

Distinguishing between Wide vs. Narrow Scope of Negation

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Introduction. The combination of negation with perfect aspect gives rise to distinct scope relations, resulting in different readings [1, 2]. When negation scopes over perfect (wide scope), the negative sentence (e.g., *John hasn't received any encouragement*) expresses that no such event took place, leading to an 'absence of events' reading (ABS). In contrast, when perfect scopes over negation (narrow scope), the sentence (e.g., *John has [not returned my calls] many times*) asserts the occurrence of the not-V event, namely a 'negative event' reading (NE). Although some languages overtly encode this contrast, English does not formally distinguish between the two potential readings.

The **present study** investigated whether comprehenders were sensitive to the two scope relations of negation in English. We presented short dialogues containing affirmative and negative sentences (*Judy played/didn't play with her son yesterday*), followed by different continuations. In the affirmative condition, the continuation (*That was a first! She has never played with him*) indicated that the event happened (i.e., *playing happened*). In the negative condition, one continuation (*She has done this on several occasions*) supported a narrow-scope relation and a NE reading (i.e., *not playing happened*), whereas the other continuation (*In fact, she has never played with him*) supported a wide-scope relation and an ABS reading (i.e., *playing didn't happen*). Participants selected the paraphrase that best matched the interpretation by clicking one of three buttons (i.e., *playing happened*, *not playing happened*, and *playing didn't happen*) displayed in random order. In addition to the 60 experimental dialogues, we included 60 filler dialogues consisting of affirmative and negative sentences to increase structural variation.

Results. In the affirmative condition, participants ($N = 184$) chose the paraphrase indicating that the event happened ($\chi^2(2) = 6664.7$, $p < .001$). In the negative condition, participants predominantly chose the ABS paraphrase in both the narrow-scope ($\chi^2(1) = 1335.4$, $p < .001$) and wide-scope continuations ($\chi^2(1) = 1655.3$, $p < .001$), indicating that they were not sensitive to the two scope relations.

Discussion. Several factors may account for this pattern. Methodologically, the large number of fillers favoring ABS reading may have biased responses toward this option, thereby overshadowing the NE reading. Additionally, frequency effects may also have played a role, as the 'not V happened' form is less frequent and less familiar than 'V didn't happen'. Finally, the NE reading may be more difficult to process due to its anaphoric structure (*do this*), compared to the default ABS reading. Future work should address these issues by reducing the fillers to avoid biasing participants towards the ABS reading and by increasing awareness of the two scope relations (for instance, through a multiple-choice matching task).

References

- [1] Arkadiev, P. M. (2021). Perfect and negation: Evidence from Lithuanian and sundry languages. In K. M. Eide & M. Fryd (Eds.), *The perfect volume: Papers on the perfect* (pp. 137–162). John Benjamins Publishing Company.
- [2] McCawley, J. D. (1999). Some interactions between tense and negation in English. In P. C. Collins & D. A. Lee (Eds.), *The clause in English: In honour of Rodney D. Huddleston* (pp. 177–185). John Benjamins Publishing Company.

Figures and Tables

Figure 1: Counts depending on the type of context (i.e., affirmative, narrow- and wide-scope) and the type of paraphrase (i.e., not V happened, V didn't happen, V happened).

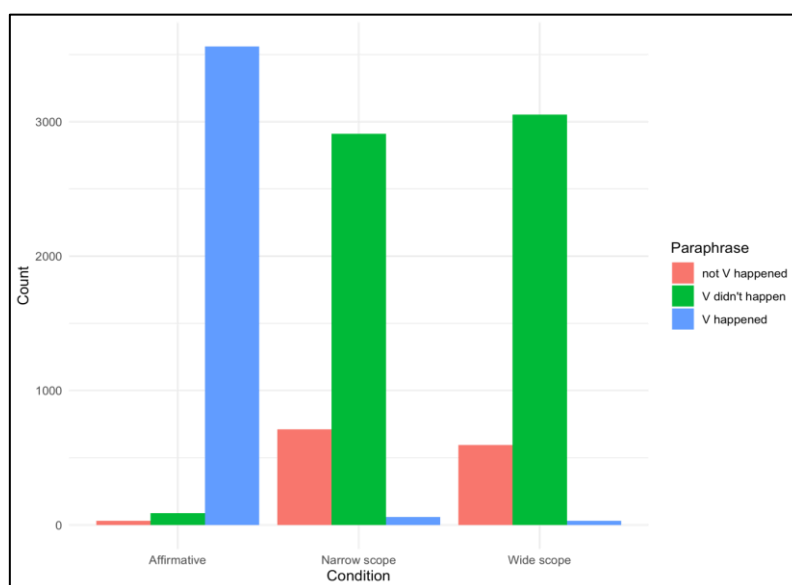


Figure 2: Illustrations of trials depicting the narrow-scope context (NE reading) and the wide-scope context (ABS reading), respectively.

A: Jane didn't frame the photos from her last holiday.
B: She has done this many times.

What would you infer from this dialogue?

A: Ella didn't attend the Chemistry lecture last Monday.
B: The truth is that she has never attended that class.

What would you infer from this dialogue?