

Extreme Adjectives in Comparative Structures and *Even*

Abstract

This paper examines two related puzzles observed in the literature about extreme adjectives (henceforth EAs, see e.g. Paradis 2001, Rett 2008, Morzycki 2012) namely (a) Why are such adjectives questionable within comparative structures? and (b) Why and how exactly does the presence of *even* greatly improve felicity of these constructions? After examining the solutions proposed in Morzycki (2012), we propose an alternative solution to these two puzzles which integrates three factors (i) the fact that EA-comparatives entail the positive form of these adjectives (building on Morzycki's and Rett's semantics for EAs) (ii) an updated semantics for *even*, independently suggested in Greenberg (2015, 2017), which guarantees that, in general, comparatives with *even* entail the corresponding positive form and (iii) the principle of Maximize Presupposition! (e.g. Sauerland 2008, Percus 2006, Chemla 2008, Singh 2011), leading to the preference of the EA-comparative with *even* over the version without it. We end the talk by discussing similarities and differences between extreme and L(ower)-closed adjectives, highlighted by our findings.

In this paper, we attempt to shed light on two puzzling observations in the literature on EAs (such as *gigantic*, *excellent*, *terrible*) in comparative constructions (e.g. Paradis 2001, Rett 2008, Morzycki 2012). The first observation is that, unlike non-extreme adjectives (e.g. *big*, *good*, *bad*) EAs are usually degraded in comparative constructions (as in (1)). The second is that they become felicitous in such constructions in the presence of *even* (as in (2), (both from Morzycki 2012)):

- (1) ?*Godzilla is more gigantic than Mothra*
(2) *Godzilla is even more gigantic than Mothra*
Our proposal for accounting for these two puzzles is based on the integration of three components: (i) Current work on EAs, their scale structure and their behavior in comparatives, (ii) An independently proposed reformulation of the scalar presupposition

(henceforth ps) of *even*, and (iii) The Maximize Presupposition! principle.

1 Background

1.1 Morzycki (2012) on Extreme Adjectives

Our starting point is Morzycki's (2012) proposal for the semantics of EAs. Morzycki argues that in any context where gradable adjectives are used, our attention is not on the entire scale that the adjective is associated with, but on a salient portion of it. Morzycki then suggests that EAs (e.g. *gigantic*) are similar to their non-extreme counterparts (e.g. *big*) in denoting relations between individuals and degrees. Crucially, however, in the case of EAs, the degrees lie **beyond** the contextually provided scale (represented by C in (3), below). For example, $gigantic_C$ is a function from an entity x and a degree d , that returns truth iff d exceeds the maximum degree in the salient portion of the 'bigness' scale, C , and x is *big* to degree d :

(3). $[[gigantic_C]] = \lambda x \lambda d . d \geq \max(C) \wedge x \text{ is } d\text{-big}$

Consequently, Morzycki claims, the EA-comparative in (1) would have the semantics in (4):

(4) $\exists d' d' > \max(C) \wedge \text{Godzilla is } d'\text{-big} \wedge d' > \max\{d: d > \max(C) \wedge \text{Mothra is } d\text{-big}\}$

1.2 Morzycki's proposed solutions for the two puzzles.

Morzycki suggests that (1) is infelicitous since the act of comparing inherently makes degrees salient, thus leading to a pragmatic clash when applied to the non-salient degrees associated with EAs. More intuitively, as Portner & Rubinstein (2016) put it, a sentence like '*The salsa is more terrible than the guacamole*' is infelicitous since "if the salsa is terrible, it is so overwhelmingly bad that it might be difficult or pointless to decide whether it is better or worse than the (also terrible) guacamole. After all, if it's terrible, you know all you need to know: that you're not going to eat it." (p. 15)

Another potential reason for the infelicity of (1) suggested by Morzycki is related to the

maximality function, within the semantics of the comparative in (4). This function presupposes that there is a degree, beyond the salient degrees in C, to which *Mothra is big* – i.e. it is presupposed that *Mothra is gigantic*. More technically, the EA-comparative in (1) necessarily entails that *Mothra's* degree on the size scale is at least as high as the standard for *giganticness*. Morzycki shows that this inference is presupposed as it is found in both the positive and negative versions of (5):

(5) ? *Godzilla is (not) more gigantic than Mothra*. Entails: *Mothra is gigantic*.

The infelicity of (1), suggests Morzycki, may be due to difficulty in accommodating this ps.

Regarding the second puzzle, i.e. the fact that (2), with *even*, becomes felicitous, Morzycki suggests that “*because even (...) [is] reflecting what is more or less expected in the discourse (Rooth 1985, Wilkinson 1996, Rullmann 1997, Giannakidou 2007), it provides a way for the speaker to acknowledge that the intended comparison is beyond the expected range, and to invite other discourse participants to play along*” (p.588).

1.3 Evaluating Morzycki's Proposals

Morzycki's proposed solutions for the two puzzles still leave a number of unresolved issues. For example, as Rubinstein & Portner (2016) point out, attributing the infelicity of EA-comparatives to a semantic clash between degrees which are simultaneously 'salient' (due to comparison) and 'non-salient' (due to extremeness), while intuitively seems reasonable, is still vague, pending a precise characterization of salience, where degrees are concerned.

Attributing the infelicity of EA-comparatives like (1) to difficulty in accommodating the ps that *Mothra is gigantic* is also unclear, as in many cases ps accommodation is done with ease and does not result in infelicity.

As to the significantly improved felicity of (2) (with *even*), Morzycki relies on the traditional 'comparative likelihood' semantics of *even*, according to which *even p* presupposes that its prejacent, *p* is less likely / expected than any of its (relevant) focus alternatives, *q*. However, this semantics of *even* does not seem to address the causes for infelicity of EA-comparatives he proposes, in any clear manner.

Let us assume, for example, that in (2), *p* is '*Godzilla is [more]_F gigantic than Mothra*', i.e. *more* is focused, so the alternative, *q*, is '*Godzilla is as gigantic than Mothra*'. The problem is that presupposing that that *p* is less likely / expected / informative than such an alternative, does not alter the salience of the relevant degrees, nor does it, in itself, facilitate accommodation of the ps that *Mothra is gigantic*. (In the full paper, we show that the same holds if one takes *even* to associate with different focused elements, triggering other alternatives).

Thus, while we believe that some of Morzycki's intuitions regarding the infelicity of (1) and the improving effect of *even* in (2) are on the right track, we would like to seek a more precise and detailed account for these two puzzling facts.

2 Our Proposal

As noted above, our solutions to the two puzzles integrate three main components, examined in the next three subsections:

2.1 EA - Comparatives Entail the Positive Form of Both Source and Target

We start with Morzycki's observed entailment pattern in (5), which appears to be correctly predicted by his proposed semantics for EAs (in (3)) and the presence of the maximality function in the comparative (in (4)). We follow Rett (2008) in assuming that a similar entailment pattern in Lower-closed¹ (henceforth L-closed) adjective scales suggests that this is the scale structure of EAs as well.

Thus, as Rett, we also assume that as L-closed scale adjectives, the standard for EAs such as *gigantic* is at the minimal endpoint of their scale, i.e. immediately above the maximal endpoint of C (i.e. the set of salient degrees = the '*big*' degrees).

2.2 An Updated Semantics for *even*

We saw above that relying on the traditional, 'comparative-likelihood' scalar ps of *even* is not sufficient for clearly understanding why its presence improves the felicity of EA-comparatives. A theory of *even* that we believe can be more helpful in this respect is Greenberg (2015, 2017). Greenberg points out several problems for the traditional 'comparative

¹ Based on Kennedy and McNally's (2005) scheme.

unlikely' based account for *even*, which lead her to develop an updated, 'gradability-based' scalar ps for this particle. For our purposes, the most relevant component in this work is the claim that *even* includes reference to standards of comparison as an intrinsic part of its semantics. Specifically, Greenberg argues that a sentence with *even* entails that a non-focused element in both its prejacent *p* and its focus alternatives, *q*, must have a degree which is at least as high as the standard, on a scale derived from a relevant gradable property, *G*.

A brief adapted example from Greenberg (2015) supporting this view is in (6):

(6) Context: John and Bill are players who applied to join our basketball team, where the standard of height is 1.90m. Their candidacy is being considered.

A: What about John and Bill? Should we recruit them?

(6a) B: *Well, John is 1.95m tall. Bill is (even) [2.10]F. (We can recruit both.)*

(6b) B: *Well, John is 1.70m tall. Bill is (??even) [1.75]F. (We should not recruit either one.)*

(6c) B: *Well, John is 1.75m tall. Bill is (??even) [1.95]F. (We can recruit Bill.)*

As Greenberg notes, when *even* is present, only (6a) is felicitous, as this is the only sentence where the degree that the non-focused element (*Bill*) has in *p* (1.95m) and in the alternative, *q* (2.10m), are **both** above the relevant standard for height in the context (1.90m).

The sensitivity of *even* to standards is further illustrated by its effect in comparatives:

(7) *John is 1.70m tall. Bill is (even) taller (than him).*

As noted in Greenberg's paper, only the variant with *even* produces an entailment that 1.70m is at or above the threshold for tallness, i.e. the presence of *even* leads to the entailment of the positive form, namely that John, (and of course also Bill), is tall.

To capture this (as well as other new observations regarding *even*), Greenberg builds on intuitions in Beck (1997) and Rullmann (2007) and redefines its scalar ps, as in (8), where *x* stands for a non-focused element within *p*, and *G* stands for a gradable property:

(8) *Even* (*C*) (*p*) (*w*) is defined iff $\forall q \in C \ q \neq p \rightarrow \forall w1, w2 \ [w1Rw \wedge w2Rw \wedge w2 \in p \wedge w1 \in [q \wedge \neg p]] \rightarrow [\max (\lambda d2. G(d2)(x)(w2)) > \max (\lambda d1. G(d1)(x)(w1)) \wedge \text{the } \max (\lambda d1. G(d1)(x)(w1)) \geq \text{stand}_G]$

In prose: *x* is more *G* in all accessible *p* worlds than in all accessible [*q-and-not-p*] worlds and

in the [*q-and-not-p*] worlds, *x*'s degree of *G* is at least as high the standard for *G*.

As shown in Greenberg (2017), applying this formulation of the scalar ps to the comparative in (7), would be as in (9), where *p* is *Bill is taller than John*, the alternative, *q*, is *Bill is as tall as John* and *x* (the non-focused element in *p*) is *Bill*:

(9) $\forall w1, w2 \ [w1Rw \wedge w2Rw \wedge w2 \in \text{the } \max d1(\lambda d1. TALL(d1)(Bill)) > 1.70m \wedge w1 \in [\text{the } \max d1(\lambda d1. TALL(d1)(Bill)) \geq 1.70m \wedge \neg \text{the } \max d1(\lambda d1. TALL(d1)(Bill)) > 1.70m]] \rightarrow [\text{the } \max d2(\lambda d2. TALL(d2)(Bill)(w2)) > \text{the } \max d1(\lambda d1. TALL(d1)(Bill)(w1)) \wedge \text{the } \max d1(\lambda d1. TALL(d1)(Bill)(w1)) \geq \text{stand}_{TALL}]$

In prose: Bill's degree of tallness in all accessible worlds where he is taller than 1.70m, is higher than in all worlds where he is exactly 1.70m tall, and Bill's degree of tallness in the latter worlds is at least as high as the standard for tallness (i.e. he is tall).

For illustration, see diagram 1 (based on Greenberg 2015):

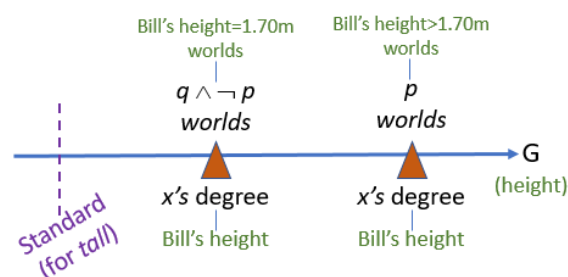


Diagram 1

Thus, the entailment of the positive form of the source, which is present in comparative constructions with EAs, also materializes within the semantics of *even*, in comparatives with any adjectives. As demonstrated above, within Greenberg's semantics of *even*, both the target and, crucially, the source within the comparison, hold a degree which is at least as high as the relevant standard.

2.3 Maximize Presupposition!

The final ingredient of our proposal is the Maximize Presupposition! principle (see e.g. Sauerland 2008, Percus 2006, Chemla 2008, Singh 2011). The idea is that given two competing alternative utterances, which bear the same assertive content, the variant with the stronger ps, which is satisfied in the context, will be favored and the utterance with the same assertive content, but which has a weaker or no

ps, will be degraded. For this reason, for example, '#A sun is shining' would be rejected in favor of '*The sun is shining*'², where the uniqueness of the sun, which is presupposed by the definite article, is satisfied in the context. As Amsili & Beyssade (2006) point out, the same holds when the alternative to the ps-triggering-expression is not another overt expression, but the empty form, as in *John ate ice cream and Mary ate ice cream (too)*, where the alternative to the sentence with *too* is *Mary ate ice cream* \emptyset .

We suggest that the same pattern occurs with EAs in the comparative form. Returning to sentences (1) and (2), again here:

(1) ?*Godzilla is* \emptyset *more gigantic than Mothra*

(2) *Godzilla is even more gigantic than Mothra*

Specifically, we propose that these two sentences compete and that (1) will be rejected in favor of (2), with *even*, since, based on Greenberg's updated semantics for *even*, it triggers a ps that is satisfied in the context (namely that the source of comparison has a degree which is at least as high as the standard of *giganticness*).

3 Summary

In a way, our explanation of (1) and (2) goes in the opposite direction from Morzycki's:

Instead of first explaining why (1) is degraded, and then why the presence of *even* makes it significantly better (as in (2)), we derive the infelicity of (1) from the fact that (2) is preferred due to Maximize Presupposition!

In particular, we propose that, in fact, it is the absence of *even*, (in (1)), that causes the questionable felicity of the EA in the comparative form, due to the integration of three facts: (i) that with such comparatives, an entailment of the positive form is satisfied, (ii) that there is a variant of such comparatives with *even*, which independently triggers a ps resulting in the entailment of the positive form, and (iii) in such cases the variant with the ps is favored, and the one without the ps is perceived as degraded, due to Maximize Presupposition!

We hope this research will contribute to our understanding of EAs, of *even*, as well as scale

structure and standards of different types of adjectives, which we also briefly discuss in the next section.

4 Open Issues & Further Research Directions

4.1 Two questions regarding EAs and Lower-closed adjectives

We presented above the idea (based on Rett 2008) that the scale EAs associate with has an L-closed scale structure³. Thus, even the smallest degree on the scale would be at or above the membership standard for that adjective, with the result that the comparative in EAs entails the positive form, as we have shown.

But counter-evidence to the L-closeness of EAs was presented in (Morzycki (2012)⁴, based on their infelicity when modified by *slightly* and *barely* (cf. Portner and Rubinstein 2016) as seen in (10):

(10) #*This pizza is slightly/barely scrumptious.*

This is contrary to L-closed scale adjectives, which readily accept modification with *slight/barely*, as in '*slightly wet*', for example.

In our paper, we propose to resolve this conflict by following ideas in Solt (2012), namely that modification with low-degree modifiers is sensitive not to scale structure in itself, but to the type of standard. Specifically, when the location of the standard is 'arbitrary', in combination with the semantics of *slightly* and other low degree modifiers⁵, the result is infelicitous.

We enlist this observation to explain the difference between L-closed adjectives such as *wet*, where the location of the standard is 'absolute' and non-arbitrary (the scalar minimum), to EAs, where the location of the standard, i.e. the cutoff point between the portion of the scale associated with '*big*' and the one associated with '*gigantic*' is arbitrary and vague. This arbitrariness explains the infelicity of EAs modified by *slightly/barely*, allowing us to maintain the L-closed analysis of EAs.

The comparison to L-closed adjectives also raises the question why they are felicitous in the

² This minimal pair is from Singh (2009).

³ Rett (2008), as well as Paradis (2001) claim that EAs utilize totally closed scales, which have both an upper and a lower bound. For counter evidence on the upper-boundedness of EAs see e.g. Morzycki (2012), Beltrama & Xiang (2012).

⁴ Based on analyses such as Rotstein & Winter (2001).

⁵ Although Solt examines only the semantics of *slightly* as a representative of low degree modifiers, Toosarvandani's (2008) semantics of *barely* seem to lead to similar results.

comparative, without *even*, unlike EAs, as seen in (11) (from Kennedy 2007):

(11) *The floor is wetter than the countertop.*

To explain this, we note that while Rett (2008) and Demonte (2012), claim that L-closed scalar adjectives in the comparative **entail** the positive form regarding the source of comparison, Kennedy (2007) argues that while there is such an entailment wrt the target, it is only **strongly implied** wrt the source within the comparison. To demonstrate, Kennedy claims that (11) entails that '*the floor is wet*', but only strongly implies that '*the countertop is wet*'.

To quote, Kennedy suggests that (11) “*does not entail that the countertop also has some degree of wetness—it could in principle be completely dry (zero wetness). There is, however, a strong implicature that the countertop is also wet.*” (footnote #23).

We adopt Kennedy's view on this point, and propose that this difference in the status of the positive form of the source of comparison (entailed with EAs and implied with L-closed adjectives) explains why, unlike comparatives with EAs, a comparative with L-closed adjectives is not degraded. In particular, only with EAs, the version with *even*, entailing the positive form for both the source and target of comparison, is favored over the version without it, due to Maximize Presupposition! In contrast, with L-closed adjectives, the utterances with and without *even* are not subject to Maximize Presupposition!, as the positive form for the source is entailed with *even*, but only implied without it.

In the full paper we discuss in more detail the difference in scale structure between L-closed and EAs, which leads to this difference.

4.2 Improved Felicity Even Without *even*

Morzycki (2012) introduces examples, without *even*, which also display improved felicity of EAs in the comparative form, as in (13):

(13) *New York is marvelous, but San Francisco is (even)⁶ more marvelous (than that).*

Let us, first, note, that it is unclear to us if the improved felicity occurs also without *even* – i.e. is the statement that '*New York is marvelous*' in the sentence before the comparative with *even* sufficient to improve the felicity of this comparative?

To the extent this comparative is indeed perfectly felicitous without *even*, we explore the possibility that the presence of the positive form for the source of comparison, introduced by the preceding sentence, may be sufficient in order to allow the Maximize Presupposition! principle to operate even in the absence of an overt particle (such as *even*). This requires deeper investigation of the Maximize Presupposition! principle and the conditions upon its operation. We discuss this option in more detail in the full paper.

⁶ The brackets are in the original.

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