

Using structural priming to test links between constructions: Caused-motion sentences prime resultatives

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Cognitive theories of grammar (e.g. Croft, 2001; Goldberg, 1995; Langacker, 1987) view speakers' linguistic knowledge as a hierarchically structured network of form-meaning pairings, or constructions. Different kinds of links have been suggested to relate constructions in this network with one another, but few empirical attempts have been made to test the psychological reality of those relations. Extending Branigan and Pickering's (2017) recent arguments for using structural priming to investigate linguistic representations, this paper reports on a priming study which tests similarities and differences between constructions to derive insights about their underlying relationships.

Many constraint-based theories assume that the linguistic network is organised by one central linking mechanism: 'inheritance', the taxonomic relation between superordinate and subordinate constructions. Goldberg (1995) suggests a further sub-classification of inheritance links into four types: instance, subpart, polysemy and metaphorical extension links. For example, she argues that the caused-motion construction in (1) and the resultative construction in (2) are related via a metaphorical extension link.

- (1) Bill rolled the ball down the hill.
- (2) Herman hammered the metal flat.

Goldberg's account, however, relies mainly on theoretical arguments and lacks empirical corroboration. Psycholinguistic evidence is needed to address the following questions: (a) Are caused-motion and resultative sentences instances of distinct but related constructions?; (b) Which psycholinguistic correlates can be used to identify distinct types of links between constructions?

I present the results of an online experiment testing structural priming effects between caused-motion and resultative sentences (see (1) and (2) above). The study used a novel experimental design combining self-paced reading with speeded acceptability judgments. 159 native speakers of English were presented with 24 prime-target pairs: prime sentences were either resultative, caused-motion or unrelated constructions; targets were always marginally acceptable resultative sentences. A linear mixed effects model with random effects for items and subjects revealed that participants read resultative sentences on average 18.8 ms faster after having been primed with caused-motion sentences than after reading unrelated constructions ($\beta = -0.02$, $SE = 0.006$, $t(3411) = -3.24$, $p = .001$). This suggests that resultative and caused-motion are different but related constructions (question (a) above). Surprisingly, however, no priming effect was found between resultative primes and resultative targets, pointing to limitations of the experimental design.

Based on these mixed results, I discuss some of the challenges for creating structural priming experiments of this sort, for example regarding priming modality (production vs. comprehension), choice of priming method and 'lexical boost' (i.e. verb repetition) between prime and target. Moreover, I argue that further structural priming experiments will reveal whether differences in the size of priming effects can be reliably used to distinguish between types of constructional links (question (b) above). Once these challenges are addressed, structural priming promises to provide a powerful tool for advancing our models of the structure of the linguistic network.

References

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