

## The Nature of Coercion: A Usage-based Approach with Empirical Data

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This study examines the nature of coercion, which has been used as theoretical explanation about the resolution of semantic incompatibility between a construction and a lexical item that occurs in it (Michaelis 2005), through empirical data derived from frequency, processing time, and acceptability judgments. I observed the co-occurrence of the ditransitive construction (DC), with various verbs that occur in it.

Based on the assumptions of the usage-based model (Langacker 1988, Kemmer and Barlow 2000), which relates semantic knowledge with frequency of usage, I expect that if a construction is semantically highly compatible with a given lexical item, their co-occurrence will be used with higher frequency, compared to cases of lower semantic compatibility. Therefore, if more coercion is involved, lower frequency is predicted. In addition, if coercion is understood as a psychological phenomenon, i.e. as a ‘resolution’ process during semantic interpretation, greater semantic incompatibility should require greater resolution and hence more processing time (Kemmer 2008). Acceptability judgments of sentences are also predicted to be the result of better or worse compatibility between linguistic elements.

To test this hypothesized correlation, first, for the linguistic knowledge about the degree of semantic compatibility, I set up five semantic compatibility categories, according to the degree that the verb implies ‘successful transfer of possession’ (Goldberg 1995): 1 for the most compatible (e.g. *give*) and 5 (e.g. *stay*) for the least.

To obtain the frequency pattern, I analyzed a part of BNC spoken data, containing 1,450,000 words. To examine the relative frequency of the verb usage in the DC, I adopted ‘collexeme analysis’ (Stefanowitsch and Gries 2003) and ranked them based on ‘collostructional strength’ of each verb, 1 (*give*) as the most frequently associated with the DC and 49 (*drop*) as the least.

For the experiment, I selected 35 verbs considering semantic compatibility categories and the corpus analysis result, and then constructed 35 sentences where each verb was used as a main verb in the DC like (1).

(1) John *cooked* Jane the egg. (*cook* from Category2)

27 participants read the sentences in a self-paced reading task. The time to read the second NP (underlined in (1)) was recorded. After reading each sentence, the participants judged its acceptability on 5-point-scale.

Finally, each “verb-DC” co-occurrence was given semantic compatibility category score (SemCom), collostruction rank (ColloRank) resulting from the collexeme analysis, and processing time (ProcessingT) and acceptability judgment score (AcceptScore) resulting from the experiment. I correlated all these scores.

As Table 1 and the regression on AcceptScore ( $r^2 = .33$ ,  $p < .001$ ) in (2) shows, all aspects were correlated with each other. This implies that when a verb and a construction are less compatible, their co-occurrence is expected to require more coercion, so it is used less frequently, processed with more effort, and judged less acceptable.

$$(2) y_{\text{AcceptScore}} = .79x_{\text{SemCom}} + .03x_{\text{ColloRank}} + .001x_{\text{ProcessingT}} - 2.87$$

$(p < .001)$        $(p < .001)$        $(p < .05)$

This study shows that coercion is not just a theoretical explanation of the resolution of semantic incompatibility but rather an actual psychological process involving processing effort. Moreover, it is correlated with language use (frequency and acceptability judgments).

	SemCom	ColloRank	AcceptScore	ProcessingT
SemCom				
ColloRank	.42**			
AcceptScore	.54**	.41**		
ProcessingT	.09*	.12 **	.13**	

Table 1. Correlations among the variables (\*  $p < .01$ , \*\*  $p < .001$ )

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