On the Syntax-Semantics Interface of Directed Transport and Caused Motion Expressions

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We present a detailed analysis of how multi-participant directed motion is expressed across languages and how the different meaning components involved in such expressions are distributed over the lexicon and the morphosyntax. More specifically, we look at the following verb classes, which are slightly more fine-grained than the related ones listed in Levin (1993): 1) bring-verbs (*bring*, *take*), 2) carry-verbs (*carry*, *schlep*, *drag*), 3) throw-verbs (*throw*, *toss*, *kick*, *flip*), 4) push-verbs (*push*, *pull*, *shove*), 5) slide-verbs (*slide*, *roll*, *bounce*). In English, the verbs in these classes can occur in directed motion expressions of the form shown in (1).

(1) Mary brought/carried/threw/pushed/slid the box to John/into the room.

The above verb classes differ in several respects (cf. Ehrich, 1996 for a related classification of transport verbs in German): For bring-verbs, the goal is part of the lexical meaning of the verb, that is, bring-verbs are lexically three-place predicates, while the members of the other classes are basically two-place predicates. Carry, push and throw-verbs specify the manner of the action performed by the actor. Carry-verbs do imply continuous control of the undergoer by the actor without implying directed motion. Moreover, if there is directed motion to a destination then it is "accompanied" motion. Throw-verbs, by comparison, do imply motion of the undergoer, which is initiated but not continuously controlled by (the action of) the actor. In construction (1), *carry* and *throw* have different aktionsart properties in that *throw* gives rise to a punctual or semelfactive expression while *carry* leads to an active accomplishment. The two classes differ also with respect to the implicated arrival of the undergoer at the destination, which is not necessarily the case for throw-verbs (e.g., Rappaport Hovav & Levin, 2008). Carry and throw-verbs can combine with *toward(s)*, which is not possible for bring-verbs in general. Push and slide-verbs can be interpreted in two ways: as initiation of undergoer motion or as continuously controlled motion of the undergoer. They differ in that push-verbs encode the manner of action while slide-verbs describe the manner of the undergoer motion. This is also reflected by the fact that push-verbs allow the conative alternation while slide-verbs have intransitive counterparts.
We explore the crosslinguistic variation in expressing statements of type (1) by examining data, inter alia, from German, Dutch, French, Russian, Bulgarian, Finnish, Japanese, Tagalog, and Lakhota. We focus on the following three aspects: A) Diversity in the encoding of direction depending on the availability of local cases and adpositions in the given language (Zwarts, 2010). For instance, Finnish has an elaborate case system while Bulgarian has no case marking and an adposition system with many syncretisms. B) Differences with respect to the distribution of manner and path information over lexical and constructional elements (Talmy, 2000; Beavers, Levin & Tham, 2010). For instance, the translation equivalents of *carry* in French and Bulgarian cannot be combined with a directional expression corresponding to (1). C) Compositional phenomena within the lexicon and at the nucleus level. For instance, the Lakhota verbs

for carrying and bringing are directly derived by prefixation from verbs of coming and going (Ullrich 2008). In Japanese, bring-verbs correspond to serial verb constructions built from 'hold' and 'go'.

Our analysis builds on the framework of Role and Reference Grammar (RRG; Van Valin & LaPolla, 1997; Van Valin, 2005). The underlying assumption is that the decompositional semantic structure of a verb or a verb-based construction systematically interacts with the morphosyntactic realization via a bidirectional linking system. For the data under investigation, the decompositional system must be capable to represent the following components and distinctions, among others: i) the activity of the actor, ii) the manner of motion of the undergoer, iii) the direction or path of the undergoer, iv) the distinction between continuously controlled motion and initial causation of motion, v) the distinction between factive and prospective arrival. The current representation of multi-participant directed motion in RRG, which leans on the decompositions suggested in Dowty (1979), is rather limited in this respect. Following the outline described in Osswald & Van Valin (2012), we therefore propose a more expressive decompositional system based on frames instead of term schemata in order to overcome these limitations.

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