
The Language-Specific Effect on Sentence-Verification Tasks Involving Negation

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As metalinguistic tasks, sentence-picture verification (SPVT) allows participants to adopt various procedures when processing negatives. One is to directly infer what is the case given the truth of the negative sentence and determine if the state of affairs depicted in the image supports those inferences (1-step strategy). Alternatively, the truth-functional properties of negation offer participants another route: first evaluate the preajcent of negation and then reverse the judgement (2-step strategy). As discussed in [1-3], participants may adopt either strategy to perform this task. [3] argues that the choice of two-step procedure is heavily influenced by what inferences about context participants are making. We argue that negative sentences which are presented without further contextualizing information trigger probabilistic inferences that the context is one in which the positive proposition is at issue.

To date, it has not been explored whether another, potentially independent, factor influences the adoption of a two-step procedure. To perform a truth-value judgement task participants may treat the indicative form of the sentence as an implicit question ‘The banana isn’t peeled?’. For English speakers, the confirmation reply to a negative question is ‘no,’ which must be reversed when responding in the SPVT (i.e., ‘True’), and vice versa for a disconfirmation response. For Mandarin speakers, the answer to a negative question, i.e., ‘shi/bu’ (yes/no), aligns with the valence of the true/false task response regardless of polarity. We present a cross-linguistic study using the visual probe task (VPT) to establish a baseline for comparing English and Mandarin speakers’ performance in the sentence verification task, we reasoned that a question-answer response strategy does not align (as much) with the aims of answering whether a probe image has been mentioned in the preceding sentence. Our results point to that language-specific factor may lead individuals to adopt two-step procedure in the verification tasks.

References: • [1] Clark & Chase (1972). *Cognitive Psychology* 3(3), 472–517 • [2] Mathews, Hunt & Macleod (1980). *Journal of Verbal Learning and Verbal Behavior* 19, 531–548 • [3] Wang, Sun, Tian, & Breheny. (2021). *Journal of Psycholinguistic Research* 50(6), 1511–1534.