In the construct state, the linear order of the possessor and the possessee is the opposite from that in English. The semantic equivalent of the English possessor (the second noun in the phonological sequence, henceforth xNP_2) is morphologically unmarked, while the possessee, which is the head of the construct state, can be morphologically marked (depending on the stem, its number and gender; see Ritter 1987, 1988; Borer 1996, among others). Importantly, if xNP_2 is definite, so is the entire construct state (see Ritter 1987, 1988):

[37] All translations of biblical texts are taken from the King James Version.

[38] In all languages discussed above superlative xAPs license the partitive construction:

(i) les meilleures des étudiantes French
the best-F.PL of+the students.F
'the best of the students'

(ii) samaja talantlivaja iz moix studentok Russian
MOST-LF-F.SG talented-LF-F.SG from my students
'the most talented of my students'

The question whether partitives contain a null noun before the preposition remains open (for arguments in favor of this position in at least some partitives see Jackendoff 1977; Cardinaletti & Giusti 1992, 2005; Barker 1998; Zamparelli 1998; Ionin et al., to appear; etc.; for arguments against it see Mallén 1992, Kupferman 1999, Martí Girbau 2005, among others). Hebrew clearly sheds light on this issue—however, since it is not directly relevant here I will leave it aside.

(103) a. bayit yafe
House beautiful-M.SG
'a beautiful house'
b. beyt ha- more
house-CS DEF teacher
'the teacher's house'

Partitives involving a null-derived superlative are realized by a construct state. Since xNP_2 in (104) is definite (a definite DP in (104a), a pronoun in (104b)), the entire construct state is definite too. As a result, the adjective in construct is interpreted as a superlative:

(104) a. tovej ha- talmidim (Siloni 2001)
good-M.PL-CS DEF students
'the best of the students'
b. mi- gədo:lam wə- ʕad qəTannam
from big-CS+3PL and until small-CS+3PL
'from the greatest of them even to the least of them' (Jon. 3:5)

It would seem that the NP-ellipsis analysis could be applied to the examples in (104), which can then be viewed as nominal construct states. The advantage would then be that the relation between the head and xNP_2 is considerably less constrained than in adjectival or quantified construct states. The problem with this hypothesis is that construct states do not allow modification of N_1 unless the modifying xAP is extraposed, or in other words, the first noun in construct state is a head (N^0) (see Ritter 1988 and subsequent work). The combination *superlative* + $\emptyset_{NP}$ is phrasal.[39]

To avoid this issue and yet assimilate construct state superlatives to nominal construct states above, Siloni (2001) treats them as "nominalized superlatives" (see also Heaton 2000, Wintner 2000). Leaving aside the problems with the nominalization hypothesis discussed in section 8.1, at least two simpler alternatives can be proposed. One assimilates superlative construct states to adjectival ones, and the other to quantified ones. In both assimilations, the second element of the construct state is an argument of the superlative adjective.

9.3.1 *Adjectival construct states*

As Hazout (2000), Kim (2000), and Siloni (2001) point out, alongside the traditional construct state whose head is a noun, as in (103) above, Hebrew

[39] This can be resolved if the null head noun ($NP = N^0$) is combined with the adjective by the operation of m-merger (Matushansky 2006a), which morphologically merges two syntactically adjacent heads into a single syntactic head. The difference between the nominalization hypothesis and the null head noun one (see also section 8.1) then becomes rather blurred.

also has the adjectival/participial construct state, as in (105). In this construct state, xNP_2 must be an argument of the adjectival or participial head:

(105) a. yalda yefat mar'e nixnesa (Siloni 2001)
girl.F.SG beautiful-F.SG-CS look.M.SG entered
la- xeder.
to+DEF room
'A good-looking girl entered the room.'

b. yeladim nos'ey matanot nixnesu la-
children.M.PL carrying-M.PL-CS gifts.F-PL entered to+DEF
xeder.
room
'Children carrying gifts entered the room.'

In adjectival construct states, xNP_2 must contain an inalienable noun (Siloni 2001), which is generally interpreted as the locus to which the adjective in construct applies, as in (103a). In participial construct states, xNP_2 is a direct object of the verb on the basis of which the participle has been formed, as in (103b). Neither of these generalizations applies to construct state superlatives. However, under our hypothesis, superlative xAPs must be attributive because the superlative morpheme requires an overt comparison set argument—and the xNP_2 of the construct state can supply such an argument.[40] The empirical generalization about adjectival construct states is then that xNP_2 is an argument of the adjectival head. This suggests that our explanation is correct and superlative xAPs are attributive as a result of the semantics of the superlative morpheme.

9.3.2 *Quantified construct states*

The partitive interpretation that xNP_2 receives in superlative construct states is also obtained in quantified construct states (see Danon 1998, Borer 2005 for discussion):

(106) a. rov ha- talmidim
majority DEF students
'the majority of the students'

b. mispar ha- mištatfim ha- mu?at
number DEF participants DEF little
'the small number of participants'

[40] See Barker 1998 and Ionin et al., to appear, for a semantics of partitive *of*-PPs that yields a set—exactly the same semantics can be used for the construct state. If a null head noun is required (as argued in these analyses), then Hebrew construct state superlatives are merely a special case of null noun licensing by the superlative morpheme and a way of ensuring that this null noun incorporates into the superlative adjective (e.g., along the lines proposed in the previous footnote) must be found.

It can be straightforwardly maintained that the partitive interpretation arises because xNP_2 is an argument of the quantifier in construct. Since superlative morphemes are quantificational under all accounts (see section 9.2), Hebrew superlative construct states fall naturally under this generalization under the assumption that the comparison set argument slot (C) of the superlative morpheme is saturated by xNP_2.

To summarize, Hebrew superlative construct states can be assimilated either to adjectival construct states (on the morphological basis) or to quantificational construct states (on the basis of their quantificational semantics). However, in both cases, xNP_2 must be treated as an argument of the superlative adjective, thus confirming my hypothesis that superlative xAPs must be attributive because they take their comparison set argument overtly.

9.4 Movement Theory of Superlatives

The so-called movement theories (Heim 1999, 2000; Bhatt & Pancheva 2004, etc.) rely on the assumption that the comparative and superlative morphemes may not be interpreted in situ. The main reasons for this view come from VP-ellipsis resolution of comparatives in the context of antecedent-contained deletion (ACD) and the ambiguous interpretation of comparatives in intensional contexts.

Standard accounts of ACD resolution in relative clauses rely on QR of the NP containing the relative clause:

(107) a. Mary read every book that Joseph did.
b. [every book that Joseph did $[_{VP}\ ]]_i$ Mary $[_{VP}$ read $t_i]$.

After QR, the ellipsis site inside the relative clause is no longer contained in its antecedent. The matrix VP (*read* t_i) can serve as a suitable antecedent for the ellipsis in the relative clause. The necessity of QR correctly predicts that bare plurals in general cannot appear in ACD. What is interesting is that bare plurals containing comparatives do license ACD (Carlson 1977):

(108) a. *Mary read books that Joseph did.
b. Mary read better books that Joseph did.

To resolve ACD in (108b), the comparative DegP QRs, leaving behind a d-type trace. The resulting VP can then serve as an antecedent for VP-ellipsis (Bhatt & Pancheva 2004):

(108) b′. [$_{\text{DegP}}$ er [than Joseph ~~read d-good books~~]] [Mary read d-good books]

This is the first reason why comparatives are believed to be able to QR. The second reason is what happens with intensional verbs. The following example from Heim 2000 is ambiguous:

(109) (This draft is 10 pages long.) The paper is required to be exactly 5 pages longer than that.
   a. required > *er*: in every possible world w compatible with what is required in w_0 the maximal degree to which the paper is long in w is 15 pages
   b. *er* > required: the maximal degree to which the paper is long in all possible worlds compatible with what is required in w_0 is 15 pages

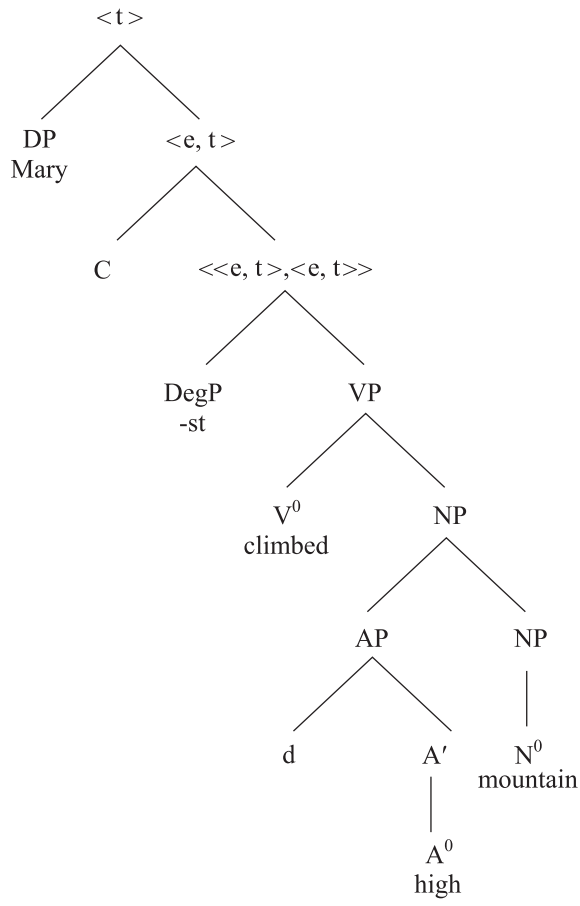
(109a) means that the paper must be exactly 15 pages long. (109b) means that 15 pages is the minimal acceptable length of the paper. Both readings are available, which suggests that the comparative quantifier can in fact move. This intuition is confirmed by the two available variants of VP-ellipsis resolution (Heim 2000, following Williams 1974):

(110) My father tells me to work harder than my boss does.

The standard view is to treat superlatives as having the same quantificational properties as comparatives, and therefore as also moving to take scope over the clause (the only independent argument in favor of their movement, the so-called upstairs *de dicto* reading in modal contexts, discussed at length in Heim 1999 and Sharvit & Stateva 2002, is too complicated to be examined here). The movement theory of superlatives is not incompatible with the argument ordering in (96), but if the superlative morpheme can move and take its comparison set argument covertly in the target position, as in (111) (i.e., unlike in Heim's theory the comparison set argument is merged after *-st* has moved rather than before), then the explanatory power of (96) disappears. Indeed, if *-st* can take its second argument covertly, there is no reason for superlative xAPs to be obligatorily attributive.[41]

[41] It should be noted that the obligatorily overt saturation of the comparison set argument slot that we are assuming represents no additional stipulation on our part (see also fn. 32)—after all, most if not all quantifiers take their arguments overtly.

(111)



Measure *by*-PPs provide an additional reason to prefer an in-situ theory of superlatives (for some proposals, see Farkas and Kiss 2000, Sharvit & Stateva 2002), since *by*-PPs always appear in the surface position of the superlative xAP. Since ACD resolution and ambiguity in intensional contexts are not relevant in superlative constructions, we need not be concerned about them.

Finally, the impossibility of moving *-st* under our analysis sheds light on the observation made in Matushansky 2002 concerning DP-internal movement of degree-operators: while such clear quantificational items as *more* or *so* can trigger DP-internal fronting or right extraposition of APs containing them, superlative xAPs never do (though see section 10.3 for some potential counterexamples). If the hypothesis advanced in Matushansky 2002 is right and such DP-internal degree-operator movement is the first step of successive-cyclic QR to a clause-level position, then if superlatives cannot move, reasons for DP-internal movement disappear.

9.5 Persian

Persian superlatives provide a tentative argument in favor of treating the xNP that the superlative xAP modifies as an argument of the superlative morpheme. According to Samiian 1983, xNP-internal constituents, and in particular modifiers, in Persian are generally postnominal—the only systematic exceptions are demonstratives, numerals (both cardinal and ordinal), superlatives and quantifiers. These are also the only xNP-internal elements that do not involve *ezafe* (on which see Samiian 1983, Ghomeshi 1997, Kahnemuyipour 2000, among others).

(112) a. in ketâb (Ghomeshi 1997:783)
this book
b. behtar-in ketâb
better-SUP book
c. har ketâb
each book
d. se- tâ ketâb
three- CL book

Why are the only Persian adjectives that appear prenominally superlatives and ordinals (see fn. 6)? Under the theory proposed here the xNP modified by superlatives (and ordinals) saturates the argument position corresponding to the restrictor of the universal quantifier (the comparison set). The empirical generalization is then that the prenominal position in Persian is reserved for quantifiers.[42] An additional advantage of this view is that it is compatible with the assumption that the *ezafe* vowel marks the modification relation (see Kahnemuyipour 2000 for a proposal along these lines): since quantification is semantically distinct from modification, superlatives, demonstratives, numerals and quantifiers are not marked with *ezafe*.

An alternative proposal would be to adopt Heim's proposal that the superlative morpheme (and the ordinal one) moves DP-internally (see the tree in (98)), and this is why superlatives and ordinals appear prenominally in Persian.

Two minor objections can be levied against this proposal. On the one hand, comparatives, which also move according to this view (see section 9.4), do not appear prenominally. By itself, this is a rather weak objection, since the picture in English is exactly the opposite: comparatives move xNP-internally, both to the left and to the right periphery, while superlatives never do (see Matushansky 2002). However, as the gloss in (112) shows, Persian superlatives are morphologically constructed on the basis of comparatives and we may thus expect a stronger similarity between them.

[42] Since Persian cardinals must appear with a classifier, the internal structure of an xNP containing a cardinal is less clear.

The second reason why the theory of superlatives advocated here might be preferable for the Persian facts is that the movement theory says nothing about the absence of the *ezafe* vowel with superlatives.

To summarize, Persian appears to treat superlative xAPs like universal quantifiers in the xNP they appear in, but explanations alternative to ours are available. Persian data are therefore suggestive but inconclusive; more work is required, in particular concerning the relevance of *ezafe*.

9.6 Summary

I have proposed a principled reason why superlative xAPs have to be attributive: the lexical entry of the superlative morpheme contains a universal quantifier, whose restrictor is provided by the comparison set. I suggest that the role of the xNP is to saturate this argument slot, thus reducing the obligatoriness of its syntactic projection to the known fact that quantifiers require restrictors. This proposal is unfortunately incompatible with the standard unified analysis of superlatives and comparatives, in which the degree operator moves to be interpreted (Heim 1999, 2000; Bhatt & Pancheva 2004, etc.). We instead adopt the hypothesis (Farkas and Kiss 2000, Sharvit & Stateva 2002) that, unlike comparatives, superlatives are interpreted in situ. As a result, we can provide simple analyses for the behavior of superlatives in two more languages: Hebrew and Persian. While the Hebrew data unambiguously point toward an analysis where the superlative morpheme takes its comparison set argument overtly, the Persian facts are less convincing.

Importantly, the fact that a superlative morpheme takes its arguments in a given order in some languages does not mean that this argument ordering is the same crosslinguistically; it could be argued to be the lexical property of the superlative morpheme in each given language. That such variation is not impossible is shown by alternations such as *please* versus *like*, where the meaning can be assumed to be the same but the order in which the two arguments are merged is different (Theme-Experiencer vs. Experiencer-Theme). Given that the crosslinguistic syntactic data gathered here indicate one argument ordering while the standard semantic accounts suggest the opposite, the question arises whether argument ordering for the superlative is obligatorily the same crosslinguistically and if yes, why. I have no suggestions to offer at this point (but see section 10.5 for further discussion).

10. Exceptions

Sometimes superlatives in the predicate position and in adverbials seem to behave as if there is no null noun there—for example, there might be no article, attributive marking fails, and so on. This would seem to be an argument against our approach, had it not been for the fact that nearly every language has a different area where exceptions occur and they do not seem to

form a natural class. In other words, I take the variety of exceptions to argue that my approach is on the right track.

10.1 Article Omission

For some English speakers the superlative definite article may be absent in the predicate position (especially with predicate fronting), which would seem to defy the generalization upheld here:

(113) a. (The) best in her class is Sue.
b. Sue is (the) best in her class.

One possible explanation is that (113) is a special case of definite article omission with nominal predicates whose extension is necessarily a singleton set (Stowell 1989):

(114) a. The queen appointed her lover **treasurer of the realm**.
b. Anne's death made George **(the) king of England**.

The omission of the definite article on the predicate is conditional on there being only one individual satisfying the predicate at every given moment, which is clearly true for superlatives. However, it can be immediately observed that in the presence of an overt noun, including *one*, article omission is impossible:

(115) a. *(The) best student in her class is Sue.
b. Sue is *(the) best student in her class.

I would like to suggest that article omission here is conditioned not only by the predicate position but also by the nature of the null noun. It is well known that some nouns, but not others, appear without a definite article in certain environments (Stvan 1998, Carlson & Sussman 2005):

(116) a. to school vs. to the hospital
b. during lunch vs. during the meeting

Such article omission can be conditioned by the combination of the adjective and the noun—thus, the deictic *next* combined with a temporal noun usually appears without an article:

(117) a. Next Monday is a holiday.
b. The next person in line is a woman.

The fact that article omission with predicative superlative phrases containing no overt noun is subject to speaker variation suggests that it is not a strong

counterexample to the main claim of this article. However, Scandinavian requires definite article omission in predicate superlatives (see section 10.6), and possibly a similar explanation can apply.

10.2 Abstract Superlatives

The definite article may disappear in English superlatives where the postulated null NP-pronoun cannot be replaced by an overt NP of any kind, not even the nominal anaphor *one*. These include impersonals with list interpretation, "stage" superlatives and various VP-modifiers (see also Ross 1964):

(118) a. It's cold in New York, it's cold in Chicago, but it's **(the) coldest (*one)** in Boston.
b. I'm **(the) happiest (*one)** when I'm doing syntax.

(119) a. The spaceship reactor was damaged (the) worst (*one).
b. Callas sang at her best (*one).

I have no explanation for why impersonal, stage and VP-modifying superlatives should be singled out with respect to article omission and the impossibility of *one*-insertion, but it seems to be related to the abstract character of the null noun (see section 10.1) and its nonanaphoricity. An alternative hypothesis, suggested by Kyle Johnson (p.c.), is that the superlative phrases in (118) and (119a) are constructed on the basis of a partitive construction (with the null *of them*) rather than on the basis of an attributive one. This hypothesis is consistent with the impossibility of an overt noun in the abstract superlatives, but only on the assumption that partitives have no null noun before the *of*-PP. Furthermore, it still does not account for situations where a partitive *of*-PP is either impossible, as in (120a,b), or has the wrong interpretation, as in (120c). Since it also doesn't bring us closer to understanding the optional article absence in abstract superlatives, I leave this topic for future research.

(120) a. *Callas sang at her best of them.
b. *I'm happiest of them when I'm doing syntax.
c. She examined the space drive the most carefully (of them).

A related issue is the attributive marking on the superlative adjective inside a predicative superlative phrase in Dutch. As mentioned in section 3, in Dutch an attributive adjective must be marked with the suffix *-e* except in neuter singular indefinites (Odijk 1992, Menuzzi 1994, Kester 1996, and Broekhuis 1999, among others). This means that superlative xAPs, which we assume to be attributive inside obligatorily definite xNPs must always bear the attributive

suffix *-e*. However, when the gender marking on the superlative predicate is default, as in (89) above, the attributive suffix may be omitted despite the definiteness of the superlative xNP:

(121) a. Deze stoel is **de**
this chair is the-C.SG
kleinst*(**e**)/best*(**e**)/blauwst*(**e**). Dutch
smallest-AGR/best-AGR/bluest-AGR
'This chair is the smallest/best/bluest.'

b. Deze stoel is **het** kleinst?(**e**)/best?(**e**)/blauwst?(**e**).
this chair is the-N.SG smallest-AGR/best-AGR/bluest-AGR
'This chair is the smallest/best/bluest.'

The grammaticality of (121b) can be due to an independent factor. In particular, I want to claim that the null noun in predicate superlative phrases with a neuter definite article falls into the group of neuter nouns in Dutch that fail to trigger the appearance of the attributive inflection for definiteness (Broekhuis 1999:210–213). Although Broekhuis 1999 observes that to some extent, the A+N combinations that are not marked for definiteness form a meaning unit, he acknowledges that this is not always the case. The possibility of (121b) might be attributed to the nonanaphoric character of the null noun or to the nonintersective nonmodal modification in this case.

That the issue is even more complicated is shown by the differences in behavior of abstract superlatives (adverbial, impersonal and stage superlatives vs. PP superlatives). While with PP superlatives attributive marking is impossible, with impersonal, adverbial and stage superlatives it is optional:

(122) a. Marie schreeuwde op d'r reflexive PP superlative
Marie screamed at her
hardst(*e).
hardest-AGR
'Marie screamed as loudly as she could.'

b. Marie komt op z'n pronominal PP superlative
Marie comes at 3SG
vroegst(*e) om 3 uur.
earliest-AGR at 3 o'clock
'Marie comes at 3 o'clock at the earliest.'

(123) a. Marie schreeuwde het pronominal PP superlative
Marie screamed the.N.SG
hardst(e).
hardest-AGR
'Marie screamed the loudest.'

b. Het is het koudst(?e) in Boston. impersonal superlative
it is the.N.SG coldest-AGR in Boston
'It is coldest in Boston.'

c. Ik ben het gelukkigst(e) als stage superlative
I am the.N.SG happiest-AGR when
ik syntaxis doe.
I syntax do
'I am happiest when I am doing syntax.'

The proposal that abstract superlatives are xNP-internal is clearly fraught with problems, but in the absence of an alternative explanation for the presence of a definite article in them, it is the only one available.

10.3 Postnominal Superlatives

As observed by Bolinger 1967, English non-right-branching xAPs can be postnominal if they are interpreted as denoting a temporary property. This option is also available for (at least some) superlatives:

(124) a. *the professor most beautiful superlative
b. the solution most commonly used participle
c. the solution most acceptable to all parties right-branching

Postnominal adjectives in English, as in the grammatical examples in (124b, c), have been considered to involve reduced relatives (Sadler & Arnold 1994; Larson 1998, 2000; Larson & Marušic 2004; Cinque 2003). This means that the superlative *most commonly used* in (124b) should be analyzed as the predicate of the reduced relative. But then this phonological sequence *most commonly used* should correspond to an xNP with a null noun rather than to an xAP—and nominal reduced relatives are generally assumed to be impossible.[43]

[43] An alternative explanation proposed for similar data in Dutch by Broekhuis 1999 may also be applicable to English. Broekhuis 1999:174 observes that Dutch attributively used past and passive participles have no synthetic comparatives and superlatives, while analytic comparatives and superlatives appear to be allowed:

(i) een door Peter *gewaardeerdere/✔meer gewaardeerde foto
a by Peter appreciated-CMP more appreciated photo
'a photo more appreciated by Peter'

Broekhuis suggests that *more* and *most* are not part of the analytic forms but rather VP-modifiers, as in (ii), although the behavior of the definite article in such analytic superlatives is not fully standard:

(ii) Peter waardeert deze foto meer.
Peter appreciates this photo more
'Peter appreciates this photo more.'

Since VPs in English, unlike in Dutch, are not verb-final, additional stipulations are necessary to make this analysis applicable. It should also be noted that, as (124c) shows, English postnominal superlatives can also be derived from deverbal adjectives in *-able*, which can also be argued to contain a VP.

The same problem reappears in French, where postnominal superlatives carry their own article:

(125) a. la plus petite émeraude French
the more small emerald
b. l'émeraude la plus petite
the+emerald the more small
'the smallest emerald'

The question of where the second article comes from can be easily answered if the postnominal superlative in French is to be analyzed as a reduced relative (cf. Cinque 1994, 2003 and Laenzlinger 2000, among others): it is the definite article of the xNP that the superlative xAP modifies. Leaving aside the question why the definite article of the second xNP is absent in English and in Romance languages other than French, which needs to be resolved independently, how are the two xNPs combined?

Although I cannot answer this question here, I would like to point out that the combination of two xNPs in a modificational structure is not impossible, if the first one is a relational noun or a proper name:

(126) a. my brother **the** famous linguist
b. Chomsky **the** philosopher
c. Jack **the** Ripper
d. **the** young Richard **the** Lion-Hearted

As (126d) unambiguously shows, two xNPs containing the definite article can be combined in a modificational structure (since neither of the two xNPs is uniquely referring to the individual in question). I conclude that nominal reduced relatives cannot be excluded, and then the question arises why they are generally unavailable.

10.4 Spanish Relative Clauses

As discussed in section 7, Spanish superlatives in the predicate position must take the definite article and cannot appear with *estar*. However, in one syntactic environment both requirements are violated (María Luisa Zubizarreta, p.c.):

(127) la que es más alta
the.F.SG that be-3SG CMP tall-F.SG
'the one who is the tallest'

Strikingly, in this environment and in this environment only, *ser* is not obligatory: *estar* appears with adjectives that normally require it:

(128) la que **está** más enojada
the.F.SG that be-3SG CMP annoyed-F.SG
'the one who is the most annoyed'

The availability of *estar* suggests that we are not dealing with an xNP here, which also explains why the article is ungrammatical here:

(129) la que **está** (*la) más enojada
the.F.SG that be-3SG (*the.F.SG cmp annoyed-F.SG

The fact that the phenomenon is restricted to relative clause predicates suggests that the basic generalization is correct, but we cannot explain why relative clauses are an exception.

10.5 Russian Analytic Superlatives in nai-

The most glaring apparent counterexample to the hypothesis that superlative adjectives cannot be predicative comes from the second type of Russian analytic superlatives in *nai-*, exemplified in (130).

(130) a. Kakoj rezul'tat byl by naimenee/ naibolee želatelen? predicate
which outcome was SBJ LEAST/ MOST desirable-SF-M.SG
'Which outcome would be the least/most desirable?'

b. Èto naimenee/ naibolee želatel'nyj rezul'tat. modifier
this LEAST/ MOST desirable-LF-M.SG.NOM result.M.NOM
'This is the least/most desirable outcome.'

As discussed in section 6.3, short-form adjectives cannot be attributive but function either as predicates or adverbs. The same is true of the analytic short-form superlatives in *nai-*:

(131) a. Gde tebe naibolee skučno? impersonal
where you-DAT MOST boring
'Where is it the most boring for you?'

b. Èto ego naimenee tščatel'no obosnovannaja teorija. adverb
this.N.SG his LEAST thoroughly motivated theory
'This is his least thoroughly motivated theory.'

c. *Èto naimenee/ naibolee želatelen rezul'tat.
this LEAST/ MOST desirable-SF-M.SG result.M.NOM

The hypothesis that superlative adjectives must be attributive cannot account for analytic superlatives in *nai-*. Therefore, either this hypothesis is only correct for some languages, some environments and some superlative morphemes, or, despite all evidence to the contrary, analytic superlatives in *nai-* are not superlatives. I will demonstrate that the first alternative need not be invoked if a particular morphosemantic decomposition of *nai-* is assumed as specified below.

Recall that the proposed explanation for the obligatorily attributive nature of superlative xAPs in sections 2–7 was that the comparison set argument of the superlative morpheme is its second argument that is taken overtly, as in the lexical entry (96), repeated below. The question therefore arises why this argument ordering should be preferred to that in Heim's lexical entry in (94) (repeated here).

(96) $[[\text{-st}]] = \lambda R{\in}D_{\langle d, \langle e, t\rangle\rangle} . \lambda C{\in}D_{\langle e, t\rangle} . \lambda x{\in}D_e . \exists d{\in}D_d\ [R(d)(x) \wedge \forall z{\in}C\ [z \neq x \rightarrow \neg R(d)(z)]]$
[[-st]] (R)(C)(x) is defined only if $x{\in}C$ and $\forall y{\in}C\ \exists d\ R(d)(y)$

(94) $[[\text{-st}]]\ (C)(R)(x) = 1$ iff $\exists d{\in}D_d\ [R(d)(x) \wedge \forall z{\in}C\ [z \neq x \rightarrow \neg R(d)(z)]]$
[[-st]] (C)(R)(x) is defined only if $x{\in}C$ and $\forall y{\in}C\ \exists d\ R(d)(y)$

A possible answer is that there is no actual preference there—while the superlative morphemes discussed in sections 2–7 all take the AP as the first argument and the comparison set C as the second, others, like the Russian analytic superlatives in *nai-*, have the reverse argument structure and take the comparison set argument first (as in (94).

However, a given argument ordering may result not from the semantics of the superlative morpheme but from a combination of morphemes, with the same superficial outcome. That such is indeed the case can be seen from the morphological structure of analytic superlatives in *nai-*. On the one hand, they clearly contain the comparative morphemes *bolee* 'more' and *menee* 'less'. On the other hand, they contain the phonological sequence *nai-*, which also appears with synthetic superlatives:

(132) a. (nai)-krasiv-ejš-aj-a
NAI-beautiful-SUP-LF-F.SG.NOM
'most beautiful'
b. (nai)-vysš-aj-a
NAI-highest-LF-F.SG.NOM
'highest'

The decomposition of analytic superlatives in *nai-* into a comparative morpheme and an extra element (on the morphological connection between

comparatives and superlatives in Slavic, see also Stateva 2003) explains why the order in which they take the two arguments is different from the analytic superlatives in *sam-* discussed in section 6. I propose that this morphological decomposition corresponds to a semantic decomposition of *naibolee* 'most' and *naimenee* 'least' into 'more than all' and 'less than all', respectively. This is how superlatives are constructed in other languages, for example, in Buli (Matushansky 2003):

(133) yénnídɛ́ (ãlĭ) wɔ̃ŋã gã:m ŋàmè:na
house-DEF-this EMPH tall over $3PL_{houses}$-all
'This house is taller than all of them.'(= 'This house is the tallest.')

Strikingly, the comparative and emphatic morphemes that are obvious in (133) can be also found in the internal structure of *nai-*, which can be argued to be morphologically complex and contain the preposition *na* 'on' and the emphatic particle *i* 'and'.[44] The preposition can be argued to introduce the comparison set argument,[45] while universal quantification can be either covert or introduced by the emphatic particle *i* 'and':[46]

(134) na i $Ø_{NP}$ bolee
on all Q CMP
'more than all (other) Qs'

The idea that the comparison set is introduced as the complement of the preposition *na* 'on' is all the more plausible since it would otherwise be difficult to explain what the argument of this preposition is.

A natural question to ask at this point is whether argument ordering doesn't correspond to the historical source of the superlative. Could it be that superlatives derived from elatives have the argument ordering in (96), while those derived from comparatives have the opposite one in (94)? The first objection to this hypothesis comes from the fact that Romance superlatives are all historically and synchronically based on the comparative morpheme—yet behave like they have to be attributive (sections 4 and 7). The second objection is that the semantic effects associated with Heim's lexical entry in

[44] The conjunction *i* 'and' is used an emphatic particle also before infinitives functioning as main verbs (Shaxmatov 1963), in the 'i…i…' construction meaning 'both, etc.'.

[45] It must be noted that the comparative clause in Russian comparatives is introduced by the complementizer *čem* 'what-INSTR' and the comparative phrase appears in the genitive case.

[46] The fact that *nai-* can be used with synthetic superlatives in (132) is not an argument against this hypothesis—additional universal quantification over a comparison set argument will only restrict the superlative further, like an overt PP of the kind *of all my friends* or *in the US* would. I leave aside additional restrictions on both overt PPs of this sort and the covert argument of *nai-*, as well as the question of optionality of *nai-* with synthetic but not analytic superlatives.

(94) should not be compatible with elative-based superlatives—and (94) has in fact been constructed for English and German.

Further evidence that the diachronic development of a superlative morpheme in a particular language does not entail particular argument ordering comes from the high/archaic superlative in *bəyoter* in Hebrew. This superlative superficially has the same structure as the Russian analytic superlative in *nai-* the comparative morpheme *yoter* 'more' and the locative preposition *bə* 'in'. Despite this fact, Hebrew analytic superlatives in *bəyoter* (unless interpreted as elatives) require the definite article, in predicate position as well as in argument ones:

(135) a. ruti hayta *(ha-) tova bəyoter bə ciyur
Ruti was.F.SG *(DEF good MOST in drawing
(ve- ronit bə matematika)
(and Ronit in mathematics
'Ruti was the best in drawing (and Ronit in mathematics).'

b. ruti hi *(ha-) tova bəyoter bə ciyur/ ba-
Ruti 3F.SG (DEF good MOST in drawing in+DEF
kvuca
group
'Ruti is the best one in drawing/in the group.'

An additional point against morphologically decomposing Hebrew analytic superlatives in *bəyoter* 'MOST' is the absence of the corresponding complex word with the meaning of 'least', unlike in Russian, where both *naibolee* 'MOST' and *naimenee* 'LEAST' are available. This lack of *least* in Hebrew suggests that *bəyoter* is not synchronically decomposable.

(136) a. ruti hayta paxot tova bə ciyur
Ruti was.F.SG less good in drawing
'Ruti was less good at drawing.'

b. *ruti hayta ha- tova bə paxot bə ciyur
Ruti was.F.SG DEF good in less in drawing
(ve- ronit bə matematika)
(and Ronit in mathematics

To summarize, Russian analytic superlatives in *nai-* lend themselves to a morphosemantic decomposition into a straightforward comparative combined with universal quantification. As a result it can be argued that they are not proper morphological superlatives and thus do not provide a counterexample to the claim that superlative xAPs are necessarily attributive. The opposite, however, is not true—the fact that a superlative word can be decomposed into the comparative morpheme and a preposition does not entail the reversal of argument ordering for the superlative. As a result,

the question of what determines argument ordering in superlatives becomes even more essential.

10.6 Hebrew Analytic Superlatives in haxi

Having discussed the archaic superlatives (null-derived and formed with *bəyoter*) in Hebrew, let us turn to the modern analytic superlatives, which involve a free-standing morpheme:

(137) haxi ceʃira
MOST young-F.SG

The absence of the definite marking on the superlative in (137) is not restricted to its use in isolation. Even though definiteness spreading onto attributive adjectives is obligatory in Hebrew, analytic superlatives bear no definite article:[47]

(138) a. ha- baxura *(ha-) ceʃira
DEF girl *(DEF young-F.SG
'the young girl'
b. ha- baxura (*ha-) haxi ceʃira
DEF girl *(DEF MOST young-F.SG
'the youngest girl'

This time superlatives in predicative and attributive positions do not differ with respect to definiteness marking, but the phenomenon is still unexpected: why do Modern Hebrew analytic superlatives fails to bear definiteness agreement? Two explanations can be envisaged. The first one is purely phonological: the superlative morpheme *haxi* cannot be preceded by the definite article *ha-*, so the latter is deleted (a more general process of haplology). The second alternative is to treat the superlative morpheme as complex rather than simplex and consisting of the definite article *ha-* and the functional morpheme *ki-* 'because, since, as' (turning into *xi-* as a result of word-internal lenition[48]).

[47] In colloquial Hebrew, plural generic superlatives allow the appearance of the definite article:

(i) ha- haxi ceirim lo maclixim ba- test ha- ze
DEF MOST young NEG succeed-M.PL in+DEF test DEF this
'The youngest do not succeed in this test.'

If such [+plural], [+human] xNPs are nominalizations, as generally considered, they constitute a counterexample to the observation made in section 8.1 that superlatives do not participate in derivation. If, on the other hand, they contain a null noun (see Borer & Roy 2005), a question arises why the definite article is present in these xNPs but not in predicative superlative phrases with a null noun.

[48] Although the process is well attested, the fact that it is not triggered by the definite article elsewhere makes this hypothesis less plausible.

The importance of this case is in showing (a) that definiteness marking with superlatives may be irregular and (b) that, once again, exceptional behavior of superlatives occurs in a wide variety of environments.

10.7 Scandinavian Predicate Superlatives

In Danish, as well as in Norwegian and Swedish, predicative adjectives agree with the subject in the same way as attributive adjectives (Danish data from Vikner 2001:51):

(139) a. en grøn bus
a.M/F green bus
b. to grønne busser
two green-PL buses
c. et grønt hus
a.N green-N.SG house
d. to grønne husser
two green-PL houses

(140) a. En bus er grøn.
one.M/F bus is green
b. To busser er grønne.
two buses are green-PL
c. En hus er grønt.
one.M/F bus is green-N.SG
d. To husser er grønne.
two houses are green-PL

Like in German, attributive xAPs in Scandinavian definite xNPs appear with the attributive marker *-e*, but show no concord with the head noun. Scandinavian attributive superlatives behave like attributive adjectives in definite DPs (Kaja Borthen, p.c.):

(141) a. En pen(*e) hund var svært pen(*e). Norwegian
a pretty dog was very pretty
'A pretty dog was very pretty.'
b. Den pen*(e) hunden var svært pen(*e).
the pretty-AGR dog-DEF was very pretty
'The pretty dog was very pretty.'
c. Den penest*(e) hunden var penest(*e).
the prettiest-AGR dog-DEF was prettiest
'The prettiest dog was the prettiest.'

Scandinavian predicate superlative phrases show no marking at all and no article is present:

(142) a. Den grønn-e bus er størst. (Vikner 2001:61)
the.M/F.SG green-AGR bus is biggest
'The green bus is the biggest.'
b. De grønn-e busser er størst.
the.PL green-AGR buses are biggest
'The green buses are the biggest.'
c. Det grønn-e hus er størst.
the.N.SG green-AGR house is biggest
'The green house is the biggest.'
d. De grønn-e husser er størst.
the.PL green-AGR houses are biggest
'The green houses are the biggest.'

This means that predicate superlative phrases in (142) differ both from predicative xAPs, which show agreement with the subject, as in (140) and from attributive adjectives in the definite subjects in (142). Neither the absence of the definite article in predicate superlative phrases nor the absence of any kind of marking on the predicate superlative phrase is expected in our theory. On the one hand, they do not behave like xNPs; on the other, they don't behave like xAPs, either.

One could suggest that the exceptional behavior of Scandinavian predicate superlatives is due to the combination of the definite article drop in the predicate position, as in English, and impoverished inflection on predicate superlatives, as in Dutch. Since Mainland Scandinavian, like all the languages we have examined, allows NP-ellipsis with superlatives, illustrated in (143) and (144), the three processes could take place simultaneously.

(143) Det er mange bivirkninger av denne medisinen.
there are many side effects of this drug

'This drug has many side effects.' Norwegian (Kaja Borthen, p.c.)
a. Den mest vanlige bivirkningen har vært
the MOST common-AGR side effect has been
svimmelhet.
vertigo
'The most common side effect has been vertigo.'
b. Den mest vanlige har vært svimmelhet
the MOST common has been vertigo

(144) Der er mange bivirkninger ved p-piller…
there are many side-effects with contraceptive-pills
'There are many side effects with contraceptive pills…'
Danish (Sten Vikner, p.c.)
a. men den hyppigste bivirkning er kvalme
but the frequent-SUP-AGR side-effect is nausea
'but the most frequent side effect is nausea.'

b. men den hyppigste er kvalme
but the frequent-SUP-AGR is nausea
'but the most frequent is nausea.'

Indeed, Mainland Scandinavian occasionally allows superlative xNP in argument positions to appear without the definite article or suffix.[49] As the attributive marking on the superlative (AGR) shows, the entire DP in question is definite (for the relevance of the attributive/referential distinction due to Donnellan 1966 for article absence see Borthen 1998, and on the relevance of uniqueness see Delsing 1993:118):

(145) a. Jeg tar alltid inn på Norwegian (Borthen 1998)
I take always in on
dyreste hotell.
most-expensive-AGR hotel
'I always stay in the most expensive hotel.'
b. Jeg tar alltid inn på det dyreste hotellet.
I take always in on the most-expensive-AGR hotel-the
'I always stay in the most expensive hotel.'

(146) Let the universities do what they do best: Danish (Sten Vikner, p.c.)
a. forskning og uddannelser på højeste
research and educations on highest-AGR
videnskabelige niveau.
scientific level
b. forskning og uddannelser på det højeste
research and educations on the highest-AGR
videnskabelige niveau.
scientific level

The problem with claiming that the data in (139)–(142) can be partially accounted for via a combination of the article drop and NP-ellipsis is the fact that such a combination is not allowed in argument positions:

(143) c. *Mest vanlig(e) har vært svimmelhet. Norwegian
MOST common-AGR has been vertigo

(144) c. *men hyppigst(e) er kvalme Danish
but frequent-SUP-AGR is nausea

This incompatibility may be due to the fact that article drop is conditioned by referentiality (the ''attributive'' use of the superlative, as shown by Borthen

[49] On double definiteness in Scandinavian, see Delsing 1993, Hankamer and Mikkelsen 2002, Julien 2003, among others.

1998), which may not allow NP-ellipsis in argument positions but may be compatible with the abstract null noun discussed in section 10.2. However, even if the absence of the article on superlative phrases in the predicate position is due to "attributive" article omission (Borthen 1998), the noun is deleted by NP-ellipsis, and their combination is allowed in the predicate position though not in argument ones, we still have no explanation for the lack of definiteness marking on the superlative adjective. Thus Mainland Scandinavian superlatives remain unexplained.

10.8 Summary

To summarize the data discussed in this section, the behavior of superlative phrases in certain predicate or adverbial positions in several languages argues against the theory that all superlative xAPs are attributive. I claim that this impression is for the most part false, since the failures of definiteness marking and attributive marking in these positions occur in different environments in different languages. Therefore, the very variety of exceptions suggests that the proposal that superlative xAPs must be attributive is on the right track.

Two important issues arise as a result on our investigation into the nature of exceptions. One is the need for independent motivation for the standard argument ordering proposed in the literature as opposed to the one proposed here. The other is the role of the diachronic source of the superlative in the determination of this argument ordering. Since it was demonstrated that the Russian analytic superlative in *nai-*, though not the Hebrew analytic superlative in *beyoter*, can be synchronically analyzed as containing the comparative morpheme and an overt introducer of the comparison set (which then becomes the first argument of the complex "superlative"), it appears that argument ordering cannot be attributed to the origin of the superlative morpheme. Indeed, if the opposite were true, only elative-based superlatives (as in English) would have been expected to have attributive syntax. In fact, it is the elative-based superlatives of English that provide the motivation for superlative QR and thus semantic counterarguments for the in-situ theory of the superlative morpheme advocated here.

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