Polarity and standards of comparison: absolute adjectives in the not very construction

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“In formal linguistics, the focus is on denotative meanings, which are generally void of affective content” (Nouwen, 2021: 1)

Psychology/computational linguistics: Affective content (e.g. valence) at the core of meaning (e.g. Osgood et al., 1956)

Interplay of denotation and valence (e.g., modification)
Negation and valence

Diana: How did the talk go?
Nicole: (1) Not bad $\sim$ okay
    (2) Not good $\sim$ bad

Speakers exploit negation and vagueness for social purposes
Absolute adjectives

(3) The glass is not clean ⇒ dirty

(4) The glass is not very clean ∼ dirty

(5) The glass is not very dirty ∼ clean but not pristine

What notion of polarity drives this interpretative asymmetry?
How does it interact with scale structure?
Roadmap

1. Theoretical background: Antonyms, scale structure and pragmatic inferences
2. Experiments on polarity and scale structure
3. Outlook: Verbal alternatives
**Context and standard of comparison**

**Relative:** context-dependent standard

*long - short, good - bad*

**Absolute:** fixed standard

*bent - straight, dirty - clean*

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Cruse (1986); Rotstein & Winter (2004); Kennedy & McNally (2005); Kennedy (2007); Experimental evidence: Solt & Gotzner (2012)
Antonyms and entailments

**Relative**: contextual standard of comparison

(7) The line is not long $\not\Rightarrow$ it is short

**Absolute**: fixed standard (minimum or maximum degree)

(8) The glass is not clean $\Leftrightarrow$ it is dirty

(9) The glass is not very clean $\not\Rightarrow$ it is dirty

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Cruse (1986); Rotstein & Winter (2004); Kennedy & McNally (2005); Kennedy (2007)
Scale structure and implicature

Gotzner, Solt & Benz (2018): Scale structure affects pragmatic inferences

Leffel et al. (2019): Borderline constraint
(10) John was not very late ∼ late (min)
(11) John is not very tall ∼ short (relative)
Role of polarity

Valence could still play a role!

(12) Context: Jack invites Sue for dinner. He takes out some glasses from the dish washer.
Sue says: Your glasses are not very clean
Polarity and negative strengthening

(13) John is not tall $\sim$ short (negative strengthening)

... in fact, he is not short either

(14) John is not short $\not\sim$ tall

Polarity asymmetry: not positive $>$ not negative
Explanations of polarity asymmetry

(13) John is not tall   ALT: short
(14) John is not short  ALT: tall

**Politeness explanation**: Use of more complex expression to mitigate face-threat posed by simpler (negative) utterance (e.g., Brown & Levinson, 1987; Horn, 1989)

**Positivity bias**: Universal human tendency to prefer positive expressions (Boucher & Osgood, 1969; Terkourafi & Weissmann, 2020)

Negated statements are less informative but communicatively useful
Experimental evidence: Polarity and politeness

**Politeness considerations** modulate pragmatic inferences (interplay of power relation, social distance and gender: Gotzner & Mazzarella, 2021)

Polarity asymmetry is found in contexts where the negative expression is **not face threatening** (Mazzarella & Gotzner, 2021)

Speakers avoid straightforwardly negative expressions (adjective valence!)
Current study

ABSOLUTE ADJECTIVES IN THE NOT VERY CONSTRUCTION
Research questions

What notion of polarity is relevant for the asymmetry in negative strengthening?

How do polarity and scale structure jointly contribute to inference making?
Different notions of polarity

**Evaluative**: subjective judgements of desirability (valence)

**Dimensional**: underlying dimension of measurement

*A shirt with more dirt, counts as dirtier*

For example Cruse (1986); Ruytenbeeck et al., (2017); Gotzner et al. (2018)
Polarity mismatches

<table>
<thead>
<tr>
<th>Adjective /polarity</th>
<th>dirty</th>
<th>clean</th>
</tr>
</thead>
<tbody>
<tr>
<td>evaluative</td>
<td>E-</td>
<td>E+</td>
</tr>
<tr>
<td>dimensional</td>
<td>Dim+</td>
<td>Dim-</td>
</tr>
</tbody>
</table>
Exp. 1: Methods and Predictions

Items: 9 antonym pairs (selected based on entailment pretest and linguistic tests for polarity and scale structure)

Design: 2 Polarity (E+, Dim- vs. E-, Dim+)

Participants: 75 (power analysis)

Prediction: E+, Dim- > E-, Dim+ if evaluative polarity is driving the asymmetry

"Joe’s suit is not very dirty"

According to the statement, Joe’s suit is:
   dirty 1 2 3 4 5 6 7 clean

osf.io/t7ar6
Results (Exp. 1)

Asymmetry aligns with evaluative and not dimensional polarity

Clmm:  
Estimate SE    z-value p-value  
-0.32    0.1    -3.14    0.001
**Exp. 2: Polarity and adjective type**

<table>
<thead>
<tr>
<th>Test sentence</th>
<th>Polarity</th>
<th>Adjective type</th>
</tr>
</thead>
<tbody>
<tr>
<td>The shirt is not very dirty</td>
<td>E-, Dim+</td>
<td>minimum standard</td>
</tr>
<tr>
<td>The shirt is not very clean</td>
<td>E+, Dim-</td>
<td>maximum standard</td>
</tr>
<tr>
<td>The door is not very open</td>
<td>E+, Dim+</td>
<td>minimum standard</td>
</tr>
<tr>
<td>The door is not very closed</td>
<td>E-, Dim-</td>
<td>maximum standard</td>
</tr>
</tbody>
</table>
Exp. 2: Methods

**Items:** 10 antonym pairs (5 from Exp. 1 selected based on valence corpus, Mohammed, 2018; 5 additional pairs with opposite polarity)

**Design:** 2 Polarity (E+ vs. E-) x 2 adjective type (max vs. min)

**Participants:** 96 (power analysis)

**Predictions:** E+ > E-; min > max, interaction of polarity and adjective type?  osf.io/t7ar6
Results (Exp. 2)

Evaluative polarity and scale structure modulate negative strengthening.
Discussion: Evaluative polarity

Asymmetry in negative strengthening aligns with evaluative, not dimensional polarity

Generalized role of evaluative polarity:
Strong associations between adjectives and evaluative polarity even for adjectives that are not evaluative (Implicit associations: Paradis et al., 2012 and valence corpora: Mohammed, 2018)

Positivity bias extends to complex expressions
Discussion: Scale structure

Maximum standard adjectives are more likely to be strengthened than minimum standard ones (see also Alexandropoulou & Gotzner, this workshop)

very clean  clean  dirty  very dirty
Verbal scales
Verbal Horn scales and neg raising

Mary likes broccoli \( \sim \) Mary does not love broccoli
\( ? \) Mary loves broccoli but she does not like it

Mary does not love broccoli \( \sim \) Mary hates broccoli
Mary does not hate broccoli \( \not\sim \) Mary loves broccoli

Mary does not think that it’s raining \( \sim \) Mary thinks it’s not raining
Mary does not know that it’s raining \( \not\sim \) Mary knows it’s not raining
Cross-linguistic variability in the realization of scalar meaning (overview: Hohaus & Bochnak, 2020)

Languages that express adjectival properties verbally (e.g., Dixon & Aikhenvald, 2004)

-> Talks at this workshop!
Conclusions

Evaluative polarity drives asymmetry in negative strengthening

Polarity and scale structure jointly modulate pragmatic inferences

Denotation and valence are more intertwined than standardly assumed