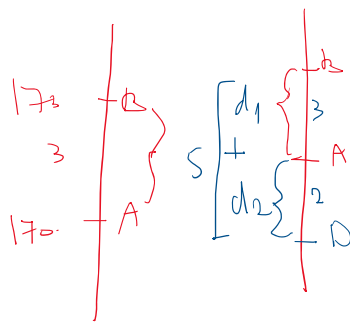# Scalar additives combining with comparatives

A degree-based approach

Still-like additives + comparatives - A degee-based analysis (e.g. Berta is od / esche / noch taller than Adam)

- Umbach 2009: A discourse-based of additive *noch*+comparatives.
- My students (e.g. Lena Miashkur and Chen Zhuang) and I are developing a degree-based analysis of the additives Hebrew *od Russian esche* and Mandarin *hai* with comparatives
- **The analysis integrates a central component of Umbach's 2009 suggestion:**
  - That the anaphor to *noch*+comparatives is another comparative
- **Together with a degree-based analysis of the additive particles (Greenberg 2010, 203), couched in a 'rising scale segments' view, following Thomas 2018** –
  - where comparatives denote a difference – i.e. an interval / segment on the scale
  - Berta is3 cm. taller than Adam – the measurement of the difference between Berta's and Adam's tallness is 3cm.
  - When we use *od / esche* + comparatives we sum the two comparative eventualites (states) and we add the degrees measuring the intervals / **differences**:
  - The degree measuring **differences** between Berta's height and Adam's height + the degree measuring the **difference** between Adam's and Danny's height.

  - See **Miashkur & Greenberg 2019** for a suggestion:

Still-like additives + comparatives - A degee-based analysis (e.g. Berta is od / esche / noch taller than Adam)

Summing up comparative states and adding their (interval) degrees (Miashkur & Greenberg 2019)

(30) German

Mary ist 20cm größer als John. Aber Bill ist noch
Mary be-3SG-PR 20cm tall-COMP than John. But Bill be-3SG-PR more$_{add}$
10cm größer als Mary.
10cm tall-COMP than Mary.

'Mary is 20cm taller than John and Bill is 10cm still taller than her/Mary.'

(31) Russian

Meri na 20cm vyše Dzona, a Bill ešče na 10cm
Mary INST 20cm tall-COMP John-GEN but Bill more$_{add}$ INST 10cm
vyše nee/Meri.
tall-COMP she-GEN/Mary-GEN

'Mary is 20cm taller than John and Bill is 10cm still taller than her/Mary.'

Summing up comparative states and adding their (interval) degrees (Miashkur & Greenberg 2019)

- the prejacent of the additive *ešče* is the comparative '*Bill is 10cm taller than Mary*',
  - ▷ which denotes a rising scale segment whose start is Mary's height and whose end is Bill's height.
  - ▷ the relevant size of this prejacent, is the difference between Bill's height and Mary's height, i.e. it equals Δ (Height (Bill) - Height (Mary)) = 10cm (Thomas 2018).

- the anaphor is another comparative (Umbach 2009), '*Mary is 20cm taller than John*',
  - ▷ which also denotes a rising scale segment, this time a segment that starts with John's height and ends with Mary's height.
  - ▷ the size of this anaphor scale segment is the difference between Mary's height and John's height, i.e. Δ (Height(Mary) - Height (John)) = 20cm (Thomas 2018).

Summing up comparative states and adding their (interval) degrees (Miashkur & Greenberg 2019)

We now propose that *ešče*+comparative entails there is a rising scale segment that:
- ▷ **starts with the measurement of the anaphor (the size of the segment in the anaphor) (20cm)**
  - *e.g. starts with Δ (Height(Mary) - Height (John))= 20cm*
- ▷ **ends with the sum of the measurement of the segment in the prejacent and the anaphor (i.e. the sum of the sizes of two segments) (30cm)**
  - !! crucially, what is being summed in this case is the sizes of the segments (and not e.g. individual's heights)
  - *e.g. ends with the sum of the size of the prejacent comparative and the anaphor comparative, i.e. ends with Δ (Height (Bill) - Height (Mary)) $\oplus$ Δ (Height(Mary) - Height (John)) = 20cm+10cm*
- ▷ **the size of the segment (the difference between its end and its start) equals the size of the segment in the prejacent (10cm)**
  - *e.g. it is the size of Δ (Height (Bill) - Height (Mary))=10cm*

Summing up comparative states and adding their (interval) degrees (Miashkur & Greenberg 2019)

- An interesting cross linguistic difference:
- *(1) Bill is noch / esche / od /?still taller*
- Assuming that we have an antecedent comparative - Who is Bill taller than in the 'prejacent comparative? Here is a potential test:
- *(2) John is taller than Berta. Bill is **esche** taller than him$_{masc}$ / ??her$_{fem}$*
- (3) John yoter gavoha mi-berta.
  - Bill **od** yoter gavoha #mimenu$_{masc}$ / mimena$_{fem}$

- **How can that be in Hebrew? Don't we end up with overlapping intervals?**
- **What happens in other languages?**

Even + Comparatives *(John is even taller than Bill)* − A degree-based analysis (Greenberg 2015, 2018)

- In class # 2 we saw that *even* does not only make a <u>comparative</u> requirement, it also makes an evaluative one (cf. Greenberg 2015, 2018):

(1)   <u>Context</u>: 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 <u>both</u> (a) and (b) p is less likely / more surprising than q.
- But we can see that 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**likely / Surprising (= exceed the norm for unlikelihood / surprise)
- When this requirement is not met (as in (a))- *even* is odd.

Even + Comparatives *(John is even taller than Bill)* − A degree-based analysis (Greenberg 2015, 2018)

- Consider also the contrast in (1) and (2):

 (1) John and Bill are tall: John is 1.87m and Bill is even [1.96m]$_F$

(2) John and Bill are short. John is 1.60m and Bill is (??even) 1.63m.

- <u>Remember that the degree-based scalar presupposition of *even*</u> makes TWO requirement (written here in an informal way):

 - p has to indicate a degree higher than the degree indicated by the alternative(s) q on the scale G

- Both p and q must indicate a degree higher than the standard, <u>on the same G</u>.

- This explains why (1) is good, but (2) is not:

Even + Comparatives *(John is even taller than Bill)* − A degree-based analysis (Greenberg 2015, 2018)

(1) John and Bill are tall: John is 1.87m and Bill is even [1.96m]$_F$

- In (1): BOTH requirements can be met wrt G=*tallness*
  - <u>Comparative requirement:</u> Bill (in p) has a higher degree on the tallness scale than *John* (in q)

  - <u>Evaluative requirement:</u> Both *Bill* (in p) and John in q have a degree which is above the standard of tallness. I.e. both are tall

---

Even + Comparatives *(John is even taller than Bill)* − A degree-based analysis (Greenberg 2015, 2018)

In contrast, for (2), there is not situation where BOTH requirements are met wrt the same G:

(2) John and Bill are short. John is 1.60m and Bill is (#even) 1.63m.

- **If we choose G=tallness**, the <u>comparative</u> requirement is met (*Bill is taller than John*), but the <u>evaluative</u> one fails (*Neither are tall*)
- **If, on the other hand we decide to choose G=shortness**, the <u>evalautive</u> requirement is met (both are short), but the <u>comparative</u> one fails (since Bill (in p) is NOT shorter than John (in q)
- So the only way to have <u>both</u> requirement to be met wrt. the same gradable property G (***shortness***), is to reverse the order of p and q:

(3) John and Bill are both short. John is 1.63m and Bill is (even) 1.60m.

Even with scales based on negative adjectives

- **<u>And here is an interesting cross linguistic point:</u>**
  - It seems that there are languages where using *even* with scales based on 'negative' gradable properties (like **shortness**) is not very good.
  - e.g. German *sogar* (Carla Umbach p.c.)
  - And that it can be saved with *nur* (= *only*)
  - <mark>Is the case for other languages as well?</mark> Mandarin? Russian? Slovenian? Marati? Benghali….?

Even with scales based on negative adjectives

- To the extent for some languages this is really a problem with *even*-like particles, this it raises several **questions**:
  - Does this mean that compatibility with different ordering of the scale is a parameter along which scalar parameters vary ?
  - Would such languages also have a problem with *even*+negative adjectives in the **comparative**?
    (1) *a. John is tall. Bill is even taller*   vs. b *John is short. Bill is even shorter*
  - And would such languages have a problem with *still*-like particles with *less*?
    (2) dani lo hicliax ba-taxarut. Yosi hiclia'x **od paxot**
      *"Danny didn't succeed in the competition. Yosi succeeded **even less".***

Back to *even*+ comparatives. The basic 'evaluative' effect :

(19) The blue tool is (even) [stronger than the red tool]_F.
<u>Without *even*</u>: No inference that the blue or red tools are strong *(...but both are weak)*
<u>With *even*</u>: Entailment that both blue and red tools are strong *(# …but both are weak)*

(20) John is 1.75m tall. Bill is (even) taller.
<u>Without *even*</u>: No inference that John or Bill are tall *(….but both are rather short)*
<u>With *even*</u>: Entailment that both John and Bill are tall *(#... but both are rather short)*

(21) John arrived at 3.00. Bill arrived (even) later.
<u>Without *even*</u>: No inference that John or Bill arrived late *(….but both arrived early)*
<u>With *even*</u>: Entailment that both John and Bill are arrived late *(#... but both arrived early)*

How is this evaluative effect derived in the degree-based analysis?

(1)   John is 1.70m tall. And Bill is (even) taller than that.
- We assume that C is {Bill is 1.70mm tall, <u>Bill is taller than 170m</u>}
- And that G measures tallness.
- Then the 'comparative' requirement in the scalar presupposition is trivially met:
  - Obviously, Bill's degree of tallness in all accessible worlds where he is taller than 1.80m is higher than in all worlds where he is exactly 1.80.
- But the 'evaluative' requirement is informative:
  - Bill's degree of tallness in the worlds where he is exactly 1.70m tall to be at least as high as the standard of tallness
- This is how we end up with the inference that both John and Bill are tall.

Even taller vs. dirtier / wetter

- <u>Notice:</u> We looked at *even+* comparatives of <u>relative – open-scale-</u>adjectives *(even taller)*
- But these seem be similar to *even*-less comparatives of <u>Lower-closed scale</u> adjectives *(wetter/dirtier):*
  - The distinction is from Kennedy & McNally 2005 influential work:
  - Relative, open-scale adjectives: Are associated with scales which are (in principle) unbounded on both ends
  - Lower-closed adjectives: have minimal endpoint: E.g. if you go down and down the wetness / dirtiness scale of an entity – you will hit a point where there it is zero wet (i.e. completely dry), or zero dirty (completely clean*)*

Even taller vs. dirtier / wetter

- Kennedy & McNally 2005: The standard for such adjectives is (close to) the scale minima:
  - To be dirty – it is enough that you have some degree of dirt / To be wet – it is enough that you have some degree of wetness
  - Therefore – in comparatives with such adjectives give leads to an evaluative effect:
- *(1) My right hand is **wetter** than my wet hand – (-> My right hand is wet)*

- The evaluative effect of *even+ $A_{relative}$-er* is thus similar to the one we get <u>without *even*</u> with $A_{L\text{-}closed}$-er.
- *(2) John is **even taller** than Mary (→ John is tall)*

- But there are also differences:
  - Kennedy (2007) observes that with L(ower)-closed comparatives, the 'positive form' inference is *entailed* w.r.t the target of comparison
  - but only *implied* in the case of the source of comparison:

Even taller vs. dirtier / wetter

(1)   The floor is wetter than the countertop.

     Entails: The floor is wet.

     Implies: The countertop is wet.

(2)   Rod A is more bent than rod B.

     Entails: Rod A is bent.

     Implies: Rod B is bent.

- (1) and (2) seem completely false if the floor is completely dry or if rod A is completely straight.
- In contrast, they seem marginally acceptable if the countertop is dry or if rod B is straight.

Even taller vs. dirtier / wetter

- In contrast when *even* is added to these comparatives the positive form for <u>both </u>source and target of comparison:

(1)   The floor is even wetter than the countertop.

     <u>Entails</u>: The floor is wet AND The countertop is wet.

(2)   Rod A is even more bent than rod B.

     <u>Entails</u>: Rod A is bent AND Rod B is bent.

- We saw that this entailment comes form the evaluative requirement which is hardwired into the scalar presupposition of *even*

Even taller vs. *noch / od / esche* taller

- We saw that both constructions lead to an evaluative effect:

(1) *John is* **noch / od / esche** taller than Bill

(2) John is **even** taller than Bill

- But these effects arise due to two different mechanisms:
  - <u>An entailment</u> – due to a hardwired evaluative requirement with *even* (cf. Greenberg 2015, 2018)
  - <u>An implicature</u> – due to accommodation of comparison to the norm with *noch* (cf. Umbach 2009) – it is cancellable
    - When there is an explicit comparison antecedent (*Adam is taller than Chris. Berta is noch taller than Adam* – There is no evaluative / norm related effect)
    - **Notice: This is strikingly similar to what happens with the evaluative 'smallness' effect of** **only** *(Greenberg 2021):*
    - *John has (??only) [11]F kids* **vs.** *Bill has 14 kids. John has less, only [11]F*

Even taller vs. *noch / od / esche* taller

- <u>A prediction:</u> The evaluative effect of *noch / od*, but not of *even* can be cancelled
- But this is not easy to show……
- An example inspired by Umbach (2010):
- (1) <u>Context:</u> *Tick, Tack and Tock are dwarfs – all three are very short.*
  - *Tick yoter gavoha mi-tack, ve-tock afilu / od yoter gavoha*
  - *"Tick is taller than Tack, and Tock is even / noch taller"*
- Both *even* and *od / noch* seem to be felicitous here….
- Perhaps this is because given that we have 3 individuals – they form a new comparison class, with a new standard of tallness? E.g. use a 'functional standard' as the start of the comparison class?
  - (cf. Miashkur and Greenebrg (in progress))