

A priming approach to the representation of English argument structure constructions

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Abstract. Structural priming effects are an important tool for investigating the nature of speakers' grammatical representations. In this talk, I summarize several key insights that previous priming results provide about the representation of English argument structure constructions, addressing both 'within-construction' priming effects (between instances of the same construction) and 'cross-constructional' priming (between instances of distinct constructions). Moreover, I argue that comprehension methods can be used to extend structural priming to previously understudied phenomena. I illustrate this with a study of English resultative and depictive sentences, in which asymmetric priming emerges between the two partially similar constructions.

Keywords: Grammatical representation, structural priming, argument structure constructions, maze task, secondary predication

1 Introduction

Priming effects occur when processing a stimulus affects subsequent processing of the same or a related stimulus [1, 2]. It has been recently argued that structural priming effects – i.e., priming above the word level – constitute an important source of evidence for theories of speakers' grammatical representation [2]. In this talk, I outline several key insights that structural priming provides about the representation of English argument structure constructions. Moreover, I illustrate ways in which the paradigm can be extended to investigate previously understudied phenomena.

2 Within-construction and cross-constructional priming

Previously reported structural priming effects can be divided into 'within-construction' priming between instances of the same construction and 'cross-constructional' priming between instances of distinct but related constructions [3]. By reviewing examples of both types, I discuss how these findings can be integrated into an overall theoretically informed account of grammatical representation. For this purpose, I draw on usage-based grammatical theories such as Cognitive Construction Grammar [4] and Usage-based Theory [5], in which speakers' grammatical knowledge is modelled as a mental

network of constructions stored at varying levels of abstraction and emerging from specific instances of use.

From the perspective of these models, within-construction priming effects, which occur for example between instances of the double-object or the *to*-dative construction [6, 7], can be taken as evidence that speakers encode abstract (i.e., verb-independent) constructional schemas. Meanwhile, the fact that priming is enhanced when primes and targets share the same verb (the so-called ‘lexical boost’ effect; [8]) suggests that speakers additionally represent regularities at lower levels of abstraction, which can be modelled as verb-specific subtypes of the general constructions. The role of such lower-level representations is further illustrated by ‘inverse frequency’ effects [9], in which the number of previously witnessed instances of a construction influences how amenable the overall construction is to priming.

Meanwhile, cross-constructional priming occurs between instances of partially similar constructions such as the dative and the benefactive construction [7, 10]. These effects have been much less frequently studied than within-construction priming and they are usually weaker. Nevertheless, I argue, cross-constructional priming provides important evidence that speakers do not represent abstract constructions independently from each other, but rather in the form of partially overlapping representations. This can be accounted for within a network model in which constructions are related by similarity links of varying strength [3].

3 Extending structural priming to new constructions

Despite the insights that previous structural priming studies have provided, they have still focused on a relatively small set of argument structure constructions, in particular on alternating patterns such as the members of the dative alternation. I suggest that comprehension methods offer a promising alternative to the previously preferred production methods, thus allowing researchers to generalize their findings to a broader set of constructions.

I illustrate this with a study that tests priming between English resultatives, illustrated in (1), and object-oriented depictives, as in (2). At least on the surface, the constructions are syntactically identical; semantically, however, resultatives express a change of state, whereas object-oriented depictives denote a state that holds of the object while it undergoes a process. The method employed was the ‘maze’ task [11], a version of self-paced reading in which participants choose between a correct continuation and an incorrect distractor at every word of the sentence.

- (1) a. Max cooked the chicken tender.
b. Nancy cut the grass short.
- (2) a. Gary cooked the chicken whole.
b. John cut the grass wet.

The results suggest that participants responded more quickly to depictive targets when they were preceded by depictive primes compared with unrelated primes ($\beta = -0.024$; $z = -3.427$; $p = 0.002$). In addition, participants also responded faster to resultative targets after depictive primes compared with the baseline ($\beta = -0.019$; $z = -2.768$; $p = 0.016$). Resultative primes, on the other hand, did not have an effect on target responses. The fact that priming occurred asymmetrically from depictives to resultatives, but not vice versa, suggests that speakers encode similarities among the secondary predicates of both constructions, but that depictives may be more unusual for speakers and thus give rise to stronger priming (in line with the inverse frequency effect; see above). While the study highlights some methodological challenges that researchers face when designing comprehension priming experiments, it also illustrates that priming can be successfully extended to new argument structure constructions in a suitable comprehension setting. The results thus motivate further expansions of the structural priming paradigm, making it an even more flexible tool for the investigation of grammatical representations.

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