

# *Even*: Polarity & Scope.

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## 1 Basics

*Even*'s contribution is limited to the level of NAI content.

- (1) (Even) Mary sang well.
- (2) a. Anna even introduced [PAUL]<sub>F</sub> to Sue.  
b. Anna even introduced Paul to [SUE]<sub>F</sub>.

In simple unnegated sentences, *even* is associated with one reading.

- (1) Even Mary sang well.

**Scalar Presupposition:**  $\forall p \in \text{ALT}((1)) : p \geq \llbracket(1)\rrbracket$ . (Eqv.: Mary is the least likely person in  $\text{ALT}(\text{Mary})$  to sing well).

**Additive Presupposition:**  $\forall p \in \text{ALT}((1)) : p \neq \llbracket(1)\rrbracket \rightarrow p$ . (Eqv.: Everyone else in  $\text{ALT}(\text{Mary})$  sang well).

Under (clausemate) negation, the contribution of *even* differs.

- (3) Not even Mary sang well.

**Scalar Presupposition:**  $\forall p \in \text{ALT}((1)) : p \leq \llbracket(1)\rrbracket$ .  
(Eqv.: Mary is the most likely person in  $\text{ALT}(\text{Mary})$  to sing well).

**Additive Presupposition:**  $\forall p \in \text{ALT}((1)) : p \neq \llbracket(1)\rrbracket \rightarrow \neg p$ .  
(Eqv.: No-one else in  $\text{ALT}(\text{Mary})$  sang well).

The exact content of the scalar/additive presuppositions is unclear.

- (4) Spain didn't even make it into the [QUARTER-FINALS]<sub>F</sub>.  
 $\not\Rightarrow$  *making it to QFs is more plausible than making it to R16.*
- (5) I'm surprised Jo didn't like the film. Afterall, even [BOB]<sub>F</sub> liked it.  
 $\not\Rightarrow$  *Jo liked the film.*

We'll distinguish between two readings associated with *even*.

**‘MIN’-Reading:** Minimal Scalar Presupposition  
 $\forall p \in \text{ALT}(\phi) : \llbracket \phi \rrbracket \leq p$   
 Positive Additive Presupposition  
 $\forall p \in \text{ALT}(\phi) : p \neq \llbracket \phi \rrbracket \rightarrow p$

**‘MAX’-Reading:** Maximal Scalar Presupposition  
 $\forall p \in \text{ALT}(\phi) : \llbracket \phi \rrbracket \geq p$   
 Negative Additive Presupposition  
 $\forall p \in \text{ALT}(\phi) : p \neq \llbracket \phi \rrbracket \rightarrow \neg p$

We'll adopt a paradigm in which the two readings are associated with the following scalar presuppositions.

(6) Sara solved even Q2.  $\checkmark_{\text{MIN}} = \text{Q2 is hardest}$   
 $\times_{\text{MAX}} = \text{Q2 is easiest}$

(7) Sara didn't solve even Q2.  $\times_{\text{MIN}} \text{ Q2 is hardest}$   
 $\checkmark_{\text{MAX}} \text{ Q2 is easiest}$

## 2 A Puzzle about Distribution

Interestingly, the two readings are not in complementary distribution.

### A. Questions

(8) Did Sara solve even Q2?  $\checkmark_{\text{MIN}}/\checkmark_{\text{MAX}}$   
 (9) a. Didn't Sara solve even Q2?  $\checkmark_{\text{MIN}}/\% \text{ MAX}$   
 b. Did Sara not solve even Q2?  $\times_{\text{MIN}}/\checkmark_{\text{MAX}}$

### B. Conditionals

(10) If a student solves even Q2, they'll receive a passing grade.  
 $\checkmark_{\text{MIN}}/\checkmark_{\text{MAX}}$   
 (11) Solve even Q2 and you'll receive a passing grade.  
 $\checkmark_{\text{MIN}}/\checkmark_{\text{MAX}}$   
 (12) Suppose you solve even Q2. Then you'll receive a passing grade.  $\checkmark_{\text{MIN}}/\checkmark_{\text{MAX}}$   
 (13) If you don't solve even Q2, you won't receive a passing grade.  $\times_{\text{MIN}}/\checkmark_{\text{MAX}}$

### C. Inquisitive Attitudes

- (14) a. I wonder if Sara solved even Q2. ✓MIN/✓MAX  
 (15) a. Katie guessed whether Sara would solve even Q2. ✓MIN/✓MAX  
 b. You know whether Sara solved even Q2. ✓MIN/✓MAX  
 c. The examiner decides whether Sara solves even Q2. ✓MIN/✓MAX

#### D. Doxastic Attitudes

- (16) I think Sara solved even Q2. ✓MIN/✗MAX  
 (17) I doubt Sara solved even Q2. ✓MIN/✓MAX  
 (18) I think Sara didn't solve even Q2. ✗MIN/✓MAX

#### E. Adjectives

- (19) It seems likely that Sara will solve even Q2. ✓MIN/✗MAX  
 (20) It seems unlikely that Sara will solve even Q2. ✓MIN/✓MAX  
 (21) a. It doesn't seem likely that Sara will solve even Q2. ✓MIN/✓MAX  
 b. It seem likely that Sara won't solve even Q2. ✗MIN/✓MAX

### 3 Polarity & Scope

Rooth (1985) posits that *even* is ambiguous between:

- A non-polarity sensitive particle, which contributes
  - a minimal scalar presupposition; and
  - a positive additive presupposition.
- An NPI, which contributes
  - a maximal scalar presupposition; and
  - a negative additive presupposition.

Karttunen & Peters (1979) (followed by Wilkinson (1996) and Crnic (2012)) posit that *even* is univocal. It contributes only:

- a minimal scalar presupposition; and
- a positive additive presupposition.

The idea is that, by taking scope, *even* associates with different alternatives. So, where  $\text{ALT}((3)) = \{ x \text{ did not sing well} \mid x \in \text{ALT}(\text{Mary}) \}$ , we obtain the following presuppositions:

**Minimal scalar presupposition:** Mary is the least likely person in  $\text{ALT}(\text{Mary})$  to not sing well;

**Positive additive presupposition:** Everyone else in  $\text{ALT}(\text{Mary})$  did not sing well.

The scope proposal struggles to explain the availability of a MAX-reading of (14). To obtain the MAX-reading, *even* must take scope over the attitude verb.

$$\text{ALT}((14)) = \{ I \text{ wonder whether Sara solved } x \mid x \in \text{ALT}(Q2) \}$$

**Minimal scalar presupposition:** I am less likely to wonder whether Sara solved Q2 than I am to wonder if she solved any other question in  $\text{ALT}(Q2)$ ;

**Positive additive presupposition:** For each other question in  $\text{ALT}(Q2)$ , I wonder whether Sara solved that question.

## 4 Positive Proposal

We suggest that *even* is ambiguous between:

- A PPI, which contributes
  - a minimal scalar presupposition;
  - a positive additive presupposition.
- An NPI, which contributes
  - a maximal scalar presupposition;
  - a negative additive presupposition.

The distribution of PPIs/NPIS aligns closely with the availability of readings of *even*.

(22) Luís met with [some/??any] students.

(23) Luís didn't meet with [??some/any] students.

### A. Questions

- (24) Did Luís meet with [some/any] students today?
- (25) a. Didn't Luís meet with [some/%any] students today?  
b. Did Luís not meet with [%some/any] students today?

### **B. Conditionals**

- (26) If Luís has met with [some/any] students today, he'll still be in his office.
- (27) a. Solve [some/any] questions and you'll do get a passing grade.  
b. Suppose you solve [some/any] questions. Then you'll get a passing grade.
- (28) If Luís hasn't met with [??some/any] students today, he won't be in his office.

### **C. Inquisitive Attitudes**

- (29) a. I wonder whether Luís met with [some/any] students today.  
b. Katie guessed whether Luís would meet with [some/any] students today.  
c. You know whether Luís met with [some/any] students today.  
d. The Dean decided whether Luís met with [some/any] students today.

### **D. Doxastic Attitudes**

- (30) a. I doubt that Luís met with [any/% some] students today.  
b. I think that Luís met with [??any/some] students today.  
c. I think that Luís didn't meet with [any/??some] students today.

### **E. Adjectives**

- (31) a. It is unlikely that Luís met with [some/any] students today.  
b. It is likely that Luís met with [some/??any] students today.  
c. It is likely that Luís didn't meet with [??some/any] students today.

<b>Environment</b>	MIN	MAX	<i>some</i>	<i>any</i>
Bare	✓	✗	✓	✗
ClausemateNeg	✗	✓	✗	✓
Questions	✓	✓	✓	✓
Questions + ClMateNeg	✗	✓	%✗	✓
Questions + NonClMateNeg	✓	%✗	✓	%✓
Conditionals	✓	✓	✓	✓
Conditionals + ClMate¬	✗	✓	✗	✓
Inq.Attitudes	✓	✓	✓	✓
<i>thinks</i>	✓	✗	✓	✗
<i>doubts</i>	%✓	✓	%✓	✓
<i>thinks</i> + Neg	✗	✓	✗	✓
<i>likely</i>	✓	✗	✓	✗
<i>unlikely</i>	✓	✓	✓	✓
<i>likely</i> + Neg	✗	✓	✗	✓

## 5 Further Issues

### 5.1 Entanglement

Homer (2021) argues that although PPIs/NPIs are in non-complementary distribution, they exhibit entanglement.

- (32) a. Did someone steal something?  
 b. Did anyone steal anything?  
 c. ? Did anyone steal something?  
 d. ? Did someone steal anything?
- (33) a. Have you already eaten something?  
 b. Have you eaten anything yet?  
 c. ? Have you already eaten anything?  
 d. ? Have you eaten something yet?

The MIN/MAX readings are constrained in exactly the way Homer predicts.

- (34) a. Did even Claire steal something? ✓<sub>MIN</sub>/✗<sub>MAX</sub>  
 b. Did even Claire steal anything? ✗<sub>MIN</sub>/✓<sub>MAX</sub>
- (35) a. Did you already solve even Q2? ✓<sub>MIN</sub>/✗<sub>MAX</sub>  
 b. Did you solve even Q2 yet? ✗<sub>MIN</sub>/✓<sub>MAX</sub>

### 5.2 What Kind of Polarity Item?

Polarity items come in different kinds, depending on the environments in which they are licensed.

	NPIs	PPIs
Weak	<i>any, ever</i>	<i>some, never</i>
Strong	<i>yet, anymore, in weeks</i>	<i>already, still</i>
Minimizers	<i>at all, a single, one bit</i>	?

Weak NPIs and minimizers, unlike strong NPIs, are licensed in conditionals.

- (36) a. If you have [ever been to/ any interest in] Malaysia, watch this documentary. Weak NPIs  
 b. If you care about koalas [at all/ one bit], give money to this charity. Minimizers  
 c. If Mary has visited [?? in weeks/?? yet], she'll have left a note. Strong NPIs

Weak/strong NPIs, unlike minimizers, are licensed in comparatives.

- (37) a. Gary is happier than he has [ever been/ any right to be].  
 b. Rita is happier than she [has been in weeks/admitted yet].  
 c. Toni is happier than [?? a single one of her students/??her students are at all].

- (38) Steve is happier than even Gabe is. ✓MIN/✗MAX

Unlike weak/strong NPIs, negative polarity minimizers are associated with negative bias in polar questions (Guerzoni (2004); Roelofsen (2018)).

- (39) a. Did Paula give a single dollar to koalas?  
 b. Do the administration care in the slightest?  
 c. Did you win any money at all?

The same is not true of (unstressed) weak/strong NPIs.

- (40) Did you [ever] go to Tasmania [yet]?

### 5.3 Emotive Attitudes

(40) has reading on which it is associated with a maximal scalar presupposition.

- (41) I am glad that I solved even Q2.

*≠ I did not solve any other questions.*

There is independent reason to think that *even* must sometimes be able to take scope (even on the polarity approach).

- (42) a. Although nobody solved every question, none of the problems were too hard for the entire class.  
 b. Afterall, someone solved even Q2.  
 $\neq$  *There is someone who solved every question.*

Not all presupposition triggers project out of alternatives.

- (43) **Context:** *On my previous trip to France, I only visited Paris.*  
 On this trip I went to Marseilles. I went to Lyon. I even went to Paris again.  
 (44) I've always enjoyed spicy and bitter food. Recently, I've even started to enjoy sour food.

**Hypothesis:** the presuppositions of alternatives do not project under *even*.

- (41) I am glad that I solved even Q2.

**Minimal scalar presupposition:** It is less likely I would be happy to solve Q2 than to solve any other question;

**Positive additive presupposition:** For each other question, I would be happy to solve that question.

By positing that *even* can take scope, we can also speculate about a contrast which arises in questions.

- (45) a. Did Sara solve even Q2?  $\checkmark$ MIN/ $\checkmark$ MAX  
 b. Did Sara even solve Q2?  $\times$ MIN/ $\times$ MAX  
 (46) a. Someone solved even Q2.  $\checkmark$  *even*> $\exists$   
 b. Someone even solved Q2. ? *even*> $\exists$   
 (47) a. ?? Mary hasn't arrived already.  
 b. ?? Luís didn't speak to someone.  $\neg$  >  $\exists$

If the PPI-containing clause in (45.a) contains a negative polarity licensing item, then the PPI take scope above it to be licensed.

- (45) a. Did Sara solve even Q2?  
 b. Did Sara even solve Q2?

However, where *even* attaches to the VP this isn't possible, meaning the MIN-reading is blocked in (45.b).



## References

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