Even, Comparative Likelihood and Gradability*

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Abstract

A popular view of the semantics of *even* takes it to presuppose that its prejacent, p, is less likely than all its contextually relevant focus alternatives, q. In this paper I point out three novel problems for this 'comparative likelihood' view, having to do with (a) cases where *even* p is felicitous though p cannot be considered less likely than q, (b) cases where *even* p is infelicitous though p asymmetrically entails and is less likely than q, and (c) cases where *even* interacts with gradable predicates, indicating that merely requiring p to be higher on the scale than q is not enough to make *even* p felicitous. Instead, both p and q must also yield degrees which are at least as high as the standard of comparison.

In response to these problems I develop a revised scalar presupposition for *even* which resembles the semantics of comparative conditionals, and which requires that for a salient x, retrieved from p, and a salient gradable property G, (i) x's degree on G is higher in all accessible p worlds than in all accessible *q-and-not-p* worlds and that (ii) in the latter worlds this degree is at least as high as the standard on G. I show how this presupposition accounts for both traditional observations concerning *even*, as well as for the novel data and propose that the common presence of 'less likely' inferences with *even* can be indirectly derived from the common use of 'distributional' standards of comparison with gradable properties. A general contribution of the proposal, then, is in attempting to apply tools from research of gradability-based phenomena for a better understanding of scalarity-based phenomena.

1 A Brief Background on the Standard Semantics for *Even*:

The scalar presupposition of *even* is usually taken to be based on comparative likelihood, as in 1:[1]

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

Given (1), $even(C)(p)(w)$ presupposes that p is **less likely** than all its distinct contextually supplied focus alternatives in C, and asserts that p is true in w.[2] An immediate advantage of this kind of entry is in explaining felicity contrasts as in (2) (where p is underlined in the respective C sets). Given the natural assumption that *winning gold* $<_{likely}$ *winning silver* $<_{likely}$ *winning bronze*, p in the felicitous (2a), but not in the infelicitous (2b) is indeed less likely than its focus alternative q in C:

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[1] See e.g. [13],[20], [25], [16], [10], [7] and [4].

[2] For simplicity I ignore here the debated presence of an additive presupposition, in addition to the 'scalar' one, the debate about the universal quantification over alternatives, and the 'scope' / 'ambiguity' debate.

(2) a. *John won silver. Bill even won [gold]$_F$* (*C: {Bill won silver, <u>Bill won gold</u>}*)
b. *John won gold. Bill (#even) won [silver]$_F$* (*C: {Bill won gold, <u>Bill won silver</u>}*)

In addition, the comparative likelihood view has other well-known achievements: It was shown to account for the interaction of overt *even* with various operators like DE operators (e.g. [16]), modals, covert *exh* ([5], [7]), non-monotone operators (e.g. [7]), and questions (e.g. [10]). In addition, it was also extended to account for the behavior of (some) Negative Polarity Items (NPIs), by assuming that their semantic structure involves a **covert** variant of *even*. (e.g. [16], [18], [4]).

Despite these points of strength, however, various theories pointed out problems for this approach. E.g. in (3), *even* is felicitous though given the information about John's non-conformity, his reading a censored book does not seem less likely than reading other, alternative books:

(3) *John is a political non-conformist. He even read [Manufacturing Consent]$_F$ although it has been banned by the censorship committee.*[21]

Such data led some theories to suggest that the scale for *even* should be based on "pragmatic entailment" "better informativeness" [14], "noteworthiness" [11], etc. instead of on (un)likelihood. However, these suggestions were usually not integrated into analyses of *even*. First, they remained intuitive and were not formally developed. Second, it was not clear that such data is really problematic for the "likelihood" view. For example, in (3) we might evaluate likelihood from the point of view of the average person (ignoring the information about John's non-conformity). Historically, then, the comparative likelihood view remained the strongest and most prominent theory of *even* on the market.

In this paper I first consider (in section 2) three novel challenges for the comparative likelihood view, indicating that this view should be more seriously re-considered. In section 3 I offer a revised version of the scalar presupposition of *even*, which relies on contextually supplied gradability, and which makes reference to standards of comparison. Section 4 shows how the revised presupposition can handle the novel data. Section 5 summarizes.

2 Three Challenges for the Comparative Likelihood View of *Even*

2.1 First Challenge: More Cases where *Even p* is Felicitous though *p* is <u>not</u> Less Likely than *q*

The felicity of *even* in (4) ([9]) and in both (5a) and (5b) is harder to explain than in (3) using the comparative likelihood approach:

(4) *<u>Client</u>: I need a strong tool for this work. What materials are these two tools made of?*
<u>Seller</u>: Both are strong enough for what you need. The red one is made of strong aluminum and the blue one is even *[made of steel]$_F$* [9].

(5) *My hat got stuck on a branch. I wonder whether John or Bill can help me fetch it.*
a. (Context (a): the branch is 2.50m high) *Neither John nor Bill can fetch the hat. John is 1.70m. tall. He is definitely too short for that. And Bill is even [shorter]$_F$*
b. (Context (b): the branch is 1.50m high) *Both John and Bill can fetch the hat. John is 1.70m tall. He is definitely tall enough for that. And Bill is even [taller]$_F$.*

Given the general perspective on what working tools are usually made of, p in (4) (*The blue tool is made of steel*) does not seem less likely, but MORE likely than q (*The blue tool is made of strong aluminum*). Nonetheless *even* is perfectly felicitous in (4). Regarding (5), to capture the felicity of *even* in both (5a) and (5b) using the comparative likelihood view one has to assume for (5a) *that Bill is* <u>*shorter*</u> *than 170* $<_{likely}$ *that Bill is 1.70*, and for (5b) the opposite likelihood judgment holds, namely *that Bill is* <u>*taller*</u> *than 1.70* $<_{likely}$ *that Bill is 1.70.* This seems unmotivated, given that the only difference between the two respective contexts concerns the height of the branch.

Our first interim conclusion, then, is that comparative unlikelihood of p is not a necessary condition for the felicity of *even p*.

2.2 Second Challenge: *Even p* with Entailed Alternatives [9]

A prediction of the comparative likelihood view ([16], [4], [7]) is that *even p* will be systematically felicitous whenever p asymmetrically entails q (unless p and q are contextually equivalent and hence equi-probable). This is because likelihood respects entailment: if p asymmetrically entails q, then unless they are contextually equivalent, p is less likely than q (true in fewer situations). But this prediction is not borne out. First, in many cases the felicity of *even p* with entailed alternatives varies. In (6a), for example, both giving birth to a boy and giving birth to a girl entail and are less likely than giving birth. Similarly, in (6b) both drinking whisky and drinking beer entail and are less likely than drinking alcohol. Nonetheless, in the indicated contexts case only one of them is fine:

(6) a. Context: Any princess who gives birth can stay in the palace. If she gives birth to a boy she also becomes a queen (i.e. on average 50% of those who give birth get to be queens):
A: *What's happening with Princess Jane?*
B: *She gave birth. She (even) gave birth to [a boy]$_F$ / #[a girl]$_F$* ($\rightarrow$ **varied felicity**)

b. Context: We were at a party where only two alcoholic drinks (beer and whisky) were served.
A: *John drank alcohol in the party. He better not drive now*
B: *Yea. He even drank [whisky]$_F$/#[beer]$_F$* ($\rightarrow$ **varied felicity**)

Moreover, with an entailed disjunction *(p or q), even* is <u>systematically infelicitous</u>, as can be seen in (7):

(7) Context: We were at a party where only two alcoholic drinks (beer and whisky) were served.
A: *John drank beer or whisky in the party. He better not drive now*
B: *Yea. He even drank #[whisky]$_F$ / #[beer]$_F$* ($\rightarrow$ **systematic infelicity**)

Our second interim conclusion, then, is that Comparative likelihood is not only not a necessary condition, but also not a sufficient condition for the felicity of *even p*.

2.3 Third Challenge: *Even* and Standards of Comparisons

Consider the felicity contrasts in (8). Crucially, while seller (a)'s utterance is felicitous given the indicated context and assuming a scale of physical strength, seller (b)'s and seller (c)'s utterances are not:

(8) (Context: plastic–<–aluminum–<–**standard**–<–iron–<–steel–– → *Physical strength*)
Client: I need a strong tool. What about the red and blue tools over there?

a. *Seller (a): Well, the red one is made of iron and the blue one is (even) made of [steel]*$_F$

b. *Seller(b): Well, the red one is made of plastic and the blue one is (??even) made of [aluminum]*$_F$

c. *Seller (c): Well, the red one is made of plastic and the blue one is (??even) made of [steel]*$_F$

I take these felicity contrasts to indicate that for *even* p to be felicitous, comparison between p and its alternatives q is not enough. More specifically, it is not enough that we end up with a higher degree with p than with q (on the relevant scale). Instead, with both p and q we should also end up with degrees which are at least as high as the **standard** on the scale. This intuition is supported by the similar felicity contrasts in (9):

(9) (John and Bill want to join our basketball team, where the standard height is 1.90m)
A: *Well, what about John and Bill? Should we take them?*

a. Agent (a): *Well, John is 1.95m tall. Bill is (even) 2.10. (We can take both).*

b. Agent (b): *Well, John is 1.65m tall. Bill is (??even) 1.75. (We shouldn't take them).*

c. Agent (c): *Well, John is 1.75m tall. Bill is (??even) 1.95. (We can take Bill).*

Further support for this intuition comes from another novel observation concerning a surprising interaction between *even* and comparatives: Unlike what usually happens,[3] when *even* associates with comparatives (based on relative adjectives) we get entailment to their positive forms, as seen in (10):

(10) a. *The blue tool is (even) [stronger than the red tool]*$_F$.
<u>Without *even*</u>: No inference: *The blue tool is strong / The red tool is strong (both can be weak)*
<u>With *even*</u>: Entailment: *The blue tool is strong / The red tool is strong (#both can be weak)*

b. *Bill is (even) [taller than John]*$_F$.
<u>Without *even*</u>: No inference: *Bill is tall / John is tall (...both can be short)*
<u>With *even*</u>: Entailment: *Bill is tall / John is tall (#...both can be short)*

Thus, whereas the data in section 2.1 and 2.2 seems to challenge the 'likelihood' component in the 'comparative likelihood' approach to *even*, the data in (8)-(10) seems problematic for the 'comparative' component in this approach, and in fact for any 'comparative' approach to *even*, requiring that p is merely 'higher' than q on a scale. Instead, we can see that both p and q must also 'lead to' (in a sense to be made precise below) degrees which are at least as high as the standard on the relevant scale.

3 A Revised Scalar Presupposition for Overt *Even*

Given the challenges considered above for the comparative likelihood approach, let me try to develop a revised presupposition for *even*. This presupposition is based on intuitive ideas in [22],

[3] E.g. [15].

according to which *even* ranks the alternatives by "correlating them with a graded property which is salient in the context" (p. 11).

[22] suggests that "alternatives $p_1 ... p_n$ are correlated with some graded property q...(*when*) ...p_1 is the strongest argument for q and p_n the weakest" (p. 13).[4] This 'stronger argument' component by itself (in which [22] follows [14]) does not seem to work for *even*. Trying to make this component more precise, one can require that *even p* presupposes that p is a stronger argument for some salient goal H than q, and more formally that the probability of H given p is higher than its probability given q (cf. [2], [17], [24], [26]). But crucially, *even* is also felicitous when p and q are equally strong arguments for H, and more formally where the conditional probability of H given p and given q is identical. For example, *even* is perfectly felicitous in (5b) above, though the conditional probability of H (*Bill is suitable to get your hat*) is 1, both given q (Bill is 1.70 m tall and can definitely get the hat), and p (Bill is taller than 1.70).

In contrast, [22]'s intuitive 'correlation with a graded property' component seems more promising. To make this intuition more precise / workable, I will follow the spirit of [3]'s analysis of **comparative correlatives** like *The better Otto is prepared, the better his talk is* as **comparative conditionals**, as paraphrased in (11):

(11) *In all accessible worlds w1, w2 where Otto's maximal degree of preparation in w2* $>$ *his maximal degree of preparation in w1, his degree of success in w2* $>$ *his degree of success in w1.*

In light of this line of thought, I propose that *even* $(C)(p)(w)$ is defined iff, given an accommodated salient gradable property G, determined by a salient goal in the discourse and / or the QUD (e.g. *How successful Bill is? How strong / suitable for this work this tool is?*) and an entity x, denoted by some non-focused / contrastive topic constituent in p (e.g. *Bill* in (2a) or *this tool* in (4)), the following holds:

(12) $\forall q \in C \; q \neq p \rightarrow \forall w1, w2 \; [w1Rw \wedge w2Rw \wedge w2 \in p \wedge w1 \in [q \wedge \neg p]] \rightarrow [\mathit{the\ max}\,(\lambda d2.G(d2)(x)(w2)) > \mathit{the\ max}\,(\lambda d1.G(d1)(x)(w1)) \wedge \mathit{the\ max}(\lambda d1.G(d1)(x)(w1)) \geq \mathbf{stand}_G]$

In prose, *Even* $(C)(p)(w)$ is defined iff for all distinct alternatives q in C the following two conjuncts are met: (a) x is more G in all accessible p worlds than in all accessible *q-and-not-p* worlds (the worlds where the exhaustified alternative to p holds), and (b) in the *q-and-not-p* worlds x is considered to have G (i.e. x's degree of G is at least as high the standard of G).

The revised presupposition, then, differs from the 'comparative likelihood' presupposition of *even* in three main features, seen in the representation in (13). First, unlike the latter presupposition, the revised one does not directly compare propositions p and q, but rather entities x in worlds where these propositions hold. Second, the dimension of the scale is not likelihood, but a variable dimension, based on the accommodated salient property G. Finally, the relationship between the measured entities is not merely comparative. Instead, their degree is also compared to the standard of comparison:

(13) <u>A schematic comparison between the two presuppositions:</u>

a. **The 'comparative likelihood' presupposition:**
$- - - - - - - - q - -- < - - -p - - - - - - - - - \rightarrow$ unlikelihood

b. **The revised presupposition:** $q \wedge \neg p$ ... p
$\downarrow$ ... $\downarrow$
$- - - - - - - - -$ **stand** $- - - -x's\ degree - -- < - - -x's\ degree - - \rightarrow G$

[4] Cf. [8] for a similar suggestion, using 'pragmatic strength'.

4 Illustration and Accounting for the Data

4.1 Basic Felicity Differences

Let us start with the felicitous (2a). Assuming x=Bill and G=successful we get the presupposition in (14):

(14) $\forall w1, w2\ [w1Rw \wedge w2Rw \wedge w2 \in \textit{Bill got gold} \wedge w1 \in [\textit{Bill got silver} \wedge \neg \textit{Bill got gold}]] \rightarrow [\textit{the max}\,(\lambda d2.SUCCESSFUL(d2)(Bill)(w2) > \textit{the max}\,(\lambda d1. SUCCESSFUL(d1)(Bill)(w1)) \wedge \textit{the max}\,(\lambda d1.SUCCESSFUL(d1)(Bill)(w1)) \geq \mathbf{STAND}_{SUCCESSFUL}]$

In prose: (a) Bill is more successful in the accessible worlds where he got gold, than in those where he got silver-and-not-gold, and (b) his degree of success in the accessible worlds where he won silver-and-not-gold is at least as high as the standard (i.e. he is still considered successful). Since both conjuncts are easily met, the presupposition is correctly predicted to be met as well, so the felicity of (2a) follows. In contrast, assuming again **x=Bill, G=successful** as above, the first conjunct in the presupposition of (2b), requiring that Bill is more successful in the accessible worlds where he got silver, than in those where he got gold-and-not-silver, is not met, thus correctly predicting its infelicity:

(15) $\forall w1, w2\,[w1Rw0 \wedge w2Rw0 \wedge w2 \in \textit{Bill got silver} \wedge w1 \in [\textit{Bill got gold} \wedge \neg \textit{Bill got silver}]] \rightarrow [\textit{the max}\,d2\,(\lambda d2.SUCCESSFUL(d2)(Bill)(w2) > \textit{the max}\,d1(\lambda d1.SUCCESSFUL(d1)(Bill)(w1)) \wedge \textit{the max}\,d1\,(\lambda d1.SUCCESSFUL(d1)(Bill)(w1)) \geq \mathbf{STAND}_{SUCCESSFUL}]$

However, one can wonder whether accommodating any G is not too flexible. For example, wouldn't accommodating G with a reversed scale, measuring degrees of UNscuccessfulness, wrongly predict the infelicitous (2b) to be felicitous? The answer seems negative, as can be seen in(16):

(16) $\forall w1, w2\ [w1Rw0 \wedge w2Rw0 \wedge w2 \in \textit{Bill got silver} \wedge w1 \in [\textit{Bill got gold} \wedge \neg \textit{Bill got silver}]] \rightarrow [\textit{the max}\,d2\,(\lambda d2.UNSUCCESSFUL(d2)(Bill)(w2)) > \textit{the max}\,d1(\lambda d1.UNSUCCESSFUL(d1)(Bill)(w1)) \wedge \textit{the max}\,d1\,(\lambda d1.UNBSUCCESSFUL(d1)(Bill)(w1)) \geq \mathbf{STAND}_{SUCCESSFUL}]$

While in this case the first conjunct is met (Bill is indeed more unsuccessful in the accessible worlds where he got silver, than in those where he got gold-and-not-silver), the second one, requiring that Bill's degree of being 'unsuccessful' in the accessible worlds where he got gold-and-not-silver is at least as high as the standard, fails. This is because winning gold is being maximally successful. The presupposition for (2b), then, fails both with a non-reversed and a reversed scale, since in both cases one of the conjuncts is false.

Moreover, we can now correctly predict that unlike (2b), (17) will be better:

(17) *I think Bill will win silver, or even [bronze]$_F$* (i.e. he is not that good)

Notice that the felicity contrast between (2a) and (17) pose another problem for the likelihood view, since winning bronze is more likely than winning silver, just as winning silver is more likely than winning gold. Hence, both sentences are predicted to be equally infelicitous. In contrast, while, as seen above, the revised presupposition fails for (2a) it can be met for (17), accommodating a new standard of unsuccessfulness where getting anything below gold is considered disappointing / unsuccessful.

Finally, the revised presupposition can also account for the felicity differences in e.g. (8) above. Assume that for (8a)-(8c) we accommodate x=*the blue tool*, G=**physically strong**, then in all these cases the blue tool is considered stronger in the p worlds than in the *q-and-not-p* worlds. However, only for (8a) the blue tool's degree of strength is at least as high as the standard in the *q-and-not-p* worlds (and of course also in the p worlds).

4.2 *Even* with Entailed Alternatives (i.e. alternatives which are entailed by *p*)

Remember that the 'comparative likelihood' approach predicts **systematic felicity** of *even p* with asymmetrically entailed alternatives.[5] In reality, though, we saw above that this prediction fails in two cases: First, with some entailed alternatives, as in (6), we actually get **varied felicity**. Second, with entailed disjunctive alternatives, as in (7), we get **systematic infelicity**.

The revised presupposition can rather easily account for cases of **varied felicity**. Assume, for example, that for (6a) above we accommodate x=Jane, G=***important***. Then the sentence is felicitous with 'a boy' since given the indicated context, Jane's degree of importance is **higher** in the accessible worlds where she gave birth to a boy than in those where she gave birth to a child who is not a boy (i.e. to a girl). In contrast, the sentence is infelicitous with 'a girl' since Jane's degree of importance is **LOWER** in the worlds where she gave birth to a girl than in those where she gave birth to a child who is not a girl (i.e. to a boy).

However, with the systematically infelicitous cases (with disjunctive alternatives) there seems to be a problem. Compare again (6b), with varied felicity and (7) with systematic infelicity. There is no problem explaining why the version with 'beer' is bad for both cases. But on the surface the version with 'whisky' should be felicitous for both cases. For example, if we assume that in both cases with 'whisky' we accommodate *x=Bill,* ***G=unsuitable for driving***, then (6a) will presuppose that John's degree of unsuitability for driving in the accessible whisky worlds is higher than in the alcohol-but-not-whisky worlds (i.e. than in the beer worlds), and in (7) we will presuppose that John's degree of unsuitability for driving in the accessible whisky worlds is higher than in the beer-or-whisky- but-not-whisky worlds (i.e. again than in the beer worlds). More intuitively, in both cases it seems that the presupposition ends up as requiring a higher degree of unsuitability for driving in the accessible worlds where John drank whisky than in those in which he only drank beer, and in both cases this presupposition is supposed to be equally met. What is then the problem with this presupposition in (7)? What is so special about disjunctive alternatives in this case?

The answer seems to lie in a problem, independent of *even*, of quantifying over accessible worlds where John drank beer or whisky and not whisky, or, more generally over worlds where $[p \text{ } or \text{ } q] \wedge \neg p$ hold. That quantifying over such worlds is problematic is both empirically and theoretically supported. Empirically, notice that unlike conditionals like (18a), ones like (18b) (with no *even*) are odd:

(18) a. *If John drank alcohol but not whisky, the situation is not hopeless*
b. *#If John drank beer or whisky but not whisky, the situation is not hopeless.*

Theoretically, conditionals (e.g. counterfactuals) with disjunctive antecedents like: *If p or q were true, then r*, are known to be interpreted as conjunctions of conditionals like *If p were true then r, and if q were true then r.* [1] interprets such equivalences to be due to the alternative-based (Hamblin style) semantics of *or*, according to which *p or q* introduces a set of alternatives $\{p,q\}$, in which each disjunct is equally 'visible' in the interpretive process. This is done by

[5] Again, unless these alternatives are contextually equivalent to p.

using pointwise functional application, where functions are applied to each input in the set of alternatives.

Turning back to *even*, the crucial point to note is that the revised presupposition developed above is conditional in nature. Specifically, when the alternative to p is q, it has the schematic form: $\forall w1, \forall w2[w2 \in p \ \wedge \ w1 \in [q \wedge \neg p]] \rightarrow [\ldots\ldots]$. Now, when the alternative to p is a disjunction q *or* p (instead of a simple q), the quantification over worlds w1 gives us the substructure $\forall w1[w1 \in [[q \ or \ p] \ \wedge \ \neg p]] \rightarrow [\ldots\ldots]$. But given the behavior of disjunctive antecedents, this ends up as the conjunction of conditionals $[\forall w1[w1 \in [q \wedge \neg p]] \rightarrow [\ldots\ldots]] \wedge [\forall w1[\ldots w1 \in [p \wedge \neg p]] \rightarrow [\ldots\ldots]]$. For example, quantifying over accessible worlds where *John drank beer or whisky but not whisky* will result in quantifying over accessible worlds where *John drank beer and not whisky* and accessible worlds where *John drank whisky and not whisky.* While the first set of accessible worlds can be constructed with no problem, the second is problematic, as we actually end up with an empty set of worlds, and hence with vacuous quantification over worlds in the presupposition. This is what seems to lead to infelicity.

The systematic infelicity of *even* with disjunctive alternatives, then, can be derived from the combination of the 'conditional'-like nature of the revised presupposition of *even* and the independently motivated behavior of disjunctions in the antecedent of conditionals.

4.3 Why do Sentences with *Even* so Often (but not always) Lead to a 'Less Likely' Inference?

We saw before that the 'less likely' inference is not always present with *even* ("Comparative unlikelihood is not a necessary condition for the felicity of *even p*"). However, such inferences are still very common with *even.* In (19), for example, we naturally infer that getting accepted to S-U is less likely than to R-U:

(19) *John got accepted to R-University. He even got accepted to [S-University]$_F$*

Using the revised presupposition, the presence of this inference can be derived in two ways. One, direct, way is to accommodate a gradable property G which measures degrees to which x (John in this case) is surprising us. But there is an indirect, and perhaps more promising way, namely to rely on the fact that in many cases[6] standards of comparison are distributional, i.e. determined by some central point, e.g. the median / average point in the comparison class.

Assume for example, that we accommodate **G=successful** for (19), so its presupposition is as in (20):

(20) $\forall w1, w2[w1Rw0 \wedge w2Rw0 \wedge w2 \in John\ got\ accepted\ to\ S - university \wedge w1 \in [John\ got\ accepted\ to\ R - university \wedge \neg John\ got\ accepted\ to\ S - university]] \rightarrow [the\ max(\lambda d2.SUCCESSFUL(d2)(John)(w2)) > the\ max(\lambda d1.SUCCESSFUL(d1)(John)(w1)) \wedge the\ max(\lambda d1.SUCCESSFUL(d1)(John)(w1)) \geq \mathbf{STAND}_{SUCCESSFUL}]$

Suppose further that the standard of success is distributional, i.e. determined by the median point. Then the farther your degree of success is from the standard, the farther it is from the median. Intuitively, in this case in order for the presupposition to be met, less people are accepted to S-U than to R-U. Hence John's getting accepted to S-U is understood as less likely than his getting accepted to R-U.

But crucially, standards are not always 'distributional'[7]. In particular, standards can be 'functional', i.e. determined by the requirements of a given situation. Two examples of using such standards are (21) and (22), from [12] and [23], respectively:

[6] At least with open scale adjectives

[7] Not even with open scale adjectives

(21) *Let's buy this book for $7? No, that's expensive. We only have $6.*

(22) *Three of the boards were cut to exactly the right length, but the fourth one was long*

Our prediction, then, is that in contexts where functional standards are being used, and when they do not correlate with distributional standards, the revised presupposition of *even* can be met with no necessary 'less likely' inference. This prediction seems to be borne out. For example, in (4) above, the standard of physical strength is determined by the requirements of 'this work', and does not correspond to the median degree in the comparison class (of tools). Hence, being farther away from this standard does NOT indicate being father away from the median, so *even* is perfectly felicitous here although there is no implication that 'being made of steel' is less likely than 'being made of strong aluminum'. Similar considerations hold for (5a)-(5b), where the standard is determined by the (un)suitability to fetch the hat.

If this suggestion is on the right track, the question is why 'less likely' inferences are so common / found in default contexts with *even*. A potential answer to consider is that this is because distributional standards are so common / found in default contexts with gradable properties. To quote [12], "Evidently, the functional standard is less accessible for the positive form of gradable adjectives, as it seems to require special contexts; the distributional standard is far more salient for it." ([12], p.(6)).

5 Summary

In this paper we examined the 'comparative likelihood' presupposition for *even* and pointed out three novel types of data which pose challenges for both the 'comparative' and the 'likelihood' components in it. We then developed a revised presupposition (inspired by previous intuitions in [22]), which accounts for the novel data, as well as for traditional felicity differences, explains why 'less likely' inferences often (but not always) arise with *even* (especially in default contexts), and more generally - applies tools from research on gradability to research on scalar operators.

Notice, though, that the revised presupposition relies on a limited set of data, namely overt *even* in matrix and UE environments. In future research I intend to examine the application of this presupposition to the behavior for overt *even* in (Strawsson) DE and non-monotone environments, to covert *even* with (some) NPIs, and for other scalar operators, e.g. some of the readings of (overt and covert) exclusives like *only* and *merely* in English (cf. [6]), or *rak* and *stam* in Hebrew (cf. [19]).

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