

On the polarity of relative adjectives.

An investigation with a newly created picture data base

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Polarity refers to the binary distinction between positive and negative members of a pair (Horn, 1989). However, it has been operationalized in different ways (Ruytenbeek et al., 2017; Van Tiel & Pankratz, 2021), and it is not always clear how polarity should be assessed or which criteria should be used. Interpretive asymmetry is built around polarity: negating a positive adjective (e.g., *not tall*) typically strengthens toward its antonym (rather *short*), whereas negating a negative adjective (e.g., *not short*) yields a middling interpretation (i.e., neither *tall* nor *short*) (Alexandropoulou & Gotzner, 2024). Building on this robust effect, we adopted a reverse-engineering approach to assess the polarity of 54 adjective pairs.

In **Study 1**, participants completed a picture-selection task in which they read affirmative and negative sentences (i.e., *John is (not) tall/short*) and chose the picture that best reflected the meaning expressed in the sentences (Fig. 2). Polarity was inferred from the responses to negative sentences: adjectives were classified as positive if the picture depicting the antonym (picture_Opp) was chosen more often, negative if the one depicting the middling interpretation (picture_Mid) was preferred, or undecided if both pictures were selected equally often. Chi-square tests ($N = 121$) showed a strong preference for the picture depicting the antonym, suggesting that most adjectives were assessed as positive (Fig. 1, left panel). However, responses may have reflected task-specific strategies rather than the actual interpretations.

Study 2. To address this concern, participants were explicitly informed that such adjectives behave differently when negated and were given an example illustrating the interpretive asymmetry. To further highlight the semantic scale, participants first examined the three pictures and their differences before reading each sentence and selecting the best-matching picture (Fig. 3). The results showed that participants again selected picture_Opp most often, although picture_Mid was also chosen in some cases (Fig. 1, right panel). Chi-square tests ($N = 145$) indicated that for some pairs both adjectives were classified as positive, for others both were undecided, while for others one adjective was positive and the other was undecided.

Discussion. Building on the interpretive asymmetry, we assessed the polarity of 54 pairs of adjectives. Study 1 showed that most adjectives were interpreted as having positive polarity, a pattern replicated in Study 2, even with explicit instructions and the scale rendered salient. Overall, these findings suggest that polarity assignment is not fixed but rather context-dependent. This challenges a strict bipolar account of adjective meaning and, implicitly, the generalizability of the interpretive asymmetry. Alternative explanations may be that participants interpreted the adjectives in a context or plausible denial or that the results reflect artifacts of the task, both of which will be tested in further studies.

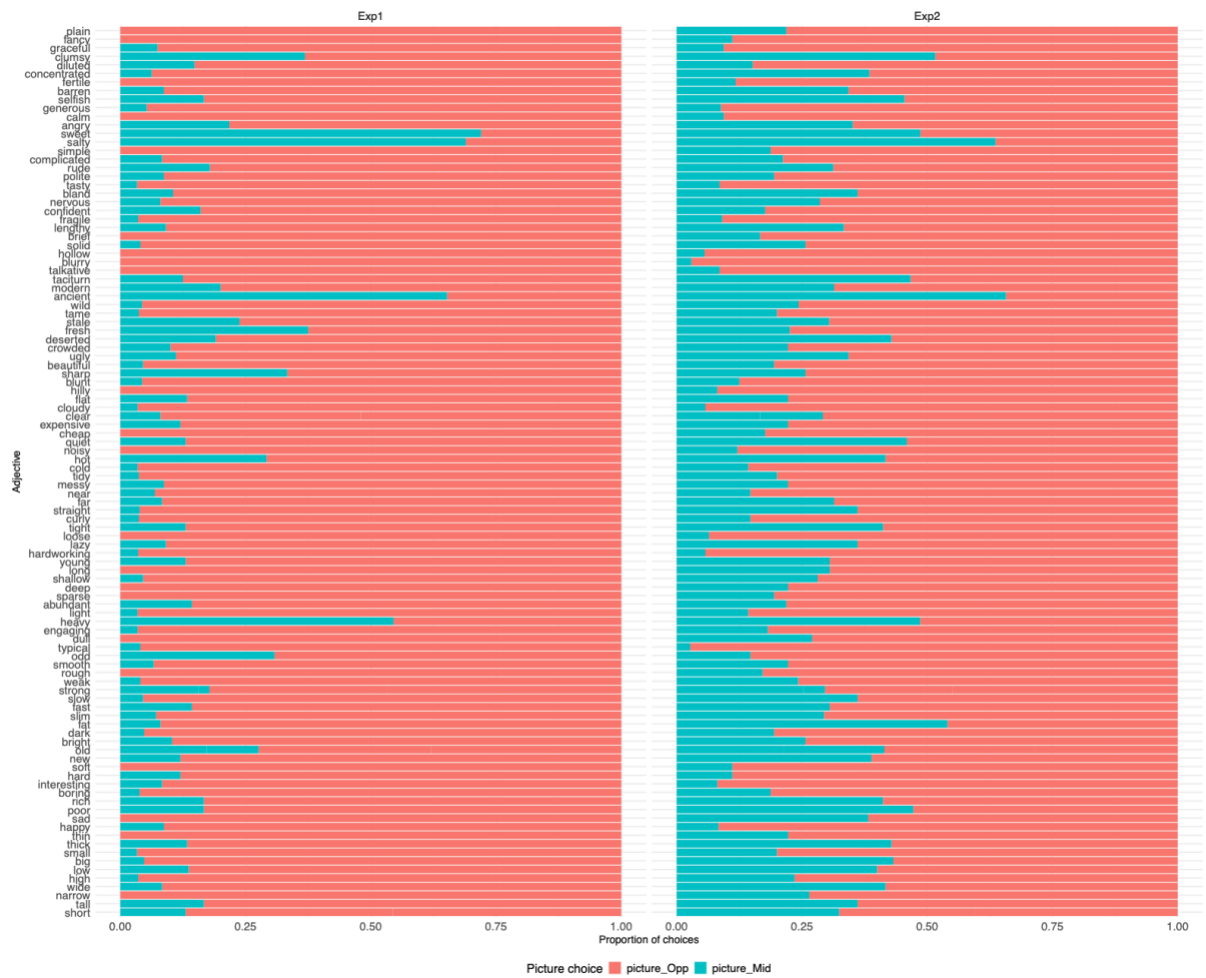


Figure 1: Proportions of picture choices for each adjective in Experiments 1 (left panel) and 2 (right panel) in the negative condition.

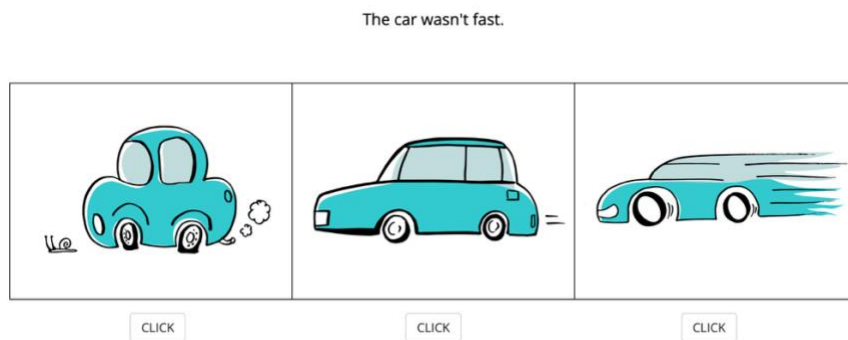


Figure 2: Illustration of a trial in the negative condition in Experiment 1.



Figure 3: Illustration of a trial in the negative condition in Experiment 2.