Lexical overlap effects on syntactic priming: Evidence against a privileged status of verbs

Claudine Raffray¹, Christoph Scheepers¹, & Andriy Myachykov²

¹Psychology, University of Glasgow; ²Psychology, University of Edinburgh

c.raffray@psy.gla.ac.uk, c.scheepers@psy.gla.ac.uk, a.myachykov@ed.ac.uk

Introduction

• Speakers tend to repeat aspects of syntactic structure from one sentence to the next (Boich, 1998; Bock & Loebell, 1990; Pickering & Branigan, 1998; Branigan, Pickering, & Cléland, 2000; Conley & Scheepers, 2002).

• Research on PO/DO priming in production has revealed enhanced priming when the verb is repeated between prime and target (e.g., Pickering & Branigan, 1998; Branigan et al., 2000; Conley & Scheepers, 2002).

• Such lexical boost effects have been explained in relation to combinatorial information linked to verbs (e.g., Pickering & Branigan, 1988).

• It remains unclear whether these effects are specific to verb-repetition or whether they also occur with repetition of non-VP-heads.

• We report an experiment designed to elicit the production of sentences while manipulating the structural position of lexical overlap between primes and targets.

Which types of constituents contribute most strongly to lexical boost effects in PO/DO priming?

Method

• Sentence recall paradigm (Potter & Lombardi, 1990; 1996).

• Speakers recall and produce complete sentences shortly after encoding those sentences into memory.

• Exploits the fact that the meaning of a recalled sentence will vary more freely and be constrained by the meaning of the originally encoded sentence, while the form of the recalled sentence will vary more freely and will often take the form of a previously recalled prime sentence.

PREDICTIONS

• If lexical boost effects are specific to repetition of lexical heads, then we expect enhanced priming only in the verb overlap condition.

• If lexical boost effects also occur with repetition of non-head constituents, then we expect enhanced priming in agent, verb, theme, and recipient overlap conditions.

Experiment

Lexical overlap effects in PO/DO priming

- 60 participants, 80 items
- 120 intransitive fillers
- 3 factors: Prime Structure (PO, DO), Target Structure (PO, DO), Lexical Overlap (no overlap, agent, verb, theme, recipient)

Results

• Overall tendency to repeat the structure of prime during target recall: main effect of Structure Repetition

LRCS₂(0) + LRCS₂(1) = 34.220, p < .001.

• Significant interaction between Prime Structure and Structural Repetition

LRCS₂(1) + LRCS₂(2) = 34.220, p < .001.

Fig. 1 shows that priming was quite strong with PO primes, whereas DO primes elicited weak priming compared to the 50% baseline.

• Significant 2-way interaction between Overlap and Structural Repetition. Lexical Overlap Condition clearly had an impact on amount of Structural Repetition (see Fig. 2).

• Log-linear contrasts with no overlap condition showed no effect of agent overlap LRCS₂(1) = 0.721, p = 0.40.

• Reliable effect of verb overlap LRCS₂(1) = 4.206, p = 0.04; LRCS₂(1) = 4.772, p = 0.031, of theme overlap LRCS₂(1) = 5.581, p = 0.02; LRCS₂(1) = 3.819, p = 0.051, and of recipient overlap LRCS₂(1) = 5.530, p = 0.02; LRCS₂(1) = 5.605, p = 0.02.

Discussion

• This is the first demonstration of lexical overlap effects in syntactic priming using the Potter & Lombardi sentence recall paradigm (but notice the high number of invalid trials!...)

• Lexical boost effects seem not confined to repeating the head of the sentence (i.e., the verb): they also occur with repetition of immediate verb sisters (i.e., verb complements). Hence, the verb does not appear to enjoy a privileged status.

• However, repeating the subject noun (agent, as it is coded here) yields no noticeable boost in syntactic priming.

• In line with Chang et al. (2006), we argue that repeated content words serve as memory cues to the syntax of the prime. However, the effectiveness of such cues is constrained by syntactic constituency, as lexical repetition of a VP-external agent does not boost PO/DO priming.