The usage basis of verb valency: Evidence from a language comprehension experiment

This paper is concerned with the cognitive representation of verbs in the mental lexicon, i.e., the amount of linguistic information that speakers store with verbs in long-term memory. It is commonly acknowledged that the cognitive representation of a verb must make reference to a set of arguments to be syntactically realized, traditionally called the valency of the verb. However, most verbs can occur with more than one set of arguments. For example, the verb *sell* is most frequently used with two arguments (a seller and some goods, e.g., *He sold his books*), but a third argument can also be added (e.g., a buyer: *He sold his books to me*). In so-called projectionist approaches (e.g., Pinker 1989), it is assumed that different valency patterns of a verb correspond to different lexical entries. In constructional approaches, verbs are combined with argument structure constructions (Goldberg 1995), which may select only a subset of the valency of the verb for overt realization, or conversely, may contribute arguments by themselves; consequently, verbs can *a priori* be stored with only one valency, with the other valency patterns being generated via combination with constructions. In this paper, I take issue with both of these extreme positions and instead argue that the range of valency patterns stored with a verb is directly related to that verb's usage. Following Langacker (2009), I suggest that repeated use of a verb in a construction leads to the entrenchment of the corresponding valency pattern with that verb, which as a result comes to be associated directly with the verb, and not arrived at via the combination of a verb and a construction.

To test this hypothesis, I devised an incremental reading experiment based on the sentence maze paradigm (Forster 2010), in which subjects were successively presented with many pairs of words and had to decide as quickly as possible which word formed a grammatical sequence with their previous selections. The experiment measures the relative cognitive accessibility of different valency patterns for three English verbs (*buy*, *pay*, *sell*) by testing which kind of third argument is most easily integrated by participants when they are presented with one of these verbs followed by a direct object. For example, the sentence *Kim bought a camera* may be continued either with a 'money' argument (e.g., *for €50*), or a 'seller' argument (e.g., *from the store*); hence, the experiment determines which of the two valency patterns (either <buyer, goods, money> or <buyer, goods, seller>) is more cognitively accessible for the verb *buy*, by measuring differences in the integration time of the preposition (*for* vs. *from*).

The results of the experiments are then compared with corpus data extracted from the BNC and several corpora of American English. It is shown that the frequency of a verb in a particular syntactic environment correlates with the cognitive accessibility of the corresponding valency pattern for that verb, suggesting that the cognitive representation of valency patterns is related to usage. These findings support the hypothesis of the usage basis of valency.

References

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