Brief article
Motion through syntactic frames
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A R T I C L E   I N F O

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A B S T R A C T

The introduction of Talmy’s (1985, 2000) typology sparked significant interest in linguistic relativity in the arena of motion language. Through careful analysis of the conflation patterns evident in the language of motion events, Talmy noted that one class of languages, V-languages, tends to encode path along with the fact of motion in motion verbs, while a second class, S-languages, tends to encode manner. In the experimental literature, it was reasoned that speakers may be expected to extend novel verbs in accordance with the lexicalization patterns of their native languages. However, the results regarding this prediction are mixed. In this paper, I examine the interplay between the meaning encoded in the motion verb itself and the meaning encoded in the motion description construction, offering a Gricean explanation for co-occurrence patterns and, by extension, for the mixed results. I then explore the implications of this argument for research on possible language effects on thought in this domain.

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1. Introduction

Since the introduction of Talmy’s (1985, 2000) typology of motion verbs, interest in their semantics, and in their potential for linguistic relativity research, has been high. By drawing a conceptual separation between the linguistic elements used to describe a motion event and the conceptual/semantic features of the event, Talmy argued that the mapping between form and meaning may be quite different across languages. Further, having outlined a set of dimensions along which languages vary, Talmy opened the way for exploration of the possibility that language may influence thought in this domain.

Talmy (1985, 2000) posited six conceptual elements of motion events: the fact of motion; the moving object (Figure); the reference object (Ground); the trajectory (path); the way the Figure moves (manner); and the situation that brought about the event (cause). The first four elements – motion, Figure, Ground, and path – together make up a basic motion event (Talmy, 2000), while the final two – manner and cause – constitute potential co-events. Talmy (2000) further noted that languages differ in their lexicalization of basic motion events, with some lexicalizing path in the verb along with the fact of motion (V-languages), while others lexicalize path outside the verb, in a satellite, leaving the verb free to encode a co-event such as manner (S-languages).

In support of these observations, studies of elicited descriptions of motion events have revealed striking differences between V-languages, such as Spanish and Greek, and S-languages, such as English (Berman & Slobin, 1994; Gennari, Sloman, Malt, & Fitch, 2002; Naigles, Eisenberg, Kako, Highter, & McGraw, 1998; Papafragou, Massey, & Gleitman, 2002; Papafragou, Massey, & Gleitman, 2006; Slobin, 1996). Overall, S-language speakers produce many more manner-conflicting verb types than path-conflicting verb types, while V-language speakers evidence the opposite pattern, in line with Talmy’s typological observations.

Are speakers whose language routinely encodes path in the main verb more sensitive to path information, with speakers of languages encoding manner more sensitive to manner information? This question has been tested using both linguistically-mediated (e.g., Cifuentes-Férez & Gentner, 2006; Hohenstein, 2005; Naigles & Terrazas, 1998) and non-linguistic tasks (e.g., Gennari et al., 2002; Papafragou...
et al., 2002). The findings from these studies are mixed. Particularly striking is the lack of a clear effect of language typology even in linguistically-mediated tasks such as novel verb interpretation (e.g., Cifuentes-Férez & Gentner, 2006; Hohenstein, 2005; Naigles & Terrazas, 1998).

The cross-language predictions in these studies are based on the semantics of the individual motion verbs, without including the information encoded in the sentence frame. However, as part of the linguistic code, that information will also contribute to potential language effects, and may further interact with the semantics of the motion verb, potentially over-riding lexicalization preferences.

2. Language differences and linguistically-mediated tasks

Given Talmy's typology and the narrative data in support of his observations, researchers reasoned that speakers might extend novel motion verbs in line with the predominant motion verb type in their language. Thus, after seeing a motion event labeled with a novel verb, speakers of V-languages should be expected to extend the verb to new events that share path information with the initially labeled event, regardless of manner, while speakers of S-languages should be expected to extend the verb to new events that share manner information, regardless of path.

In a seminal study, Naigles and Terrazas (1998) asked speakers to watch video-taped motion events that were labeled with nonsense verbs. Each video clip was followed by two alternatives: one preserving the path of the original while changing the manner; the other, preserving the manner while changing the path. The verbs were presented embedded in one of three sentence contexts: path-biasing (transitive in English; transitive or together with the generic path preposition a in Spanish; cf., he's approaching the tree), manner-biasing (intransitive, together with a prepositional phrase headed by a content-rich path preposition in both languages; cf., he's walking toward the tree), or neutral (bare intransitive; cf., he's walking/approaching). When the verbs were embedded in sentences meant to bias either a path-verb interpretation or a manner-verb interpretation, they found that Spanish and English speakers behaved differently in this task: as expected from the typological observations, English speakers chose manner matches more often than path matches, while Spanish speakers chose path matches more often than manner matches, with the typological preferences strengthened when the syntax of the carrier sentence supported the typologically preferred match.

However, when the verbs appeared in sentences that were not expected to bias either interpretation – that is, as bare intransitives (i.e., “Look, she's blinking!”) – Naigles and Terrazas (1998) found that speakers of both languages preferred to extend the verb to the manner match. Because the bare intransitive, which occurs with both path and manner verbs, is argued to be neutral, this result presents a puzzle. The result is still more puzzling given that the preferred match, manner, is not a component of a basic motion event (Talmy, 2000).

More recently, Cifuentes-Férez and Gentner (2006) examined interpretations of novel motion verbs in English and Spanish. They presented participants with short stories containing novel motion verbs, after which participants were asked what the verbs meant. English speakers received the verbs embedded in a simple transitive frame like the path-biasing frame used by Naigles and Terrazas (1998); Spanish speakers received the verb as an intransitive followed by a content-poor preposition (P. Cifuentes-Férez, personal communication, 1 February 2009), also similar to the path-biasing frame in Naigles and Terrazas (1998). While they did find the predicted interaction – Spanish speakers produced more path interpretations and English speakers, more manner interpretations – their data also show an overall preference for path interpretations (P. Cifuentes-Férez, personal communication, 5 May 2009), echoing the strong contribution of the sentence frame found by Naigles and Terrazas (1998).

Despite the strong typological tendencies evident in the narrative data, the experimental findings regarding novel verb extensions and interpretations are mixed. While there are effects of language typology, these effects are modulated, and at times overshadowed, by effects of syntactic frame. The question that then arises is: what role does the sentence frame play in the likely meaning of the verb embedded in it?

3. Verb meaning and sentence frames

Three sentence frames are used in the studies reviewed in Section 2: the neutral intransitive frame, 1 in which both types of verb can appear; the path-biasing transitive frame (or, in Spanish, the use of an intransitive with a content-poor preposition; see Hohenstein, Naigles, & Eisenberg, 2004; Naigles & Terrazas, 1998); and the manner-biasing PP frame, (cf., Hohenstein et al., 2004). The transitive frame and the PP frame thus accord with the lexicalization biases of Spanish and English, respectively (Cifuentes-Férez & Gentner, 2006); it is in these frames that typological differences in novel verb interpretations were found to be most evident. Due to its neutrality, the intransitive frame had been expected to reveal speakers’ lexicalization biases unfettered by syntactic cues. It is particularly with this frame, however, that lexicalization biases failed to emerge (Naigles & Terrazas, 1998).

Compelling regularities regarding the appearance of path and manner verbs in the three frames have long been noted (e.g., Hohenstein et al., 2004), motivating predictions

1 Alternatively, Hohenstein et al. (2004) suggest that this frame may best accord with path verbs, because it “does not allow for path to be incorporated elsewhere” (p. 582). This conjecture is based on a review of narrative data, in which path verbs often occur in this frame; this contrasts sharply with the situation in the experimental novel verb extension data. The analysis presented here, which draws on contextually-available information as a predictor of likely motion verb conflation choices, can conceivably be extended to account for the patterns in the narrative data, given Slobin's (1996) observation that V-languages make frequent use of both bare motion verbs and extended locative elaboration, with the result that the Ground information may be recoverable from the context (although such an extension, and the concomitant review of the elicited narrative data, is beyond the scope of the current paper).
regarding likely interpretations of novel verbs presented in the different frames. However, these regularities leave both the co-occurrence patterns of verbs and frames and the conflicting data on the extension of novel motion verbs unexplained. In what follows, I provide an explanation of the co-occurrence patterns and, by extension, of the novel verb extension data.

In narrative, it is not uncommon for a comprehender to be left to infer path or manner (Slobin, 2005). Often the information necessary to make such inferences is elsewhere in the narrative. If listeners are in the habit of making inferences about path and manner in naturally occurring language comprehension, why should we not expect them to continue this practice in the lab? If they do make these inferences in the lab, it is reasonable to expect that laboratory usage, like natural language, will follow Gricean principles (Grice, 1975). Furthermore, rather than being purely structural, syntactic frames may contribute significantly to the meanings of utterances (e.g., Goldberg, 1992, 2009), potentially interacting with the verbal semantics. As such, a careful consideration of the contributions of both motion verbs and the frames within which they occur, along with their interactions, may yield clearer insights into the contextual salience of linguistically privileged aspects of motion events.

Grice (1975) argued that speakers can be expected to make their utterances “as informative as is required” (p. 308), but no more so (Maxims of Quantity), and that the content should be relevant to the interaction (Maxim of Relation). Because constructions are meaning-bearing (Goldberg, 1992, 2009), the communicated content is a function of both the meaning of the construction and the meaning of the lexical items, with their combination thus adhering to these principles.

Although there are four conceptual elements available to be conflated with the fact of motion in verb meanings, verbs tend to conflate just one (Talmy, 1985). Thus, for each syntactic frame, the explanation for the choice of element to be conflated may lie in a consideration of those conceptual elements that are contextually given within the frame: the conflated element will be one which is not encoded in the frame (from Grice’s Quantity), and will be maximally related to those elements which are encoded in the frame (Relation). In keeping with Quantity, Papafragou et al. (2006) found that speakers of Greek were more likely to include manner information in their descriptions of pictured events when the manner of motion was “not inferable from the rest of their linguistic description” (p. 883).

The three frames each encode different elements of the motion event. The simplest case, the PP frame (e.g., She’s blicking toward the tree), includes specification of a Figure (e.g., she), a Ground (e.g., the tree), and a path relative to that Ground (e.g., toward), leaving only manner available for conflation in this frame.

The situation is more complex with the other two frames. The transitive frame (e.g., She’s blicking the tree) in-
We turn next to the transitive frame. It was argued in Section 3 that the transitive frame raises the relevance of path due to the explicit mention of the Ground. This in turn predicts increased same-path choices for novel verbs embedded in this frame, the result observed for adults’ verb extensions (Naigles & Terrazas, 1998). Furthermore, when novel verbs presented in this frame were interpreted by speakers of English and Spanish (Cifuentes-Férez & Gentner, 2006), path interpretations were more prevalent overall than manner interpretations (P. Cifuentes-Férez, personal communication, 5 May 2009).

Finally, the intransitive frame includes specification of only the Figure, leaving path, manner, and Ground available for conflation. Rather than being neutral, it was argued in Section 3 that this frame is in fact most felicitous with a manner verb. Due to the pragmatic strengthening of manner in this frame, we would expect speakers to prefer to extend a novel verb to events which preserve the manner from the standard, regardless of their language’s typological status. This is in fact what was observed in adult speakers of both English and Spanish (Naigles & Terrazas, 1998).

5. Discussion and conclusions

In contrast to the strong evidence for Talmy’s (1985, 2000) typological observations yielded by studies of narrative (e.g., Slobin, 2004), experimental work on the extensions of novel verbs has produced mixed results: speakers extend novel verbs in accord with their language’s typological classification only when those verbs are embedded in a subset of syntactic frames. Particularly puzzlingly, speakers fail to extend in line with the most frequent conflation pattern in their language when the novel verb is embedded in the presumably “neutral” bare intransitive frame. And most puzzlingly, extensions for verbs embedded in this frame are more prevalent for same manner choices, despite the exclusion of manner from Talmy’s (2000) core motion event, and arguments that path verbs may be preferred in this frame (Hohenstein et al., 2004).

In this paper, I have presented a novel analysis of the interaction between the conceptual elements encoded by the syntactic frame and those encoded by the verb. I have argued that path and Ground are conceptually closely linked, with the result that explicit mention of the Ground will increase the likelihood that path will likewise be encoded, while the failure to mention either Ground or path in the syntactic frame will increase the likelihood that manner will be conflated in the motion verb. Combined with the fact that manner is not explicitly given in any syntactic frame, this coupling of Ground and path may contribute to the differential cross-linguistic salience accorded to manner (Slobin, 2004), but not path.

While the pattern of concepts encoded in a frame influences the likely conflation patterns for verbs embedded in the frame, the fact still remains that there are cross-linguistic differences in novel verb extensions, particularly when the verbs are embedded in the PP sentence frame (Hohenstein, 2005; Naigles & Terrazas, 1998). Interestingly, these differences are most evident for manner interpretations in situations when path and Ground are both encoded in the syntactic frame. As Slobin (2004) has argued, there are likely cross-linguistic differences in the salience of manner information itself; such differences in manner salience have been found to influence the ease of access of manner verbs (Feist, Rojo, & Cifuentes, 2007). Cross-linguistic differences in the salience of manner may similarly translate to differences in the strength of the preference for a manner-verb interpretation, particularly when a novel verb is presented in a frame that itself draws attention to path and Ground information.

Studies of potential effects of language on thought focus on whether speakers whose language routinely encodes path in the main verb will be more sensitive to path information, while speakers of languages encoding manner will be more sensitive to manner information (e.g., Gennari et al., 2002; Papafragou et al., 2002). This question rests on two assumptions: first, that path and manner information are equally salient non-linguistically, and second, that only one type of information is routinely encoded in the linguistic description. The linguistic evidence, however, is inconsistent with both these assumptions, with the result that the validity of predictions based on these assumptions is compromised. First, the conceptual link between Ground and path may increase path salience when the Ground is in focus, upsetting the potential balance in salience between path and manner. For example, speakers of Greek were more likely to look at a Ground object in the early stages of planning a verbal description than were speakers of English (Papafragou et al., 2008), much like the strengthening of typological preferences observed when verbs were presented in path- and manner-biasing frames in Naigles and Terrazas (1998). Second, the distribution of information outside the verb, coupled with speakers’ sensitivity to this information, reduces the likelihood of a single type of information being encoded in a linguistic description. Such inter-reliance between semantic and syntactic information, including the ever-presence of some context, has recently been observed elsewhere (Bates et al., 1998). Taken together, these facts suggest that speakers’ attention to path and manner in a motion event may be influenced by contextual factors – both linguistic and extra-linguistic – in addition to their language’s lexicalization patterns.

While it has been noted previously that the typological distinction in the description of motion events is both lexical and syntactic (Hohenstein et al., 2004), little semantic weight has been accorded to the syntactic construction per se. Similarly missing is an account of the contribution of the semantics of the construction to the semantics of the verb, and the likely interpretation of a novel verb. This paper provides just such an account.

It has been suggested that spatial semantic information, rather than being localized to a single word, is distributed over the words within an utterance (Sinha & Kuteva, 1995). Because lexical choices are intimately tied to constructional ones, the cross-linguistic asymmetry between path and manner that holds in the motion verb lexicons may not hold in motion event descriptions. Thus, reducing language effects to those resulting from the lexicon alone will result in an incomplete picture of the resources that a language provides its speakers. The current evidence sug-

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gests that speakers are sensitive to this distribution of information, combining it with their knowledge of typical patterns in their language as they shape their understanding of motion events.

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References


