Scalar implicatures vary within and across adjectival scales

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Scalar Diversity

Lexical scales differ in how likely they are to lead to scalar implicature (SI), e.g., (1) more likely than (2), see van Tiel et al. (2016):

(1) The museum is old → The museum is not ancient
(2) The employee is smart → The employee is not brilliant

Role of carrier sentences remains understudied (van Tiel et al. 2016) found no difference, cf. Degen (2015) for <some, all>.

Gathering Scales (Norming Study 2)

- 77 adjectival scales from previous work normed for cancellability and asymmetric entailment.
- Criterion: above 60% expected response
- Result: 45 scales

Hypothesis 1: Likelihood

- SI: reasoning about what was left unsaid (Grice, 1967; Horn, 1972)
- Biased nouns: the stronger adjective very likely to be true → its non-utterance is especially meaningful

H1 predicts higher SI rates for biased compared to neutral CCs.

Hypothesis 2: Threshold distance

- Semantic distance: close proximity between adjectival thresholds discourages SI calculation
- Elicit threshold (θ) distributions

H2 predicts higher SI rates for neutral compared to biased CCs.

SI Calculation

- SI task, Experiment 3:
  - Distance (D)-score: \( d = (\mu_{\text{bias}} - \mu_{\text{neutral}})/\sigma_{\text{bias}} \)
  - Lower rates of SI calculation in biased condition \( p < 0.05 \)
  - Distance (D)-score: \( d = (\mu_{\text{bias}} - \mu_{\text{neutral}})/\sigma_{\text{bias}} \)
  - In line with H2 D-score positively correlated with neutral–biased SI rate \( r = 0.36, p < 0.02 \)

Gathering CCs (Norm. Study 1)

- Shown stronger scalemates (e.g., brilliant)
- Elicit nouns likely to have the property
- Two nouns selected per scale:
  - one high frequency (“biased”) and one very infrequent (= 1 count; “neutral”).

Research Question

What is the role of sentential context in scalar diversity?

Does likelihood of Comparison Class (CC) having adjectival property modulate SI rates?

Manipulate CC: whether the noun (e.g., scientist vs. employee) is likely to have adjectival property (e.g., brilliance).

Conclusion

- Contra H1, biased nouns lead to less SI.
- Semantic distance (e.g., van Tiel et al. 2016; Horn 1972) between adjectival thresholds better predictor of SI, supporting H2.
- Results highlight the methodological importance of controlling for carrier sentences.