The Ditransitive Strategy:
Argument Cohort Accessibility Affords Cognitive Containment

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This paper pursues a cognitive-functional explanation for the double-object ditransitive construction in English (gave him his hat), in contrast to the prepositional-dative construction (gave it to the boy on the bicycle). While the literature on ditransitives and other 3-place predicates is vast (Haspelmath, 2015; Levin, 2015; Malchukov, Haspelmath & Comrie, 2010b), the studies most relevant to the present research are from discourse-functional (Thompson, 1995; Thompson, 1997), corpus-based quantitative (Bresnan, Cueni, Nikitina & Baayen, 2007; Gries & Stefanowitsch, 2004), constructional (Goldberg, 1995), and typological approaches (Malchukov, Haspelmath & Comrie, 2010a; Malchukov et al., 2010b; Margetts & Austin, 2007).

We explore how ditransitive constructions and their competitors may differ in how they distribute their proportional 'argument mass' (relative length in characters), reflecting degree of accessibility (Ariel, 1990; Ariel, 2001), across their available nominal argument slots. In addition, we explore whether these general constructional preferences differ as a function of their combining with verbs from different semantic classes. To do so, we extracted all instances of give ($n = 533$) and put ($n = 204$) occurring in the Santa Barbara Corpus (Du Bois, Chafe, Meyer, Thompson, Englebretson & Martey, 2000-2005). We selected these verbs because both refer to three-entity events, but differ in the types of entities involved. As a proxy for information, we developed a measure of argument length, measured in characters, and measured the nominals in each thematic role (A=agent, R=recipient/goal, T=theme) of the ditransitive argument cohort. For each instance we indicated whether it occurred in the double-object ditransitive or prepositional-dative construction, and with give or put. We further annotated each instance for a number of factors known to influence argument realization, including animacy (animate < inanimate), constituent order (light-heavy ordering of A, R, T), person (1/2 < 3), grammatical role (subject < object < object of preposition), and prosodic phrasing (within intonation unit < outside intonation unit). In addition we annotated all arguments in the argument cohort (A, R, T) for accessibility, based on prior mention and other discourse-pragmatic factors (Ariel, 1990; Ariel, 2001; Givón, 1983).

Results of a linear-mixed effects regression predicting proportional argument length (length of a given argument relative to the total length of the 3 arguments of the clause) demonstrate that each construction imposes its own pattern of argument realization (modeled as the interaction between construction and thematic role, $p<.001$***). Surprisingly, the explanatory power of this effect swallows up the effects of verb, animacy, constituent order, and grammatical role. Moreover, the pattern of the results reveals that the double-object construction strongly differentiates A and R (equally short) from T (long). The prepositional-dative also shows a short A and long T, but a second long slot occurs in R. Confirming the generality of the patterns identified, we replicated our results with the data from (Bresnan et al., 2007). Preliminary analysis suggests that, all else being equal, as the accessibility of R and T decrease together, the likelihood of the prepositional object construction increases; conversely, as they increase together, the double object construction becomes more likely. In asymmetric conditions, the typical pattern of effects is observed (R > T = double object; T > R = prepositional object).

We interpret these findings as suggesting that, in order to allow for the expression of relatively complex ideas (such as ditransitives) without exhausting the limited cognitive resources available, speakers adopt a Cognitive Containment Strategy (Ariel, Dattner, Du Bois & Linzen, 2015; Du Bois, 2008). This strategy builds on empirical predictions regarding recurring asymmetries in the clausal distribution of information (Du Bois, 1987; Du Bois, 2003), which allows language users to further predict the differential distribution of information processing demands within the clause. Based on these predictions, users evaluate the accessibility profile of the argument cohort, and allocate fewer cognitive resources for argument structure slots where processing costs are predicted to be low (pockets), in order to ensure their full availability where processing costs are predicted to be high (platforms).
References