# *Even* as a scalar additive particle

Some debates regarding the traditional claims regarding the additivity and the scalarity of *even*

ESSLLI course
Additivity, scalarity and the interactions between them:
Beyond *also* and *even*

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## Let's remember the traditional entry of *even*:

- Horn (1969) Kartunnen & Peters 1979, Rooth 1985, 1992:

$||even||^{g,c} = \lambda C.\ \lambda p.\lambda w:\ \exists q\ q \neq p \wedge q(w) = 1 \wedge \forall q \in C\ q \neq p \rightarrow p >_{unlikely} q.\ p(w) = 1$

In prose: *even (C)(p)(w):*

- Assertion: *p* is true in w
- An additive presupposition (=*also*): At least one distinct alternative in C is true in w
- A scalar presupposition: *p* is less likely than any distinct alternative in C

## This entry seems to capture well the contribution of *even* in many cases:

- *Mary even invited [John]$_F$ to the party*

*C = {Mary invited John, Mary invited Bill, Mary invited Susan……}*

- Assertion: *Mary invited John to the party* is true in w
- Additive presupposition: Mary invited at least one individual distinct from John to the party
- Scalar presupposition: "Mary invited John" is the least likely alternative
  - = John is the least likely individual that Mary invited to the party

## Moreover, this scalar presupposition can also easily explain felicity contrasts with *even*:

(1) I think that Bill is going to win silver, and perhaps (even) [gold]$_F$.

C for (1): { …*Bill will win silver, Bill will win gold*}

- The scalar presupposition is met: *p* is less likely than *q*

(2) I think that Bill is going to win gold, and perhaps (#even) [silver]$_F$.

- C for (2): { ….*Bill will win gold, Bill will win silver*}
- The scalar presupposition fails: *p* is more likely than *q*

# But….there are also debates regarding various components in this entry of *even*

- We will look at two main questions related to this entry:
  - Issue # 1: Additivity - Does *even* really trigger an additive presupposition? Is it as additive as *also*?
    - Spoiler: No!
  - Issue # 2: Scalarity - Is the scalar presupposition of *even* really based on comparative unlikelihood?
    - Spoiler: No!

# Roadmap:

- First issue: Additivity
- We will look at several challenges for the additive presupposition of English *even*
  - We will also look at some *even*-like particles cross linguistically and discuss which of them is additive and which is not
- Second issue: Scalarity:
- We will then turn to several challenges for the scalar presupposition of *even* based on 'comparative Unlikelihood' :
  - Challenge for both the 'unlikelihood' and well as for the 'comparative' components of this presupposition
- Handling the second issue: We will look at a degree-based characterization of the scalar presupposition (Greenberg 2015, 2018)
  - And we will show how it can handle the challenges, and how it can explain why 'unlikelihood' inferences are so often found with *even*

# First issue: *Even* as a scalar additive

- Challenge # 1: *Also* is bad with 'incompatible alternatives' - where the additive ps. cannot be met
- But crucially – *even* is felicitous in such cases:

(1) *John drinks only tea. Bill **even** / **#also** drinks only [water]$_F$* (cf. von Stechow 1991)
C: {*Bill drinks only tea, Bill drinks only water*}

(2) A: I heard that Claire is doing great. She is an assistant professor, right?
B: She's **even** / **#also** an [associate]F professor! (cf. Rullmann 1997: 45)
C : {*Claire is an assistant professor, Claire is an associate professor*}

# First issue: *Even* as a scalar additive

Challenge # 2: Unlike *also*, *even* does not always trigger an additive inference:

*(1)* Client: I need a strong tool for this work. What about these two tools?
Seller:: *Both tools are strong. The one on the right is made of strong aluminum, and the one on the left is **even** / **also** made of [steel]F.* (Greenberg 2016)
*(2)* *Bill and John read difficult books. Bill read book B. John **even** / **also** read [book A]F.* (Greenberg 2016)

➢ *even* is felicitous although there is no inference that the second tool is made of any other material besides steel, or that John read any other book besides book A.
➢ In contrast, *also* must give rise to such inferences

## First issue: *Even* as a scalar additive

- Challenge # 3: Unlike *also,* even is felicitous with entailed alternatives (cf. Greenberg 2016):

(1) A: Did John read some of the books?
B: He even / #also read [all]F of the books. (cf. Wagner 2014)
(2) A: Did you get a medal in the competition?
B: Sure. I even / #also got the [gold]F medal.
(3) The queen gave birth to a child. She even / #also gave birth to [a boy]F

## First issue: *Even* as a scalar additive

- In all these cases the alternative to *p* is entailed by it
  - E.g. The queen gave birth to a child. She even / #also gave birth to [a boy]F
    C: {The queen gave birth to a child, The queen gave birth to a boy}

- We can see that *also* is infelicitous with entailed alternatives.
  - Why? Perhaps because then the additive presupposition is trivially met

➢ If *even* necessarily triggered an additive presupposition as well, we would wrongly expect it to be as infelicitous

## Taking stock: Is English *even* really a scalar additive?

- **It seems that the answer is negative**:

- Unlike *also, even* is felicitous in various cases where the additive presupposition fails (e.g. with *only* and incompatible alternatives)

- Unlike *also* it does not necessarily give rise to an additive inference

- And unlike *also*, *even* is felicitous when the additive presupposition would be trivially met (e.g. with 'entailed' alternatives)

## What happens with the additivity of *even* cross linguistically?

- In English there is basically only one *even* (besides the NPI *so much as*)

- But – many other languages have **families** of *even*-like particles!
  - Hindi: *tak, bhii*
  - Spanish: *hasta, incluso*
  - German: *selbst, sogar, uberhaupt*
  - Russian: *daze, voobsce,*
  - Hebrew: *afilu, af, bixlal, ve-lu*

- These *even*-like particles differ in various ways / along various parameters
- One of the parameters distinguishing them is additivity:

## An example: *Even*-like particles in Hebrew and the additivity parameter (Greenberg & Orenstein 2018)

- *Af* is necessarily additive
- *bixlal* is exclusive
- *afilu* is unspecified for additivity

- *Af* is necessarily additive: Unlike *afilu* and *bixlal* it is bad with mutually incompatible alternatives (cf. Russian *daze* - Miashkur 2018):

Context: Taking about Danny's and Yosi's great success:

*dani hu marce baxir ve-yosi hu **afilu / bixlal / ??af** [professor xaver]$_F$*

*Danny is lecturer senior and Yosi is afilu / bixlal / ??af professor associate*

*"Danny is an assistant professor. And Yossi is even [an associate professor]$_F$"*

## *Even*-like particles in Hebrew and the additivity parameter

- *bixlal* is exclusive Unlike *afilu* and *af* it is odd when we end up with an additivity inference:

(1) *Context: Talking about why Danny shouldn't drive*
*dani shata bira. ve-hu **afilu /af /#bixlal** shata [whisky]$_F$*
*Danny drank beer. And he afilu /af /#bixlal drank [whisky]$_F$*
*"Danny drank beer.* And he *even drank [whisky]$_F$"*

- Indeed, *bixlal* is better in (2), where the additivity inference disappears:

(2) Context: Talking about why Danny and Yosi shouldn't drive
*dani shata bira. Ve-yosi **afilu /af /bixlal** shata [whisky]$_F$*
*Danny drank beer. And Yosi afilu /af /#bixlal drank [whisky]$_F$*
*"Danny drank beer. And Yosi even drank [whisky]$_F$"*

## *Even*-like particles in Hebrew and the additivity parameter

- So *bixlal* is an exclusive *even*-like particle! (Greenberg 2018)
  - Cf. Japanese *deka-demo* (Nakanishi 2006)
  - Cf. Russian *voobsce* (Miashkur 2018)

- In contrast *Afilu* is unspecified:
  - It can appear with incompatible alternatives,
  - as well as in cases where there is an additive inference.
    - English *even* seems to be the same.

## Taking stock: The additivity of *even*

- English *even* does **not** seem to be systematically additive (unlike *also*)

- Moreover - cross linguistically – additivity seems to be a parameter along which *even*-like particles vary
  - Some are necessarily additive, some are 'exclusive' in nature, and some are unspecified.

- **General conclusion: Additivity is not inherent to *even*-like particles**

➢ **We will see later on that this is one of the important differences between the two scalar additives: *even* and *noch* / od / *more*$_{add}$**

## Questions? / Comments?

## Second Issue: Is the scalar presupposition of *even* really based on comparative (un)likelihood?

- A reminder: The traditional scalar presupposition: *p* is the most unlikely (=least likely) alternative in C:

  $\forall q \in C\ q \neq p \rightarrow p >_{unlikely} q$

- But there are at least three challenges for this claim:

  Challenge #1: Comparative **unlikelihood** does not seem to be a necessary condition for the felicity of *even p*

  Challenge # 2:Contextual factors which affect the felicity of *even p* do not necessarily have to do with **(un)likelihood**

  Challenge #3: The '**comparative**' requirement is not enough: *Even* also makes an evaluative (= 'above the standard') requirement

## Challenge # 1: Comparative unlikelihood is **not a necessary** condition for the felicity of *even p*

(1) John is a political non-conformist. He **even** read [Manufacturing Consent]$_F$ although it has been banned by the censorship committee. (Rullmann 1997:55)

(2) It is more for aesthetic reasons that leather seats in automobiles are mainly colored dark grey, indeed mostly **even** [black]F (Gast and van der Auwera 2011: 6)

(3) Seller to client: Both tools are strong. The one on the right is made of strong aluminum, and the one of the left is **even** made of [steel]$_F$.(Greenberg 2016:6)

- The scales in these cases do not seem to be based on unlikelihood

## What is the relevant scale for *even*, then?

- Various alternative suggestions in the literature:

❑ '**informativity**' (Kay 1990)

❑ '**noteworthiness**' (Herburger 2000)

❑ **'pragmatic strength'** (Gast and van der Auwera 2011)

❑ **'correlation with a graded property'** (Rullmann 2007)

- But these were not defined in a precise / formal way
  - How can we make the characterization of the scale more precise?
    - Let's look at some more clues first!

## Challenge # 2: Contextual factors which affect the felicity of *even p* do not necessarily have to do with (un)likelihood

- Suppose my hat got stuck on a branch and I want someone to fetch it:

(1) (*Scenario (a):* The branch is 1.50m high). Both John and Bill can fetch the hat. John is 1.60m tall. He is definitely tall enough for that. And Bill is even $[170]_F$

(2) *Scenario (b):* The branch is 2.50m high). Neither John nor Bill can fetch the hat. John is 1.70m tall. He is definitely not tall enough for that. And Bill is even $[1.60m]_F$ .

- Importantly, *even* is felicitous in both cases,
- But it is odd to make two opposite likelihood judgements based on the height of the branch!

➢ **Instead – what seems to be compared here is degrees of suitability (in (1)), or unsuitability (in (2)) for fetching the hat**

## Challenge # 2: Contextual factors which affect the felicity of *even p* do not necessarily have to do with (un)likelihood

(1) Context (Middle Ages): Any princess who gives birth can stay in the palace. If she gives birth to a girl she becomes a queen (i.e. an average 50% of those give birth become queens).

Princess Jane gave birth! She (even) gave birth to $[a\ girl]_F$ / $\#[a\ boy]_F$

- The felicity contrast is not predicted by the likelihood-based view:
- If C is {She gave birth, she gave birth to a girl} – then *She even gave birth to a boy* is wrongly predicted to be as felicitous as *She even gave birth to a girl*
- If C is {She gave birth to a boy, she gave birth to a girl} then *even* is wrongly predicted to be infelicitous in both cases

- **Instead – the scale seems to be based on something else, e.g. happiness / importance of princess Jane.**

## Challenge # 2: Contextual factors which affect the felicity of *even p* do not necessarily have to do with (un)likelihood

(1) Context: A – from USA - has bought a new factory near Jerusalem.

A: I need someone in Israel to take care of the new factory.

B: John lives in Israel. He even lives in $[Jerusalem]_F$ / #Ako. (Ako (=Acre) is a small town in the north of Israel.)

(2) Context: We were at a party where two soft drinks (cola and lemonade) and two alcoholic drinks (beer and whisky) were served.

A: John drank alcohol at the party. He better not drive now.

B: Yes. He even drank $[whisky]_F$ / $\#[beer]_F$.

- Again – what contrasts here do not seem to do with unlikelihood
- **Instead, they seem to do with suitability for the job / unsuitability for driving**

## Taking stock:

- In all the cases we looked at, what affects the felicity vs. infelicity of *even* does NOT seem to be a difference in unlikelihood of *p* relative to its alternatives
- Rather, the relevant scales seem to be based on:
  - suitability / unsuitability for fetching the hat
  - happiness / importance of princess Jane
  - Closeness to the new factory,
  - Unsuitability for driving
  - Etc.

- **More generally – the relevant scale for *even* is (many times) based on a gradable property which is supplied by the context**

Questions? / Comments?

Challenge # 3: The scalar presupposition of *even* is not based only on a comparison of *p* to its alternatives

- So far we looked at challenges to the 'unlikelihood' part of this view
- But in fact, there are also challenges to the 'comparative' component
- In particular: The 'comparative' requirement in the scalar presupposition of *even* is not enough:
- ***Even* also makes an 'evaluative' requirement**

## What do we mean by 'evaluative'?

- The term 'evaluative' is from the literature on constructions involving gradable adjectives (see e.g. Rett 2008, 2015)
- Gradable adjectives are assumed to associate with scales: Ordered sets of degrees – with dimensions (e.g. height, cost), and ordering (e.g. *tallness* vs. *shortness*)
- Gradable adjectives - denote relations between individuals and degrees on these scales
- And degree modifiers give information about this degree

(1) *John is taller than Mary –*
= John's (maximal) degree on the tallness scale is higher than Mary's

(2) John is the tallest boy
= John's (maximal) degree on the tallness scale is higher than that of all boys

(3) John is 1.78m tall = John's degree on the tallness scale is 1.78m

## What do we mean by 'evaluative'?

- But then… what does a gradable adjective in the 'positive' form tell us about the degree of tallness?

John is tall

- The claim is that this sentence has an 'evaluative' contribution
  - It asserts that John's degree on the talleness scale is above the norm / the standard
  - And the standard is often supplied by context:
    - This immediately explains why *John is tall* can be considered true in some contexts (our family) and false in others (the basketball team)
- Notice - in many theories this contribution is attributed to a covert degree modifier: *pos*
- *John is pos tall*

Now we can go back to *even:* It seems to impose not only a 'comparative', but also an 'evaluative' requirement

- Context: John is an accountant, working in a standard western government office, where workers must wear official-like shirts, suits and ties:

  a. John wore his usual white shirt to work yesterday, and he (??even) wore [a funny old hat]$_F$.

  b. John wore a colorful T-shirt to work yesterday, and he (even) wore [a funny old hat]$_F$.

- Importantly - in both (a) and (b) *p* is less likely / more surprising than *q*.
- But this is not enough to make *even* felicitous!
- What makes (b) better than (a) is the fact that *p* and *q* are both also **Un**ikely / Surprising (= exceed the norm for unlikelihood / surprise)
- When this requirement is not met (=a)- *even* is odd.

# *Even* also makes an 'evaluative' requirement with other scales:

Context: John and Bill want to join our basketball team, where the standard for ` player height is 1.90m.

Coach: So – what about John and Bill?

Agent (a): John is tall. He is 1.95m. And Bill is (**even**) [2.10]$_F$. (we should get both)

Agent (b): John is short. He is 1.75m. And Bill is (#**even**) [1.95]$_F$. (we should only get Bill)

Agent (c): John is short. He is 1.70m. And Bill is (#**even**)[1.75]$_F$. (we should get neither

- In all cases Bill is taller than John
- But *even* only good in (a) - where both John and Bill are tall
  - I.e. where both their degrees on the tallness scale exceeds the norm / standard

# *Even* also makes an 'evaluative' requirement with other scales:

We can see the same story with a scale of 'lateness':

Context: The meeting started at 8 p.m. Did John and Bill arrive on time?

a. Well, John arrived at 8.15 and Bill (even) arrived at [8.45]$_F$. (both were late)
b. Well, John arrived at 7.00 and Bill (#even) arrived at [7.30]$_F$. (both were early)
c. Well, John arrived at 7.45 and Bill (#even) arrived at [8.15]$_F$. (John was early and Bill was late)

- Conclusion: The scalar presupposition of *even* cannot be just 'comparative' in nature
- It makes an 'evaluative' requirement as well: if the scale is 'lateness' – both *p* and its alternatives must indicate a degree of lateness which is higher than the standard.

# Taking stock: challenges for the 'comparative unlikelihood' semantics of *even*

- We saw before that the scale for *even* does not seem to be based on unlikelihood
  - Instead – it is based on a scale associated with a contextually supplied gradable property
- We also saw that the scalar presupposition of *even* is not just comparative
  - It is not enough that *p* just indicates a higher degree than *q* on the contextually supplied scale
- Rather, *even* also makes an 'evaluative' requirement
  - both *p* and *q* are required to indicate a degree which is higher than the contextual norm / standard:
    - The norm / standard of surprise
    - The norm / standard of physical strength
    - The norm / standard of tallness

Questions? / Comments?

# Characterizing a new scalar presupposition of *even* (Greenberg 2015, 2018)

Rullmann's 2007 *"even* ranks the alternatives by "correlating them with a graded property which is salient in the context"

and is "used to claim that the associated graded property holds to an extreme degree"

*Mary even won the [gold]$_F$ medal:* (Rullmann 2007, p. 11)

**Alternatives:**

*Mary won gold*

Mary won silver

Mary won bronze

**Associated graded property:**

High degree of success

↕

Low degree of success

# Rullmann's idea is good – but still needs development:

- First, it is still based only on the 'comparative' requirement – we need to integrate the 'evaluative' requirement as well
- Second, it needs to be clarified : How do propositional alternatives 'correlate' with gradable properties?

- A clue: The semantics of **Comparative Correlatives!**

# The semantics of Comparative Correlatives

- Beck 1997: Comparative correlatives (as in (1)), have a similar semantics to comparative conditionals (as in (2)):

  (1) The better Otto is prepared, the better his talk is.

  (2) If Otto prepares better, his talk comes out better.

- Conditionals are traditionally analyzed as universal quantifier over possible worlds:

  (3) If Otto prepares well, his talk will be good

  ➢ In all accessible worlds where otto prepares well, his talk will be good.

- So – the semantics for both (1) and (2):

➢ In all accessible worlds w1 and w2 where Otto's maximl degree of preparation in w1 is higher than his degree of preparation in w2, Otto's degree of success in w1 is higher than his degree of success in w2.

## Back to the scalar presupposition of *even*:

*Mary even won [gold]$_F$* is not about unlikelihood, but about success:

It makes two presuppositional requirements:

(a) A comparative requirement Mary's degree of success in the accessible worlds where she won gold - is higher than in the accessible worlds where she won silver or bronze and didn't win gold.

(b) An evaluative requirement: Mary's degree of success in the latter worlds is still higher than the standard of success, so she is successful when she win silver or bronze (and clearly also when she wins gold)

## More generally:

- For a contextually supplied gradable property G (e.g. success)
- And an individual denoted by a non-focused element in *p* (e.g. Mary)
- And all alternatives to *p* in C, *q*

- *Even (p) (C)* presupposes that
  - (a) x's degree on the G scale is higher in the accessible *p*-worlds than in the accessible *q-and-not-p w*orlds
  - (b) In the accessible *q-and-not-p* worlds x's degree on the G scale is higher than the standard for G

## And now more formally…:

- For all q: $q \in C \wedge q \neq p$, *even (C) (p) (w)* presupposes that for some salient entity x (denoted by some nonfocused or contrastive topic constituent in p) and a contextually supplied gradable property G, the following holds:

$\forall w1,w2\ [w1Rw \wedge w2Rw \wedge w2 \in p \wedge w1 \in [q \wedge \neg p]\ ] \rightarrow$

$[$ the max d2 $(\lambda d2.G(d2)(x)(w2))$ > the max d1 $(\lambda d1.G(d1)(x)(w1))$

$\wedge$ the max d1 $(\lambda d1.G(d1)(x)(w1)) \geq$ **stand$_G$** ]

## 'Comparative-unlikelihood' vs. 'Degree-based' presupposition of *even* – A schematic comparison

- **Comparative likelihood-based presupposition:**
- ----------*q*------*p*----------→ unlikelihood

- **Degree-based presupposition:**

q-*and-not-p* worlds — *p* worlds

- ----------**stand.**--x's degree--------x's degree-------→ G

# The degree-based presupposition of *even* makes correct predictions:

(1) I think that Bill is going to win silver, and perhaps (even) $[gold]_F$.

(2) I think that Bill is going to win gold, and perhaps (#even) $[silver]_F$.

- Instead of saying something about unlikelihood let's assume that we are indeed saying something about success
- Then the comparative of the presupposition is met in (1):
  - Bill's degree of success is higher in the worlds where he won gold than in those where he won silver but not gold
- But it fails in (2):
  - Bill's degree of success is lower in the worlds where he won silver than in those where he won gold – I.e. he is successful

# But, hey! Wait a minute! ☺ What happens if we reverse the scale?

- I.e. If G can be any gradabe property, we can assume that here it does not measure degrees of **success** but of **failure / disappointment.**
- But if this is so, wouldn't we wrongly predict that (2) will be good?

  (2) I think that Bill is going to win gold, and perhaps (#even) $[silver]_F$.
  - We could say that Bill's degree of failure is higher in the worlds where he won silver than in those where he won gold but not silver

➢But - although the 'comparative' requirement is indeed met, the evaluative one fails. So the infelicity of *even* is predicted:
- Bill's degree of failure in the worlds where he won gold but not silver is NOT higher than the standard of failure – i.e. he does NOT fail in these worlds.
  - because winning gold is maximally successful – It cannot be considered a failure
  - Conclusion: The degree-based semantics makes the right predictions here

# Further support for this idea:

- *Even* is much better in (2) than in (1):

  (1) I think that Bill is going to win gold, and perhaps (#even) $[silver]_F$.

  (2) A: I don't think Bill will win the gold medal

  B: Yea…I think he will win silver, and perhaps even $[bronze]_F$.

- Notice: The contrast is a further challenge for the 'comparative unlikelihood' view:
  - in both (1) and (2) *p* is more likely than its alternative
  - So, *even* is predicted to be infelicitous in both sentences

- But the degree-based view can explain the contrast:
  - Unlike (1), in (2) we can accommodate a standard where winning anything below gold is a 'failure' / 'disappointed'
  - So in (2), but not in (1) - the evaluative presupposition is met as well.

# The degree-based semantics of *even* can also explain the contextual effects on felicity:

Context: Any princess who gives birth can stay in the palace. If she gives birth to a girl she also becomes a queen (with the result that on average 50% of those who have given birth become queens).

Princess Jane gave birth. She **even** gave birth to $[a\ girl]_F$ /# $[a\ boy]_F$.

- Remember that the comparative unlikelihood view could not explain this contrast
- But the degree-based view can: Given the context - it is only with 'a girl' that the two presuppositional requirements in the scalar ps. are met:
  - First, princess Jane is happier / more important in the accessible worlds where she gave birth to a girl than in those where she gave birth, but did not give birth to a girl
  - Second, in the latter worlds she is happy / important. I.e. her degree of happiness / important is above the standard

## Questions? / Comments?

## A question: If *even* is really not about being less likely, why does it tend to trigger 'less likely' inferences so often?

- In fact, some theories (e.g. Zeevat 2007, 2008) explicitly argued that *even* is a 'mirative' particle –i.e. is encoding surprise / above expectations (cf. deLancy 1997)
- For example, in (1) the default inference is that John's acceptance to S-university is surprising / above what we expected / less likely than his acceptance to R-university

(1) John got accepted to R-University. He even got accepted to [S-University]F

- A suggestion: This default / common inference is not hardwired into the semantics of *even.*
- Rather – it is derived from the 'above the standard requirement + the fact that the default / common type of standards we rely on are '**distributional**'

## Deriving the default 'unlikelihood' inference of *even* from default distributional standards:

- 'Distributional standards' are discussed in the literature on the 'positive form' of gradable adjectives (John is pos tall / pos successful)
  - These standards represent the (interval around) a central point on the scale, e.g. the median / average point (Solt 2011)

- Take again (1):

(1) John got accepted to R-University. He even got accepted to [S-University]F

"Suppose […] 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." (Greneberg 2015 p. 154)

## But – standards are not always distributional!

- There are also 'functional' standards, which do not rely on 'normal' distribution, but on the need to meet the requirement in the context.
  - Such standards are discussed in the literature on degree-based constructions for cases like (1)-(3):

(1) *Our truck is too tall to go through this tunnel.* (Kagan & Alexeyenko 2010:5a)

(2) *This pool is a little bit deep for my daughter*. (Bylinina 2012:5c)

(3) *Three of the boards were cut to exactly the right length, but the fourth one was long.* (Solt 2011:17)

A prediction: Cases of *even* without the 'less-likely' inferences are those where the salient standard is not distributional, but functional

- The prediction is borne out:

*(1)* Client: I need a strong tool for this work. What about these two tools?
*Seller: Both tools are strong. The one on the right is made of strong aluminum, and the one on the left is even / also made of [steel]F.*

Functional standard: Degree of physical strength needed for this work

(2)

(*Scenario (a):* The branch is 1.50m high). Both John and Bill can fetch the hat. John is 1.60m tall. He is definitely tall enough for that. And Bill is even $[170]_F$

*Scenario (b):* The branch is 2.50m high). Neither John nor Bill can fetch the hat. John is 1.70m tall. He is definitely not tall enough for that. And Bill is even $[1.60m]_F$ .

- Functional standards: Degree of stuitability/ unsuitability for fetching the hat

## So why are `less likely' / unexpected inferences so common / found in default contexts with *even?*

- Because distributional standards are those which are so common / found in default contexts for gradable properties:

**"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." (Kagan & Alexajenko 2011)**

- An interesting point to think about:

➢ *even* is not directly a gradable expression (it does not have a degree argument)

➢ It is an alternative sensitive, scalar operator over propositions

➢ But its semantics involves similar constraints (e.g. on types of standards) to gradable constructions.

## Taking Stock: We looked at *even:* The first particle described in the literature as scalar additive

- We started with the traditional entry of *even* as a scalar additive focus particle:

$||\text{even}||^{g,c} = \lambda C.\ \lambda p.\lambda w:\ \exists q\ q \neq p \wedge q(w) = 1 \wedge \forall q \in C\ q \neq p \rightarrow p >_{unlikely} q.\ p(w) = 1$

In prose: *even (C)(p)(w):*

- Assertion: *p* is true in w
- An additive presupposition (=*also*): At least one distinct alternative in C is true in w
- A scalar presupposition: *p* is less likely than any distinct alternative in C

- We then raised issues for both the scalarity as well as for the additivity of *even*:

## Taking stock

- **Regarding additivity**:
- We claimed that unlike *also*, *even* is actually NOT inherently additive
  - And that cross-linguistically – additivity is a parameter along which *even*-like particles vary:
    - There are additive *even*-like particles
    - Exclusive *even*-like particles
    - And 'unspecified' ones

**- This will be important when we try to compare the additivity of *even* with that of *noch / od / more*$_{add}$**

# Taking stock

- **Regarding scalarity**:
- We claimed that characterizing the scalar presupposition of *even* as based on '**comparative-unlikelihood**' faces challenges.
- And that it should be replaced by a degree-based presupposition, which
  (a) Relies on scales associated with **contextually-supplied gradable properties**
  (b) includes not only a comparative, but also an **evaluative** component: requiring *p* and its alternatives to lead to degrees **above the standard** on these scale
  - We suggested that the common / default 'less likely' inference of *even* is NOT hardwired, but derived from
    - This 'above the standard' requirement +
    - the fact that the default standards are 'distributional' (=represent normal distribution)

# Questions? / Comments?

Feel free to also send us *questions* and comments later on!

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