

Analyzing English *Only* as *Not Any More/Other Than*

Linmin Zhang (NYU Shanghai)
zhanglinmin@gmail.com

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For more updates of this project, please see

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The classical view of *only*

- Horn (1969): *Only* expresses maximality (of informativeness)
 - ▶ \leadsto the prejacent of *only* is the strongest true proposition (among its alternatives) that can be uttered
 - ▶ i.e., every stronger alternative to the prejacent is false
- Both (1) and (2) has the same positive inference \leadsto presupposition

(1) *Only* Amy and Bill read poems.

- a. **Positive inference:** Amy and Bill read poems. **Presupposition**
- b. **Negative inference:** No one else read poems. **Assertion**

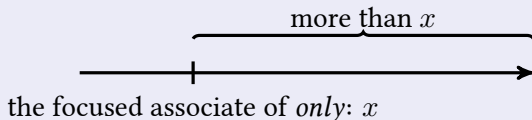
(2) *Not only* Amy and Bill read poems.

- a. **Positive inference:** Amy and Bill read poems. **Presupposition**
- b. **Negating the negative inference:** Someone else read poems. **Assertion**

Today's take-home messages

Only means **anti-additivity** and includes three components:

1. negation, 2. NPI, 3. additivity



- (3) $[[\text{only } x]] = \underbrace{\text{not}}_{\text{Negation}} \underbrace{\text{any}}_{\text{NPI}} \underbrace{\text{more/other than } x}_{\text{an additive part}}$
(with an additive presupposition: something other/more than x exists)

- (4) $[[\text{Only Amy and Bill read poems}]] =$
Not anyone other than Amy and Bill read poems

a. **Positive inference**: Amy and Bill read poems.

\leadsto (obligatory) scalar implicature

b. **Negative inference**: No one else read poems. \leadsto literal meaning

Today's roadmap

- 1. I will present new and cross-linguistic empirical data which
 - ▶ challenges the view that the prejacent of *only* is maximally informative
 - ▶ suggests that the positive inference is more like an implicature
 - ▶ sheds light on the underlying components of *only*
- 2. I will propose a new perspective on *only*: it indicates **anti-additivity**
- 3. I will address a few welcome consequences of the proposal
 - ▶ Just like additive particles, the use of *only* is across domains
 - ▶ The positive inference of *only* is an implicature
 - ▶ The NPI (non)-licensing behavior of *only*
 - ▶ The 'diminishing' effect of *only*
- 4. I will compare the current proposal with some recent accounts

Outline

- 1 Empirical data
- 2 Proposal: *Only* means anti-additivity
- 3 Welcome consequences of the current proposal
 - The notion of (anti-)additivity is across domains
 - The positive and negative inference of *only*
 - NPI (non-)licensing
 - The component *any* and ‘diminishing’ meaning
- 4 Comparison with existing accounts
- 5 Conclusion

1. The classical ‘maximality’ view: good predictions

- According to the canonical view, the prejacent of *only* is the strongest (maximally informative) true one among alternatives
- Our intuition that (5)–(7) are contradictory is indeed accounted for.
 - (6) and (7) suggest that the meaning of *only* is similar to *exactly*.

(5) ?**Only** $\underbrace{\text{Amy and Bill came.}}_{p_1}$ In fact, **only** $\underbrace{\text{Amy came.}}_{p_2}$ **Contradiction**

$\therefore p_1 \models p_2, \therefore$ they cannot be both the strongest.

(6) ?**Only** $\underbrace{3 \text{ people came.}}_{p_1}$ In fact, **only** $\underbrace{2 \text{ people came.}}_{p_2}$ **Contradiction**

$\therefore p_1 \models p_2, \therefore$ they cannot be both the strongest.

(7) #**Only** $\underbrace{3 \text{ people came.}}_{p_1}$ In fact, **only** $\underbrace{4 \text{ people came.}}_{p_2}$ **Contradiction**

$\therefore p_2 \models p_1, \therefore$ they cannot be both the strongest.

1. The classical ‘maximality’ view: bad predictions

- However, our intuition is that (8) and (9) are NOT contradictory, and they are true and felicitous in their context.

(8) Context: I have a juice bar. Only kids below 14 came to my juice bar. I told a friend who came to my juice bar:

‘Only kids below 18 came to my juice bar.’

In fact, only kids below 14 came to my juice bar. $p_2 \models p_1$

p_1

p_2

(9) Context: a company only hires people with a PhD degree in linguistics. During an interview, when asked who they hire, they said:

‘We only hire people with a PhD degree.’

In fact, we only hire people with a PhD degree in linguistics. $p_2 \models p_1$

p_1

p_2

2. Parallelism (i): positive inference of *only* vs. implicature

Incremental informativeness

- Both can be cancelled by continuing with a stronger alternative.¹

(8) Context: I have a juice bar. Only kids below 14 came to my juice bar. I told a friend who came to my juice bar:

‘*Only* kids below 18 came to my juice bar.’

$\underbrace{\hspace{15em}}_{p_1}$

In fact, *only* kids below 14 came to my juice bar.’ $p_2 \models p_1$

$\underbrace{\hspace{15em}}_{p_2}$

(10) Context: At the entrance of a bar, somebody asked me whether I’m 21, and I answered:

‘Of course I’m 21. In fact I’m 40.’ $p_2 \models p_1$

$\underbrace{\hspace{5em}}_{p_1} \qquad \underbrace{\hspace{5em}}_{p_2}$

¹I thank Paul-André Mellies for imagining the juice bar scenario, which makes me see the parallelism between (8) and (10).

2. Parallelism (i): positive inference of *only* vs. implicature

Incremental informativeness

- Both can be cancelled by continuing with a stronger alternative.

- (9) Context: a company only hires people with a PhD degree in linguistics. During an interview, they said:

‘We *only* hire people with a PhD degree.’

p_1

In fact, we *only* hire people with a PhD degree in linguistics.’ $p_2 \models p_1$

p_2

- (10) Context: At the entrance of a bar, somebody asked me whether I’m 21, and I answered:

‘Of course I’m 21. In fact I’m 40.’ $p_2 \models p_1$

p_1 p_2

2. Parallelism (ii): positive inference of *only* vs. implicature Asymmetry

- There can be an asymmetry between a positive and negative sentence:
(i) cancellable in one and (ii) uncancellable (i.e., obligatory) in the other

(11) (see also e.g., [Van Rooij and Schulz 2007](#), [Crnič 2022](#))

- a. **Only** kids below 18 came to my juice bar,
and perhaps even they didn't.

~> **weak, cancellable** positive inference

- b. **Not only** kids below 18 came to my juice bar,
but perhaps they didn't.

~> **strong, uncancellable** positive inference

(12) (see also e.g., [Sauerland et al. 2005](#), [Spector 2007](#))

- a. The kids flew kites in the park.

~> **uncancellable** plural inference

- b. The kids didn't fly kites in the park.

~> **cancellable** plural inference

3. Inspiration from cross-linguistic expressions of ONLY

- In some languages, the expression of ONLY already contains a negation:
an NPI + a negation

(13) Korean construction *pakk-ey* + NEG
NPI

30-pwun pakk-ey an ca-ss-ta
30-min. outside-to NEG sleep-PST-DEC

‘I only slept for 30 minutes.’

Literal translation: ‘Outside of 30 minutes, I did not sleep.’

Interim summary

- I have shown new and cross-linguistic empirical data which
 - ▶ challenges the ‘maximality (of informativeness)’ view of *only*
 - ▶ suggests the parallelism between the positive inference and implicature
 - ▶ sheds light on the underlying components of *only*
- These empirical data suggest that
 - ▶ *Only* includes some hidden negation and NPI
 - ▶ The use of *only* shows a sensitivity to scalarity (see also e.g., [Alxatib 2020](#))

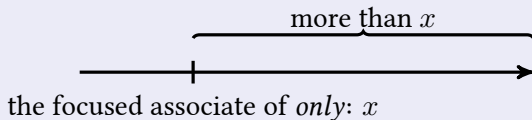
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Proposal

Only means **anti-additivity** and includes three components:

1. negation, 2. NPI, 3. additivity



(3) $[[\text{only } x]] = \underbrace{\text{not}}_{\text{Negation}} \underbrace{\text{any}}_{\text{NPI}} \underbrace{\text{more/other than } x}_{\text{an additive part}}$

(with an additive presupposition: something other/more than x exists)

Additivity and anti-additivity: Anaphoricity to a QUD

- The components of negation and NPI reflect what is overt in Korean ONLY.
- The component of additivity captures scalarity (in addressing a QUD)
 - **Additivity** addresses an increase anaphoric to a base item, that is a partial answer to a relevant Current Question (CQ, see [Beaver and Clark 2009](#), [Thomas 2011](#), [Zhang and Ling 2021](#), [Zhang and Zhang 2024](#)).
 - ★ Additivity: leading to a more informative answer to the CQ
 - **Anti-additivity** still assumes the existence of items / values above the base item, but indicates that this increase part cannot lead to a more informative true answer to the CQ
 - ★ Anti-additivity does not itself guarantee maximal informativeness in addressing the CQ (see examples like (8) and (9))

(14) Current question: Who came?

a. (Amy came). Another girl also came.

base item increase

b. Not anyone other than Amy came.

no increase base item

Accounting for some of the above examples

- In these examples, the overall discourse shows an incremental informativeness in addressing their relevant CQ:

(8) CQ of the juice-bar scenario: who came to my juice bar?

‘ Only kids below 18 came to my juice bar .

Not anyone other than kids below 18 came to my juice bar

In fact, only kids below 14 came to my juice bar .’

Not anyone other than kids below 14 came to my juice bar

(9) CQ of the the hiring scenario: who do we hire?

‘ We only hire people with a PhD degree .

We do not hire anyone other than those with a PhD degree

In fact, we only hire people with a PhD degree in linguistics.’

We do not hire anyone other than those with a PhD degree in linguistics

(10) CQ of the bar scenario: how old am I?

‘Of course I’m 21. In fact I’m 40.’

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1. The notion of (anti-)additivity is across domains

- (Anti-)additivity is about addressing a QUD and can be based on
 - a part-whole relation in a domain of entities
 - lower and higher values along a totally ordered scale (i.e., in a domain of scalar values)

(15) I ate two bars of chocolate. Then I ate a bit **more**.

Additivity in a domain of entities

(16) Amy is intelligent. Sophie is **more** intelligent.

Additivity in a domain of scalar values
(here a scale of intelligence)

(17) **Only** Amy and Bill bought books.

= Not anyone other than Amy and Bill bought books.

Anti-additivity in a domain of entities

(18) Bill is **only** 17 years old.

= Bill is not any older than 17.

Anti-additivity in a domain of scalar values

◀ ◻ (here a scale of height) ↻

2. The positive and negative inference of *only*

- (4) [[Only Amy and Bill read poems]] =
Not anyone other than Amy and Bill read poems
- a. **Positive inference:** Amy and Bill read poems.
 \leadsto (obligatory) scalar implicature
 - b. **Negative inference:** No one else read poems. \leadsto literal meaning

2. The positive and negative inference of *only*

Deriving the positive inference as scalar implicature

- (17) *Only* Amy and Bill bought books.
= Not anyone other than A and B bought books. (literal meaning)
 $\wedge \neg$ [Not anyone other than A bought books] (negating a stronger claim)
 $\wedge \neg$ [Not anyone other than B bought books] (negating a stronger claim)
 \leadsto Amy and Bill bought books
- (18) Bill is *only* 17 years old.
= Bill is not any older than 17. (literal meaning)
 $\wedge \neg$ [Bill is not any older than n] (here $n < 17$) (negating a stronger one)
 \leadsto Bill is 17 years old

2. The positive and negative inference of *only*:
When an *only*-sentence is negated

- Negating anti-additivity results in additivity
- Thus the positive inference of an *only*-sentence now becomes the **literal meaning**, serving as the base of additivity.
- This explains why the positive inference is actually strong and uncancellable in a negated *only*-sentence.

(19) **Not only** Amy and Bill bought books. (the negation of (17))
 = Someone other than Amy and Bill bought books.
 \models Amy and Bill bought books. base of additivity

(20) Bill is **not only** 17 years old. (the negation of (18))
 = Bill is older than 17.
 \models Bill is 17 years old. base of additivity

2. The positive and negative inference of *only*: the weakening of the positive inference

- Some naturally occurring examples online:

- (21) How can human beings balance their bodies on *only two legs* (*sometimes even on one*) when it is not possible for other animals and non-living things on only two legs?
<https://www.quora.com/How-can-human-beings-balance-their-bodies-on-only-two-legs-sometimes-even-on-one-when-it-is-not-possible-for-other-animals-and-non-living-things-on-only-two-legs>
- (22) Flower that blooms *only once a year* *sometimes even once in two years*.
<https://www.alamy.com/flower-that-blooms-only-once-a-year-sometimes-even-once-in-two-years-flower-in-the-garden-image312105296.html>
- (23) Flat warts may be round or oval-shaped. They're *only very slightly raised*, *sometimes not even noticeable*.
<https://my.clevelandclinic.org/health/diseases/24337-flat-warts>

2. The positive and negative inference of *only*: the weakening of the positive inference

- Examples from the literature: Crnić (2022), von Fintel and Iatridou (2007)

(24) Tali has to only dance with Gali_F (Crnić 2022: (11))
... and she doesn't have to dance with her either

(25) To get good cheese, you only have to go to the North End.
(von Fintel and Iatridou 2007: (11))

- Under the current proposal,
 - (24) means that Tali does not have to dance with anyone other than Gali.
 - (25) means that you don't have to go to anywhere other than the North End.

2. The positive and negative inference of *only*: the weakening of the positive inference

- Van Rooij and Schulz (2007): Material implication

(26) Only if $[A]_F$, then C .
 \neq if $[A]_F$, then C .

(27) I will read a book only if its reviews are good.
 \leadsto Intuitively, 'its reviews are good' is a necessary but not sufficient condition for me to read a book.

3. NPI (non)-licensing

- By containing a negation operator, *only* naturally licenses NPI.
 - *Only* naturally provides a downward-entailing (DE) environment.
 - There is no need to assume Strawson DE-ness (cf. [Von Stechow 1999](#))

(28) *Only* Mary ate *any* vegetables.
= Not anyone other than Mary ate *any* vegetables.

(29) *Only* provides DE-ness

- a. Only Mary read books
= Not anyone other than Mary read books
- b. Only Mary read linguistics books
= Not anyone other than Mary read linguistics books

- Given that $\lambda x.\text{linguistics-book}(x) \subseteq \lambda x.\text{book}(x)$, while $\llbracket (29a) \rrbracket \models \llbracket (29b) \rrbracket$, *not anyone other than Mary*, i.e., *only Mary*, is a DE environment.

3. NPI (non)-licensing

- The focused associate part of *only* is upward-entailing (UE) and cannot license an NPI (see also [Xiang 2017](#)).

- (30) a. Only [some kids]_F came.
b. *Only [any kids]_F came.

- (31) The focused associate of *only* is an UE environment
- a. Only dogs are cute
= Not anything other than dogs are cute
- b. Only poodles are cute
= Not anything other than poodles are cute

- Given that $\lambda x.\text{poodle}(x) \subseteq \lambda x.\text{dog}(x)$, while $\llbracket (31b) \rrbracket \models \llbracket (31a) \rrbracket$, the focused associate of *only* is a UE environment.

4. The component *any* and the ‘diminishing’ meaning

- As illustrated by the contrast between (18) and (32), the ‘diminishing’ impression in interpreting an *only*-sentence comes from the contribution of *any*.

(18) Bill is only 17 years old. \leadsto 17 is below the threshold of being old
= Bill is not any older than 17. ‘diminishing’ meaning

(32) Bill is not older than 17. No ‘diminishing’ meaning

NPI “any” means “(not) even slightly”.

(18) = Bill is not even slightly older than 17

= Even compared to a value slightly older than 17, Bill’s age does not reach it.

“even” suggests that the contextual threshold of being old is probably higher.

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1. Compared with Van Rooij and Schulz (2007)

- Van Rooij and Schulz (2007): a background alternative approach.
 - ▶ E.g., in (33), $[[\text{only Mary}]]$ is a GQ of type $\langle\langle et \rangle, t\rangle$,
 - ▶ and $[[\text{John introduced to Sue}]]$ is of type $\langle et \rangle$
 - ▶ and the latter is a smallest element of the former, i.e., the latter is equal to $\{\text{Mary}\}$
- Van Rooij and Schulz (2007) considers the positive inference of an *only*-sentence an implicature

(33) John only introduced Mary_F to Sue.

2. Compared with von Stechow and Iatridou (2007)

- von Stechow and Iatridou (2007): (i) *only* expresses **exception**, and (ii) there is a weakened, existential presupposition.

(34) *only* x = NEGATION + other than x (von Stechow and Iatridou 2007)
(with an existential presupposition)

(25) To get good cheese, you only have to go to the North End.
= You do not have to go to places other than the North End
(Presupposition: You have to go to somewhere)

- This analysis makes a wrong prediction wrt Crnič (2022)'s data:
Intuitively, (24) does not entail that Tali has to dance with someone.

(24) Tali has to only dance with Gali_F (Crnič 2022: (11))

- This analysis attributes the 'diminishing' effect to world knowledge:

(18) Bill is only 17 years old.
 \leadsto predicted to be equivalent to 'Bill is not older than 17'

3. Compared with Coppock and Beaver (2014)

- **Coppock and Beaver (2014)**: exclusive expressions
 - ▶ **an at-issue ‘at most’ component**: there is no answer to the Current Question under discussion that is stronger than the prejacent
 - ▶ **a presupposed ‘at least’ component**: there is some answer to the Current Question under discussion that is at least as strong as the prejacent
- The ‘juice-bar’ example and the ‘hire’ example challenge this view:

- (8) CQ of the juice-bar scenario: who came to my juice bar?
‘**Only** kids below 18 came to my juice bar. In fact, **only** kids below 14 came to my juice bar.’
- (9) CQ of the the hiring scenario: who do we hire?
‘We **only** hire people with a PhD degree.
In fact, we **only** hire people with a PhD degree in linguistics.’

4. Compared with Alonso-Ovalle and Hirsch (2022)

- Alonso-Ovalle and Hirsch (2022) proposes that an *only*-sentence presupposes the truth of the prejacent
- To account for (25), Alonso-Ovalle and Hirsch (2022) proposes the insertion of a silent *at least*
 - This optional insertion is problematic wrt (24)
 - It is also at odds with adding an overt *at least* in an *only* sentence.

(25) To get good cheese, you only have to go to the North End.

(35) Alonso-Ovalle and Hirsch (2022)'s analysis of (25):
you have to go to the North End or somewhere else

(24) Tali has to only dance with Gali_F (Crnič 2022: (11))

- (36)
- Only two people came.
 - *Only at least two people came.

5. Compared with Crnić (2022)

- Crnić (2022) adopts a distributed analysis

(37) *only* x = no one but x

[MIN [**only** $Gali_F$ arrived on time]]

negative inference: No one *distinct from Gali* arrived on time

positive inference: Gali arrived on time

“only” conveys an exceptive meaning. Counterexample:

(38) Only 90% of the students passed the exam.

Summary

| | Theory components | | | how are empirical data explained | | |
|---------------------------------|-------------------|-------------------------------------|---------------|----------------------------------|---------------------------------------|----------------------|
| | NEG | exception | NPI | cross-domain use | positive inference | 'diminishing' effect |
| Van Rooij and Schulz (2007) | / | / | / | not discussed | implicature | not discussed |
| von Stechow and Iatridou (2007) | ✓ | unclear on whether it's scale-based | hinted | not discussed | a weakened existential presupposition | world knowledge |
| Coppock and Beaver (2014) | / | scale-based | / | QUD-related | a weekend existential presupposition | not discussed |
| Alonso-Ovalle and Hirsch (2022) | / | / | / | not discussed | presupposition | not discussed |
| Crnič (2022) | ✓ | not-scale-based | / | not discussed | a weakened existential presupposition | not discussed |
| Current proposal | ✓ | scale-based | ✓ | anti-additivity | implicature | the NPI component |

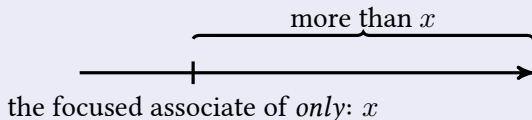
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Selected references I

- Alonso-Ovalle, Luis, and Aron Hirsch. 2022. Keep only strong. *Semantics and Pragmatics* 15(6):1–47.
<https://doi.org/10.3765/sp.15.6>.
- Alxatib, Sam. 2020. *Focus, evaluativity, and antonymy: a study in the semantics of only and its interaction with gradable antonyms*. Springer Nature. <https://doi.org/10.1007/978-3-030-37806-6>.
- Beaver, David I., and Brady Z. Clark. 2009. *Sense and sensitivity: How focus determines meaning*. John Wiley & Sons. https://doi.org/10.1002/9781444304176open_in_new.
- Coppock, Elizabeth, and David I Beaver. 2014. Principles of the exclusive muddle. *Journal of Semantics* 31:371–432. <https://doi.org/10.1093/jos/fft007>.
- Crnič, Luka. 2022. A distributed analysis of *only*. <https://ling.auf.net/lingbuzz/006645>.
- von Fintel, Kai, and Sabine Iatridou. 2007. Anatomy of a modal construction. *Linguistic Inquiry* 38:445–483. <https://www.jstor.org/stable/pdf/40071397.pdf>.
- Horn, Laurence R. 1969. A presuppositional analysis of *only* and *even*. In *Proceedings from the Annual Meeting of the Chicago Linguistic Society*, volume 5, 98–107. Chicago Linguistic Society.
https://ling.yale.edu/sites/default/files/files/horn/Horn1969_CLS5.pdf.
- Sauerland, Uli, Jan Anderssen, and Kazuko Yatsushiro. 2005. The plural is semantically unmarked. In *Linguistic Evidence: Empirical, Theoretical and Computational Perspectives*, ed. Stephan Kepser and Marga Reis, 413–434. <https://semantics.uchicago.edu/kennedy/classes/f11/na/docs/sauerlandetal05.pdf>.
- Spector, Benjamin. 2007. Aspects of the pragmatics of plural morphology: On higher-order implicatures. In *Presupposition and Implicature in Compositional Semantics*, ed. Uli Sauerland and Penka Stateva, 243–281. https://link.springer.com/chapter/10.1057/9780230210752_9.

Selected references II

- Thomas, Guillaume. 2011. Another additive particle. In *Semantics and Linguistic Theory*, volume 21, 634–651.
- Van Rooij, Robert, and Katrin Schulz. 2007. Only: Meaning and Implicatures. In *Questions in dynamic semantics*, 193–223. Brill. https://doi.org/https://doi.org/10.1163/9780080470993_010.
- Von Stechow, Kai. 1999. NPI licensing, Strawson entailment, and context dependency. *Journal of semantics* 16:97–148. <https://doi.org/10.1093/jos/16.2.97>.
- Xiang, Yimei. 2017. ONLY: An NPI-licenser and NPI-unlicenser. *Journal of Semantics* 34:447–481. <https://doi.org/10.1093/jos/ffx006>.
- Zhang, Linmin, and Jia Ling. 2021. The semantics of comparatives: A difference-based approach. *Journal of Semantics* 38:249–303.
- Zhang, Linmin, and Florence Zhang. 2024. Comparative morphemes are additive particles English *-er/more* vs. Chinese *gèng*. <https://ling.auf.net/lingbuzz/008122>, submitted manuscript.