HOW *EVEN* SAVES EXTREME ADJECTIVE COMPARATIVES*

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1 Introduction

The focus sensitive particle *even* is intensively discussed in the literature on scalarity and polarity, especially due to its interesting interactions with various well-studied semantic-pragmatic phenomena. These discussions concern, for example, the felicity and interpretation of *even* in downward entailing contexts (e.g., Karttunen and Peters, 1979; Rooth, 1985; Guerzoni, 2003; Giannakidou, 2007; Crnič, 2011), *even*'s interaction with questions (e.g., Guerzoni, 2003, 2004; Iatridou and Tatevosov, 2016), as well as with focus and contrastive topic material (e.g., Wagner, 2013; Zimmermann, 2014; Greenberg, 2018), and the possible presence of an *even*-like operator in (some types of) NPIs (e.g., Lahiri, 1998; Crnič, 2014; Chierchia, 2013). At the same time, various aspects in the semantics of *even* itself have been debated in the literature.

In this paper we will concentrate on one such debated aspect, namely, the characterization of the scalar presupposition of *even*. We will compare here two suggestions made in the literature concerning this presupposition. The first, long-standing characterization is based on the (un)likelihood of the prejacent of *even* relative to its alternatives (Horn, 1969; Karttunen and Peters, 1979; Rooth, 1985, 1992; Guerzoni, 2003, 2004, 2007, and Chierchia, 2013, a.o.). The second, more recent characterization, suggested in Greenberg (2015, 2018), relies on a contextually supplied gradable property associated with a scale, and hardwires sensitivity to standards of comparison into the semantics of *even*. We will henceforth refer to these two approaches as the 'likelihood-based' and the 'gradability-based' approaches, respectively.

While various arguments have been made in support of each of these approaches, we will take a different, and very specific, perspective in comparing them. In particular, we will examine

how each of them fares in explaining the interaction of *even* and comparatives based on extreme adjectives.

More specifically, we will check which of the approaches to the scalar presupposition of *even,* namely the 'likelihood-based' or the 'gradability-based' approach, can better explain the observation, made in e.g., Morzycki (2012), that *even* significantly improves the felicity of, otherwise degraded, extreme-adjective-comparatives (henceforth EA-comparatives). Non-extreme adjectives, on the other hand, are usually felicitous in comparative structures to begin with. This is exemplified by (1a)-(1c), where the EA-comparative in (1a) appears to be degraded, unlike the comparative with the non-extreme adjective in (1c), and, crucially, felicity is much improved with *even,* as in (1b):

(1) a.   ??*Liz is more gorgeous than Hyacinth.*
     b.   *Liz is even more gorgeous than Hyacinth.*
     c.   *Liz is more pretty/prettier than Hyacinth.*

The paper is structured as follows. In §2 we provide some background. We begin, in §2.1, by reviewing the semantics of the scalar presupposition of *even* within the traditional likelihood-based semantics. We then note one of the challenges to this presupposition, concerning the sensitivity of *even* to standards, and introduce the 'gradability-based' presupposition which attempts to overcome this challenge. In §2.2, we present in more detail the data that are to be accounted for by the two analyses of *even*, namely, the improved felicity effect of *even* on EA-comparatives, and review Morzycki's (2012) explanations of the original, degraded felicity of such comparatives and of the improving effect of *even.* We evaluate Morzycki's explanations in §3, and in §4 we present our proposal for the discussed data. §5 reviews cross-linguistic data from French, German, and Hebrew, on cognates of English *still,* that we take to support our proposal. Finally, in §6 we summarize and point out some open questions and directions for future research.

2   Background

2.1   The Semantics of *even*

2.1.1   The Traditional, 'Likelihood-Based' Semantics

The widely accepted semantics of *even* (Horn, 1969; Karttunen and Peters, 1979; Rooth, 1985, 1992; Guerzoni, 2003, 2004, and Chierchia, 2013, a.o.) analyzes it as being focus-sensitive, whereby the focused element evokes a set of alternatives of the same semantic type (Rooth, 1985). Within this framework, *even* is taken to assert the truth of its prejacent, and to trigger a scalar presupposition, stating that, out of the relevant focus alternatives, the prejacent is the least likely proposition.[1] Consider (2) for example:

(2)   *Even [John]*F *read Moby Dick.*   (Wagner, 2013:1)

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[1] *Even* has also been argued to trigger an additive/existential presupposition (Horn, 1969; Karttunen and Peters, 1979; Rooth, 1985, 1992), but this claim is still debated (see e.g., von Stechow, 1991; Krifka, 1991; Wilkinson, 1996; Rullmann, 1997; Lahiri, 2008; Crnič, 2011; Wagner, 2014; Greenberg, 2016). We focus, then, only on the scalar presupposition.

In (2) the presupposition is that, of the set of relevant focus alternatives (e.g., '*Mary read Moby Dick*', '*Hannah read Moby Dick*', etc.), the prejacent '*John read Moby Dick*' is the least likely proposition. The lexical entry representing this analysis is given in (3):

(3) $||even||^{g,c} : \lambda C. \lambda p. \lambda w : \forall q \in C\ q \neq p \rightarrow p < likely\ q\ .\ p(w) = 1$
        where $C \subseteq ||p||^F \wedge ||p||^O \in C \wedge \exists q\ q \neq p \wedge q \in C$

According to (3), where C is a contextually supplied subset of the focus semantic value of p (Rooth, 1992), i.e., of the set of focus alternatives to the prejacent, which has p and at least one other distinct alternative as members, p is the prejacent proposition, and w is a world of evaluation, *even* $(C)(p)(w)$ presupposes that p is less likely than any distinct alternative proposition q in C, and asserts that p is true in w.

2.1.2   A Challenge to the 'Likelihood-Based' Semantics: The Sensitivity of *even* to Standards of Comparison

In her 2015, 2018 papers, Greenberg discusses a number of challenges to the 'likelihood-based' semantics of *even*. One of these challenges is that comparative likelihood semantics cannot account for the observation that when *even* is present, both p and q 'involve' degrees which are at least as high as the standard on a relevant scale, as is demonstrated by sentences (4a)-(4c) below (Greenberg, 2018:(17)):

(4)   Context: John and Bill are players who applied to join our basketball team, where the standard for 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 (4a) 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), are both above the relevant standard for height in the context (1.90m). The 'likelihood-based' semantics of *even* cannot explain this felicity variation between (4a) on the one hand, and (4b-c) on the other hand.
     Since this paper discusses the interaction of *even* with comparative structures, let us consider a similar sensitivity to standards, in sentence (5), below:

(5)   *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 (5) triggers a presupposition that 1.70m is a degree which is at least as high as the basketball team membership standard for tallness. In other words, the presence of *even* leads to presupposing the 'positive form' of the adjective (following Kennedy and McNally's 2005 terminology), namely, that John (and, subsequently, also Bill) is tall. This claim is supported by the fact that sentence (5) with *even*, cannot be felicitously followed by '…*but both are short*', compared to the version without *even*.

2.1.3 The Revised 'Gradability-Based' Presupposition and How It Captures *even*'s Sensitivity to Standards

To address the abovementioned challenge posed by the comparative likelihood account of *even*,[2] Greenberg (2018) proposes a revised account, whose applicability and added value will be examined in this paper, in the context of EA-comparatives.

According to this proposal, where *x* is a non-focused element within *p*, *q* is an alternative proposition, and *G* is a contextually provided scale, the following holds: *x* is more *G* in all accessible *p* worlds than in all accessible [*q-and-not-p*] worlds, and in these [*q-and-not-p*] worlds, *x*'s degree of *G* is at least as high as the standard for *G*. The corresponding lexical entry is given in (6):

(6)   *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* $\forall w1 \in$ [*q* $\wedge$ $\neg p$]] $\rightarrow$ [*the max d2($\lambda d2.G(d2)(x)(w2)$) > the max d1 ($\lambda d1.G(d1)(x)(w1)$) $\wedge$ the max d1 ($\lambda d1.G(d1)(x)(w1)$) $\geq$ standG*]

Applying this semantics of *even*'s scalar presupposition to the comparative in (5), would be as in (7), where *p* is '*Bill is taller than John*', the alternative, *q*, is, for example, '*Bill is as tall as John*' and *x* (a non-focused element within *p*) is Bill.

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

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 (which is, of course, trivially met), and (ii) *Bill*'s degree of tallness in the latter world set is at least as high as the membership standard for being considered tall (i.e., he is tall).

Thus, this updated semantics, by including the requirement that the degrees associated with a non-focused element in *p* and *q* be at least as high as the membership standard associated with a contextually supplied scale, can explain why in sentence (5), with *even*, 1.70m is considered to be at least at the threshold for being considered tall. The traditional, 'likelihood-based' semantics, on the other hand, cannot account for this interpretation.

Now, let us apply this semantics to sentence (1b) ('*Liz is even* [*more*]$_F$ *gorgeous than Hyacinth.*'). Let us assume that *p* is, for example, '*Liz is more gorgeous than Hyacinth*', and that possible alternatives *q*, where *more* is the focused element, are e.g., '*Liz is less gorgeous than Hyacinth*', and '*Liz is as gorgeous as Hyacinth*'. The semantics in (7) would have it that Liz's degree of gorgeousness is higher in the worlds where it exceeds *Hyacinth*'s degree on that scale, compared to the worlds where *Liz*'s degree of *gorgeousness* is less than or the same as *Hyacinth*'s degree, and, crucially, the degree of *Liz*'s *gorgeousness* in both sets of worlds is at least as high as the standard associated with the adjective *gorgeous*.

As noted above, in this paper we will examine whether, apart from achieving more accurate semantics for *even* itself, its updated semantics with intrinsic sensitivity to standards also fares better with respect to the interaction of *even* with EA-comparatives. In order to set the stage, in the next section we will present in more detail the observation we wish to explain with regards to

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[2] This account is meant to address the other issues with the likelihood semantics of *even* as well. See Greenberg (2015, 2018) for further details.

the interaction between *even* and EA-comparatives, and review some explanations given so far to this observation.

2.2 *even* **and Extreme-Adjective-Comparatives**

Let us start by describing a rule of thumb that will enable us to identify extreme adjectives. To this end, we will make use of an observation made by Morzycki (2012), according to which such adjectives (e.g., *enormous*, *gorgeous*, *minute*, *colossal*, *destitute*[3]) occur felicitously with a specific set of degree modifiers (e.g., *absolutely*, *full-on*, *downright*, *flat-out*, *positively*) (as in (8)), but not with, for example, *very* (as in (9)). On the other hand, non-extreme adjectives, such as *big* and *pretty*, are questionable with *downright* (as in (8)), but felicitous with *very* (as in (9)).

(8)   *downright enormous*/*gorgeous*/??*big*/??*pretty*

(9)   *very* ??*enormous*/??*gorgeous*/*big*/*pretty*   (Adapted from Morzycki, 2012:(4)-(5))

Equipped with this diagnostic, let us turn to the data we wish to discuss with respect to the interaction between extreme adjectives and *even*. Morzycki (2012) observes that *even* significantly improves the felicity of extreme adjectives in comparative structures, which otherwise display degraded felicity (cf. Cruse, 1986; Paradis, 1997). Consider the sentences in (1), repeated here as (10), and sentences (11)-(13), below:

(10) a.   ??*Liz is more gorgeous than Hyacinth.*
      b.   *Liz is even more gorgeous than Hyacinth.*

(11) a.   ??*Godzilla is more gigantic than Mothra.*
      b.   *Godzilla is even more gigantic than Mothra.*   (Morzycki, 2012:(10a), (61b))

(12) a.   ??*A is more excellent than B.*   (Morzycki, 2012:(9), based on Paradis, 1997)
      b.   *A is even more excellent than B.*

(13) a.   ??*The salsa is more terrible than the guacamole.*
                                                        (Portner and Rubinstein, 2016:(21))
      b.   *The salsa is even more terrible than the guacamole.*

The observation, then, is that while sentences (10a), (11a), (12a), and (13a) with EA-comparatives, display degraded felicity, the addition of *even* to their counterparts: (10b), (11b), (12b), and (13b), significantly improves their acceptability.

In the next two sections, we review Morzycki's (2012) characterization of extreme adjectives, as well as his explanations for the original infelicity of EA-comparatives and for the improved felicity of *even*.

2.2.1 The Semantics of Extreme Adjectives

Morzycki (2012) argues that extreme adjectives are associated with degrees which are 'off the scale', that is, degrees which are beyond the salient subsection of the scale. In any given context where gradable adjectives are associated with a scale, Morzycki suggests, one's attention is not on the entire scale but on a salient portion of it, which he calls the 'perspective scale'. To reflect

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[3] For a comprehensive list, see Morzycki (2012:8).

this, Morzycki adds a component to the semantics of non-extreme adjectives, where, besides denoting relations between individuals and degrees (these adjectives are of the type $<e, <d,t>>$), these degrees are within the contextually salient portion of the scale, *C*, as seen in (14), for e.g., *pretty*:

(14)   [[*pretty$_C$*]] = $\lambda x \lambda d$. $\boldsymbol{d} \in \boldsymbol{C} \wedge$ *x is d-pretty*

According to (14), *pretty$_C$* 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 subscale associated with *pretty*), and *x* is *pretty* to degree *d*.

     Following this line of thought, Morzycki suggests that extreme adjectives are like their non-extreme counterparts, in that they denote relations between individuals and degrees. However, in the case of extreme adjectives, these degrees lie beyond the contextually provided scale. For example, *gorgeous$_C$* is interpreted as in (15), where *d* exceeds the maximum degree on the salient portion of the '*pretty*' scale *C*:

(15)   [[*gorgeous$_C$*]] = $\lambda x \lambda d$.$\boldsymbol{d} > \boldsymbol{max(C)} \wedge$ *x is d-big*

     As for his semantics of EA-comparatives, Morzycki integrates his semantic analysis of extreme adjectives with an analysis of comparatives as in, e.g., Kennedy (2004), such that '*more gorgeous than Hyacinth*' in (10b) would have the semantics in (16):

(16)   [[*more gorgeous$_C$ than Hyacinth* ~~is gorgeous$_C$~~]]
         $\lambda x. \exists d'$ $d' > max(C) \wedge$ *x is d'-pretty* $\wedge d' > max\{d:d > max(C) \wedge$ *Hyacinth is d-pretty*$\}$

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

2.2.2   Morzycki's Explanation for the Improved Felicity Effect of *even* on EA-Comparatives

Morzycki (2012) proposes two possible explanations for the degraded felicity of EA-comparatives. First, he suggests that this may derive from a pragmatic clash between degrees of compared entities which are inherently salient, and the degrees associated with extreme adjectives, which, following his semantics and intuitions, are inherently non-salient. Portner and Rubinstein (2016) offer a more intuitive version of this explanation, referring to sentence (13a) above ('??*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. (ibid.:15)

     A second reason for this infelicity, which Morzycki (2012) suggests, is related to the maximality function, which is part of the semantics of comparatives, as in (16) above. This function triggers an existential presupposition, presupposing that there is a degree on the 'gorgeousness scale', i.e., a degree that exceeds the salient degrees in *C*, to which Hyacinth is gorgeous. Morzycki supports his claim that this is indeed a presupposition, by demonstrating that it projects under negation, as in (17) below.

(17)   ??*Liz is not more gorgeous than Hyacinth*.
        <u>Presupposition</u>: *Hyacinth is gorgeous*.   (Adapted from Morzycki, 2012:(37a))

Morzycki proposes that this presupposition, which is part of the semantics of EA-comparatives, is difficult to accommodate, and that this is what leads to their degraded felicity. In specific terms, this would mean that in (10a) ('??*Liz is more gorgeous than Hyacinth*'), it is the difficulty to accommodate that '*Hyacinth is gorgeous*' that may be the source of the degraded felicity of the sentence.

We now turn to Morzycki's account of the improved felicity of EA-comparatives where *even* is involved. In trying to explain this phenomenon, Morzycki appears to assume the traditional, 'likelihood-based' semantics of *even* (explained in §2.1.1 above), according to which *even p* presupposes that p is less likely than any other relevant focus alternative, q (cf. Horn, 1969; Karttunen and Peters, 1979; Rooth, 1985, 1992; Guerzoni, 2003; Chierchia, 2013). Specifically, in addressing the suggested pragmatic clash issue, Morzycki (2012:25) proposes 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.*

As for the difficulty in presupposition accommodation pointed out by Morzycki (2012), it seems that he does not, at least directly, discuss how the presence of *even,* with its 'likelihood-based' presupposition, addresses this difficulty. Nonetheless, we will evaluate the ability of *even* to address both difficulties in the next section.

3   An Evaluation of Morzycki's Explanation of *even*'s Improved Felicity Effect

For the 'likelihood-based' semantics of *even,* assumed by Morzycki (2012), to be able to explain the improved felicity effect of *even* on EA-comparatives, it would have to interact with the possible reasons suggested for the original infelicity of such comparatives. However, this does not appear to be the case. The two proposed reasons for infelicity do not appear to be addressed by the traditional, likelihood semantics of *even* in a sufficiently clear manner.

Consider the 'likelihood-based' semantics of *even*, when applied to our test case sentence (10b) ('*Liz is even* [*more*]$_F$ *gorgeous than Hyacinth*'). Let us assume, as the focus marking indicates, that '*more*' is focused. Thus, the prejacent of *even*, p, would be '*Liz is* [*more*]$_F$ *gorgeous than Hyacinth*', and alternatives, q, could be e.g., '*Liz is less gorgeous than Hyacinth*', and '*Liz is as gorgeous as Hyacinth*'.

Presupposing that '*Liz is more gorgeous than Hyacinth*' (p) is less likely than alternatives q, does not affect the salience of any of the associated degrees in any direct way.[4] This means that Morzycki's suggestion concerning the pragmatic clash between the salient degrees of compared entities and the non-salient degrees associated to extreme adjectives, cannot be resolved by the likelihood semantics of *even*.

As for the second possible explanation Morzycki offers for the degraded status of EA-comparatives, to wit, a problem in accommodating that the source of comparison, Hyacinth, is

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[4] The same applies to focus alternatives triggered by other focused elements: e.g., where p is: '[*Liz*]$_F$ *is more gorgeous than Hyacinth*', presupposing that '*Daisy is more gorgeous than Hyacinth*' is a more likely alternative, would not resolve the pragmatic clash, or change the salience of the associated degrees.

gorgeous, the likelihood semantics of *even* appears to be equally unrelated. Assuming that (i) *p* ('*Liz is* [*more*]F *gorgeous than Hyacinth*') is less likely than e.g., '*Liz is as gorgeous as Hyacinth*', or that (ii) '[*Liz*]F *is more gorgeous than Hyacinth*' is less likely than e.g., '*Daisy is more gorgeous than Hyacinth*', does not in any clear fashion facilitate accommodation of the presupposition that *Hyacinth is gorgeous*.

Finally, notice that, as Portner and Rubinstein (2016) point out, without a clear definition of what salience means when it applies to degrees, the 'pragmatic clash' explanation for the infelicity of EA-comparatives is challenging to prove or reject. In addition, the claim that the presupposition triggered by EA-comparatives is difficult to accommodate, is challenged by the fact that such accommodation occurs frequently in language, without leading to infelicity. It remains unexplained why a special impediment is encountered in the case at hand.

4   Our Proposal

4.1   Comparatives with EAs and Comparatives with *even* Both Presuppose the Positive Form for Source and Target of Comparison

The first building block of our proposal is based upon Morzycki's (2012) observed presuppositional pattern in (17) above, which appears to be correctly predicted by his semantics of extreme-adjectives (in (15) above) and the maximality function within his semantics of comparatives (in (16)). We follow Morzycki in arguing that (10a) (??'*Liz is more gorgeous than Hyacinth*') presupposes that Hyacinth is gorgeous.

Following Kennedy and McNally's (2005) terminology, we take this to mean that (10a) presupposes that '*Hyacinth is pos*[5] *gorgeous*', i.e., that the degree to which the source of comparison, Hyacinth, is gorgeous, is at least as high as the standard associated with the 'gorgeousness' scale (with the same being true of the target, which has a higher degree on the scale).

We base this inference from the existential presupposition, triggered by the maximality operator within the comparative, to the 'positive form' presupposition, on Morzycki's semantics of extreme adjectives and his analysis of their scale structure. Within Morzycki's semantics, the scales associated with non-extreme adjectives and their extreme counterparts e.g., *pretty* and *gorgeous*, are two adjoining subsections of one scale. The smallest *gorgeous* (extreme/non-salient) degree would be just above the greatest *pretty* (non-extreme/salient) degree, i.e., just above *C*. Thus, the minimal degree above *C* would mark the location of the standard, above which all degrees are extreme, as demonstrated in Figure 1 below.[6]

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[5] 'pos' stands for 'positive form', a null degree morpheme which relates the degree argument of an adjective to an appropriate standard of comparison (Kennedy and McNally, 2005).

[6] Based on the triggering of the 'positive form' presupposition in comparatives and the characterization of the scale structure of extreme adjectives, it has been suggested by e.g., Rett (2008), that extreme adjectives have, in fact, lower-closed scale structure (following Kennedy and McNally's 2005 framework). In Daniels and Greenberg (to appear) we explain in detail the similarities and differences between extreme adjectives and lower closed scalar adjectives and the implications of this comparison to felicity differences between comparatives featuring the two types of adjectives.
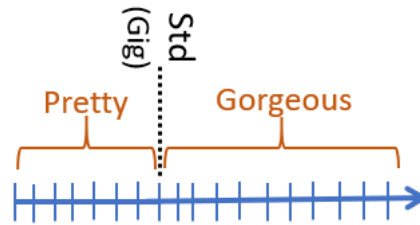
Figure 1. Location of the standard of the extreme subscale

Since the maximality function within the comparative ensures that the source of comparison has a degree on the extreme subsection of the scale (i.e., above *C*), and since Morzycki's definition of extreme adjectives ensures that **any** degree above *C* is at least as high as the membership standard associated with *gorgeous*, EA-comparatives, such as (10a) ('??*Liz is more gorgeous than Hyacinth*') indeed presuppose the 'positive form' for both source and target ('*Liz (and Hyacinth*) *is* (*are*) *pos gorgeous*').

An interim stock-taking now reveals that, in sentences with *even* (under the 'gradability-based' semantics) which are EA-comparatives, we are faced with two components that trigger the 'positive form' presupposition. The first is *even*, which, according to Greenberg's (2015, 2018) (independently argued) updated scalar presupposition, triggers this presupposition in comparative structures with **any** adjective (as explained in §2.1.3). The second is the presence of the extreme adjective, which, when combined with the comparative, also triggers this presupposition, following Morzycki's (2012) analysis, as explained above.

Why, then, would a sentence be more felicitous with two triggers of the same presupposition than with one?

A possible way to explain this is the *Maximize Presupposition!* principle (see e.g., Heim, 1991; Sauerland, 2008; Percus, 2006; Chemla, 2008; Singh, 2011). We discuss this option in the next section.

4.2 The Relation between the Shared Presupposition and the Improved Felicity Effect

In this section we discuss the relationship between the 'positive form' presupposition, triggered by EA-comparatives and *even*, and the improved felicity resulting from the combination of these two elements. As mentioned above, one potential means of tying the two together, may be via *Maximize Presupposition!*.

Maximize Presupposition! (e.g., Heim, 1991; Sauerland, 2008; Percus, 2006; Chemla, 2008; Singh, 2011) is a principle stating that between two competing alternative utterances, which have the same assertive content, language users will select the variant with the stronger presupposition which is satisfied in the context. The disfavored utterance (with the weaker or no presupposition), will be degraded. This is why, for example, (18a) is claimed to be rejected in favor of (18b):

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

The fact that there is only one unique sun (in Earth's solar system), which is taken to be true in the context, based on real world knowledge, is presupposed by the definite article *the* in (18b).

Hence, this sentence is preferred to (18a), where this presupposition is not triggered, and which is, thus, infelicitous.

Returning to the case at hand, it could be argued that *Maximize Presupposition!* causes the preference of (10b) over (10a), since *even*, which appears in (10b) and not in (10a), triggers a presupposition which, due to the semantics of EA-comparatives, requires satisfaction. Thus, the version with *even* (repeated in (19b)) is favored over the one without it (repeated with the relevant marking in (19a)), which does not trigger this 'positive form' presupposition.

(19) a.   ??*Liz is Ø more gorgeous than Hyacinth.*

     b.   *Liz is even more gorgeous than Hyacinth.*

Notice, though, that there appear to be two problems with applying *Maximize Presupposition!* to EA-comparatives with *even*. The first is that, in most documented cases, this principle leads to the favoring of an utterance with one overt form, over an utterance with another overt form (such as *a* vs. *the* in (18)). This is contrary to our scenario, where an utterance with an overt form (*even* in (19b)) is preferred to an utterance without it (in (19a)).

To address this issue, we refer to Amsili and Beyssade (2006), who argue that *Maximize Presupposition!* also holds where the disfavored competing expression is a null form, as in (20a-b) below:

(20) a.   #*Jean est malade. Marie est malade Ø.*
          'John is sick. Mary is sick Ø.'

     b.   *Jean est malade. Marie est malade aussi.*
          'John is sick. Mary is sick too.'   (Amsili and Beyssade, 2006:(6b))

In this case, (20b) with the additive particle *aussi*, which triggers the existential presupposition that someone else in the context, who is not John, is also sick, is favored over (20a) with the null form Ø, where this presupposition (which is satisfied in the context) is not triggered.

A more serious obstacle is that in standard cases of *Maximize Presupposition!* discussed in the literature, it is the utterance context which is required to satisfy the triggered presupposition, as in (18b) ('*The sun is shining*'), where the uniqueness of the sun, triggered by *the*, is satisfied based on real world knowledge. In contrast, in the case at hand, the 'positive form' presupposition, triggered by *even,* is not satisfied in the context, but is triggered by the combination of the extreme adjective and the comparative. In this case, then, EA-comparatives with *even* appear to have two elements which trigger the same presupposition. This apparent deviation from the current definition of *Maximize Presupposition!*, could cause our theory to over-generate, predicting that any case of two elements which trigger the same presupposition, would lead to improved felicity, compared to its counterpart with only one such element. This prediction is not necessarily supported by data.[7]

A possible avenue to take in addressing this challenge is to note that, compositionally speaking, the 'positive form' presupposition that is triggered by the EA-comparative is already suggested to be part of the common ground **before** *even* enters the picture (as *even* scopes above the prejacent). So, in fact, it could, perhaps, be argued that *even* takes a proposition, namely '??*Liz is more gorgeous than Hyacinth*', in which the 'positive form' presupposition is already assumed to be satisfied, and triggers this same presupposition, thus improving its felicity, following the *Maximize Presupposition!* principle. For this scheme to be acceptable, though, a

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[7] We thank Alexandre Cremers and Benjamin Spector for pointing out this issue at CSSP 2017.

more general version of *Maximize Presupposition!* should be considered and shown to be both empirically and theoretically sound. We intend to examine this direction in detail in future research.

5 Supporting Evidence: Other Particles with 'Positive Form' Presuppositions Also Improve the Felicity of EA-Comparatives

In the previous section we proposed that it is the absence of *even*, (in e.g., (19a)), that causes the questionable felicity of the EA-comparative, due to the integration of three facts: (i) with such comparatives, a presupposition of the 'positive form' is taken to be satisfied, (ii) there is a competing variant of such comparatives with *even*, which independently triggers a presupposition of the 'positive form' (according to Greenberg's (2015, 2018) 'gradability-based' semantics), and (iii) in such cases, the variant with the stronger presupposition is favored (e.g. (19b)), due to *Maximize Presupposition!* (or some revised version of it).

Our proposal, thus, predicts that the same effect should hold with respect to other particles which trigger a similar positive form presupposition. This prediction seems to be borne out. Cognates of English *still* were observed in previous research to trigger a similar presupposition as part of their semantics or in comparative structures.[8] These particles are the French *encore* (as in (21)) (Hansen, 2007), the German *noch* (as in (22)) (Umbach, 2009), and the 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.'
      Presupposition: *Adrien is good looking*.

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

(23) *rina od yoter gvoha mi-sara*.   (Greenberg, 2012:fn. 6)
      'Rina is still taller than Sarah.'
      Presupposition: *Sarah is tall*.

Without going, at this point, deeply into a comparison between these particles and *even*, the prediction of our proposal is that these particles, which trigger a similar 'positive form' presupposition to that triggered by *even*, would also improve the felicity of EA-comparatives.

As noted above, this prediction appears to pan out. These particles, as is the case with *even*, indeed seem to significantly improve the felicity of EA-comparatives: (22b) with *encore*, (23b) with *noch*, and (24b) with *od* seem to be more felicitous, compared to the degraded (24a), (25a) and (26a), without them:

(24) a.   ??*Rencontrer la France est Ø plus énorme qu'affronter l'Angleterre*.
            'To encounter France is more enormous than to face England.'

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[8] We thank an anonymous CSSP reviewer for suggesting this line of inquiry.

        b.   *Rencontrer la France est **encore** plus énorme qu'affronter l'Angleterre.*[9]
            'To encounter France is still more enormous than to face England.'

(25) a.   ??*Seine Gelassenheit ist Ø gigantischer als seine Technik.*
          'His serenity is more gigantic than his technique.'

        b.   *Seine Gelassenheit ist **noch** gigantischer als seine Technik.*[10]
          'His serenity is still more gigantic than his technique.'

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

        b.   *ha-šulxan ha-kaxol **od** yoter anak me ha-šulxan ha-afor*
          'The blue table is still more huge than the grey table.'

These data from French, German, and Hebrew appear to indicate that, as we propose, at the very least, 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* trigger (under the 'gradability-based' analysis of the scalar presupposition of *even*). The exact mechanism which causes this improved felicity, whether it be a more general version of *Maximize Presupposition!*, or some similar machinery, is yet to be determined in a precise manner.

6 Summary and Open Questions

Morzycki (2012) attributed the degraded status of EA-comparatives to problems in the semantic-pragmatic structure of such comparatives, and then attempted to explain how the presence of *even* solves these problems, thus improving their felicity. In the current paper, the structure of argumentation we employed was the opposite. We proposed that the degraded felicity of EA-comparatives is caused by the absence of *even*, due to the integration of three facts: (i) with such comparatives, a presupposition of the 'positive form' is triggered and assumed to be satisfied, (ii) when *even* is present with comparatives (regardless of adjective type), it independently triggers a presupposition of the 'positive form' (according to Greenberg's 2015, 2018 'gradability-based' semantics), and (iii) in such cases, the variant with *even* is favored (e.g., (19b)), due to *Maximize Presupposition!* (or a revised version of it).

    Our proposal still leaves open a few questions and issues which require further research. The first such issue is that there appear to be various examples where EA-comparatives seem to be felicitous without the presence of *even*. A preliminary stock-taking of such cases appears to indicate that there are at least two categories of such examples, one involving NPIs as in (27) below, and another where no '*than*-phrase' is explicitly present[11] (or when the comparative is used attributively), as in (28) below.

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[9] Adapted from: http://www.leparisien.fr/alpes-maritimes-06/euro-2016-islande-la-france-encore-plus-grand-lagerback-28-06-2016-5920633.php.

[10] https://www.weltwoche.ch/ausgaben/2006-37/artikel/artikel-2006-37-gross-gelassen.html.

[11] A similar observation is made in Morzycki (2012:25).

(27) a. *This campaign is more epic, more gigantic, than **anything** we have **ever** set out to do.*[12]

   b. *As expected, episode nine delivered a struggle more monumental than **anything** in the past season.*[13]

   c. *(…) the laundry pile is more ginormous than **ever**.*[14]

   d. *With cakes going more ginormous and extreme than **ever** before, ever wonder what the world's largest cake looks like?*[15]

(28) a. *People who wear crazy socks are more brilliant, creative and successful.*[16]

   b. *The forest seems to decrease in height in these calcareous rocks, especially the planes, which are more colossal in Indiana.*[17]

   c. *When I hear "advanced" preferences, I think of more miniscule nuances such as espresso or French roast.*[18]

   d. *The palate may want <u>more sumptuous</u> food or, at times, a dish that requires more elaborate preparation.*[19]

Further research is required to ascertain whether our proposal can account for these cases.

Another issue which appears to be problematic for our analysis, is that in 'classic' cases of *Maximize Presupposition!*, the disfavored utterance (which triggers the weaker or no presupposition) is clearly infelicitous (as in (17a) ('#*A sun is shining*')), whereas in our cases (as in e.g., (19a) ('??*Liz is more gorgeous than Hyacinth*'), the degree of infelicity seems to be lower, and varies between informants.[20]

It merits further investigation whether this variance in infelicity can be attributed to difference between the more typical documented cases of *Maximize Presupposition!*, and its role in our proposal. We noted above two such differences with our proposal: (i) an overt form competes with a null form (cf. Amsili and Beyssade, 2006), and not with an overt one, and, (ii) the presupposition triggered by *even* is assumed to be satisfied given the presence of the same presupposition triggered by its prejacent (the EA-comparative), and not due to discourse context, as in the 'classic' instance of *Maximize Presupposition!*. It is, perhaps, possible that this variance, on one or both of these levels, leads to a difference in the degree of infelicity as well.

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[12] https://www.pledgemusic.com/projects/project86.

[13] http://www.dailycal.org/tag/battle-of-the-bastards.

[14] https://40weekscountdown.wordpress.com/2013/12/18.

[15] http://cakelava.blogspot.co.il/2008/12/now-thats-ginormous-cake.html.

[16] We thank an anonymous CSSP reviewer, who pointed out this example: https://www.lifehack.org/531957/people-who-wear-crazy-socks-are-more-brilliant-creative-and-successful.

[17] Google Books search result; quote from: Wied, Maximilian. 1843. *Travels in the Interior of North America*, p. 98. Ackermann and Company.

[18] Google Books search result; quote from: Potts, Kevin, Robert Sable, Nathan Smith, Mary Fredborg, and Cody Lindley. 2007. *Textpattern Solutions: PHP-Based Content Management Made Easy*, p. 77. Friendsof ED.

[19] Google Books search result; quote from: Lombardo, Stanley. 2007. *Abelard and Heloise: The Letters and Other Writings*, p. 231. Hackett Publishing.

[20] Researchers also differ on the felicity status of EA-comparatives. As Portner and Rubinstein (2016) note, while Morzycki (2012) and Paradis (2001) judge EA-comparatives to be questionable, Rett (2008) considers them to be grammatical.

A final question concerns the interaction of extreme adjectives with '*less-than*' comparatives.[21] Consider sentence (29):

(29) *Liz is* ??(*even*) *less gorgeous than Hyacinth*.

It appears, notably, that the effect observed with *even* and '*more-than*' EA-comparatives, is reversed with '*less-than*' comparatives. In (29), the variant without *even* appears to be felicitous, while the version with *even* appears to be odd. It would be interesting to check whether the 'gradability-based' semantics of *even* can be employed to explain this ostensibly opposite effect.

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[21] We thank an anonymous IATL 2017 reviewer for suggesting this line of inquiry.

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