

On the scalar antonymy of *only* and *even* (and what it can teach us about the construction of alternatives)

Linguistics department colloquium, University of Potsdam, 22.6.2021

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1. Introduction:

- ***Only* and *even*** : Central and highly debated particles.
- **Goal:** Understand an old observation: *only* and *even* encode some kind of **scalar antonymy**:
 - Zeevat 2009 p. 301:

Only.. expresses that the size of something is disappointingly small: one expected more. Similarly, *even* expresses that one expected less.
 - Beaver & Clark 2008, p. 71:
- (1)
 - a. David **only** wears a bow tie when [teaching]_F
 - b. David **even** wears a bow tie when [teaching]_F

“...whereas (1a) is appropriate if wearing a bow tie when teaching is **less**, e.g., eccentric than had been expected or previously indicated, (1b) is appropriate if wearing a bow tie when teaching is regarded as significantly **more**, e.g., eccentric than has been expected or previously indicated”. (Beaver & Clark 2008, p. 71)
- (2) (Context: We are passing near a room where there is a committee meeting evaluating Bill’s academic achievements. We hear one of the committee members saying:
 - a. ...and during the last 5 years he **only** published [3]_F papers (≈ a little)
 - b. ...and during the last 5 years he **even** published [3]_F papers (≈ a lot)
- (3) (How do you think John will do in the quiz?)
 - a. He won’t do so well. I think he can **only** / **#even** solve [6]_F problems
 - b. He will do great. I think he can **even** / **#only** solve [6]_F problems
- **So – the observation that *only* and *even* are scalar antonyms seems strong**
 - But, surprisingly - this is not captured in traditional entries of these particles (see later).
 - Because capturing this observation is hard...

in considering the meanings of *only* and *even*, one is tempted to say that they are, in some sense, opposites. Yet is hard to put one’s finger on the nature of this intuitive antonymy.We suggest that *only* and *even* might best be labeled PRAGMATIC ANTONYMS (Beaver & Clark 2008 p. 71)

More specific goals:

- Examine three suggestions which tried to ‘put one’s finger’ on the nature of the scalar antonymy:
 - These take p , to be lower (with *only p*) vs. higher (with *even p*)
 - **than what is expected / what is the default standard** in the context
 - the ‘mirative / evaluative’ antonymy view
 - **than some (salient) alternative** in C
 - the ‘existential antonymy’ view
 - **than all alternatives** in C
 - the ‘superlative antonymy’ view
 - Where C is the set of contextually supplied focus alternatives to p (Rooth 1985, 1992)
- Examine a wide range of contexts for teasing apart the predictions of each of these views
 - Since in many contexts the predictions overlap
- **Argue the ‘superlative’ antonymy view is preferable**
 - And will discuss ways to handle challenges raised against this view
- Discuss wider implications and open questions raised by the examination:
 - E.g. towards the characterizations (competing) contextual factors affect the construction of alternatives in C
 - And will compare them with implications / open questions discussed in
 - Experimental research on activation / processing of alternatives
 - And in research on Scalar Implicatures

2. Basic motivation for the ‘superlative’ scalar antonymy view of *only* and *even*

2.1 An infelicity pattern with *only*

- (4) Two years ago John won the gold medal. Last year he won bronze, and this year he (**#only**) won [silver]_F (cf. Orenstein 2016)
- (5) A: How many papers did your faculty members write during the last 3 years?
B: Let’s see: Susan and Ann wrote 10 papers, Sam wrote 8, Henry wrote 5, Tom wrote 7, Ted wrote 6, Ian wrote 3, and Bill (**#only**) wrote [4]_F.
- (6) Two weeks ago I managed to interview the prime minister, last week I interviewed the assistant to the minister, and this week I (**#only**) managed to interview the [minister]_F
- In all of these – *only* is odd.
 - **Why?**
 - An important assumption Previously uttered material helps construct alternatives into C:
 - Due to contrastive focus in the sentences with *only*, which places an anaphoric requirement on the context, (Rooth 1992),
 - Or based on e.g. Katzir’s 2014 algorithm for constructing alternatives
 - Where one of the sources for substituting a focused element in *p* is previously mentioned material
 - I will call alternatives based on such material **Uttered Alternatives** (cf. Trinh 2019)
 - They are identical to the prejacent, *p*, except for the focused element, which is substituted by the uttered material.
 - This leads to the following C sets for (4), (5), (6) (*p* is underlined):
- (4’) {*John won gold, John won bronze, John won silver*}
- (5’) {*Bill wrote 10 papers, Bill wrote 8 papers, Bill wrote 5 papers, Bill wrote 7 papers, Bill wrote 6 papers, Bill wrote 3 papers, Bill wrote 4 papers*}
- (6’) { *I interviewed the prime minister, I interviewed the assistant to the minister, I interviewed the minister* }

-So - what the cases of infelicity of *only* in (4)-(6) share: *p* is not the weakest alternative in C

2.2 But... this infelicity pattern with *only* is a mystery given traditional claims about *only*

- I.e. it is NOT accounted for by traditional, **non-scalar** as well as by **scalar** entries of *only*

(7) **NON-SCALAR entry** - - (cf. Horn 1969, Karttunen & Peters 1979, Rooth 1992, Krifka 1992)

$$\llbracket \text{only} \rrbracket^{\mathcal{C}} = \lambda C. \lambda p. \lambda w: p(w)=1. \forall q \in C [q \neq p \rightarrow q(w)=0]$$

- Presupposition: *p* is true.
- Assertion: **All** distinct alternatives to *p* in *C* are **false**.

(8) **A SCALAR entry** (cf. Klindinst 2005, Beaver and Clark 2008, Roberts 2011, Coppock & Beaver 2014, Alxatib 2013, Liu 2017):

$$\llbracket \text{only} \rrbracket^{\mathcal{C}} = \lambda C. \lambda p. \lambda w: p(w)=1. \forall q \in C [q \neq p \wedge q >_C p] \rightarrow q(w)=0$$

- Presupposition: *p* is true.
- Assertion: All distinct alternatives to *p* in *C*, **which are stronger (/ non-weaker) than *p*** on a scale (entailment / or rank order), are **false**
 - Entailment scales
 - *I only invited [John]_F { I invited John < I invited John and Bill < I invited John and Bill and Harry }*
 - Rank order scales
 - *John is only [an assistant to the minister]_F { John is an assistant to the minister < John is a minister < John is the prime minister }*
- **Crucially - neither these entries capture the infelicity pattern of *only*:**
 - They require **all distinct / all stronger** alternatives to *p* in *C* **to be false**
 - But the existence of weaker alternatives in *C* is not banned in any way
 - Notice also -
 - In (4)-(6) there are also stronger alternatives than *p* in *C* (besides weaker ones)
 - This means that the infelicity of *only* is not because the operation of *only* is vacuous (cf. Crnič 2011, Alxatib 2015)
 - I.e. *only* is infelicitous although there are alternatives stronger than *p* that can be negated
 - **How can the infelicity pattern with *only* be captured then?**
 - **An important clue**: Let's look at *even*

2.3 A mirror image infelicity pattern with *even*

Even is odd in (9), (10), (11) – i.e. in the mirror imaged versions of (4), (5), (6):

- (9) Two years ago John won the bronze medal. Last year he won gold, and this year he (#**even**) won [silver]_F
- (10) (Context: How many papers did your faculty members write during the last 3 years?)
 . Let's see: Susan and Ann wrote 4 papers, Sam wrote 3, Henry wrote 5, Tom wrote 7, Ted wrote 6, Ian wrote 10, and Bill (#**even**) wrote [8]_F
- (11) Two weeks ago I managed to interview the assistant of the minister, last week I interviewed the prime minister, and this week I (#**even**) interviewed the [minister]_F

- But - crucially, unlike the mysterious infelicity of *only*, this infelicity of *even* is easily derived from its traditional lexical entry (e.g. Horn 1969, Karttunen & Peters 1979, Rooth 1985, 1992):¹

(12) $//\text{even}//^{\beta^c} - \lambda C. \lambda p. \lambda w: \forall q \in C \ q \neq p \rightarrow p >_C q. \ p(w) = I$

- Scalar presupposition: *p* is the strongest alternative (along a scale) in C
- Assertion: *p* is true

- Again we assume that uttered material is used to construct alternatives (Uttered Alternatives) into C.
 - So the C sets for (9), (10), (11) are the following:

(9') { John won bronze, John won gold, John won silver }

(10') { Bill wrote 4 papers, Bill wrote 3 papers, Bill wrote 5 papers, Bill wrote 7 papers, Bill wrote 6 papers, Bill wrote 10 papers, Bill wrote 8 papers }

(11') { I managed to interview the assistant of the minister, I managed to interview the prime Minister, I managed to interview the minister }

- In all these cases *p* is not the strongest alternative in C
- So, the superlative scalar presupposition fails,
 - And *even* is infelicitous

¹ We are ignoring here the debated presence of the additive presupposition with *even*

- We can now use the mirror imaged infelicity pattern with *only* to argue for a mirror imaged superlative presupposition for it:
 - Requiring that *p* is the weakest alternative in C:
- (13) A superlative scalar presupposition for *only*: $\forall q [q \in C \wedge q \neq p] \rightarrow q >_s p$
- Notice: The mirror imaged superlative presuppositions of *only* and *even* was independently argued for in Guerzoni 2003
 - (cf. also König 1991, Crnič 2012, Charnavel 2017, Grubic 2012, Liu 2017)
 - But so far it was not used to explain the observation about the mirror imaged infelicity pattern of these two particles

(14) The superlative scalar antonymy of *only* and *even* view:

- a. *Only p* presupposes that *p* is the weakest alternative in C
- b. *Even p* presupposes that *p* is the strongest alternative in C

- A cross linguistic support for this view:
 - The behavior of the particle *kapa*, reported in Grubic 2012 to be present in both Bole and Ngizim, with opposite scalar orderings:
 - In Bole it is *only*-like - indicating that its prejacent is on the low endpoint,
 - in Ngizim it is *even*-like - indicating that its prejacent is on the high endpoint.

3. Challenges for the superlative presuppositions of *only* and of *even* and ways to handle them

3.1 First challenge: Cases where *even* and *only* are felicitous though *p* is not at the endpoint of the scale

- (15) Not only did Mary win her first round match, she **even** made it to the [semi-finals]_F.
- Kay 1990: ‘making it to the Semi-finals’ is not the end of the scale point - ‘making it to the finals’ is more extreme.
 - Hence if *even* triggered a superlative scalar presupposition it would be infelicitous in (15), since *p* is NOT stronger than all alternatives.
 - Instead: *even* triggers a weaker presupposition: *p* is stronger than some salient alternative (‘context proposition’)

- A similar challenge is in (16):

(16) Last year Bill won the bronze medal. This year he **even** won [silver]_F

 - *Even* is felicitous although winning silver is not the strongest alternative
 - winning gold is stronger
- We can see a mirror imaged challenge for the superlative presupposition of *only*:

(17) Last year Bill won the gold medal. This year he **only** won [silver]_F

 - *Only* is felicitous in (17) although winning silver is not the weakest alternative
 - winning bronze is weaker than it.

How can this challenge be handled?

- Greenberg 2016 about the challenge for *even*:
 - The ‘endpoint’ alternatives in (15)-(16) (e.g. *Mary made it to the finals / John won gold*) , can be left out of C – although they are relevant alternatives
 - since they are less salient than the Uttered Alternatives (= the one based on uttered material before *p*)
 - Support: when these endpoint alternatives ARE Uttered – *even* becomes infelicitous:

(18) Two years ago Mary won her first round match, last year she made it to the finals, and this year she (**#even**) made it to the [semi-finals]_F
- We can now see the same pattern with *only*.
 - When the weaker endpoint alternative is Uttered, *only* becomes infelicitous:

(19) Two years ago Bill won the gold medal. Last year he won bronze and this year he (**#only**) won [silver]_F
- A more general conclusion:
 - The infelicity pattern with *only* and *even* showed us that Uttered Alternatives are forced into C
 - Now we see that when such Uttered Alternatives are in C, they have priority over Non- Uttered ones – which (can) stay out of C, although they are potentially relevant
 - I.e. although they answer the same QUD (e.g. *What medal did Bill win?*),
 - and although they are part of the same conventionalized scale of alternatives (e.g. *bronze < silver < gold*)

- There are interesting parallel observations in experimental studies on activation / processing of alternatives:
 - Fraundorf et al 2013: the ability to reject alternatives to a sentence with a focused element is improved when the alternative is based on an element which was mentioned before the original sentence (but not when it is based on unmentioned material).
 - Gotzner 2015: Mentioned alternatives are the ones which get the highest amount of activation when considering sentences with *only* (see also Gotzner et al 2016),
 - Kim et al 2015: material mentioned prior to sentences with *only* leads to activating an alternative to the focus associate (cf. also Doran et al 2009)

3.2 Challenge # 2 : Cases where *only* / *even* are felicitous despite the presence of Uttered Alternatives which are weaker than / stronger than *p*, respectively

- *Even* is felicitous in (20)
- (20) A: How did it go in the exam? I heard that you both solved 10 questions!
 B: Well, no... But we still did very well. John answered 8 questions, and I **even** answered [9]_F!
- If indeed Uttered Alternatives **necessarily** enter C, then C should look as in (20'):
- (20') { *Bill answered 10 questions*, *Bill answered 8, questions*, *Bill answered 9 questions* }
- Superlative ps. of *even* is wrongly predicted to fail**
- A suggestion: In this case *solving 10 questions* can be ignored – i.e. Uttered alternative based on it can be left out of C
 - since Bill's achievement is allowed to be compared just to John's lower achievement (20''),
 - or since both achievements are compared to some lower standard (solving 7 problems) - ("we still did very well" = higher than the standard) (20''')
- (20'') C { *Bill answered 8 questions*, *Bill answered 9 questions* }
- (20''') { *Bill answered 7 questions*, *Bill answered 8 questions*, *Bill answered 9 questions* }
- **In both the Superlative presupposition of *even* is correctly predicted to be met**
- But.... isn't this suggestion a bit ad hoc....?
 - Is there any support for it?

- **Yes:** if we slightly change the discourse to force a reading where we compare Bill's achievement to "solving 10 question", then *even* becomes infelicitous:

(21) A: How did it go in the exam? I heard that Sue solved 10 questions!

A: Right, but neither Bill nor John managed to do the same. John answered 8 questions, and Bill (**#even**) answered [9]_F.

(21') { *Bill answered 10 questions*, *Bill answered 8 questions*, *Bill answered 9 questions* }

Superlative ps. of *even* is correctly predicted to fail

- We can now also predict a similar pattern with *only*:
 - Here too the felicity does not merely depend on the presence / absence of uttered material, but on what *p* is taken to be compared to in the discourse:

(22) A: To go into this playground one needs to be 10 years old. Can John and Bill go in?
They are of the same age, right?

B: No, neither can go in, and they are not of the same age: John is 12 and Bill is **only** [11]_F.

- In this case the immediate Question Under Discussion is "Are they of the same age?"
 - This allows us to concentrate on John's age compared to Bill's, and ignore the uttered material concerning the age limit for the playground.
 - So *Bill is 10 years old* can be left out of C although it is Uttered:

(22') { Bill is **12**, Bill is 11 }

Superlative ps. for *only* is correctly predicted to be met

- A prediction: if the QUD is about the comparison of *p* to the age limit, then *only* will become degraded.

- The prediction is borne out:

(23) A: To go into this playground one needs to be 10 years old. Can John and Bill go in?

B: No, neither can go in. John is 12 and Bill is (**#only**) [11]_F.

- Here *Bill is 10 years old* cannot stay out of C:

(23') { Bill is 10, Bill is 12, Bill is 11 }

Superlative ps. of *only* is correctly predicted to fail

- A more general implication – we see that actually - not ALL Uttered Alternatives have an equal ‘entrance ticket’ to C:
 - Context pressure can prioritize some Uttered Alternatives over others
 - Again: there are some parallel observation in experimental research:
 - Fraundorf et al 2013: distinguish two types of ‘mentioned material’: ‘merely mentioned’ vs. ‘plausible mentioned’ (i.e. plausible given the discourse situation)
 - only the latter leads to rejection of alternatives in contrastive environments.
- But, in fact, we can also find cases where the alternatives which get priority over the Uttered Alternatives in C are not other Uttered Alternatives, but implicit (inferred) alternatives:

(24) Context: John, Mary, Susan and Bill are in a restaurant. They’ve just got a \$100 bill to pay and check whether together they have enough money for that.

John: Let’s see. I’ve got \$35

Susan: I’ve got 20\$

Mary: and I’ve got 10\$. What about you, Bill? How much money do you have?

Bill (opens his wallet): I’ve **only** got [30\$]_F. (We’re in trouble. That’s not enough.)

- If all Uttered Alternatives are forced into C, *only* is incorrectly predicted to be infelicitous:

(24’) { I’ve got \$35, I’ve got \$20, I’ve got \$10, I’ve got \$30}

Superlative ps. of *only* is wrongly predicted to fail

 - Why is *only* felicitous, then?
 - The discourse goal here is to sum the money from all of us and pay the \$100.
 - after summing the money that John, Susan and Mary have –we need 35\$ more
 - This amount is discourse salient, although it is not Uttered.
 - So, we ignore the Uttered Alternatives and end up with (24’')

(24’'): { I’ve got 35\$, I’ve got \$30 } -

Superlative ps. of *only* is correctly predicted to be met

- A Prediction: if we leave out this goal, and instead make sure *p* is compared with the Uttered Alternatives, *only* will become infelicitous:
 - This is borne out:

(25) Context: John, Susan, Mary and Bill check how much money each of them has in his wallet.

John: Let's see. I've got \$35

Susan: I've got 20\$

Mary: and I've got 10\$. What about you, Bill? How much money do you have?

Bill (opens his wallet): I've (#**only**) got [30\$]_F.

- A final interesting point:
 - We can even find a case where the alternative which has priority over the Uttered Alternative in C is not independently discourse salient
 - Rather it is accommodated due to the presence of *only* and *even*:
 - Here is an example (Inspired by examples in Zimmermann 2014):

(26) (Context John is a great academic. He usually publishes many papers. Bill is much slower. How did it work for them this year?)

a. Not so well. Bill published 1 paper, and John **only** published [2]_F

b. They both did great. John published 5 papers, and Bill **even** published[3]_F²

- If Uttered Alternatives are forced into C we get the following C sets:

(26a') {*John published 1 paper*, *John published 2 papers*}

Superlative ps. of *only* is wrongly predicted to fail

(26b'') {*Bill published 5 papers*, *Bill published 3 papers*}

Superlative ps. of *even* is wrongly predicted to fail

- Instead, we compare John's and Bill's actual achievements this year, not to each other's achievements (expressed by the Uttered Material) – but to their tendential achievements
 - **Importantly, this is so although the number of papers each of them tendentially publishes is not specified, and must be accommodated, e.g. as in (26''):**

(26a'') {*John published 3 papers*, *John published 2 papers*}

Superlative ps. of *only* is correctly predicted to be met

(26b'') {*Bill published 2 papers*, *Bill published 3 papers*}

Superlative ps. of *even* is correctly predicted to be met

² Cf. Zimmerman 2014, Greenberg 2018 for discussion of the possibility that in such cases *even* operates on Contrastive Topic alternatives.

3.3 Third challenge: weaker / stronger Uttered Alternatives (respectively) with ‘sequences of *only* / *even*’

- Several theories noted that the presence of more than one occurrence of an operator can itself lead to interesting effects.
 - **We mark here the first and second occurrences of the operators – and their prejacentes and C sets – with numbers:**
 - Here are two examples with *only*:
- (27) a. The average number of children here is 5. John **only**₁ has [2]_F children. And Bill **only**₂ has [3]_F (Greenberg 2019)
- b. How much are these shoes? Well, this pair is **only**₁ [\$40]_F, and that pair is (**only**₂) [\$50]_F. (Xiang 2020)
- Xiang (2020) suggests that parallel cases can be constructed with ‘sequence of *even*’:
- (28) [— Harry, John and Bill participated in the sports competition. I heard that Harry won his first round. How exciting! —
Well,] not only that Harry won his first round, John **even**₁ made it to the [finals]_F, and Bill also **even**₂ made it to the [semi-finals]_F!
- if Uttered Alternatives must be in C we get the following C sets for the second occurrences of the operators (i.e. for *only*₂ and *even*₂):
- (27a’) C₂ - {*Bill has 2 children*, *Bill has 3 children*}
- Superlative ps. of *only*₂ is wrongly predicted to fail**
- (27b’) C₂ - {*that pair is \$40*, *that pair is \$50*}
- Superlative ps. of *only*₂ is wrongly predicted to fail**
- (28’) C₂ - { *Bill made it to the first round*, *Bill made it to the finals*, *Bill made it to the semi-finals* }
- Superlative ps. of *even*₂ is wrongly predicted to fail**
- How can we handle this challenge within a ‘superlative’ view?
 - We saw before a number of contextual factors leading to preferring various alternatives over Uttered Alternatives in C
 - We now suggest that the very presence of the first operators in the sequence (*only*₁ / *even*₁) is another such contextual factor affecting the C set of *only*₂ / *even*₂
 - Though it is a less direct factor:

- Take again (27a):

(27a) The average number of children here is 5. John **only**₁ has [2]_F children. And Bill **only**₂ has [3]_F (Greenberg 2019)

- The presence of *only*₁ indicates that a comparison is being made between p_1 and higher alternatives (based on ‘the average is 5 children’)
- Now the comparison to ‘has 5 children’ is itself salient in the context,
 - so when we turn to construct the C set of *only*₂ we can compare p_2 to **this same alternative** as well
 - I.e. Both prejacentes are compared to the same higher alternative:

(27’’) C₁ { John has 5 children, John has 2 children }

C₂ { Bill has 5 children, Bill has 3 children }

Superlative ps. of *only*₂ is correctly predicted to be met

- A prediction: If the context ensures that p_2 is compared to p_1 , *only*₂ will become infelicitous

- This prediction is indeed borne out:
 - *Only*₂ is infelicitous in (29) despite the presence of *only*₁:

(29) The average number of children here is 5. John **only**₁ has [2]_F children. Compared to him, Bill (**#only**₂) has [3]_F.

(29’) a. C₁ : { John has 5 children, John has 2 children }

b. C₂ { Bill has 2 children, Bill has 3 children }

Superlative ps. of *only*₂ is correctly predicted to fail

- We can give a similar explanation to (28):

(28) How much are these shoes? Well, this pair is **only₁** \$40, and that pair is (**only₂**) \$50. (Xiang 2020)

- Here, however, the stronger alternative that both prejacentes are compared to is not Uttered, but accommodated:

- This alternative represents the standard price, and it can be e.g. 100\$:

(28'') C₁ {*This pair is \$100, This pair is 40\$*}

C₂ {*That pair is \$100, That pair is 50\$*}

Superlative ps. of *only₂* is correctly predicted to be met

- Again, we can predict that *only₂* will become infelicitous - despite the presence of *only₁* - if there is contextual pressure to compare *p₂* to *p₁*

- And again the prediction is borne out:

(30) A: Do both pairs of shoes cost the same?

B: No. This pair is only \$40 and that one is (#*only₂*) \$50.

(30') C₁ {*This pair is \$100, This pair is 30\$*}

C₂ {*That pair is \$40, That pair is 50\$*}

Superlative ps. of *only₂* is correctly predicted to fail

- A similar case can be made to the example with 'sequences of *even*'

3.4 Taking stock

- We started with the mirror imaged ‘infelicity pattern’ of *only* and *even* as a motivation for the superlative antonymy view (*p* is the weakest vs. strongest alternative in C)
- We then examined challenges to view:
 - I.e. cases where *only* and *even* are felicitous despite the potential presence of alternatives which are weaker than *p* / stronger than *p*, respectively
- We suggested that in the default case (with no special context) Uttered Alternatives are forced into C, and get priority over non-Uttered ones
 - (cf. parallel observation in experimental research)
- We suggested that in other cases. Uttered Alternatives which can risk the superlative presupposition, can stay out of C if there is contextual pressure to prioritize other alternatives over them.
 - Such prioritized alternatives can be
 - other Uttered Alternatives (cf. parallel experimental observations)
 - Implicit alternatives which become discourse salient due to an inference
 - Or even accommodated alternatives
 - We supplied support for this prioritization hypothesis:
 - When we remove the contextual pressure, or use a context which forces comparison of *p* to the alternatives which risk the superlative presuppositions – *even* and *only* become infelicitous
- More generally: We see that *even* and *only* seem to be sensitive to the same contextual factors which affect the decision of which alternatives are prioritized for entering C.
- **Questions left open:**
 - Is this prioritization process really due to the presence of *only* / *even* – or does it equally hold for other focus sensitive particles? / bare focus with no such particles?
 - Cf. Gotzner et al 2016: The presence of both German *only* and *even* leads to similar competition between mentioned and unmentioned alternatives (compared to sentences with no focus particles).
 - How to characterize precisely the contextual factors affecting the construction of C – so we do not over generate?
 - See discussion at the end: comparing similar challenges from the research on scalar implicatures and the symmetry problem

4. A comparison with an alternative proposal: *only* and *even* as existential and evaluative scalar antonyms (Xiang 2020)

4.1 The proposal

- Xiang 2020 takes the scalarity of both *even* and *only* to include existential, not universal, quantification over alternatives.

(31) $even_C = \lambda p \lambda w : \exists q \in C [q > \text{likely } p], p(w) = 1$ (cf. Bennet (1982) and Kay 1990)

Presupposition': There is at least one alternative in C that is more likely (=weaker) than *p*

(32) $only_C = \lambda p \lambda w : \exists q \in \text{Excl}(p, C) \wedge p(w) = 1. \forall q \in \text{Excl}(p, C) [q(w) = 0]$

non-vacuity prejacent exhaustivity

Presupposition: There is at least one alternative to *p* in C which is excludable (= not entailed / not weaker than *p*)

- Xiang takes the felicity of *even* in Kay's example in (33) to motivate the existential presupposition:

(33) Not only did Mary win her first round match, she **even** made it to the [semi-finals]_F. (Kay 1990)

- She follows Kay's argumentation: If *even* required *p* to be stronger than ALL alternatives, it would be infelicitous here, since *p* (*Mary made it to the semi-finals*) is not at the endpoint of the scale:
 - *Mary made it to the finals* is more extreme / stronger

- But Xiang is aware that this claim is risked by the infelicity pattern of *even* we saw before:

(34) (Harry, John and Bill participated in the sports competition.) Harry made it to the finals, John won his first round match, and Bill (??**even**) made it to [the semifinals]_F. (Greenberg 2016)

- To explain this infelicity Xiang makes two moves.
 - First, she takes *even* to be an evaluative particle, which triggers the evaluative presupposition that *p* is **unlikely** (cf. p. 198)
 - Second, she assumes that the infelicity of *even* in (34) is due to violating a pragmatic constraint on evaluative particles:

Contra Greenberg (2016, 2019) I argue that the oddness of *even* in [(34)] is not due to the failure of satisfying the scalar presupposition of *even*. Instead, it is due to the oddness of not using *even* when the option of using *even* is clearly available in terms of the truthfulness of the related evaluative inference and the speaker's linguistic habit of using evaluative particles [...]. **if *even* is used for a less extreme case, it should also be used for the more extreme case(s).** (p. 198, emphasis added)

- As a support, Xiang points out the felicity of *even* in (35):
- (35) [— Harry, John and Bill participated in the sports competition. I heard that Harry won his first round. How exciting!—Well,] not only that Harry won his first round, John **even** made it to the [finals]_F, and Bill also **even** made it to the [semi-finals]_F!
- Moreover, Xiang argues the constraint on evaluative particles can also explain similar contrasts with *only*, as in (36):
- (36) [— How much are these shoes? — Well, ...]
- a. . . . this pair is \$40, and that pair is (#**only**) [\$50]_F.
 - b. . . . this pair is **only** \$40, and that pair is (**only**) [\$50]_F.
- Xiang argues that *only* is also an evaluative particle:
 - It is a pragmatic antonym of *even* (e.g. Klinedinst 2005; Beaver & Clark 2008; Zeevat 2009; Alxatib 2013),
 - In (36), it “triggers an evaluative inference that the speaker considers the said price cheap” (p.199),
 - So (36a) is infelicitous since “it is odd to use *only* for a higher price while not using it for a lower price, [...], compared with (36b).” (p.199).

4.2 Issues for the pragmatic constraint on evaluative particles

- Let's assume (for a minute) that indeed both *even* and *only* are evaluative particles

So they are supposed to be covered by the pragmatic constraint on evaluatives

(“Don't use an evaluative in a non-extreme case if you do not use it in an extreme case")

An issue for this constraint: the existence of ‘order contrasts’ with *only* and *even*:

- Take an example with *even*:
- (37) A: During a long time Bill did very well – he published 3 papers each year. How does he do lately?
- B: Very well. Last year he published 5 paper and this year he (**#even**) published [4]_F.
- B’: Very well. Last year he **even** published [4]_F paper and this year he published 5.
- The evaluative proposal CAN explain the infelicity of *even* in (37b):
 - *Even* - as an evaluative particle - violates the constraint on evaluatives
 - since it is used for a less extreme case (4 papers) but not for the more extreme case (5 papers).
 - But crucially, the same holds for the felicitous use of *even* in the (B’) example:
 - It only differ from in the linear order of the sentences,
 - But here too the constraint on evaluatives is violated:
 - I.e. here too *even* is used in a less extreme case (4 papers), but not in a more extreme case (5 papers)
 - The evaluativity-based proposal wrongly predicts *even* in (B’) to be as infelicitous as in (B)
 - We see the same type of ‘order contrasts’ with *only* as well
- (38) A: During a long time Bill did very well – he published 3 papers each year. How does he do lately?
- B: Not so well. Last year he published 1 paper and this year he (**#only**) published [2]_F.
- B’: Not so well. Last year he **only** published [2]_F papers and this year he published 1.
- Here too – *only* is infelicitous in B – where there seems to be a violation of the pragmatic constraint on evaluatives:
 - It is used with a less extreme case (2 papers), but not in a more extreme case (1 papers)
 - But crucially again, the same holds for the felicitous B’ case, which only differs in linear order

- More generally: we see the following schema:
 - (39) a. [extreme case] # **scalar operator** [non-extreme case]_F
 - b. **scalar operator** [non-extreme case]_F [extreme case]
- But If the idea of the constraint is ‘If you use an evaluative in a less extreme case, you must also use it in an extreme case’, - then there is no motivated way for distinguishing the two orders³
- In contrast - the superlative-based proposal CAN explain the order contrasts:
 - In the infelicitous, B cases, these presuppositions fail since there is uttered material weaker than *p* (with *only*) or stronger than it (with *even*), which appears **before** the sentence with the operator,
 - This material forms Uttered Alternatives which go into C, and the superlative presuppositions fail
- In contrast, in the felicitous, B’ cases, things are different:
 - by the time the sentences with *even* and *only* are uttered, the ‘problematic’ material has not been uttered yet, since it appears **after** these sentences,
 - so there is no contextual pressure to use it in constructing C.
 - Consequently the superlative scalar presupposition of *only* and of *even* does not fail.
 - Instead, we can accommodate appropriate alternatives into C–
 - Stronger than *p* in the case of *even*, and weaker than *p* in the case of *only*
 - so when the second sentences are being processed, the operation of *only* and of *even* has been already safely and appropriately completed.

³ Strictly speaking, Xiang 2020 gives a formal version of the constraint, for coordination structures, in (i) which does distinguish the two linear orders:

- (i) **The felicity condition of coordinating clauses with evaluatives:** For an evaluative expression δ , a coordination with clauses $\{q, \delta(p)\}$ is felicitous only if the evaluative inference of $\delta(p)$ does not entail the evaluative inference of $\delta(q)$. (Xiang 2020 p. 198)

However, the order contrasts are not really limited to coordination structures, but appear also in dialogues (ii):

- (ii) A: In 2019 John published 5 papers. Last year he published 8. And this year?
 B: This year he (#even) published [6]_F papers.
 A’: In 2019 John published 5 papers. Last year he even published [6]_F. And this year?
 B’: This year he published 8 papers.

More importantly, the linear constraint in (i) is not motivated semantically or pragmatically.

4.2 Issues for the characterization of *even* and *only* as evaluative antonyms

- A central ingredient of the proposal: both *even* and *only* are evaluatives
 - ***Only p*** conveys that *p* indicates a **small / low** value on a scale (e.g. ‘cheap’)
 - ***Even p*** indicates that *p* is **unlikely**
 - Xiang later says that the scale for *even* is not necessarily that of likelihood, but can also be another contextually supplied scale (cf. Greenberg 2018)
 - In these terms: ***even p*** conveys that *p* indicates a **large / high** value on scale
- A first issue: It is not clear what the source of the evaluativity of *even* and *only* is, under Xiang’s proposal:
 - there is no explicit component in Xiang’s entries for *only* and *even* which derives this claim
 - Importantly - the existential presuppositions in the entries is not strong enough for that.
 - Suppose that there are several (e.g.5, or 10) alternatives in C
 - being less likely (or – higher) than one alternative in such a C (for *even*) does not guarantee that you are Unlikely (or – large) - I.e. exceed the contextual norm for unlikelyhood
 - And being cheaper than at least one price (for *only*) (or in general, lower than at least one alternative) does not guarantee that you are cheap (or low) – i.e. exceed the contextual norm for being cheap.
- But let’s assume that there is some kind of evaluative requirement for *only* and *even*
 - This immediately raises a second issue:
 - The very claim that both *only* and *even* are evaluative particles – with an antonymic evaluativity– is problematic
 - There is, in fact, a systematic asymmetry between the evaluative inferences of the two particles:
 - That of *only* is cancellable, whereas that of *even* is not

- Let's start with an example with *only*:

(40) A: Both the green and the red pairs of shoes are expensive. The average price for a pair here is around \$50, and these two pairs cost more than \$100!

B: Wow. That's really expensive! Do both cost the same?

A: No. The red pair is \$130 and the green one is less - **only** [\$110]_F. (so it is cheaper, but not cheap - it is still very expensive)

- We see that the evaluative inference of *only* ('the price is cheap') is cancellable:
 - *only* is felicitous where *p* is **lower** (=indicates that the price is **cheaper**) than the uttered alternative,
 - But crucially – it is not '**low**' (**cheap**) – i.e. lower than the contextual norm
 - in fact – it is explicitly said to be expensive
- In contrast, the evaluative inference of *even* (unlikely is non-cancellable)
 - It is NOT enough that *p* is **higher** (= indicates a more expensive price) than the uttered alternative,
 - I.e. it must indicate that the price is **high** / **expensive**⁴
 - I.e. It must be also higher than the default contextual norm,
 - Otherwise *even* is infelicitous

(41) A: Both green and red pairs of shoes are cheap. The average price for a pair is around \$100, and this one costs less than \$50!

B: Wow, that's really cheap! Do both cost the same?

A: No. The red pair is 20\$ and the green one is (**#even**) [\$40]_F. (So it is more expensive though still very cheap).

- We can see the asymmetry between *only* and *even* with other scales as well,
 - E.g. a scale of academic success:

⁴ It can also indicate 'high' on a negative antonym scale, e.g. shortness (*John is very short, he is 1.58m, and Bill is even 1.50m*). See Greenberg 2015, 2018 for discussion. In contrast, *only* cannot indicate 'low' on a negative antonym scale (cf. Klindinst 2004).

- (42) (Context: John and Bill are two average students checking their grades. The average / median grade / the grade one needs in order to be accepted to the second year is B+)
- John : Unbelievable ! I got an A+!
- Bill: You got more than me then! I **only** got [an A]_F. (But this is still more than the average / than what I need. I am so happy!)
- (43) John: Oh no. I got a C in the exam...
- Bill: You got less than me then, I **#(even)** got [a C+]_F (But this is still less than the average / than what I need. I am disappointed!)
- So – here too there is an asymmetry between *only* and *even*:
 - For *only* to be felicitous it is enough that *p* is lowerer than the Uttered Alternative
 - Even if it is itself ‘high’ (higher than the norm)
 - For *even* it is not enough that *p* is higherer than the Uttered Alternative
 - It must be ‘high’ as well (i.e. higher than the norm)⁵
 - What does this asymmetry mean?
 - A suggestion: The evaluativity of *even* and *only* is of a different nature:
 - ***even* is a true evaluative particle** –it has a hardwired evaluative presupposition, requiring that *p* indicates ‘higher than the norm’, in addition to its superlative presupposition (cf. Greenberg 2015, 2018)
 - The ‘norm’ can be either ‘distributional’ i.e. represent a degree / interval around the median (cf. Solt 2011), or ‘functional’, i.e. represents a degree which is suitable / needed for some salient discourse goal or purpose.(cf. Kagan & Alexajenko 2011, Solt 2012, Bylinina 2012).
 - **In contrast, *only* is not a true evaluative particle** – its evaluativity effects (“lower than the norm”) are cancellable and are NOT hardwired into its semantics

⁵ In Greenberg 2015, 2018 I argued against the widely held view that the scale for *even* is based on (un)likelihood. Instead I argued (following ideas in Rullmann 2007) that the scale is contextually supplied, and associates with gradable properties. In Greenberg 2015 I suggested that the default ‘unlikelihood’ effect of *even* is due to the default use of distributional standards, where deviation from the interval around the median corresponds to being unlikely, and that cases where unlikelihood is insufficient or not-necessary for the felicity of *even* are characterized by exceeding ‘functional’ standards, which typically need contextual support (cf. Kagan & Alexajenko 2011).

- To the extent this is correct – this poses a serious challenge to Xiang’s 2020 suggestion:
 - The claim that *only* is subject to a constraint on evaluative particles (which derives its infelicity pattern) is problematic if it is not a real evaluative.
 - This also means that *only* and *even* should not be considered evaluative antonyms
- **At the same time this suggestion leaves us with an obvious question:**
 - If *only* is not an evaluative particle, why does it so strongly seem to be so?
 - I.e. what leads to its so common ‘little / ‘less than the norm’ inferences’?
 - Although the inference is indeed cancellable, it is very prominent –it seems to be the default inference.
 - **Question: Is there a way to derive this inference for *only*?**
 - **Answer: Yes. (see next section)**

Part 5. Deriving the (cancellable) evaluativity of *only* from its superlative scalar presupposition

5.1 Krifka 2000 on deriving the mirative effects of *still* and *already*

- Krifka 2000 discusses the well-known mirativity effects of *still* and *already*:
 - (44) a. Lidia is 3 months old (no inference)
 - b. Lidia is **already** 3 months old — one would expect Lidia to be younger – **3 is 'a lot'**
 - c. Lidia is **still** 3 months old—one would expect Lidia to be older – **3 is 'little'**
 - Krifka 2000 suggests that these inferences are not hardwired (.....)
 - Rather they are derived from two ingredients:
 - First ingredient: A ‘superlative’ semantics for *still* and *already*, with universal quantification over alternatives ordered along the timeline. (but cf. Zimmermann 2018 for other possible scales)
 - The focused element of *already* is the latest in the set of alternatives,
 - whereas that of *still* is the earliest element:
 - (45) a. Lidia is [3]F months old
 - b. alternatives considered: 1 2 3 4 5,
 - c. alternative asserted: 3
 - (46) a. Lidia is **already** [3]F years old
 - b. alternatives considered: 1 2 3
 - c. alternative asserted: 3
 - (47) a. Lidia is **still** [3]F years old.
 - b. alternatives considered: 3 4 5
 - c. alternative asserted: 3
 - Second ingredient: A pragmatic constraint on constructing alternatives.
 - The alternatives to the prejacent of *still* and *already* are
 - “...assertions that, given the common ground and the informational interest of the interlocutors, could have been made at the current point of conversations” (p. (405)).
- The interaction of the two ingredients leads to the ‘mirative’ effects of *still* and *already*:

“By a general pragmatic rule, a consequence of the maxim of relevance, the alternative propositions must be considered reasonable, or entertainable, at the current point in discourse....hence (*still* and *already*) express a deviation from expected values in a particular direction... 'already' in (46) gives rise to the understanding that Lydia's age is greater than may have been expected, and *still* in (47), that it is smaller than may have been expected. These meaning components are conversational implicatures that arise from the fact that only such alternatives are constructed that can plausibly be entertained" (p. 405)

5.2 An application for *only*:

- We take what Krifka calls the ‘alternative considered’ to be the set C of contextually supplied alternatives
 - So for *only* p there are two constraints on C corresponding to Krifka's two ingredients:

❖ First, given the Guerzoni style superlative semantics - *only* is similar to *still* under Krifka's analysis:

- *p* is the weakest (=earliest) alternative in C

(48) Lidia is **only** [3]_F months old (≈ Lidia is still 3 months old)

- alternatives considered (= C) : 3 4 5

❖ Second, following Krifka's requirement: the alternatives in C must be **reasonable / entertainable at the current point in discourse**.

- A suggestion: The presence vs. absence of evaluative / “smallness” inferences with *only* will depend on the **current point of discourse** in which *only* *p* is uttered
 - To see how this works let's look at two basic cases:

5.2.1 **First case:** when *only p* is heard ‘out of the blue’ or as an answer to a question

(49) John **only** wrote [3]_F papers

A: How many papers did John write?

B: He only wrote [3]_F papers

- To construct alternatives stronger than *p* in C (by the superlative presupposition), which are also ‘entertainable at the current point in discourse’ - one must rely on non-linguistic factors
 - The default case: rely on common ground assumptions, regarding entertainable / reasonable number of papers – these actually correspond to some salient or default standard / norm:
 - E.g. standard around the average / median number of papers
 - Or a standard representing the number of papers known in the context to be relevant for some purpose (e.g. to get a promotion)
 - Notice: These two types of standards correspond to what has been called in the literature on the ‘positive form’ of gradable adjectives ‘distributional’ vs. ‘functional’ standards. Cf. Kagan & Alexajenko 2011, Solt 2012, Bylinina 2012). See discussion at the end.
 - **This leads to the ‘smallest inference’ of *only*:** *p* is considered ‘lower than what is expected / needed’ / ‘lower than the common ground standard’, etc.
- This can be also used to explain the infelicity of e.g. (50):

(50) John (**#only**) has [11]_F kids (odd in Western societies)

➤ Given the superlative semantics of *only*, C in this case looks as in (50’):

(50’) {*John has 13 kids, John has 12 kids, John has 11 kids*}

- But given common ground assumptions regarding the reasonable / expected / standard number of kids (in typical western contexts), putting such higher alternatives into C is costly / problematic (they are not plausible / entertainable).
 - I.e. there is a clash between the two constraints on the alternatives in C (stronger and contextually entertainable)

5.2.2 Second case: When *only* p appears **after uttered material stronger than p**

➤ **Prediction:** In such discourses “smallness effects” of *only* will NOT arise:

- Because we can rely on the uttered material itself to construct the alternatives to C
- Intuitively such uttered alternatives can be then considered **entertainable** at the current point in discourse since a close variant of p has been just actually **entertained**
- Thus, here there is **no need to rely on common ground standards**,
- So, there are no necessary ‘smallness’ effects relative to such standards

➤ **The prediction seems to be borne out:**

- Cases where *only* is felicitous although p does not indicate ‘a little’ (and even indicate ‘a lot’) are those where uttered material before, with which is stronger than the one in p :
 - Notice: A very similar mechanism is described in Umbach 2012 regarding the sensitivity of ‘comparative *noch*’ to standards

(51) (Context: The standard price for shoes is \$100).

The red pair is \$130 and the green one is less - **only** [\$110]_F (so it is cheaper, but not cheap - it is still very expensive)

- Similarly, Compare (50) with (52):

(50) A: How many kids does John have?

B: He (**#only**) has [11]_F kids

(52) A: Bill has 12 kids.

B: Wow, that’s a lot! And what about John?

A: He has less: He **only** has [11]_F kids

➤ **Conclusion:** *Only* is only a superlative, not a true evaluative scalar particle

- In contrast, we suggest that the evaluative effects of *even* (‘largeness effects’) are not derived, but hardwired,
 - I.e. the scalar presupposition of *even* has BOTH a superlative and an evaluative components (cf. Greenberg 2015, 2018):
 - a superlative component - p is the strongest alternative in C
 - an evaluative component – p indicates a measure higher than the contextual standard

6. Summary, open questions and directions

6.1 Summary

- We started this paper with Beaver & Clark's (2008) words about *only* and *even*:

In considering the meanings of *only* and *even*, one is tempted to say that they are, in some sense, opposites. Yet is hard to put one's finger on the nature of this intuitive antonymy We suggest that *only* and *even* might best be labeled PRAGMATIC ANTONYMS (Beaver & Clark 2008 p. 71)

- We looked at the felicity and interpretational effects of *only* and *even* in a wide range of contexts and types of discourse,
 - So now we can make progress in putting our finger on the nature of the scalar antonymy:
- We provided novel supports for a Guerzoni 2003 style approach to *only* and *even*
 - Namely that they both trigger a superlative presupposition, with opposite ordering
 - I.e. they are **superlative scalar antonyms**
 - And in fact – can be taken to be SEMANTIC (rather than pragmatic) antonyms
 - On the other hand, we argued that *even* and *only* are **NOT evaluative scalar antonyms**
 - Since only for *even* an evaluative ('more than the norm') component is hardwired,
 - whereas for *only* it is derived (from the superlative scalar presupposition)
 - We also argued **against taking *only* and *even* to be 'existential' scalar antonyms**
 - I.e. to take them to presuppose that *p* is weaker vs. stronger than some (salient) alternative in C
 - this seems to be true when there is one salient (e.g. uttered) alternative in C,
 - But it cannot explain cases where there are multiple such alternatives in C.
- A significant part of our discussion concerned the way contextual factors affect the construction of the set of alternatives, C, and prioritize some alternatives over others.
 - Some of our conclusions parallel conclusions in experimental research.
 - But more research is needed to continue doing that
 - And much more research is needed to define the contextual factors affecting in a precise and systematic way.

6.2 Some directions for further research

6.2.1 How precisely characterize of the way context affects the construction of alternatives?

- We already pointed out some parallels between our observations and experimental observations concerning this issue
 - I would like to look more closely at such and other comparisons along this line
 - In addition - it will be good to compare our observations regarding the way C is affected by context with conclusions in research on Scalar Implicatures and the Symmetry problem (e.g. Fox and Katzir (2011), Katzir (2014), Trinh and Haida (2015), Trinh (2019), Breheny et al. (2017), Gotzner & Romoli 2021).
 - Two potentially useful contextual constraints discussed in this research:
 - **relevance** and **salience**
 - Notice: ‘**complexity**’ is not relevant to us, since in all our examples the alternatives were as complex as the prejacent and as each other)
 - **Relevance:**
 - Usually defined relative to the Question Under Discussion,
 - An alternative is considered relevant - and hence eventually a member of the actual set of alternatives - only if it answers the current QUD (cf. e.g. Roberts 2006, Beaver & Clark 2008).
 - Indeed, in some cases a QUD-based notion of relevance seems helpful in explaining felicity contrasts with *only* and *even* above:
- (22) A: To go into this playground one needs to be 10 years old. Can John and Bill go in?
They are of the same age, right?
B: No, neither can go in, and they are not of the same age: John is 12 and Bill is **only** [11]_F.
- (23) A: To go into this playground one needs to be 10 years old. **Can John and Bill go in?**
B: No, neither can go in. John is 12 and Bill is (**#only**) [11]_F.
- We argued that (23), but not in (22), *only* is infelicitous since *Bill is 10 years old* must be a member of C – so the superlative scalar presupposition fails
 - this can be taken to be due to the shift in the QUD,
 - from a question concerning comparison between John’s and Bill’s ages (in (22))
 - from a question concerning a comparison to the age limit (in (23))
 - So the alternative *Bill is 10 years old* is relevant

- **But...** there are also cases where QUD-based relevance does not seem helpful
 - We get felicity contrasts – but with no clear change in the QUD:
- (20) A: How did it go in the exam? I heard that you both solved 10 questions!
 B: Well, no... But we still did very well. John answered 8 questions, and I **even** answered [9]_F.
- (21) A: Context: How did it go in the exam? I heard that Sue solved all 10 questions!
 B: Right, but neither of us managed to do the same. John answered 8 questions, and I (**#even**) answered [9]_F.
- In both cases the QUD seems to be the same (**How many questions did I answer?**)
- A similar case is (27a) vs. (29) – both with ‘a sequence of *only*s:
- (27a) The average number of children here is 5. John **only**₁ has 2 children. And Bill **only**₂ has [3]_F
- (29) The average number of children here is 5. John **only**₁ has 2 children. Compared to him, Bill (**#only**₂) has [3]_F.
- Here too the QUD seems to be the same for both cases (**How many children does Bill have?**)
- **Salience**
 - Perhaps the right factor which affects the inclusion of alternatives to C is salience of alternatives (in addition to relevance)?
 - E.g. perhaps the phrase “compared to him” in (29) makes the ‘problematic’ Uttered Alternative (“Bill has 2 children”) salient - so it has to be in C – leading to the failure of the superlative presupposition.
 - In contrast, when this phrase is not there, this alternative does not have to enter C, although it is QUD-relevant, since it is not salient (enough)?
 - But...relying on salience will require us to give a clear and precise characterization of this constraint.
 - In the original Katzir 2014 algorithm “The set of salient constituents in C” was equated with “constituents of the structures of utterances made in recent discourse” (p. 50)
 - I.e. with what we called “Uttered Alternatives”
 - However, we saw that sometimes alternatives based on **non**-uttered material (e.g. inferred or even accommodated ones) have priority over Uttered Alternatives in C.
 - So, “Salient alternatives” do NOT equal “Uttered Alternatives”
 - This challenge is not limited to our data

- It was also raised in the research on scalar implicatures and the symmetry problem:

Relevance and utterance can be defined with sufficient precision to make concrete predictions. However, C cannot be defined in terms of these notions, and it is, at this point, not clear what other notion can be resorted to in establishing an understanding of salience. (Trinh 2019, p. 6)

- So – in general, more research is needed to define in a precise way salient alternatives, and their relation to relevant and uttered ones.
 - But - the examination of our data above – concerning the scalar antonymy of *only* and *even* – can be taken as another source for making progress with such questions

6.2.2 What happens with covert *O* / *exh*?

- We saw that taking *only* to trigger a superlative scalar presupposition can account for two facts:
 - The infelicity pattern (against weaker Uttered material)
 - Derived ‘smallness’ effects
- Now we can see that covert *exh* differs from overt *only* regarding both phenomena:
 - First, unlike *only*, sentences where *exh* is assumed to be present exhibit no “smallness effects” (cf. Crnič 2012):
 - (53) John **only/exh** has [3]_F kids
 - unlike *only*, *exh* does not yield the inference that 3 is ‘a little’ / ‘not a lot’
 - (54) John (#*only*) / *exh* has [11]_F kids
 - unlike *only*, the sentence with *exh* is felicitous
 - Second, unlike *only*, constructions with *exh* are perfectly felicitous even against uttered material weaker than *p*:
 - (55) A: How many papers did your faculty members write?
 B: Let’s see: Bill wrote 7, Henry wrote 12, Tom wrote 11, Ted wrote 9, Ann wrote 9 as well, Bill wrote 4 Ian wrote 6, and John (**#only**) / **exh** wrote [5]_F
 - **Why?**
 - Perhaps – unlike *only* - *exh* does not trigger a superlative scalar presupposition?
 - Perhaps it imposes different contextual constraints on C?
 - (is this related to the claims ‘blindness’ of scalar implicatures to contextual information (cf. Magri 2009, 2011, Spector 2014)?

6.3.2 what happens with other *only*-like and *even*-like particles cross linguistically?

- Is the distinction between hardwired vs. derived evaluativity argued here for *even* vs. *only*, holds more generally for all *even*-like vs. *only*-like particles cross linguistically?
 - At least for exclusive, *only*-like particles, the answer is negative.
 - There are exclusives with a non-cancellable ‘lower than the default norm’ inference
 - e.g. English *merely* (cf. Beaver & Clark 2008, Coppock & Beaver 2014), and Hebrew *stam* (Orenstein 2016, Greenberg & Orenstein 2016), and *bilvad*.
- But more research should examine
 - the hardwired vs. derived evaluative distinction with exclusives cross linguistically
 - and whether there are also non-evaluative *even*-like particles.

6.3.4 The linguistic reality of standards in the semantics and pragmatics of alternative sensitive particles

- We saw above that contextual standards – both ‘distributional’ and ‘functional’ ones - play a role in the interpretation of both *even* and *only*:
 - For *even* we argued that the sensitivity to standards is non-cancellable and hardwired into its scalar presupposition (following Greenberg 2015, 2018)
 - For *only* we argued that this sensitivity is not hardwired – and it arises in default context
 - i.e. where no stronger Uttered Alternatives are present in C
- The linguistic reality of both types of standards has been argued for in the literature on degree-based constructions (cf. Kagan & Alexajenko 2011, Solt 2012, Bylinina 2012)
 - E.g. the interpretation of adjectives in the ‘positive form’
 - Or the interpretation of *too* and *enough*
- The fact that such standards are also relevant for the interpretation of alternative sensitive expressions which are not gradable, and do not have any degree argument is interesting
 - These two expressions are scalar - So it seems that the very existence of a scale leads / allow us to calculate / relate to standards on the scale.
 - More generally, the usefulness of tools from gradable / degree-based construction in the research of alternative sensitive scalar operators should be further examined. (Cf. also Zimmermann 2018 degree-based semantics for German *schon*).

Thank you!

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