

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

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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**

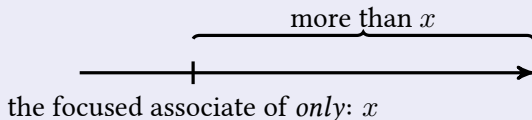
(2) **Not only** Amy and Bill read poems.

- 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
- Positive inference:** Amy and Bill read poems.
 \rightsquigarrow (obligatory) scalar implicature
 - Negative inference:** No one else read poems. \rightsquigarrow 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**

$\because p_1 \models p_2, \therefore$ 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**

$\because p_1 \models p_2, \therefore$ 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**

$\because p_2 \models p_1, \therefore$ 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, $\underbrace{\text{only kids below 14 came to my juice bar.}}_{p_2}$ $p_2 \models p_1$

(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 $\underbrace{\text{only hire people with a PhD degree in linguistics.}}_{p_2}$ $p_2 \models p_1$

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.’

$\underbrace{\text{Only kids below 18 came to my juice bar.}}_{p_1}$
In fact, $\underbrace{\text{only kids below 14 came to my juice bar.}}_{p_2}$ $p_2 \models p_1$

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

‘Of course $\underbrace{\text{I’m 21.}}_{p_1}$ In fact $\underbrace{\text{I’m 40.}}_{p_2}$ ’ $p_2 \models p_1$

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

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](#))

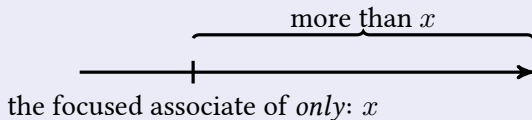
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- 3 Welcome consequences of the current proposal
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 - The component *any* and ‘diminishing’ meaning
- 4 Comparison with existing accounts
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Proposal

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)

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.
 \rightsquigarrow (obligatory) scalar implicature
 - b. **Negative inference:** No one else read poems. \rightsquigarrow 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*: 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: Crnič (2022), von Stechow and Iatridou (2007)

(24) Tali has to only dance with Gali_F (Crnič 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 Stechow 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.
 \rightsquigarrow 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 $[[\text{(29a)}]] \models [[\text{(29b)}]]$, *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 $\llbracket (31b) \rrbracket \neq \llbracket (31a) \rrbracket$, 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. \rightsquigarrow 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

The role of NPI “any”: “any” means “(not) even slightly”.(18) = Bi

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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.
 \rightsquigarrow 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)
- a. Only two people came.
 - b. *Only at least two people came.

5. Compared with Crnič (2022)

- Crnič (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 weakened 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

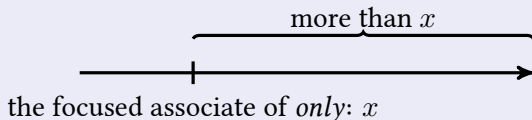
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Thank you!

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For more updates of this project, please see

<https://ling.auf.net/lingbuzz/008130>

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