

Evaluativity and structural competition*

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Abstract Certain degree constructions have been observed to systematically give rise to evaluativity inferences, by which gradable predicates are interpreted relative to a contextually provided standard of comparison. It has been proposed that the obligatoriness of these inferences results from a competition between ‘marked’ vs. ‘unmarked’ degree constructions that are semantically equivalent (Rett 2008). Yet, no explanation has been offered so far to account for the source of markedness in these constructions. Building upon previous decompositional approaches to degree expressions (Rullmann 1995; Büring 2007; Heim 2008), the present paper argues that structural complexity is the right metrics for a competition-based account of evaluativity, and develops a modular account of evaluativity in comparatives.

Keywords: Evaluativity; antonymy; structural alternatives; synthetic/analytic alternation

1 Introduction

In recent years, linguists have tried to capture the set of entailment patterns associated with comparative constructions while taking stock of the primitive meanings of comparison, i.e., by identifying the semantic contribution of each degree morpheme. Consider for example the comparative in (1). The sentence describes a situation where Athos’ height exceeds Porthos’ height. Alternative ways of describing this situation include the degree constructions provided in (2a) and (2b):

- (1) Athos is taller than Porthos is.
- (2) a. Porthos is shorter than Athos is.
b. Porthos is less tall than Athos is.

On recent analyses, the way (2a) and (2b) relate to (1) is explained by the presence of a negative operator that either (a) reverses the polarity of the adjective – i.e., *short* is interpreted as the negation of *tall* in (2a), or (b) changes the comparative operator

* I thank Danny Fox, Martin Hackl, Irene Heim, Mora Maldonado, Daniel Margulis, Paul Marty, Stephanie Solt, Alexis Wellwood, and audiences at SALT 28, NYU semantic group, and MIT LFRG for valuable questions and comments.

from *-er* to *less*, as in (2b) (Rullmann 1995; Büring 2007; Heim 2008 among others). It naturally follows from this characterization that the three comparatives entail each other. Against this background, it is surprising that the degree constructions in (3) are not good paraphrases for the sentence in (1):

- (3) a. Athos is less short than Porthos is.
 b. Porthos is more short than Athos is.
 c. Athos is more tall than Porthos is.

Note that, just like in (1)-(2), the degree constructions in (3) are compatible with a situation where Athos' height exceeds Porthos', but they somehow introduce an additional entailment. For example, for the comparative of inferiority in (3a) and the analytic comparative in (3b) to be felicitously uttered, Athos and Porthos have to count as 'short' in the context. In turn, (3c) gives rise to the inference that Athos and Porthos count as 'tall' in the context. This type of context sensitivity, by which gradable predicates are interpreted relative to a contextually-provided standard of comparison has been called 'evaluativity' (Rett 2008, 2015; Breakstone 2014 among others). Note that no analogous inference arises in any of the sentences in (1), (2a) or (2b). For instance, (1) and (2b) involve the adjective *tall*, but the two sentences can be felicitously uttered in contexts where Athos and Porthos are short¹. In essence, the above paradigm raises the following questions: how can we derive suitable meanings for the evaluative sentences in (3) while preserving our assumptions about the semantics of degree morphemes? Is there a way of predicting which degree constructions are evaluative?

One of the main accounts of evaluativity relies on the idea of a markedness competition (Rett 2007, 2008).² At the core of this approach is the idea that degree constructions come in pairs composed of a marked and an unmarked member. The unmarked construction precludes the marked construction whenever they express the same meaning. The markedness-based competition account further argues that the presence of an optional evaluativity operator can break the competition, thereby forcing the evaluative construal of a degree construction to surface. However, the explanatory scope of this account is limited by the fact that it leaves unexplained the source of markedness and consequently, the way competitors are determined is not fully predictable.

My aim in this paper is to provide a theory of what counts as alternatives for semantic competition in the aP domain. In particular, I argue that 'markedness'

1 In fact, there seems to be some inter-speaker variation in this case as (2b) is sometimes judged as necessarily evaluative.

2 In recent work, the EVAL account is no longer pursued by Rett who now proposes a treatment of evaluativity as arising as a manner implicature (see Rett 2015, 2018)

in the sense of Rett’s can be cashed out in terms of structural complexity once we adopt a decompositional analysis of degree expressions. The paper is organized as follows. In Section 2, I review Rett’s (2007, 2008) evaluativity account and discuss the limits of the markedness-based competition. Section 3 argues that structural complexity is the relevant metrics for competition. Section 4 introduces the LF-principle that governs structural competition, and Section 5 suggests a modification of this principle which is made sensitive to the morphophonological properties of competitors: structural competitors must be *expressible*. To introduce this alternative, modular approach to evaluativity, I will focus only on a subset of degree constructions for which the literature already provides us with an insightful decompositional account. This is why the remaining of this paper exclusively discusses synthetic, analytic comparatives and *less*-comparatives of dimensional adjectives.

2 The EVAL theory of evaluativity

Rett (2008) endorses the common view that gradable antonyms enter the derivation as non-evaluative and have a relational interpretation as in (4) that holds between the measurement of an object x and a degree d , such that the measurement of x is at least as great as d on the relevant scale (cf. Cresswell 1977; von Stechow 1984; Heim 2000).

$$(4) \quad \llbracket \mathbf{tall} \rrbracket = \lambda x. \lambda d. \text{HEIGHT}(x) \succeq d \quad (5) \quad \llbracket \mathbf{short} \rrbracket = \lambda x. \lambda d. \text{HEIGHT}(x) \preceq d$$

Evaluative interpretations arise when a freely-occurring EVAL morpheme composes with a degree-denoting property. EVAL has a predicate-modifier type that operates on degree-denoting properties to contribute the reference of a contextually-provided standard³.

$$(6) \quad \llbracket \mathbf{EVAL} \rrbracket^c = \lambda D_{\langle d,t \rangle}. \lambda d. D(d) \wedge d > \text{Standard}_c$$

The markedness competition account then exploits the assumption that EVAL is optional to assign each degree construction two parses, which can be distinguished in whether or not they involve the EVAL operator. Let us illustrate this point with the positive-antonym synthetic comparative in (7), repeated from (1).

- (7) Athos is taller than Porthos is.
 a. *Non-evaluative parse*: [Athos is tall] [-er [than Porthos is tall]]
 $\text{MAX}(\lambda d. \text{tall}(\text{athos}, d)) > \text{MAX}(\lambda d'. \text{tall}(\text{porthos}, d'))$

³ The meaning of EVAL is modeled after the meaning of POS that was originally argued to occur in positive constructions (Bartsch & Vennemann 1972, Cresswell 1977)

- b. *Evaluative parse*: [Athos is tall] [-er [than Porthos is EVAL tall]]
 $\text{MAX}(\lambda d. \text{tall}(\text{athos}, d)) > \text{MAX}(\lambda d'. \text{tall}(\text{porthos}, d') \wedge d' > \text{Standard}_{\text{tall}})$

The meaning of the LF in (7a) is that Athos' height exceeds Porthos' height. This corresponds to the non-evaluative construal of (7). Now, on its evaluative construal, (7) admits the parse in (7b) which adds to the meaning of (7a) the requirement that the maximal degree to which Porthos is tall exceeds the standard value for *tallness*⁴. Note that although the EVAL account generates two parses for (7), we do not detect a semantic ambiguity. This is because the evaluative reading of the sentence is a stronger version of the non-evaluative reading: whenever (7b) is true in a situation, (7a) will be true as well.

In several other degree constructions however, only the evaluative reading is available, suggesting that the non-evaluative construal is blocked. The key idea behind Rett's (2007, 2008) theory of evaluativity is that this blocking effect is due to a markedness competition. In the comparative paradigm, Rett considers three types of markedness triggers: the polarity of adjectives (the negative adjective is marked whereas the positive adjective is unmarked), the type of comparative operator (*less* is marked, whereas the degree operator *-er* is unmarked) and the shape of the comparative (analytic comparatives are marked whereas synthetic comparatives are unmarked). On this account, when a comparative lacks a non-evaluative reading, is it because its non-evaluative parse is blocked by a less marked competitor that expresses the same meaning. To illustrate an example of markedness competition, let us look at the two parses generated for the negative-antonym *less*-comparative, provided in (8a) and (8b).

- (8) Athos is less short than Porthos is.
- a. *Non-evaluative parse*: [Athos is short] [less [than Porthos is short]]
 $*\text{MAX}(\lambda d. \text{short}(\text{athos}, d)) < \text{MAX}(\lambda d'. \text{short}(\text{porthos}, d'))$
- b. *Evaluative parse*: [Athos is short] [less [than Porthos is EVAL short]]
 $\text{MAX}(\lambda d. \text{short}(\text{athos}, d)) < \text{MAX}(\lambda d'. \text{short}(\text{porthos}, d') \wedge d' > s_{\text{short}})$

First, consider the predicted truth-conditions for the LF that does not include the EVAL operator, i.e., (8a). This LF says that Athos' shortness is less great than Porthos' shortness. In other words, it says that Athos' height exceeds Porthos', which is exactly the meaning expressed by the comparative *Athos is taller than Porthos*, under its non-evaluative parse (see (7a)). Since the two LFs are semantically

⁴ Based on the observation that the evaluative presupposition does not project out of the matrix clause of bi-clausal degree constructions in certain environments like the antecedent of conditionals, Rett (2008) stipulates that EVAL can only occur in standard clauses. I will not adopt this assumption. Instead, I argue that whenever the presupposition does not project, it is because it is accommodated, i.e. the evaluative parse also contains an occurrence of the accommodation A-operator.

equivalent, the markedness competition applies, and forces speakers to use the form that is less marked. In this case, Rett claims that speakers should prefer the AP *taller* over the AP *less short*, the latter being doubly marked – i.e., the negative antonym *short* is marked and the degree operator *less* is marked too.

However, once EVAL is included, the truth conditions delivered by (8b) and (7b) are no longer equivalent: in (8b), EVAL modifies the negative antonym and therefore contributes the reference to a contextual standard for ‘shortness’ whereas in (7b), EVAL modifies the positive-antonym and therefore, it refers to the contextual standard for ‘tallness’. Since the presence of the operator yields different interpretations for the marked and the unmarked constructions, it breaks the markedness competition. As a consequence, the evaluative reading of the negative-antonym *less*-comparative is attested, in accordance with our intuitions about the meaning for (8).

2.1 Issues

Although Rett’s competition account of evaluativity is appealing in its simplicity, it relies on an intuitive characterization of markedness which makes unwanted predictions in some cases. Consider for instance the treatment of analytic comparatives like (9) which are reported as being necessarily evaluative. Rett claims that the analytic variant (*more tall*) is marked whereas the synthetic variant (*taller*) is not⁵. On this assumption, and the assumption that analytic and synthetic comparatives are semantically equivalent, the markedness competition applies to the non-evaluative parse of (9) which turns out to be precluded by the non-evaluative parse of the synthetic construction in (7a). But what about the evaluative parse of (9)? Above it was shown how the inclusion of EVAL in a parse can break semantic equivalence between competitors and therefore save a marked construction from ungrammaticality. This reasoning fails to apply to the present case. Indeed, synthetic and the analytic variants are semantically equivalent under their evaluative parse because EVAL has the same contribution in the two constructions: it refers to the standard value for ‘tall’. As a result, the evaluative construal of the analytic comparative in (9b) is predicted to be blocked by the markedness competition, contrary to facts.

- (9) Athos is more tall than Porthos is
- a. *Non-evaluative parse*: [Athos is tall] [more [than Porthos is tall]]
 $*\text{MAX}(\lambda d. \text{tall}(\text{athos}, d)) > \text{MAX}(\lambda d'. \text{tall}(\text{porthos}, d'))$
 - b. *Evaluative parse*: [Athos is tall] [more [than Porthos is EVAL tall]]
 $\text{MAX}(\lambda d. \text{tall}(\text{athos}, d)) > \text{MAX}(\lambda d'. \text{tall}(\text{porthos}, d')) \wedge d' > s_{\text{tall}}$

⁵ Of course, the competition here is restricted to adjectives that allow for a synthetic and an analytic form (e.g., *smarter* - *more smart*). Independent prosodic constraints are known to block synthetic forms of ‘long’ adjectives, accounting for unattested forms like **intelligenter* (Embick 2007).

Descriptively, the availability of the reading in (9b) suggests that the general ability of EVAL to break semantic competition is yet insufficient to explain the whole distribution of evaluativity in synthetic and analytic comparatives. To summarize, the markedness competition account correctly explains the missing non-evaluative readings of analytic comparatives but it only captures half of the puzzle: it does not explain why analytic comparatives are licensed under their evaluative parse.

More generally, the markedness competition account lacks a markedness theory. That is, pairs of constructions have to be stipulated as being marked or unmarked on the basis of what appears to be the case intuitively. For example, the notion of adjective's markedness is suggested to arise from two independent sources in Rett (2008): a morphosyntactic source, that follows from the fact that some negative antonyms are morphologically marked (cf. *possible-impossible*), and a more abstract source that can be interpreted as a conceptual markedness, motivated by the fact that negative antonyms are derived from their positive counterpart via a form of negation⁶. In order to account for further cases, the markedness account is extended to degree operators. Here again, the notion of markedness is rather unclear; the complexity that underlies *less* is claimed to be intuitively semantic whereas the complexity in *more* has to be stipulated:

All of the extensions of the EVAL theory [...] require corresponding extensions of markedness theory. I believe that the markedness assumptions I follow here – e.g. that the synthetic form is less marked than the analytic – are intuitive, but I have no basis for making them other than the fact that these assumptions lead to the correct empirical predictions with respect to evaluativity. (Rett 2008:109)

In sum, one important point that remains unexplained under the EVAL account concerns the exact nature of *markedness*. Part of the analysis I will propose directly addresses this explanatory gap in Rett's proposal, while providing additional support for a competition-based approach to the distribution of EVAL.

3 'Markedness' is structural complexity

In this section, I argue that markedness in the sense of Rett can be cashed out in term of structural complexity, once we adopt a decompositional account of degree expressions. In particular, I endorse the Syntactic Negation Theory of Antonymy offered in Heim (2008) and the decomposition of the degree operator *more* suggested in Solt (2009) (see also Corver 1997, 2015).

⁶ 'Negative-polar antonym seems to semantically encode the force of negation'. (Rett 2008:88)

Several decompositional accounts analyze negative antonyms as complex, decomposable lexical items. In particular, while spelled out as a single word, *short* contains two syntactically and semantically distinct ingredients: a negative degree operator LITTLE and the positive antonym TALL (see among others Rullmann 1995; Heim 2007; Buring 2007; Bobaljik 2012). Lexical entries that are relevant for the analysis of antonymy are provided in (10) and the spell-out rule in (11) ensures that the constituent [LITTLE TALL] licenses the surface form *short* (The morphophonological operation that creates the portmanteau form associated with the negative antonym is represented by ‘+’):

(10) **Lexical entries**

a. $\llbracket \mathbf{tall} \rrbracket = \lambda x. \lambda d. \text{HEIGHT}(x) \succeq d$

b. $\llbracket \mathbf{little} \rrbracket = \lambda A_{\langle d,t \rangle}. \lambda d. A(d) = 0$

(11) **Spell-out rule for the negative antonym**

$[\text{LITTLE+TALL}] > \text{'short'}$

The composition of **little** with a positive degree-denoting property derives the meaning of the negative antonym *short*, as illustrated in (12). That is, **little tall(x)** is the set of degrees d such that d is not in the set of x 's tallness degrees (i.e., the set of degrees d such that x is short to d).

(12) $\llbracket \mathbf{little} \rrbracket (\llbracket \mathbf{tall} \rrbracket (x))$
 $= \lambda A_{\langle d,t \rangle}. \lambda d. A(d) = 0 (\lambda d. \text{HEIGHT}(x) \succeq d)$
 $= \lambda d. \text{HEIGHT}(x) \prec d$

Antonyms are mapped to their comparative form by the degree head *-er*. The comparative head projects a DegP situated in [Spec, aP] and selects the *than*-clause as complement. The comparative morpheme, commonly treated as a quantifier over degrees (see also Seuren 1973; von Stechow 1984; Heim 1985, 2000, 2008) of semantic type $\langle dt, \langle dt, t \rangle \rangle$, is defined in (13).

(13) $\llbracket \mathbf{-er} \rrbracket = \lambda D_1. \lambda D_2. D_2 \supset D_1$

The *than*-clause in which *wh*-movement of a null degree operator has taken place (Chomsky 1977) serves as the first argument of *-er*, which subsequently combines with the matrix clause it abstracts over. On this semantics, the comparative is true if and only if the set of degrees denoted by the matrix-clause properly contains the set of degrees denoted by the *than*-clause.

A regular *-er*-comparative like (14) is thus represented along the lines of (14a). The subjects *Athos* and *Porthos* are base-generated as sisters of the matrix and standard predicates and raise to their surface position, leaving copies which are

unpronounced at PF but which get interpreted at LF. It is also assumed that the standard clause is merged late in the derivation as the internal argument of the comparative operator (c.f. Bhatt & Pancheva 2004), and it is subject to Comparative Deletion, an ellipsis mechanism that (minimally) elides the standard predicate. These assumptions produce the denotation for (14) in (14b) and its associated PF in (14c).

- (14) Porthos is taller than Aramis is.
- a. $[[[IP \text{ Porthos}_i \text{ is } -er_1 \text{ Porthos}_i \text{ tall}] [-er_1 [CP \text{ than } [CP \text{ wh}_2 \text{ Aramis}_j \text{ is } \text{wh}_2 \text{ Aramis}_j \text{ tall}]]]]]$
- b. LF: $[\lambda 1. \mathbf{t1} \text{ Porthos tall}] [-er [\lambda 2. \mathbf{t2} \text{ Aramis tall}]]$
 Semantic computation:
 $[[\lambda 2. \mathbf{t2} \text{ Aramis tall}]] = \{d : d.\text{HEIGHT}(\text{aramis}) \succeq d\}$
 $[[\lambda 1. \mathbf{t1} \text{ Porthos tall}]] = \{d : d.\text{HEIGHT}(\text{porthos}) \succeq d\}$
 $[-er] ([[\lambda 2. \mathbf{t2} \text{ Aramis tall}]]) ([[\lambda 1. \mathbf{t1} \text{ Porthos tall}]]) =$
 $\{d : d.\text{HEIGHT}(\text{porthos}) \succeq d\} \supset \{d : d.\text{HEIGHT}(\text{aramis}) \succeq d\}$
i.e., the set of degrees to which Porthos is tall is a proper superset of the set of degrees to which Aramis is tall.
- c. PF: $[[[IP \text{ Porthos}_i \text{ is } \mathbf{Porthos}_i \text{ tall-er}] [-er_1 [CP \text{ than } [CP \text{ wh}_2 \text{ Aramis}_j \text{ is } \text{wh}_2 \text{ Aramis}_j \text{ tall}]]]]]$

On this non-lexicalist view of antonymy, the negative-antonym comparative admits the representation in (15). In this derivation, the comparative morpheme relates two negative degree-denoting properties, each of which results from modifying the positive predicate by an instance of the LITTLE operator.

- (15) Porthos is shorter than Aramis is.
- a. $[[[IP \text{ Porthos}_i \text{ is } -er_1 \text{ little Porthos}_i \text{ tall}] [-er_1 [CP \text{ than } [CP \text{ wh}_2 \text{ Aramis}_j \text{ is } \text{wh}_2 \text{ little Aramis}_j \text{ tall}]]]]]$
- b. LF: $[\lambda 1. \mathbf{t1} \text{ little Porthos tall}] [-er [\lambda 2. \mathbf{t2} \text{ little Aramis tall}]]$
 Semantic computation:
 $[[\lambda 2. \mathbf{t2} \text{ little Aramis tall}]] = \{d : d.\text{HEIGHT}(\text{aramis}) \prec d\}$
 $[[\lambda 1. \mathbf{t1} \text{ little Porthos tall}]] = \{d : d.\text{HEIGHT}(\text{porthos}) \prec d\}$
 $[-er] ([[\lambda 2. \mathbf{t2} \text{ little Aramis tall}]]) ([[\lambda 1. \mathbf{t1} \text{ little Porthos tall}]]) =$
 $\{d : d.\text{HEIGHT}(\text{porthos}) \prec d\} \supset \{d : d.\text{HEIGHT}(\text{aramis}) \prec d\}$
i.e., iff the set of degrees to which Porthos is short is a proper superset of the set of degrees to which Aramis is short.
- c. PF₁: $[[[IP \text{ Porthos}_i \text{ is } \mathbf{Porthos}_i \text{ [little+tall]-er}] [-er_1 [CP \text{ than } [CP \text{ wh}_2 \text{ Aramis}_j \text{ is } \text{wh}_2 \text{ Aramis}_j \text{ little+tall}]]]]]$

Let us now turn to a derivation that contains the degree word *less*. Proponents of the Syntactic Negation Theory of Antonymy have proposed that *less* is not a semantic primitive based on the consideration of (16a-16b):

(16) *Situation: Aramis' height exceeds Porthos' height.*

- a. Porthos is shorter than Aramis is.
- b. Porthos is less tall than Aramis is.

Although (16a) morphologically belongs to the class of *-er*-comparatives, it expresses inferiority just like (16b) does; indeed, the two sentences are synonymous. To account for this synonymy, it has been proposed that the aPs *less tall* and *shorter* involve the same building blocks, namely [_{aP} -ER LITTLE TALL]. Note that on the decompositional account of negative antonyms, LITTLE always composes with the positive antonym (due to its semantic type $\langle dt, dt \rangle$), so how is it possible to derive the *less* word? Because LITTLE – independently of its semantic contribution – exhibits a flexible morphological distribution: it is pronounced *short* or *less* depending on the constituent it gets spelled out with (cf. Bobaljik 2012). The relevant spell-out rules are provided in (17) and (18).

(17) [-ER+LITTLE] > *less* (18) [LITTLE+TALL] > *short*

On this assumption, the synonymy of (16a) and (16b) is simply due to the fact that the two comparatives share the same structure in (15a), and therefore the same LF (see (15b)) but result from alternative PF realizations. In particular, the positive-antonym *less*-comparative arises by application of the spell-out rule in (17) instead of (18):

(19) PF₂: [[_{IP} Porthos_i is [-er+little] Porthos_i tall] [-er₁ [_{CP} than [_{CP} wh₂ Aramis_j is wh₂ little Aramis_j tall]]]]
Porthos is less tall than Aramis is.

At last, the decompositional account also generates negative-antonym *less*-comparatives: the underlying representation of *less short* in (20) involves a sequence of two negative **little** operators which spell out independently by application of the two spell-out rules in (17) and (18). Namely, the positive antonym PF-merges with the most embedded occurrence of LITTLE allowing for the vocabulary insertion of *short* whereas the higher occurrence of LITTLE PF-merges with -ER allowing for the vocabulary insertion of *less*. However, as discussed in the introduction, this non-evaluative parse is somehow blocked by competition.

(20) Porthos is less short than Aramis is.
 *[[_{IP} Porthos_i is -er₁ little little Porthos_i tall] [-er₁ [_{CP} than [_{CP} wh₂ Aramis_j is wh₂ little little Aramis_j tall]]]]

In addition to the decompositional account of antonymy, I further assume that the analytic form *more* involves more syntactic structure than just the *-er* degree head: it

spells out a semantically vacuous *much* operator in addition to *-er* (c.f. Solt 2009, Corver 1997). Just like **little**, **much** is a degree modifier for gradable properties, but it is essentially contentless, i.e., it denotes an identity function on degree predicates.

$$(21) \quad \llbracket \mathbf{much} \rrbracket = \lambda A_{\langle d,t \rangle} . \lambda d . A(d) = 1$$

As for other portmanteaus studied so far, a specific spell-out rule for the analytic form is provided in (22). It completes our list of spell-out rules for the comparative paradigm. Following these assumptions, our system generates analytic comparatives as exemplified in (23).

$$(22) \quad [-\text{ER}+\text{MUCH}] > \text{more}$$

(23) Porthos is more tall than Aramis is.

a. $[_{IP} \text{Porthos}_i \text{ is } -\text{er}_1 \text{ much Porthos}_i \text{ tall}] [-\text{er}_1 [_{CP} \text{ than } [_{CP} \text{ wh}_2 \text{ Aramis}_j \text{ is wh}_2 \text{ much Aramis}_j \text{ tall}]]]$

b. LF: $[\lambda 1. \mathbf{t1} (\mathbf{much}) \text{ Porthos tall}] [-\text{er} [\lambda 2. \mathbf{t2} (\mathbf{much}) \text{ Aramis tall}]]]$

Semantic computation:

$$\llbracket \lambda 2. \mathbf{t2} (\mathbf{much}) \text{ Aramis tall} \rrbracket = \{d : d.\text{HEIGHT}(\text{aramis}) \succeq d\}$$

$$\llbracket \lambda 1. \mathbf{t1} (\mathbf{much}) \text{ Porthos tall} \rrbracket = \{d : d.\text{HEIGHT}(\text{porthos}) \succeq d\}$$

$$\llbracket -\text{er} \rrbracket (\llbracket \lambda 2. \mathbf{t2} (\mathbf{much}) \text{ Aramis tall} \rrbracket) (\llbracket \lambda 1. \mathbf{t1} (\mathbf{much}) \text{ Porthos tall} \rrbracket) = \{d : d.\text{HEIGHT}(\text{porthos}) \succeq d\} \supset \{d : d.\text{HEIGHT}(\text{aramis}) \succeq d\}$$

i.e., iff the set of degrees to which Porthos is tall is a proper superset of the set of degrees to which Aramis is tall.

c. PF₁: $[_{IP} \text{Porthos}_i \text{ is } \text{Porthos}_i [-\text{er}+\text{much}] \text{ tall}] [-\text{er}_1 [_{CP} \text{ than } [_{CP} \text{ wh}_2 \text{ Aramis}_j \text{ is wh}_2 \text{ ~~much~~ Aramis}_j \text{ tall}]]]$

In the semantics just presented, there are no entries for *less*, *short* and *more*. Instead, their meaning is derived via two covert operators, **little** and **much**, which add up extra layers of syntactic structure whenever they are included in the derivation. As a consequence, this type of account predicts a structural difference between negative and positive antonyms, namely *short* is structurally more complex than *tall*. Similarly, the difference between degree operators can be stated in terms of structural complexity: all other things being equal, a degree expression that contains *less* or *more* is more complex than a degree expression that only involves the comparative head *-er*. It should now clearly appear that the constructions considered as ‘marked’ on Rett’s approach involve structurally complex aPs (namely, *less short*, *more tall* and *more short*). Given these findings, I propose that Rett’s notion of markedness translates into structural complexity.

4 The proposal: structural competition

In the previous section, I have proposed a new metrics for comparing degree constructions based on the structural complexity of the aPs they involve. In this section, I develop a formal account of semantic competition. First, the grammaticality of degree constructions is determined by comparing them with structural alternatives. The generation of such alternatives follows from Katzir's 2007 definition in (24).

(24) **Structural Alternatives** Alt_{str} (Katzir 2007)

If a structure α can be derived from β by substituting terminal nodes in β with lexical items or with subconstituents of β , or by deleting subconstituents of β , then $\alpha \in Alt_{str}(\beta)$.

Capitalizing on the decompositional account introduced in Section 3, the relevant structural alternatives in the comparative paradigm are naturally derived by deletion or substitution of *little* and *much* operators (or both). As a result, non-evaluative aPs can be hierarchically ordered as a function of how much structure they involve, as illustrated in Figure 1 (subjects of aPs are omitted for clarity). In this diagram, a grey arrow pointing from a given box containing an aP α to another box containing an aP β is to be read as $\alpha \in Alt_{str}(\beta)$, i.e. α is a structural alternative to β .

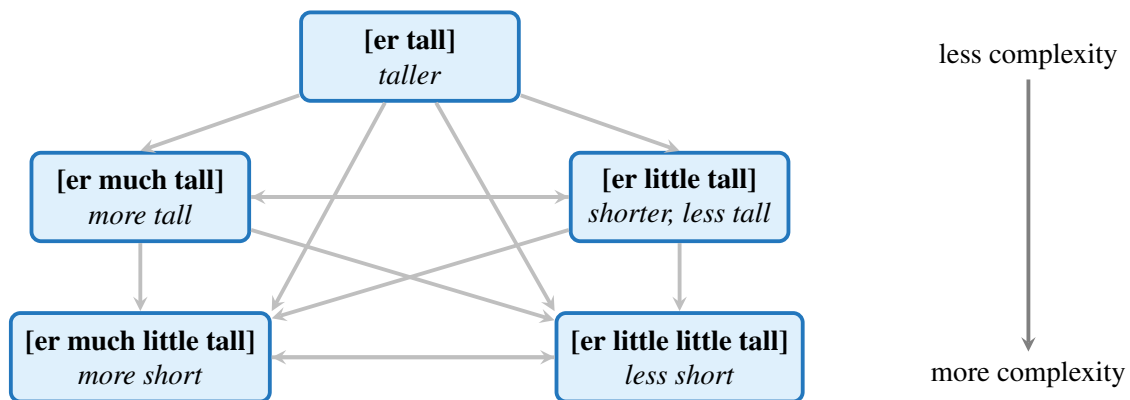


Figure 1 Structural hierarchy of non-evaluative aPs.

Second, I propose the LF-Economy principle in (25), by which structurally complex aPs are precluded by simpler structural alternatives whenever these alternatives express the same meaning.

(25) *Minimize aPs!*

For any LF ϕ , any aP α in ϕ , α is deviant in ϕ if α can be replaced in ϕ with a structural alternative, β , such that

- a. β is semantically equivalent to α , and
- b. β is structurally simpler than α

Minimize aPs! belongs to the family of structural economy constraints that impose limits on syntactic complexity. It ensures that syntactic representations that exhibit structural redundancies are licensed only when they yield an interpretation that would not be available otherwise (a.o. Chomsky 1993; Corver 1997; Reinhart 1998; Meyer 2015; Marty 2016, 2017).

With these tools in place, we are now ready to see how the LF-principle *Minimize aPs!* evaluates the different structural alternatives provided in Figure 1. But before going into the details, note that, by definition, this economy principle only applies to semantically equivalent aPs. On this criterion for instance, the aP *shorter* has a structurally simpler alternative, namely *taller*, yet it is not ruled out by since this alternative has a different meaning.

4.1 Polarity-driven competition

Consider now the pair of non-evaluative sentences in (26) which were predicted to compete on Rett's account. Their LFs are given in (27a) and (27b), respectively. To begin with, one can verify with the parses in (26a) and (26b) that the aP in ψ is a structural alternative to the aP in ϕ : [$_{aP}$ -er tall] is derivable from [$_{aP}$ -er little little tall] by deletion of the two negative operators in the matrix and the standard clause. Consequently, $\psi \in \text{Alt}_{str}(\phi)$. Furthermore, by double negation cancellation in (27a), we observe that the aPs in (27a) and (27b) are semantically equivalent. Therefore, by *Minimize aPs!*, (27a) is deviant due to the availability of (27b).

(26) a. Athos is less short than Porthos is.

ϕ : [[$_{IP}$ Athos_i is -er₁ little little Athos_i tall] [-er₁
[$_{CP}$ than [$_{CP}$ wh₂ Porthos_j is wh₂ little little Porthos_j tall]]]]]

b. Athos is taller than Porthos is.

ψ : [[$_{IP}$ Athos_i is -er₁ Athos_i tall] [-er₁
[$_{CP}$ than [$_{CP}$ wh₂ Porthos_j is wh₂ Porthos_j tall]]]]]

(27) a. LF: * $[\lambda 1. \mathbf{t1}$ little little Athos tall] [-er $[\lambda 2. \mathbf{t2}$ little little Porthos tall]]

{d: $\neg\neg$ [HEIGHT(athos) \succcurlyeq d]} \supset {d: $\neg\neg$ [HEIGHT(porthos) \succcurlyeq d]}

b. LF: $[\lambda 1. \mathbf{t1}$ Athos t tall] [-er $[\lambda 2. \mathbf{t2}$ Porthos tall]]

{d: HEIGHT(athos) \succcurlyeq d} \supset {d: HEIGHT(porthos) \succcurlyeq d}

4.2 Analytic and synthetic comparatives

Turning to analytic and synthetic comparatives, it follows from our assumptions about the syntax of *more* that analytic comparatives always admit structurally simpler synthetic alternatives (see Figure 1). These alternatives are derivable by deletion of *much*. Moreover, since *much* is semantically vacuous, the equivalence between aPs in (28a) and (28b) obtains straightforwardly. As a result, the non-evaluative parse of the analytic comparative is deemed deviant by *Minimize aPs!*.

(28) Analytic and synthetic comparatives: competition #1

a. Athos is more short than Porthos is.

ϕ : $*[A_i \text{ is } -er_1 \text{ much little } A_i \text{ tall}] [-er_1 [\text{wh}_2 P_j \text{ is } \text{wh}_2 \text{ much little } P_j \text{ tall}]]$

b. Athos is shorter than Porthos is.

ψ : $[A_i \text{ is } -er_1 \text{ little } A_i \text{ tall}] [-er_1 [\text{wh}_2 P_j \text{ is } \text{wh}_2 \text{ little } P_j \text{ tall}]]$

As shown in (29), this line of explanation extends to the case of non-evaluative positive antonym comparatives as well.

(29) Analytic and synthetic comparatives: competition #2

a. Athos is more tall than Porthos is.

ϕ : $*[A_i \text{ is } -er_1 \text{ much } A_i \text{ tall}] [-er_1 [\text{than } \text{wh}_2 P_j \text{ is } \text{wh}_2 \text{ much } P_j \text{ tall}]]$

b. Athos is taller than Porthos is.

ψ : $[A_i \text{ is } -er_1 A_i \text{ tall}] [-er_1 [\text{than } \text{wh}_2 P_j \text{ is } \text{wh}_2 P_j \text{ tall}]]$

A summary of the different competitions is provided in Figure (2), where the double arrows represent semantic equivalence between aPs.

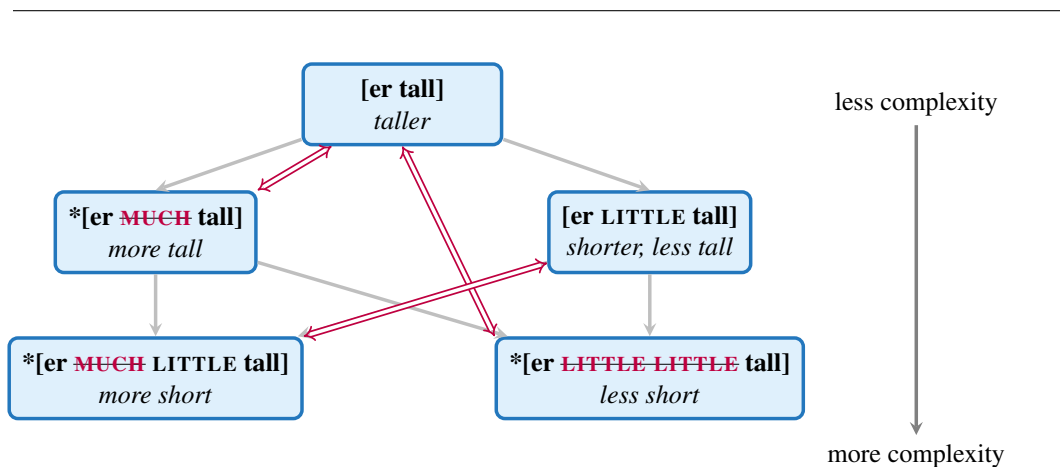


Figure 2 Structural and semantic competition of non-evaluative aPs

We have captured the distribution of non-evaluative readings in comparatives. Now, what about evaluative readings? In the present approach, analytic comparatives are semantically equivalent to their synthetic counterparts due to the semantic vacuity of *much*, and that even in presence of the EVAL operator. Hence, unless supplemented by additional assumptions, the present analysis makes the same inadequate empirical predictions as Rett does for analytic comparatives (see 2.1). In the following section, I will argue that the problem is not the competition itself but the nature of alternatives. I will propose that synthetic comparatives are never evaluative due to a PF-constraint that prevents EVAL to occur between the *-er* affix and the adjectival head that selects for it.

5 PF-constraint on the distribution of EVAL

In addition to provide a metrics for semantic competition, the decomposition of degree expressions also offers an interesting perspective on the formation of morphologically complex expressions. In particular, in the comparative paradigm, there are two types of operations that form complex words: affixation of the comparative head in synthetic comparatives, and portmanteau formation in the case of negative antonyms, *more* and *less*. In this section, I articulate a proposal that (a) integrates evaluativity in the decompositional framework and (b) takes into account the scope of the evaluativity operator with respect to elements that participate in the formation of complex words. The claim I will put forward is that EVAL can disrupt PF-adjacency which is a pre-requisite for spell-out rules application. In other words, EVAL acts as an intervener.

5.1 Evaluativity in a decompositional account

Our first task is to implement Rett's EVAL operator within a decompositional framework. Recall that, on Rett's analysis, the standard associated with polar adjectives in evaluative contexts is hypothesized to directly follow from the semantics of each antonym. On the decompositional account, such an approach would assign negative antonyms the standard of the positive antonym they are based on. In other words, if *short* spells out [LITTLE TALL], then applying EVAL to this constituent should derive a standard of *tallness* instead of a standard of *shortness*. To solve this issue, I adopt a view on which the standard of comparison is a contextually provided vague interval of degrees called the Standard Set (Std_c). By assumption, this set contains degrees that are neither in the extension of the positive antonym, nor in the extension of the negative antonym. Consequently, the scale for relative adjectives like *tall* and *short* is divided into three zones: above the maximal boundary of Std_c are the degrees that qualify as 'tall', below the minimal boundary of Std_c are the degrees that qualify

as ‘short’ and the standard set itself contains neutral degrees, i.e., degrees that are neither ‘tall’ nor ‘short’. Following this proposal, the lexical entry for EVAL is to be rewritten as in (30) so as to derive a suitable standard for both the positive and the negative antonym.⁷

$$(30) \quad \llbracket \mathbf{eval} \rrbracket^c = \lambda D_{\langle d,t \rangle} : D \supset Std_c. D$$

EVAL denotes an identity function on degree predicates, and introduces the evaluativity presupposition that the degree predicate D properly contains a contextually provided standard set:

$$(31) \quad \llbracket \mathbf{eval tall} \rrbracket^c (x) = \lambda d : tall(x) \supset STD_c. HEIGHT(x) \succcurlyeq d$$

The requirement imposed by the EVAL operator is that the set of x’s tallness degrees properly contains the standard set. Due to the properties of scales, this condition is fulfilled only when the degree property denoted by **eval tall**(x) is true of some degrees that are above the maximal boundary of the standard set, and by definition, those are degrees that qualify as ‘tall degrees’. By the same reasoning, in (32), **eval little tall**(x) is true of some degrees that are below the minimal boundary of the standard set, and by definition, those are degrees that qualify as ‘short degrees’.

$$(32) \quad \llbracket \mathbf{eval little tall} \rrbracket^c (x) = \lambda d : little\ tall(x) \supset Std_c. HEIGHT(x) \prec d$$

The relative scope of EVAL has direct consequences on the type of presupposition it gives rise to. Consider for instance the schematic string in (33). At PF, this string could in principle be realized in two different ways given the spellout rules given in (17) and (18), i.e., as *less tall* or as *shorter*. At LF, however, the evaluative operator modifies the positive antonym *tall*, and thus gives rise to a presupposition that refers to a standard of tallness. This presupposition is compatible with the meaning expressed by *less tall* in an evaluative context, but not with that expressed by *shorter*. Based on this observation, it seems then that the presence of EVAL in (33) blocks the surface form *shorter*.

$$(33) \quad [-er\ little\ eval\ tall]$$

PF: *less tall*, **shorter*

⁷ This revised version of the EVAL operator is modeled after a definition for POS as in von Stechow (2009), Heim (2007), Solt (2015) among others.

From there, I see two possible options to explain the restrictions that seem to apply in (33). If this fragment does not correspond to the surface form *shorter* it may be because (i) *shorter* is in fact never evaluative – that is it cannot be associated with a string that contains EVAL – or (ii) the sequence in (33) admits only one possible morphological realization, which has to be *less tall*. A way of implementing this second option consists in deriving the apparent blocking effect in the PF-component of the grammar: whenever the operator EVAL intervenes between the negative operator and the positive antonym, the PF-realization of the string cannot be pronounced as *short*. I am now going to argue that both explanations are right.

5.2 Myers' Generalization and the Expressibility Condition

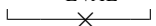
I propose to reanalyze the morphophonological intervention effect of EVAL as a consequence of *Myers' generalization* (Myers 1984). That is, I submit that EVAL is a zero morpheme subject the following constraint:

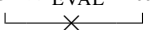
(34) *Myers' generalization*

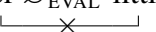
A \emptyset -derived form cannot undergo further affixation/PF-processes.

Myers' generalization works as a PF-filter on derivations. For example, once the null morpheme EVAL is affixed to a gradable predicate, it predicts that any bound morpheme on the top of it (MUCH, LITTLE, -ER) must be realized independently. This way, *Myers' generalization* has two direct consequences on the treatment of evaluative aPs. First, EVAL can block the application of spell-out rules for the portmanteau forms *short*, *less* and *more* as shown in (35). Second, since EVAL blocks further affixation of the form it attaches to, it follows that synthetic forms cannot be evaluative. This is illustrated in (36).


(35) **EVAL is an intervener for portmanteau formation**


a. *short*: [little+tall], *[little \emptyset_{EVAL} -tall]


b. *less*: [-er+little], *[-er \emptyset_{EVAL} -little]


c. *more*: [-er+much], *[-er \emptyset_{EVAL} -little]


(36) **EVAL blocks affixation of -er**

a. *taller*: [-er tall], *[-er \emptyset_{EVAL} -tall]


b. *shorter*: [-er little tall], *[-er \emptyset_{EVAL} -[little tall]]


Myers' generalization indirectly constrains the distribution of the EVAL operator and it does so in a way that appears relevant for semantic competition. For example, on the present account, the synthetic forms in (36) are simpler structural alternatives of the analytic forms in (28a) and (29a). In this case, the LF-principle *Minimize aPs!* wrongly predicts that analytic forms are precluded by their synthetic alternatives. However, by *Myers' generalization*, those forms don't have PF-outputs, thus raising an interesting question: can they count as well-formed alternatives for semantic competition? I will stipulate that they can't. For *Myers' generalization* to have an impact on competition, *Minimize aPs!* must be revised accordingly as follows:

(37) *Minimize aPs! (Final version)*

For any LF ϕ , any aP α in ϕ , α is deviant in ϕ if α can be replaced in ϕ with an **expressible structural alternative**, β , such that

- a. β is **semantically equivalent to α** , and
- b. β is **structurally simpler than α**

This modification of *Minimize aPs!* adds a morphophonological wellformedness condition on structural alternatives. On this revised version of *Minimize aPs!*, evaluative synthetic aPs do no longer qualify as potential competitors. In turn, evaluative analytic forms (i.e., *more tall*, *more short*, *less tall* and *less short*) satisfy both interfaces: EVAL occurs at word boundaries without intervening in PF processes, and in absence of relevant structural alternatives, their evaluative parses is licensed by *Minimize aPs!*. Figure 3 provides a visual summary of attested evaluative aPs.

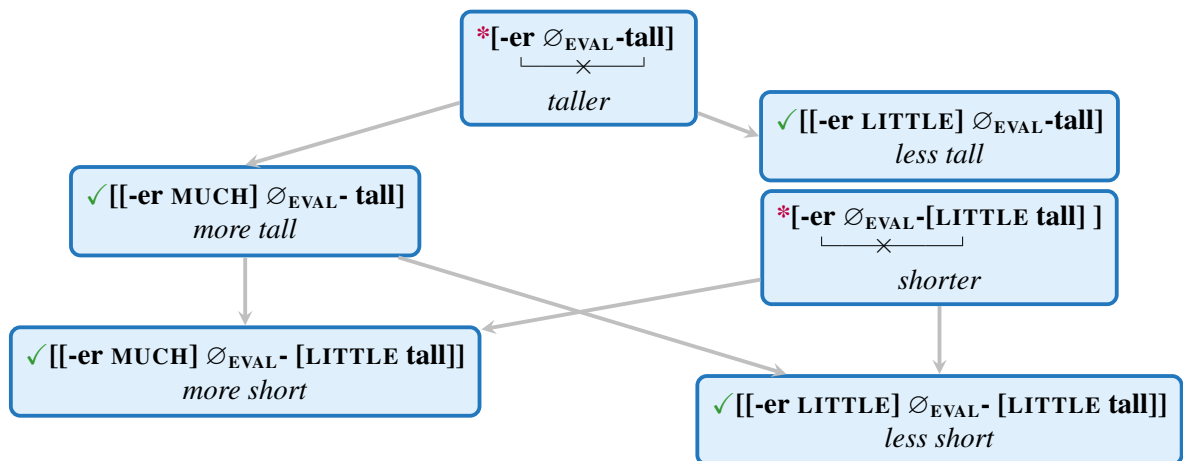


Figure 3 Attested evaluative aPs in comparative constructions

6 Conclusion

In the present paper, I have developed a formal account of the distribution of evaluativity which builds on important ideas and findings from existing theories. Endorsing the logic behind Rett's EVAL competition-account, I have proposed a principled way for generating the candidates for competition. Specifically, I have shown that the notion of markedness can be recast in terms of structural complexity, once we adopt non-lexicalist accounts for degree expressions.

The present account further departs from Rett's EVAL account by making it crucial that the distribution of evaluativity does not solely depend on semantic competition. Instead, it is regulated at the two interfaces: the LF-principle *Minimize aPs!* is designed to account for the deviancy of certain structurally complex degree expressions while the PF-filter *Myers' generalization* imposes a wellformedness condition on morphologically complex expressions. The resulting picture offers a solution to the evaluativity puzzle at the crossroads of the different modules of the grammar.

As mentioned in the introduction, the distribution of evaluativity goes beyond comparative constructions. Future research will have to show whether this analysis can be extended to cover degree constructions such as positives, superlatives and equatives. I think chances are good that these cases can be accounted for by a modular account of evaluativity too.

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