Introduction

In a Visual World Study, Sedivy et al. [1] report an effect of referential contrast forgradable Relative Adjectives (RAs) like 'tall' used as restrictive modifiers when the visual context provides a Comparison Class (CC). An open question is whether this context-sensitivity is driven by pragmatic reasoning about referential contrast [2,3], or whether it arises from the lexical semantics of the predicate itself [4,5]. In this study we address this question by replicating Sedivy et al.'s design and extend it to Absolute Adjectives (AAs), a class of adjectives that is also gradable but does not default to fixing a CC. Our results suggest that while AAs show pragmatic sensitivity to context, only RAs show lexical context-sensitivity resulting from the need of resolving an appropriate CC.

Research Question

Is contextual information integrated differently in the processing of relative vs. absolute adjectives?

Gradable Adjectives and Comparison Classes

- Only RAs, but not AAs, default to fixing a CC. RAs can take contextually specified CAs introduced by for-phrases or compared-to-phrases (cf. [6-7] for a different view):
  1. For-phrases:
     a. Mary is tall for a 6 year old.
     b. ??This door is closed for a safe door
  2. Compared-to-phrases:
     a. Compared to John, Mary is tall.
     b. ??Compared to this door, that door is closed.

Design

- 3 types of adjectives tested:
  1. Relative Adjectives (RA, n=20)
  2. Absolute (maximum) Adjectives (AA, n=10). All AAs target picture were compatible with precise interpretations.
  3. Color Adjectives (CA, n=20) serve as our baseline, since in the current design the interpretation of CAs does not involve comparison class [8]

- Stimuli consisted of geometric shapes in order to avoid category effect (from the head noun) driven by world knowledge

- Participants were 40 native speakers of American English

- 2 conditions (Sedivy et al. [1]):
  1. Contrast (left panels, Figure 1)
  2. No-Contrast (right panels, Figure 1)

  - No-contrast condition was created by substituting the contrasting object with a second distractor

Results Breakdown 1—No-Contrast Condition only

Figure 1: Item Example

Contrast Condition Target Competitor No-Contrast Condition Target Competitor

Relative

Contrast
Competitor
Instruction: Click on the tall cylinder

No-Contrast
Target
Competitor

Absolute

Contrast
Competitor
Instruction: Click on the empty cube

No-Contrast
Target
Competitor

Lexical vs. Pragmatic Effects of Contrast

Pragmatic Effect of Contrast

Color Adjectives:
- Effect of Contrast takes place after the adjective property is identified in the No-Contrast condition

Absolute Adjectives:
- Effect of Contrast takes place outside the adjective window at a point when information about the head noun is already available

Semantic Effect of Contrast

Relative Adjectives:
- Effect of Contrast takes place in the same time window in which the adjective property is identified in the No-Contrast condition
- The contrast effect for RAs seems to facilitate the lexical semantic processing of the adjective
- We suggest the contrasting object facilitates the construction of a semantic comparison class for RAs, in addition to any pragmatic facilitation effect.

Stimuli Creation and Norming

- For Relative and Absolute adjectives, experimental target, competitor and contrast objects were normed in three picture matching Murk studies

Figure 2: Proportions of yes-responses

Figure 3: Proportions of yes-responses

Stimuli Creation and Norming

- Norming 1:
  - This is a tall cylinder:

- Norming 2:
  - This is an empty cube:

- Norming 3:
  - This is a tall cylinder:

Conclusions

- By evaluating the relative timing of the Contrast effect in the adjective window with respect to the lexical processing of the predicate in the No-Contrast condition, it is possible to tease apart lexical from pragmatic effects of Contrast, as exemplified by RAs and CAs.
- The processing of RAs vs. AAs involves different patterns of integration of contextual visual information:
  1. For RAs, the contrasting object triggers the semantic processing of constructing a semantic comparison class for RAs, in addition to any pragmatic effect
  2. For AAs, the visually present CC facilitates target identification, but not during the adjective window (pragmatic effect of contrast)

References