# Extreme Adjectives in Comparative Structures and *even*

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**Abstract** This paper examines two related puzzles, observed in the literature about extreme adjectives (see, e.g., Paradis 2001, Rett 2008, Morzycki 2012), namely, (a) why such adjectives are questionable within comparative structures and (b) why and how exactly the presence of *even* improves the felicity of such constructions. After examining the solutions proposed in Morzycki 2012 for these two puzzles, we propose an alternative solution which integrates three components: (i) the fact that extreme-adjective comparatives necessarily presuppose the "positive form" of these adjectives (building on Morzycki's semantics for extreme adjectives); (ii) an updated, gradability-based semantics for *even* (Greenberg 2015, 2018), which guarantees that comparatives with *even* presuppose the corresponding "positive form," with all kinds of adjectives (extreme and non-extreme alike); and (iii) a local Maximize Presupposition!-type effect, such as that suggested by Singh (2011), leading to the preference of the extreme-adjective comparative with *even* over a competing alternative without it. While the latter component presents a number of challenges requiring further research, the proposal is shown to be supported by cross-linguistic data and by comparing extreme and lower-closed adjectives in terms of scale structure and behavior in comparatives.

**Keywords** extreme adjectives · comparatives · degrees · standards · *even* · scalar presupposition · Maximize Presupposition! · scale structure

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## 1 Introduction

This paper discusses two puzzling observations which have been noted in the literature on extreme adjectives (such as *gigantic*, *ginormous*, *excellent*, *scrumptious*, *terrible*) in comparative constructions (e.g., Paradis 2001, Rett 2008, Morzycki 2012). The first puzzle is why such adjectives are usually judged to be degraded within the comparative, as in (1b), as opposed to the case with non-extreme adjectives, as in (1a). The second puzzle is why the felicity of extreme-adjective comparatives (henceforth EA comparatives) is improved with *even*, as seen in (1c).

(1) a. Godzilla is bigger than Mothra.
b. ??Godzilla is more gigantic than Mothra.
(Morzycki 2012:(10a))
c. Godzilla is even more gigantic than Mothra.
(Morzycki 2012:(61b))

In this paper we suggest a solution for these two puzzles and examine some implications of this solution for issues such as the semantics of extreme adjectives, their associated scale structure, comparatives and gradability, as well as the semantics of *even*. We will start in section 2 with a review of previous solutions to these two puzzles, proposed by Morzycki (2012), and in section 3 raise a few challenges to these solutions. In section 4, we will present our proposal for solving both mysteries, which integrates three building blocks: (i) Morzycki's (2012) semantics of EA comparatives, (ii) Greenberg's (2015, 2018) "gradability-based" semantics for the scalar presupposition of *even* and (iii) a principle akin to localized Maximize Presupposition!, such as that proposed in Singh 2011. We will provide support for our proposal based on some cross-linguistic data in section 5.1, and by examining some differences between extreme adjectives and lower-closed ones in section 5.2. Finally, in section 6, we summarize and point out some open issues and directions for future research.

# 2 Background

## 2.1 Extreme Adjectives in the Comparative

Morzycki (2012) discusses several ways to identify extreme adjectives. Among these ways, one is that such adjectives (e.g., *enormous*) occur felicitously with a specific group of degree modifiers, for instance, *absolutely*, *full-on*, *downright*, *flat-out*, *positively*, as in (3), but not with, for example, *very*, as in (2). In contrast, non-extreme adjectives, such as *big*, are infelicitous with *downright* (see (3)), but felicitous with *very* (see (2)).

(2) very ??enormous / big

(3) downright enormous / ??big (Morzycki 2012:(5,4))

Another feature of extreme adjectives, noted by, among others, Paradis (2001) and Morzycki (2012), is that, as mentioned above, they are degraded in comparative structures (as in (1b), (4b), (5b) and (6b)), unlike their non-extreme counterparts (as in (1a), (4a), (5a) and (6a)):

(4) a. A is better than B.
b. ??A is more excellent than B. (Paradis 1997)

(5) a. The salsa is worse than the guacamole.
b. ??The salsa is more terrible than the guacamole.
(Portner & Rubinstein 2016:(21))

(6) a. Jane is more beautiful than Dorothy.
b. ??Jane is more gorgeous than Dorothy.

To capture this latter observation, Morzycki relies on his analysis of extreme adjectives, which is based on the idea that such adjectives are associated with degrees which are "off the scale," that is, exceed the salient part of the scale. More specifically, Morzycki argues that in any given context, where gradable adjectives are associated with a scale, our attention is not on the entire scale but on a salient portion of it. This leads Morzycki to add a component to the seman-

tics of non-extreme adjectives, where besides denoting relations between individuals and degrees, type $\langle e, \langle d, t\rangle\rangle$ (as suggested in, e.g., Kennedy & McNally 2005) these degrees are within the contextually salient portion of the scale $C$, as seen in (7) for *big*:

(7) $[\![\text{big}_C]\!] = \lambda x \lambda d.d \in C \wedge \text{big}(d)(x)$

According to this, $big_C$ is a function from an entity $x$ and a degree $d$, that returns truth iff $d$ is a member of the salient portion of the scale $C$ (the portion of the scale associated with *big*), and $x$ is *big* to degree $d$.

Morzycki then suggests that extreme adjectives are similar to their non-extreme counterparts in denoting relations between individuals and degrees. However, crucially, in the case of extreme adjectives, these degrees lie beyond the contextually provided scale. For example, $gigantic_C$ is interpreted as in (8), where $d$ *exceeds* the maximum degree on the salient portion of the bigness scale $C$:

(8) $[\![\text{gigantic}_C]\!] = \lambda x \lambda d.d > \max(C) \wedge \text{big}(d)(x)$

Then, adopting a semantics for comparatives as in Kennedy 2004, Morzycki proposes that the EA comparative in (1b) would have the semantics in (9):

(9) $[\![\text{more gigantic}_C \text{ than Mothra (is gigantic}_C)]\!] =$
$\lambda x.\exists d'(d' > \max(C) \wedge \text{big}(d')(x) \wedge d' > d \wedge d > \max(C) \wedge$
$\text{big}(d)(\text{Mothra}))$

In prose, *more gigantic than Mothra* is true of an individual $x$ iff there is a degree $d'$ to which $x$ is big which exceeds the salient portion of the scale $C$ and this degree is higher than the maximal degree $d$ to which Mothra is big, which also exceeds the maximal degree in $C$.

### 2.2 Morzycki's (2012) Explanations for the Two Puzzles

### 2.2.1 Morzycki's Explanation for the First Puzzle: Why are EA Comparatives Degraded?

Morzycki (2012) proposes two explanations for this puzzle. First, he suggests that EA comparatives are degraded since the act of comparing inherently makes degrees salient, thus leading to a pragmatic clash when applied to the non-salient degrees associated with extreme adjectives. Portner & Rubinstein (2016:15) give a more intuitive characterization of this clash in the case of (5b) (??*The salsa is more terrible than the guacamole*), which 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.

Another potential reason for this infelicity, suggested by Morzycki, is related to the maximality function, shown in the semantics of the comparative in (9). This function triggers an existential presupposition, that is, presupposes that there is a degree on the "giganticness scale," that is, a degree beyond the salient degrees in $C$, to which Mothra is big. Consequently, in (9) it is presupposed that Mothra is gigantic. Morzycki shows that this inference is, indeed, presupposed, as it survives negation, as in (10):

(10) ??Godzilla is (not) more gigantic than Mothra.
*Presupposes:* Mothra is gigantic.
(Adapted from Morzycki 2012:(37a))

The existence of this presupposition in EA comparatives leads Morzycki to propose that their infelicity is caused by difficulty in accommodating this presupposition. For example, in (1b), the difficulty would be to accommodate 'Mothra is gigantic'.

### 2.2.2 Morzycki's Explanation for the Second Puzzle: Why does even *Improve the Felicity of EA comparatives?*

Morzycki appears to base his explanation for this puzzle on the long-enduring traditional semantics of *even*, according to which *even p* presupposes that *p* is less likely than any other relevant focus alternatives *q* (cf. Horn 1969, Karttunen & Peters 1979, Rooth 1985, 1992, Guerzoni 2003, Chierchia 2013). He then proposes (p. 25) 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.

According to Morzycki, then, this is why the presence of *even* helps language users overcome the difficulty in accommodating the presupposition that the degree of the compared elements is "beyond the expected range," or more technically, beyond the relevant standard.

## 3 Issues with Morzycki's Proposed Solutions

Regarding the proposed solution for the first puzzle, that is, the infelicity of EA comparatives, while Morzycki's idea that there is a pragmatic clash (between the non-salient degrees which are associated with extreme adjectives and the inherently salient degrees associated with compared entities) is intuitively a compelling reason for infelicity, it is still rather vague. As Portner & Rubinstein (2016) point out, without a clear definition of what salience of degrees amounts to, this explanation is rather difficult to test and evaluate.

As noted above, Morzycki's other possible explanation for the degraded status of EA comparatives is that there is a difficulty in accommodating the existential presupposition that is triggered in such comparatives, which leads to the inference that, for example, Mothra is gigantic. The problem with this solution, however, is that presup-

position accommodation is quite common, and usually does not result in infelicity. It is unclear why there would be a special obstacle to accommodation specifically in EA comparatives.

As for the improved felicity of EA comparatives in the presence of *even*, as noted above, Morzycki appears to employ the "traditional" likelihood-based semantics for *even*. For this semantics to be insightful with respect to the improved felicity effect of *even* with EA comparatives, it would have to interact in some way with the possible reasons suggested for the original infelicity of such comparatives. However, none of the two suggested reasons for infelicity seem to be mitigated by this semantics of *even* in a sufficiently clear way.

Let us assume, for example, that in (1c) (*Godzilla is even more gigantic than Mothra*), *even* associates with *more*, so the prejacent of *even*, *p*, is *Godzilla is* $[more]_F$ *gigantic than Mothra*. In this way, possible alternatives, *q*, could be *Godzilla is as gigantic as Mothra*, *Godzilla is less gigantic as Mothra*, etc. Crucially, presupposing that *Godzilla is more gigantic than Mothra* is less likely than such alternatives, *q*, does not affect in any clear manner the saliency of any of the degrees on the "size" scale involved in the semantics of the extreme adjective *gigantic*. The "pragmatic clash" between the degrees made salient by the semantics of the comparative, and the non-salient degrees introduced by the semantics of the extreme adjective *gigantic*, does not seem to disappear, given the presence of *even*.[1]

As for the second explanation for the oddness of EA comparatives suggested by Morzycki, namely, the difficulty in accommodating that the source of comparison has a degree on the extreme portion of the scale (e.g., that Mothra is gigantic in (10)), the likelihood-based scalar presupposition for *even* does not appear to address this reason for infelicity either. This is because assuming that *p* (*Godzilla is* $[more]_F$ *gigantic than Mothra*) is less likely than *q* (e.g., *Godzilla is as gigantic*

[1] The same is true with other types of alternatives triggered by focused elements in such sentences: for example, where *p* is $[Godzilla]_F$ *is more gigantic than Mothra*, it would not solve the pragmatic clash or alter the salience of the associated degrees to assume that the Kraken is more gigantic than Mothra is a more likely alternative.

*as Mothra*) does not in any clear way facilitate accommodation of the presupposition that Mothra is gigantic. Such is the case for other focus placements and alternatives as well.

As an interim summary, it appears that assuming a likelihood-based semantics of *even* is not fruitful here in that it does not seem to solve the suggested causes for infelicity of EA comparatives in any clear manner.

## 4 Our Proposal

As noted above, our solutions to the two puzzles integrate three main components, briefly reviewed in the next three subsections.

### 4.1 First Component: EA Comparatives Presuppose the "Positive Form" for both Source and Target

Our starting point is Morzycki's observed presuppositional pattern in (10), which appears to be correctly predicted by his proposed semantics for extreme adjectives (in (8)) and the presence of the maximality function in the comparative (in (9)). As noted above, in (1b) (??*Godzilla is more gigantic than Mothra*), for example, Morzycki takes this EA comparative to presuppose that Mothra is gigantic. Following Kennedy and McNally's (2005) terminology, we will assume that (1b) presupposes that Mothra is [pos] gigantic, that is, the degree to which the source of comparison, Mothra, is gigantic, is at least as high as the membership standard for giganticness (and the same is true for the target of comparison, Godzilla, which has a degree of giganticness which is higher still).

This move from the existential presupposition triggered by the maximality operator in the comparative to the "positive form" presupposition can, indeed, be derived from Morzycki's semantics of extreme adjectives. This is because according to his analysis, the scales associated with, for example, *big* and *gigantic*, are two subsections of one scale which lie "back to back." The smallest *gigantic* (extreme/non-salient) degree would be just above the greatest *big* (non-extreme/salient) degree, that is, just above $C$. Thus, the minimal degree above $C$ would mark the location of the standard, above

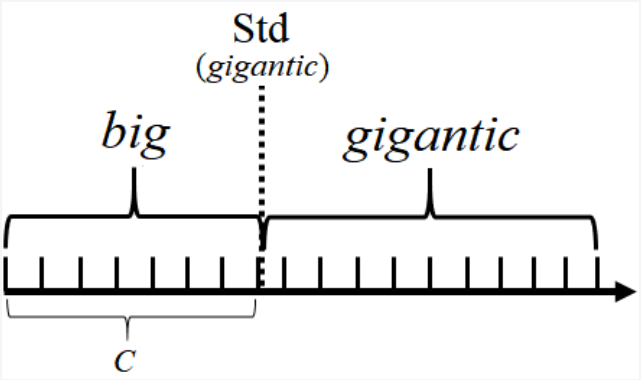


**Figure 1**

which all degrees are extreme, as demonstrated in figure 1.

Since the maximality function in the comparative ensures that the source of comparison has a degree on the extreme subscale, that is, above *C*, and since Morzycki's characterization of extreme adjectives ensures that any degree above *C* is at least as high as the standard of giganticness, EA comparatives as in (1b) (??*Godzilla is more gigantic than Mothra*) indeed presuppose the "positive form" for both source and target (that Mothra (and Godzilla) is [pos] gigantic).

Note that this "positive form" presupposition in EA comparatives, has led, among others, Rett (2008) to claim that extreme adjectives have, in fact, lower-closed scale structure (based on Kennedy and McNally's (2005) scheme). This conclusion seems to be based on the apparent existence of a similar presuppositional pattern to that observed in extreme adjectives in lower-closed scalar adjectives, as in (11).

(11) This rag is (not) wetter than the chamois.
*Presupposes:* The chamois is [pos] wet.

Despite this apparent similarity, we will show in section 5.2 that there is an important difference between the two types of comparatives, which will ultimately strengthen our proposal.

### 4.2 Second Component: An Updated Semantics for *even* with Intrinsic Sensitivity to Standards

We saw above that relying on the traditional, likelihood-based scalar presupposition of *even* is not fruitful for clearly understanding why its presence improves the felicity of EA comparatives. A theory of *even* that we find to be more helpful in this respect is Greenberg 2015, 2018. Greenberg points out several problems for the traditional likelihood-based account for *even*, which leads her to develop an updated, "gradability-based" scalar presupposition 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* presupposes 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 associated with a contextually supplied gradable property, $G$. An example adapted from Greenberg 2015 supporting this view is in (12).

(12) 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?
   a. B: Well, John is 1.95m tall. Bill is (even) $[2.10]_F$. (We can recruit both.)
   b. B: Well, John is 1.70m tall. Bill is (??even) $[1.75]_F$. (We should not recruit either one.)
   c. B: Well, John is 1.75m tall. Bill is (??even) $[1.95]_F$. (We can recruit Bill.)

As Greenberg notes, where *even* is present, only (12a) is felicitous, as this is the only sentence where Bill's degree of height in $p$ (2.10m) and in the alternative, $q$ (1.95m), is in both cases at least as high as the relevant standard for height in the context (1.90m). The sensitivity of *even* to standards is further illustrated by its effect in comparatives,

as in (13).

(13) John is 1.70m tall. Bill is (even) taller (than that).
(Greenberg 2018:(34))

As noted in Greenberg 2018, only the variant with *even* in (13) triggers a presupposition that 1.70m is at or above the threshold for tallness; that is, the presence of *even* leads to the presupposition of the "positive form," namely, that John, (and subsequently also Bill), is [pos] tall. Indeed, when *even* is absent, there is no problem uttering *... but both are short* after (13), while crucially, with *even* this would lead to infelicity.

To capture this sensitivity of *even* to standards as well as other novel observations regarding *even*, Greenberg builds on an intuition in Rullmann 2007, according to which *even* indicates that $p$ and its alternatives "are correlated with some graded property $q$." To formally capture this intuition, she relies on Beck's (1997) analysis of comparative correlatives and redefines the scalar presupposition of *even* as in (14), where $x$ stands for a non-focused element within $p$, and $G$ stands for a gradable property:

(14) $\text{even}(C)(p)(w)$ is defined iff $\forall q \in C \wedge q \neq p \longrightarrow$
$\forall w_1, w_2 (w_1 R w \wedge w_2 R w \wedge w_2 \in p \wedge w_1 \in q \wedge \neg p) \longrightarrow$
$\max(\lambda d_2 . G(d_2)(x)(w_2)) > \max(\lambda d_1 . G(d_1)(x)(w_1)) \wedge$
$\max(\lambda d_1 . G(d_1)(x)(w_1)) \geq \text{stand}_G$

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 $G$. In the case of (12a), for example (*John is 1.95m tall. Bill is* (*even*) $[2.10]_F$), we can assume that we are measuring degrees to which Bill (a non-focused element in $p$) is tall (or alternatively, degrees to which he is suitable for the basketball team). Given (14), then, (12a) presupposes that (i) Bill's degree of tallness in all worlds where he is 2.10m tall is greater than in the worlds where he is 1.95m tall (and not 2.10m tall), and (ii) that in the

latter world set, John is considered to be [pos] tall, that is, his degree of tallness is at least as high as the contextually supplied standard. Since this presupposition is indeed met in (12a), the presence of *even* is felicitous, whereas in the parallel (12b-c), the second conjunct of the presupposition fails, so *even* is infelicitous.

As shown in Greenberg 2018, applying this scalar presupposition of *even* to the comparative in (13), would be as in (15), 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:

(15) $\forall w_1, w_2 (w_1 R w \wedge w_2 R w \wedge$
$w_2 \in (\exists d(\text{tall}(d)(\text{Bill}) \wedge d > 1.70m) \wedge$
$w_1 \in [\exists d(\text{tall}(d)(\text{Bill}) \wedge d \geq 1.70m) \wedge$
$\neg \exists d(\text{tall}(d)(\text{Bill}) \wedge d > 1.70m)] \longrightarrow$
$\max(\lambda d_2.\text{tall}(d_2)(\text{Bill})(w_2)) > \max(\lambda d_1.\text{tall}(d_1)(\text{Bill})(w_1)) \wedge$
$\max(\lambda d_1.\text{tall}(d_1)(\text{Bill})(w_1)) \geq stand_{TALL})$[2]

In prose: (i) 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 (this is, of course, trivially met), and (ii) Bill's degree of tallness in the latter set of worlds is at least as high as the standard for tallness (i.e., he is tall). To illustrate, see figure 2 (based on Greenberg 2015).

We are now in a position to apply this analysis of comparatives with *even* to the EA comparative in (1c) (*Godzilla is even* [*more*]$_{\text{F}}$ *gigantic than Mothra*), where an alternative $q$ is, for example, *Godzilla is as gigantic as Mothra*. Greenberg's scalar presupposition for *even* would now require that (i) Godzilla's size is greater on a scale of giganticness in the $p$-worlds (where Godzilla's size exceeds that of Mothra) than its size in the [$q$ *and not* $p$]-worlds (where Godzilla's size equals that of Mothra) and crucially (ii) Godzilla's size in the latter set of worlds is at least as high as the standard for giganticness. To clarify,

[2]For further details on the "gradability-based" semantics of *even* and its application on comparative structures, beyond what was described here, see Greenberg 2015, 2018.

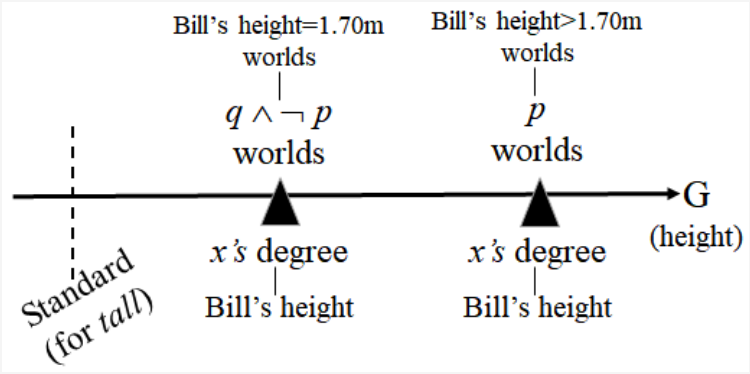


**Figure 2**

see figure 3.

What will be crucial in what follows is that given this analysis, the same "positive form" presupposition (i.e., that the source and target have a degree which is at least as high as the standard) is triggered by both EA comparatives, given Morzycki's (2012) semantics (as described in section 4.1 above), and by comparatives with *any* adjective in the presence of *even*, given Greenberg's (2015, 2018) "gradability-based" semantics of *even*.

Given these two occurrences of the same presupposition, one potential way to explain the improved felicity of EA comparatives with *even* may be an effect similar to Maximize Presupposition!, to which we now turn our attention.

### 4.3 Third Component: a Maximize Presupposition!-like Effect

The idea behind Maximize Presupposition! (Heim 1991, Sauerland 2008, Percus 2006, Chemla 2008, Singh 2011, Schlenker 2012) is that given two competing alternative utterances, which bear the same assertive content, the variant with the stronger presupposition that is satisfied in the context will be favored. Thus, the utterance with the same assertive content, but which has a weaker or no presupposition, will be degraded. For this reason, for example, (16a) is taken to be rejected in favor of (16b):

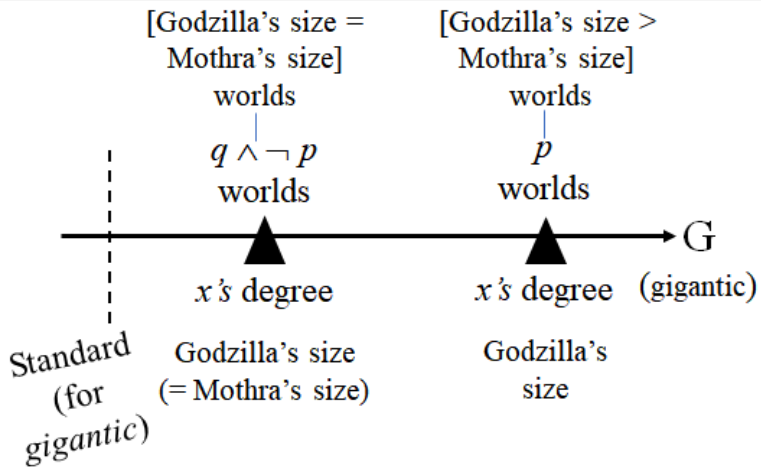


**Figure 3**

(16) a. #A sun is shining.
b. The sun is shining. (Singh 2009:(1a,1b))

The uniqueness of the sun, which is taken to be true in the context, based on real-world knowledge, is presupposed by the definite article *the* in (16b), hence the sentence in (16b) is favored over (16a), which does not trigger this presupposition, and which is, thus, infelicitous.

In what immediately follows, we will describe some proposed deviations from the more classic analyses of Maximize Presupposition!, which will come into play when we apply this principle to the case of EA comparatives and *even*.

The classic accounts of Maximize Presupposition! such as Heim 1991, Chemla 2008 and Sauerland 2008, define it as a principle which operates globally, at the root. This assumption does not hinder Maximize Presupposition!'s ability to account for examples such as (16). However, Percus (2006), followed by Singh (2011) noted examples, which challenge this view. Consider (17a) and (17b).

(17) a. #If Mary has exactly two students, she assigned the same exercise to all of them.

b. If Mary has exactly two students, she assigned the same exercise to both of them.
(Adapted from Percus 2006:(30))

The challenge posed by (17) to Maximize Presupposition! taking effect globally, is that (17a) (with *all*) is rejected in favor of (17b) (with *both*), despite the fact that as a whole, neither sentence presupposes that Mary has exactly two students. It appears that the latter presupposition is satisfied thanks to the antecedent, and that (17b), where this same presupposition is triggered by *both*, is thus favored over (17a) with *all*, which does not.

To account for such sentences with Maximize Presupposition!, Percus (2006) suggests that it causes the preference of an alternative lexical item (in this case, *both*), which on its own triggers a stronger presupposition than the other alternative, regardless of the global presupposition of the sentence. Alternatively, Singh (2011) suggests that Maximize Presupposition! takes effect on the level of subclauses, evaluated in their "local context." Thereby in (17), what causes Maximize Presupposition! to take effect (and (17b) to be favored) is that in the consequent (*she assigned the same exercise to both* vs. *she assigned the same exercise to all*) there is a difference in presuppositional strength, and the presupposition of *both* is satisfied in the local context (i.e. the initial context updated with the antecedent).

A further example indicating a case which deviates from the classic characterization of Maximize Presupposition! is in (18):[3]

(18) a. #All of the two students are nice.
b. Both of the two students are nice.

As opposed to the scenario in (17), where globally neither sentence presupposes that there are exactly two students, in (18), both sentences presuppose this, due to the presence of *of the two students*. Thus, it appears that (18b), which is presuppositionally stronger (be-

[3]Thanks to an anonymous EISS reviewer for this example and related insights, based on his/her personal communication with Amir Anvari.

cause of the presence of *both*), is favored due to the fact that another element in the sentence (namely, *the two students*) triggers the same presupposition as *both* does. We propose that this case can be explained by an effect similar to localized Maximize Presupposition! à la Singh 2011,[4] in the following way: when *the two students* (which appears syntactically below *both*) is computed, it creates a local context in which its presupposition is assumed to be satisfied. This local context then causes the preference of (18b) with *both*, which triggers the same presupposition, over (18a), which does not.

A final digression from classic Maximize Presupposition!, which will be significant later on, is one proposed by Amsili & Beyssade (2006). The latter argue that Maximize Presupposition! will also take effect if the disfavored competing expression is a null form and not an overt form as in the default case. Consider (19a) and (19b).

(19) a. #Jean est malade. Marie est malade ∅.
'John is sick. Mary is sick ∅.'
b. Jean est malade. Marie est malade aussi.
'John is sick. Mary is sick too.'
(Amsili & Beyssade 2006:(11b))

Here, (19b) with the additive particle *aussi*, which triggers the existential presupposition that someone else in the context who is not Mary is sick as well, is favored over (19a) with the null form ∅, where this presupposition (which holds in the context) is not triggered.

### 4.4 Integrating the Three Components

Returning to our original example, see (20a) and (20b) (repeated and adapted from (1b) and (1c)), below:

(20) a. ??Godzilla is ∅ more gigantic than Mothra.
b. Godzilla is even more gigantic than Mothra.

We are now in a position to explain the contrast between the EA

[4]Percus's (2006) analysis appears to be equally applicable.

comparative in (20a) and the EA comparative with *even* in (20b), building on the three components described in the previous sections.

First, we established that EA comparatives presuppose the "positive form" for the source (and consequently also the target) of comparison. We did this by following Morzycki 2012, in claiming that the interaction of the maximality function in the comparative, triggering an existential presupposition over degrees, with the semantics of extreme adjectives, leads to a situation where the source of comparison is independently presupposed to have a degree which is at least as high as the standard related to the extreme adjective scale.

Second, we argued that *even*, too, presupposes the "positive form" for both the source and target of comparison, based on Greenberg's (2015, 2018) "gradability-based" semantics of *even*.

Finally, following Singh 2011, we proposed that where (20a) and (20b) compete, the EA comparative in both creates an updated context in which its presupposition is satisfied locally at the level of the subclause *more gigantic than Mothra*. This local context, in which the "positive form" presupposition is satisfied, causes the preference of (20b) with *even*, which scopes over and triggers the same presupposition as the EA comparative, due to a Maximize Presupposition!-type principle. The disfavored (20a) with the null form, which does not presuppose the "positive form," will consequently be degraded.

To summarize how our localized Maximize Presupposition!-like effect differs from traditional Maximize Presupposition!: (i) This effect operates locally, on the level of subclauses (Singh 2011) (or lexical items (Percus 2006)) and not globally. In sentences such as (18) and EA comparatives, this may lead to a situation where a sentence, which has two triggers for the same presupposition, is favored over a sentence with one trigger.[5] (ii) This localized Maximize Presupposition-like effect is one where the disfavored competing expression is a null form, as in Amsili & Beyssade 2006.

[5]Thanks to Alexandre Cremers and Benjamin Spector, in attendance at CSSP 2017, for pointing out this issue.

### 4.5 Summarizing our Proposal and How it Solves the Two Puzzles

According to our proposal, the first puzzle (why are EA comparatives usually considered to be degraded?) is actually answered by our explanation to the second one (why does *even* improve the felicity of EA comparatives?). We derive the infelicity of (20a) from the fact that (20b) is preferred due to a local Maximize Presupposition!-like effect.

Specifically, we proposed that, in fact, it is the absence of *even* (in (20a)) that causes the questionable felicity of the EA comparative due to the integration of three facts: (i) that with such comparatives, a presupposition of the "positive form" is taken to be satisfied; (ii) that there is a competing variant of such comparatives with *even*, which independently triggers a presupposition of the "positive form"; and (iii) that in such cases the presuppositionally stronger variant is favored, while the one with a weaker or without a presupposition is perceived as degraded, due to an effect similar to localized Maximize Presupposition!.

## 5 Supporting Evidence for Our Proposal

### 5.1 Cross-Linguistic Data on Cognates of English *still*

Our proposal that *even* makes EA comparatives felicitous by triggering the "positive form" presupposition predicts that the same effect should hold with other particles that trigger a similar presupposition.

A few cognates of *still* were observed in the literature to trigger a similar presupposition as part of their semantics or in comparative structures.[6] These particles are, for example, French *encore* (as in (21); Hansen 2007), German *noch* (as in (22); Umbach 2009) and Hebrew *od* (as in (23); Greenberg 2012):

(21) Luc est **encore** plus beau qu'Adrien. (Hansen 2007:(114))
'Luc is still better looking than Adrien.'

[6] Thanks to an anonymous EISS reviewer for pointing us in this direction.

*Presupposes:* Adrien is good-looking.

(22) Berta ist **noch** größer als Adam. (Umbach 2009:(4))
'Berta is still taller than Adam.'
*Presupposes:* Adam is tall.

(23) Rina **od** yoter gvoha mi-Sara. (Greenberg 2012:fn. 6)
'Rina is still taller than Sarah.'
*Presupposes:* Sarah is tall.

Without going into the similarities and differences between these particles and *even*, the prediction of our proposal is that these particles, which trigger a similar presupposition to that triggered by *even*, would also greatly improve the felicity of EA comparatives. This prediction seems to be borne out. These particles, similarly to *even*, indeed appear to significantly improve the felicity of EA comparatives: (24b) with *encore*, (25b) with *noch* and (26b) with *od* seem to be more felicitous, compared to the degraded (24a), (25a) and (26a) without them:

(24) a. ??Rencontrer la France est plus énorme qu'affronter l'Angleterre.
'To encounter France is more enormous than to face England.'
b. Rencontrer la France est **encore** plus énorme qu'affronter l'Angleterre.[7]
'To encounter France is **still** more enormous than to face England.'

(25) a. ??Seine Gelassenheit ist gigantischer als seine Technik.
'His serenity is more gigantic than his technique.'
b. Seine Gelassenheit ist **noch** gigantischer als seine Technik.[8]
'His serenity is **still** more gigantic than his technique.'

[7] https://tinyurl.com/yy5vw66k

[8] https://www.weltwoche.ch/ (registration required); then ausgaben/2006-37/artikel/artikel-2006-37-gross-gelassen.html

(26) a. ??ha-Sulxan ha-kaxol yoter anak me ha-Sulxan ha-afor.
'The blue table is huger/more huge than the grey table.'
b. ha-Sulxan ha-kaxol **od** yoter anak me ha-Sulxan ha-afor.
'The blue table is **still** huger/more huge than the grey table.'

Preliminarily, this observation seems to strengthen the notion that there is a connection between the improved felicity of EA comparatives in the presence of *even* (and these other particles) and the "positive form" presupposition, which they and *even* share.

### 5.2 The Difference between Extreme and Lower-Closed Adjective Scales

As noted in section 4.1 above, Rett (2008) suggested that extreme adjectives have in fact lower-closed scale structure, based on an apparently similar presuppositional pattern, as illustrated by (27) (extreme adjective; repeated from (1b)) and (28) (lower-closed adjective; repeated from (11)):

(27) ??Godzilla is more gigantic than Mothra.
*Presupposes:* Mothra is gigantic.

(28) This rag is wetter than the chamois.
*Presupposes:* The chamois is wet.

However, note that the comparative in (27), with the extreme adjective, is, as already noted above, infelicitous (without *even*), while in (28) with a lower-closed scalar adjective, it is perfectly felicitous as it is. If, then, extreme adjectives are, in fact, associated with lower-closed scales, this felicity difference would be problematic for our analysis. This because lower-closed scale structure, which has been argued to correlate to a minimum standard (cf. Kennedy & McNally 2005) can be seen as logically leading to the "positive form" presupposition, in the following way: if the standard is at the scale's minimal point, then even the smallest amount of wetness is considered to be [pos] wet, the same way the least amount of giganticness,

is deemed to be [pos] gigantic. If both lower-closed and extreme adjectives indeed trigger the "positive form" presupposition, then one would expect (28), with the lower-closed-comparative, to violate the localized Maximize Presupposition as well, but as observed above, this is not the case.

It turns out that the explanation for this felicity difference ends up supporting our theory by highlighting an important difference between extreme adjectives and their non-extreme counterparts. While Rett (2008) claims that lower-closed scalar adjectives in the comparative presuppose the "positive form" regarding the source of comparison, as suggested in (28) above (cf. Demonte 2011), Kennedy (2007) argues that while there is such a presupposition with respect to the target of comparison, it is only a strong implication with respect to the source within the comparison. In sentences such as (28), for example, Kennedy claims that it is presupposed that the rag (target) is wet, but that it is only strongly implied that the chamois (source) is wet. This is, Kennedy proposes, because the chamois could, in principle, have "zero wetness" (i.e., be completely dry) while still being considered as having a degree on the wetness scale (see Kennedy 2007:fn. 23).

We adopt Kennedy's view and propose that the fact that the "positive form" is not presupposed, but only strongly implied for such adjectives in the comparative is why the conditions are not in place for a Maximize Presupposition!-like mechanism to take effect. Crucially, this is in opposition to the case with extreme adjectives. With the latter, as discussed in section 4.1 above, due to their inherent characterization as involving degrees which are just above the salient subscale $C$, it is necessarily presupposed that the source of the comparison has a degree which is at least as high as the membership standard.

Specifically, contrary to the case with lower-closed adjectives, with extreme ones it appears to be impossible to have a zero degree on the extreme (*gigantic*) subscale, because its lower bound is the largest degree on the non-extreme (*big*) subscale, as explained above. All

degrees above $C$ (the salient portion) have a degree of giganticness which is above zero. Any degree below $C$ is not on the giganticness scale anymore but on the bigness scale.

Thus, our proposal is supported by the difference between extreme adjectives and lower-closed scalar adjectives in that only in a context where the "positive form" is presupposed (as in EA comparatives) will the competing utterance with *even* be favored over the utterance without it, which will be degraded. In a case where the "positive form" is only strongly implied (as in lower-closed comparatives), *even* will not be required, because the conditions for the Maximize Presupposition!-like effect will not have been met.

## 6 Summary and Open Questions

In this paper we addressed two previously discussed puzzles concerning extreme adjectives in comparative constructions (EA comparatives). The first puzzle concerned the degraded status of such constructions, and the second concerned their improved felicity in the presence of *even*.

We reviewed Morzycki's (2012) intuitions and semantics of extreme adjectives, and how these are meant to address the two puzzles, but pointed out a few challenges for these suggestions. Instead, we developed a proposal, where we followed Morzycki in assuming that the interaction between the semantics of comparatives and his proposed scale structure of extreme adjectives, causes EA comparatives to trigger a "positive form" presupposition, where the source of comparison (as well as the target) has a degree which is at least as high as the standard for that extreme adjective.

As part of our proposal, we relied on the independently motivated "gradability-based" analysis of *even* (Greenberg 2015, 2018). This, in turn, left us with two components in the structure that trigger the "positive form" presupposition with respect to the source: the EA comparative itself, based on Morzycki's analysis, and *even*, based on the "gradability-based" semantics.

We then proposed that a mechanism akin to local Maximize Pre-

supposition! causes the preference of an utterance in which *even* combines with the EA comparative, since then the "positive form" presupposition triggered by *even* is independently assumed to be triggered and locally satisfied by the EA comparative. As a result, the variant with *even* is favored over the competing variant without *even*, which is thus judged to be degraded.

We provided two supporting arguments for our proposal. The first one is a prediction of our theory, which appears to be borne out. Particles in French, German and Hebrew, which have been claimed to have a similar "positive form" presupposition, also seem to have an improving effect on EA comparatives. A second prediction of our analysis, which appears to be borne out, is that only an environment in which the "positive form" is presupposed (as with EA comparatives) would cause the Maximize Presupposition!-like effect to come into play, as opposed to where the same inference is only strongly implied (as in with lower-closed scalar adjectives, which are perfectly fine in the comparative).

Hopefully, our analysis can help to shed light on the nature of extreme adjectives, their associated scale structure and their membership standard, as well as to contribute to research on other types of adjectives, Maximize Presupposition!, and the semantics of *even*.

The proposal above leaves a number of questions open and raises possible directions for future research. Beginning with the open questions, first, the status of EA comparatives without *even* is often judged to be degraded but not totally infelicitous like the status of, for example, (16a) (#*A sun is shining*), which is supposedly blocked by Maximize Presupposition!. We would like to examine whether this difference can be attributed to a competition between an overt and a null form that we proposed occurs with EA comparatives and *even*,[9] as

[9]It bears mentioning that the proposal by Amsili & Beyssade (2006) that we used to support our proposal, whereby *too* competes with a null form within Maximize Presupposition!, seems to face counterexamples. Consider (i):

(i) a. Jean est malade, mais je ne pense pas que Marie le soit aussi.

opposed to a competition between two overt forms, as in the classic examples of Maximize Presupposition!.

In addition, we found various attested examples where EA comparatives appear to be felicitous, also without the presence of *even*. A preliminary online stock-taking of such cases appears to indicate that there are at least two groups of such examples, one involving NPIs as in (29), and another where no *than*-phrase is explicitly used (or when the comparative is used attributively), as in (30).

(29) a. America astonished him with social paradoxes far more gigantic than **anything** he had observed in Europe.[10]
b. A large tree far more ginormous than Bresa could **ever** imagine reached towards the sky in the middle of this odd valley.[11]
c. (...) the laundry pile is more ginormous than **ever**.[12]
d. With cakes going more ginormous and extreme than **ever** before, ever wonder what the world's largest cake looks like?[13]

(30) a. People who wear crazy socks are more brilliant, creative

'John is sick, but I don't think Mary is too.'
b. Jean est malade, mais je ne pense que Marie le soit.
'John is sick, but I don't think Mary is.'

Sentence (ib), with *too*, is felicitous and the presupposition that someone else in the context, namely John, is sick as well, holds. Based on Amsili & Beyssade's proposal, *too* is predicted to be obligatory in such a scenario, because it triggers a stronger presupposition that holds in the context compared to the null form. However, (ia) without the presuppositionally stronger *too*, is perfectly felicitous. It merits further research to check the viability of an overt vs. covert form competition within Maximize Presupposition!. Thanks to an anonymous EISS reviewer for pointing out this issue and this example.

[10]Google books search result; quote from: Woodcock, George. 2007. *Dawn and the darkest hour: A study of Aldous Huxley*. Vol. 350. Black Rose Books Ltd.

[11]https://tinyurl.com/yynb5ut2

[12]https://tinyurl.com/yy42erc9

[13]https://tinyurl.com/y6teygt6

and successful.[14]

b. The forest seems to decrease in height in these calcareous rocks, especially the planes, which are more colossal in Indiana.[15]

c. When I hear "advanced" preferences, I think of more miniscule nuances such as espresso or French roast.[16]

d. The palate may want more sumptuous food or, at times, a dish that requires more elaborate preparation.[17]

More research is needed to check whether our analysis can account for these cases in a precise manner.

Beyond the examples in (29) and (30), there appear to be (at least borderline) felicitous sentences without *even*, in which the "positive form" clearly holds of the source of comparison and which would be felicitous with *even*. These examples potentially pose a greater problem for our proposal, which would predict them to be degraded. Consider (31) and (32).

(31) A: John is tall. He is 1.80m tall.
B: And what about Bill?
A: He is (even) taller (than John). He is 1.86m tall.

(32) Godzilla is (even) as gigantic as Mothra.

In the exchange in (31), the "positive form" holds of John (the source) in the context, but *even* appears to be optional and not obligatory. Similarly, the equative in (32), which like the comparative, also presupposes 'Mothra is gigantic', does not require the presence of *even*.

[14]Thanks to an anonymous EISS reviewer, who pointed out this example: `https://tinyurl.com/y34tyvzf`

[15]Google books search result; quote from: Wied, Maximilian. 1843. *Travels in the interior of North America*. Ackermann and Company.

[16]Google books search result; quote from: Potts, Kevin et al. 2007. *Textpattern solutions: PHP-based content management made easy*. Apress.

[17]Google books search result; quote from: Symes, Carol. 2008. *Abelard and Heloise: The letters and other writings*. Hackett Publishing Company.

While it is not entirely clear that (31) is not improved with *even*, or how exactly the equative interacts with extreme adjectives and *even* in (32), these two and other examples like them, definitely merit further examination.

One interesting direction for further research concerns the interaction of extreme adjectives with *less ... than* comparatives,[18] illustrated in (33).

(33) Godzilla is ??(even) less gigantic than Mothra.

Surprisingly, it appears that the effect observed with *even* and *more ... than* EA comparatives is reversed with *less ... than*. Here, the variant without *even* appears to be acceptable, while the version with *even* appears to be odd. It would be interesting to check whether the "gradability-based" semantics of *even* and the above proposal as a whole, can be used to explain this effect.

A final direction for further research involving a different solution to the puzzles addressed by this proposal, involves Morzycki's idea regarding the pragmatic clash caused by comparing degrees of extreme adjectives (described in section 2.2.1). Recall that Morzycki proposes that extreme adjectives inherently involve degrees which are non-salient, and that this attribute clashes with the act of comparing, which automatically "brings degrees into salience," thus causing the observed infelicity. This intuitively appealing explanation may be perhaps useful if defined in terms of informativity or relevance towards resolution of a QUD. Perhaps it is possible to claim, roughly, that the distinction between two extreme degrees is non-informative or non-relevant for the QUD (following Portner & Rubinstein 2016). Preliminarily, the improved felicity with *even* may be explained by the fact that the latter's "gradability-based" semantics defines the scale associated with it as a contextually relevant scale. This way, *even* indicates that in its presence, a comparison of extreme degrees

[18]Thanks to an anonymous IATL 2017 reviewer for suggesting this line of inquiry.

is informative, thus countering the initial inherent non-informativity of such a comparison. This idea requires further research and elucidation.

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