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Developments in event conceptualisation and event integration in language and mind

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Abstract

This essay is the introduction to the Special Issue 'Events in language and mind: Theoretical and empirical advances in the event integration theory'. We first review Leonard Talmy's event integration theory in addition to some critiques of this framework. Following this, we point to some empirical research inspired by this framework, which explores the interaction between language and cognition. We then briefly introduce the papers in this volume and discuss their contributions to the event integration framework. We conclude with some limitations, questions and future directions.

1. Introduction

It has been about 50 years since Leonard Talmy first started working crosslinguistically on events. His research on language universals in motion and location (Talmy, 1972) turned into a number of highly influential papers about how events are expressed lexically, semantically and syntactically in numerous languages around the world. At the time of writing, one of his most influential works in the field, *Toward A Cognitive Semantics* (Talmy, 2000), has been cited 8769 times, according to Google Scholar. Many researchers in several disciplines have been inspired to examine the spatial components of their cognitive framework on events. The current Special Issue on 'Events in Language and Mind' is no exception to this. We had the good fortune in February 2022 to have him as the keynote speaker at The Big Event forum leading to this Special Issue.

We take as a starting point the structures that Talmy put into place to consider where the research has come to, as well as where it might lead next. In this introduction, we first present a short summary of Talmy's event frameworks, as well as the language typologies he proposed, stemming from these frameworks. We then refer to some challenges and revisions to these frameworks as a way of pointing

towards some current debates in methods and findings regarding the treatment of language and cognition covered in this volume. Finally, we sum up some of the conclusions reached in the research presented here and consider what more could be done to push the boundaries of this field.

2. Talmy's event framework

To limit ourselves to the most well-known version of Talmy's theory, we draw from the above-mentioned 2000 publication, mostly from Volume 2, Chapter 3, on 'A typology of event integration'. In that chapter, Talmy outlines five categories of framing events, defines his views of the main parts of complex events and their descriptions and makes clear how he has determined the distinction between types of languages. The five types of framing events include the following:

- Motion (and stationary locatedness)
- Temporal Contouring (akin to aspect)
- State Change, or lack thereof
- Action Correlating
- Realisation

There are considerable overlaps between these framing types. However, briefly, Motion[1] includes changes in location (triggered by a translational activating process) or positional statements (triggered by stationariness) involving a physical object (a Figure) whose Path – trajectory or site – is the association function that characterises the motion the Figure performs with respect to a Ground. According to Talmy's general lexicalisation theory: Path is the core schema within the framing event of Motion, characteristically expressed by satellites in satellite-framed languages such as English, German or Russian, but by the main verb in verb-framed languages such as French and Spanish[2]. *Temporal Contouring* refers to the ways in which a language presents action duration or completion. In some languages, grammatical aspect, affixes, etc., together with the verb, play a role in signalling the temporal structure of events, such as ongoingness, completion, starting, stopping and continuation. Other languages utilise particles and adverbials to indicate temporal contour. The examples in Talmy's chapter come from Spanish and German, respectively. With respect to *State Change*, when a person remarks upon an object as either becoming altered or remaining the same, they generally speak about the object as it is associated with some property. For example, in English we can refer to a candle's extinguishing by saying *The candle blew out*. In describing *Action Correlating*, Talmy suggests that these events involve two entities that act at the same time and more or less complement one another (or in one variation there is asymmetrical action, as in demonstrating an action to another person). Examples provided for this framing type include singing together, or accompaniment, or following along musically. The final

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[1]In this paper, we use uppercase terms to refer to different types of macro-events (e.g., Motion, State Change) and event elements (e.g., Manner, Path), and lowercase terms refer to actual event contents (motion, state change) or concepts outside Talmyan event theories (e.g., manner verbs, result verbs).

[2]Although Spanish is characterised as a verb-framed language by Talmy in his previous works (1985), in his later writings Talmy (2000, 65) recognises that Spanish is actually a 'split system' using zero conflation for locative situations but Path conflation for translational motion.

framing type, *Realisation*, is a special case of the others in which intention and its fulfilment (including confirmation of fulfilment) are considered. That is, these events involve the expression of intention and the extent to which an action has been completed (e.g., *I hunted the fugitive down*) by a human agent who intends to effect change upon an object. Papers in this volume cover some of the above-mentioned framing events, highlighting the necessity to adopt complementary perspectives in event characterisation: by mapping meaning to form both from a constituent-component (verb/satellite encoding) and semantic-component (framing/non-framing event conflation) perspective.

For the purposes of this discussion, it is important to bear in mind that Talmy's event integration theory involves this double, complementary procedure. From a semantic-component perspective, Talmy distinguishes between the framing event and the potential co-events that provide additional information about the anchoring of the main event. The framing event is the most important component of an event, upon which the event is based. The basic elements of a framing event, at least as the field tends to highlight, include a Figure and Ground, bearing in mind that these could be metaphorical, as is often the case for Temporal Contouring. Generally, Figure and Ground are the agent or subject and the area in which the event takes place, respectively. With translational motion, for example, the framing event is the actual displacement (motion) of the Figure from one place to another relative to the Ground, which in some languages is expressed in the verb and in others in satellites. This framing event is sometimes seen as synonymous with Path, which in the Talmyan theory is part of the framing event and represents the core schema of Motion expressing, e.g., the site, the trajectory, the direction, the endpoint of that motion (displacement) with respect to a Ground. In most situations, it is difficult to express motion without conflation with Path[3]. On the other hand, there are also co-events associated with motion. For instance, the Manner in which the Figure moves (or is moved) is, according to Talmy, a co-event – the activity (e.g., the Manner of a voluntary motion, the Cause in a caused motion) within which a translational event can come to be anchored.

Talmy noted that languages tend to differ with respect to how they place and conflate the framing event and the co-event in event constructions. Many languages, according to his perspective, place the framing event in the main verb of a sentence (e.g., Romance languages, Japanese, Turkish). These have therefore been called Verb-framed languages or V-languages. Other languages (e.g., Germanic languages, such as English, as well as Russian) more often place the framing event outside of the main verb, usually in what is known as a satellite, i.e., any bound or free morpheme in a sister relation to the main event verb (Talmy 2000, 233), such as prefixes in German and English verb particles. In this case, the main verb is 'free' to describe the co-event, such as Manner. These languages have been labelled Satellite-framed or S-languages. To cite a well-known example, in Spanish one would use a verb referring to Path to describe a bottle's motion with respect to floating on water and a cave: *La botella entró a la cueva (flotando)* 'The bottle entered the cave (floating)', where the parenthetical

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[3]It is possible in many languages, including those considered Verb-framed, to refer to motion that does not cross boundaries without referring to the Path, e.g., *She is walking.* For the majority of research, this is the exception, rather than the normal way to describe Motion.

'floating' is optional. In contrast, in English it would be more common to hear *The bottle floated into the cave.*

3. Critiques of Talmy's event typology

There are several ways in which Talmy's event typology framework has been critiqued. First, the typological status of a language may present variation not only across event types but also within event types. Aske (1989) initially raised the issue of intra-language variation within the Motion framing. In V-languages such as Spanish, S-framed Motion expressions in fact also systematically abound, but only in cases where boundary-crossing is not involved. That is, when the translocation involves the crossing of some boundary, the V-pattern needs to be used. This phenomenon later came to be known as the boundary-crossing constraint (Slobin & Hoiting, 1994). More recent studies have reported both intra-language and intra-language-type variation (e.g., Brown, 2004; Ibarretxe-Antuñano, 2009; Kopecka, 2006; Soroli & Verkerk, 2017; Talmy, 2009).

Another challenge to Talmy's event typology framework comes from the claim that the V-framed versus S-framed language distinction might not be comprehensive enough to accommodate all the world's languages. Despite the fact that Talmy in his framework also describes languages that can employ one conflation type for one type of event framing and a different conflation type for another, as is the case in 'split' or 'complementary' systems (e.g., Spanish, Tzeltal), but also languages that present 'parallel systems of conflation' where S- and V-framed constructions are equally frequent (e.g., Modern Greek), a main criticism comes from researchers who work on serialising languages, where multiple verbs can be linked to describe a complex event. One such language is Mandarin Chinese, which is classified as an S-language by Talmy. This is because the framing event tends to appear in the second verb in a serial verb construction, with the first verb describing the co-event. For example, in the Motion event *Wǒ pǎo-jìn-le fángjiān* ('I run-enter-PAST the room'), the first verb character *pǎo* ('run') describes the co-event of running and the second verb character *jìn* ('enter') refers to the framing event of entering the room. Whereas this verb order placement tends to be a regular pattern, some argue that Mandarin and other serialising languages, such as Thai, may place the framing event and co-event on equal status because both framing events and co-events are expressed by verbs, making these languages equipollently framed (e.g., Chen & Guo, 2009; Ji et al., 2011; Slobin, 2004). One paper in this volume (Fu et al.) takes up this position to examine the extent to which Mandarin varies from S-languages in ways that may or may not be consistent with Talmy's original event framework typology.

Related to this notion that there may be more than two types of language with respect to event framing, Croft et al. (2010) have suggested, based on their analysis of a select set of five languages, that the categorisation of entire languages might not be helpful. Instead, they advocate that constructions can be seen as representative of particular framing types. At the same time, languages may utilise all types of constructions, even if they have tendencies for certain constructions to appear more frequently than others.

For final consideration here, but not exhaustive of all critical views of Talmy's framework, the holistic spatial semantics (HSS) theory (Zlatev, 2003) suggests that, at

least with respect to Motion events, Talmy's event framing theory does not consider the full range of information available to speakers in constructing motion descriptions. For example, Vesnina (this volume) uses HSS in her analysis of Swedish and French motion descriptions in participant narratives by referring to taxonomies of motion involving the presence or absence of translocation, boundedness and causation. At the same time, HSS highlights semantic categories that are more numerous than those identified by Talmy. In addition to Motion, Figure, Manner, Cause and Path (but not Ground), HSS notes that Motion event expressions can differ according to Region (akin to Ground), Landmark (often considered part of Ground), Frame of reference (dependent upon how motion is described relative to the viewer), Direction and Shape of path (which is often consider part of Path in much of the Motion event literature). Similarly, Combe and Stosic (this volume) describe how heterogeneous spatial components can be, illustrating this with Manner and the multitude of semantic values conveyed by manner verbs and adjuncts that may express: Speed, Body motion pattern, Purpose(less)/finality, Force/intensity, Instrument/means and so forth. This increased number of potential elements regarding spatial components and their means of encoding allows for a finer grained analysis of events than what is available in Talmy's theory. It also is perhaps consistent with notions of construction typology, as opposed to the categorisation of whole languages according to types.

4. The study of cognition in relation to Talmy's theory

Although Talmy proposed five types of framing events, the vast majority of research investigating the relationship between cognition and event language has focussed on Motion. In addition to examinations of ways children and adults use Motion event language around the world, there is also extended experimental work addressing the interaction between language and thought, much of it investigating some version of the linguistic relativity hypothesis (Whorf, 1956). Some of these studies have investigated the extent to which language influences non-linguistic thought as opposed to merely guiding thought whilst using language (cf. the *Thinking for Speaking* hypothesis (TfS) proposed by Slobin, 1996). Within this volume, authors also focus on Motion (translational and locative). However, in addition, new research on Change of State and Realisation complements this. There is also research about the format that Manner takes in a variety of event domains. To the best of our knowledge, little cognitively-based research using the Talmyan framework has been conducted on Temporal Contouring and Action Correlating – which are gaps that remain to be filled.

Likewise, research (although growing) is limited with respect to the languages that have been studied. Of the world's 2500-odd languages, most studies of event typology have relied on Indo-European languages. This base is gradually being supplemented with studies on Asian languages like Mandarin Chinese. Additionally, some cognitive studies have included Thai, Tamil and some less well-studied indigenous languages. However, this volume does not follow suit and, like much of the research before, focusses mainly on a few better-studied languages: English, Swedish, Dutch, French, Turkish and Mandarin Chinese (though the review article by Ünal et al., this volume, considers additional languages). We urge researchers to broaden the scope further to help better understand the ways events are represented in language and cognition.

Initial studies of event language and cognition relied on research methods such as elicited production (e.g., Naigles et al., 1998), important for the description and identification of patterns in speakers' predilection to refer to certain parts of events more than others. Some subsequent studies began to use categorisation techniques like similarity judgements (e.g., Gennari et al., 2002; Hohenstein, 2005; Papafragou et al., 2002) as well as simple recall or recognition methods (e.g., Filipović, 2011; Lakusta & Landau, 2012; Papafragou et al., 2008). Recent developments in research have led to a massive expansion in ways to measure the conceptualisation of events psychologically. Included in this volume are approaches to event cognition such as developmental (He & Arunachalam; Özçalışkan et al.), diachronic (Liu & Li), corpus (Combe & Stosic; Vesnina), in addition to adult cognitive and psycholinguistic methods (George et al.; Kou & Hohenstein; Lesuisse & Lemmens; Soroli), as well as literature review (Ünal et al.). The specific tools represented include eye-tracking, memory tests (a variety of types), verb learning, gesture (co-speech and silent communication), cross-situational statistical learning, habituation, breaking continuous flash suppression (bCFS), elicited production (short and narrative), questionnaire, translation, reaction time, similarity judgements, self-paced reading and priming. In addition to these, Soroli (this volume) pits several variations in types of stimuli against one another (e.g., animated versus 'real-life' videos; presence/absence of instruments; presence/absence of boundaries) to understand more about how the elements of Motion events influence speakers' cognitive and linguistic responses to stimuli.

5. Research in this special issue

5.1. Elicited and corpus-based investigations of event integration

The papers of this volume discuss the event integration theory and the validity of the event components proposed in the Talmyan analysis, suggesting a more integrated account. For instance, Liu and Li in their paper go beyond single synchronic accounts by taking a diachronic perspective to spatial construction variation. Others adopt a fine-grained analysis to investigate specific spatial event components, such as Path and Manner (Vesnina; Combe & Stosic), from a crosslinguistic perspective (French, Swedish, English, Mandarin Chinese).

More specifically, the Liu and Li paper evaluates the changes over millennia of the ways that one verb, SHI, appears in Chinese texts through a diachronic analysis of the semantic and grammatical changes that reflect variation in spatial constructions. They draw samples of the word from texts in five periods between 1100 BCE and the present time. Each is then coded according to word class and meaning. The findings show a decrease over time in the use of SHI meaning 'to send' but an increase in grammaticalisation as a causative marker. The constructional grammaticalisation of SHI as a verb confirms that event integration is key to the development of SHI. It further illustrates the process of a semantic gradation that takes place in Chinese.

From a crosslinguistic perspective, Vesnina studies the production of narratives by Swedish and French speakers using videos involving voluntary Motion events, adopting the HSS theory to understand the data. She finds equal use of Path across languages but more Manner and Direction encodings in Swedish and more unbounded non-translocatives in French. The findings highlight that Path and Direction might be best seen as distinct, unlike in Talmy's event framing, additionally

contradicting the concept of the boundary-crossing constraint in French with examples that show frequent manner verb uses even in boundary-crossing configurations.

The Combe and Stosic paper investigates two languages during online interpretation situations, French and English, regarding the extent to which the tendency for Manner to appear more often in the verb in S-languages, and more frequently in peripheral portions of the sentence (or separately) in V-languages, also is apparent in such high-pressure situations of simultaneous translation. They examine speeches of prominent politicians (four English-speaking and four French-speaking) and their translations. Rather than looking at one type of event description, they seek out Manner in any form, so across domains. Manner appears frequently in both English and French, although it is favoured more in English texts. The findings show that French–English interpreters tend to transfer more Manner from source to target language than do English–French interpreters, thus supporting the idea that Manner is more salient in English than in French, even across multiple (non-motion) domains.

5.2. Event conceptualisation and interpretation of motion, realisation and endstate framings

The common ground shared by the papers in this group is that they focus on the representation of events as related to how event language can be acquired. This is done from the perspective of not only naïve infants (He & Arunachalam) but also adult learners (George et al.; Kou & Hohenstein).

The Kou and Hohenstein paper compares Talmy's notion of 'fulfilment type' in Realisation events with the verb-semantic theory of manner/result complementarity (e.g., Rappaport Hovav & Levin, 2010) to investigate whether mental representations of verbs are closer to a dichotomy or a more nuanced cline. A novel verb learning paradigm and a paired associative learning task with English verbs not only revealed a general split between manner verbs ('intrinsic-, moot-, implied-fulfilment verbs') and result verbs ('attained-fulfilment verbs') but also showed variation within manner verbs in how closely they are mentally bounded with result information. This is argued to influence the need to use satellites to express Realisation events, leading to blurred typological tendencies in this domain.

In their paper, He and Arunachalam investigate whether 13-month-olds are able to distinguish between complete and incomplete events. By using a habituation paradigm, they test babies with the idea that if infants cannot distinguish between complete and incomplete events, then errors that appear early in speech about event completion could be due to the development of cognitive ability. However, results show that they are able to disambiguate, meaning such errors are unlikely to be due to infants' inability to recognise completeness for the purposes of labelling in later years.

The George et al. paper investigates the statistical learning of Manner and Path verbs in English-speaking adults through cross-situational exposure to novel verbs. The idea is that lexicalisation biases may affect learning of new verbs (e.g., for second language learners) in a 'frameless' situation. The results appear to suggest that monolingual English-speaking adults are slightly better at learning Manner than Path verbs.

5.3. Experimental and crosslinguistic investigations of the cognitive influences of lexicalisation/integration patterns

This group of papers focusses especially on the ways in which event lexicalisation and integration affect cognition, particularly non-linguistic cognition. These studies all compare typologically different languages, and the methods exemplified here tend to rely on measurements of low or unconscious behaviours when attending to events, in this case eye-tracking (Lesuisse & Lemmens; Soroli) or breaking continuous flash suppression (bCFS, Fu et al.).

Fu and colleagues use bCFS (low level) and sentence video verification (high level) to test the extent to which language plays a part in event cognition, specifically for caused Motion events. The authors test English and Mandarin Chinese adult speakers for their response to Manner and Path in Motion events. In particular, they suggest that top-down processing, via language, can play a role in speakers' expectations in Motion events. They find that English speakers are more sensitive to Manner than Mandarin speakers, who exhibit a more balanced saliency between Manner and Path. These findings parallel the high-level ones, suggesting that both low-level processing and high-level processing are influenced by the specific language one speaks.

Lesuisse and Lemmens examine the use of postural verbs in Dutch (with some, albeit fewer, in English) compared with the lack thereof in French (where mainly stative verbs appear) in judgements involving eye gaze on recognition of pictures in different object relations (on base, not on base, different objects). This is to compare the Talmyan notion of locatives considered as Motion events with S-framed and V-framed patterns, except that English is more split in these types of descriptions than it is for translational motion. In terms of accuracy and dwell time/number of fixations, the results indicate that Dutch falls on one extreme with French on the other and English in the middle in terms of recognising a change in object orientation (i.e., whether or not it is on base).

Soroli in her paper investigates whether the typological differences between *verb-framed* French and *satellite-framed* English, together with other contextual factors (e.g., the Manner/Path salience of voluntary Motion events, the nature of the scenes, the degree of language involvement in the task), influence spatial visual processing and decision-making. In three eye-tracking experiments involving varied Manner–Path configurations and language to different degrees, participants had first to process a target Motion event, choose the variant that looked most like the target (non-verbal categorisation), then describe the events (Production) and finally perform a similarity judgement after hearing a target sentence (verbal categorisation). The results show massive crosslinguistic differences in production that follow directly from the typological properties of the tested languages, but only partial language effects on non-verbal measures (categorisation choices, fixation counts) that disappeared in non-salient motion configurations involving unnatural (cartoon) scenes and language only implicitly. The findings support a moderate version of the language relativity hypothesis and highlight the need to formulate precise and subtle views of the relationship between language use and online visual processing that take into account cognitive and typological factors, as well as the perceptual properties of events in an integrated (body/mind–language–environment) approach.

5.4. Event conceptualisation and multi-modality

So far in this volume, the term 'language' has primarily been used to refer to speech, but language in essence has more modalities than verbal communication. Two papers in this volume investigate other modalities of language, specifically focussing on the interplay between speech and gesture.

Özçalışkan and colleagues report on research with children at five different ages (3–4, 5–6, 7–8, 9–10 and 11–12) in both linguistic description and non-linguistic (gestural) communication about Motion events in two language groups: English and Turkish. They find that co-speech gesture differs across language groups from the earliest ages, but no groups show any differences in silent gesture (which mirror patterns in adults). They conclude that thinking for speaking is available from very early in development but that people may not think about Motion events differently across language groups when not preparing for speech.

Ünal and colleagues review recent research literature on multimodal encoding of motion in speech and gesture to gain a deeper understanding of whether and how language typology shapes linguistic expressions in different modalities and how this changes across different sensory modalities of input and interacts with other aspects of cognition. The overall conclusion notes general consistency across modalities with Talmy's event integration framework whereby typology of event integration predicts multimodal event descriptions in speech and gesture and visual attention to event components prior to producing these descriptions. However, there are some exceptions, particularly related to type of stimulus and modality, especially for expression of co-events like Manner.

6. Conclusion

We hope this volume demonstrates how diverse methodological approaches can contribute to our understanding of the conceptualisation and linguistic encoding of events. Whether through adult/child comparisons, through single-language or cross-linguistic investigations, following corpus-based or experimental paradigms, using verbal or non-verbal protocols, or from synchronic or diachronic perspectives, the research represented here shows the multitude of styles of investigation inspired by Talmy. It is also clear that event conceptualisation in language and cognition is multi-factorial and multifaceted in nature, requiring careful investigation. Whilst not prescriptive, the Talmyan approach forms a good terrain that reveals variability that emerges in language behaviour and cognitive processing. Our contribution in editing these papers has been both to show variability and to add to the existing diverse models in research of this kind.

At the same time, as noted above, we are aware of several limitations. As already mentioned, more research is needed in a greater number of languages. These need to include not just S- and V-languages, but also a larger selection of E-languages, as well as potentially other types of language (parallel, split systems, etc.). Additionally, it will be important to conduct more comparisons of languages that come from the same typological class (e.g., S-languages with other S-languages) to further understand potential nuances in the ways events are expressed and conceptualised within language types. Moreover, we need approaches that take into account not only variability but also the universal and/or constant aspects of language-related

behaviour. These types of studies will enrich the field by including complementarity and an integrated approach for the language–thought interface.

Taking together the research presented in this special issue, in terms of future directions, there are a few questions and take-home messages to consider. These include the nature of event conceptualisation as a whole. Talmy noted that the five domains could be thought of as part of a 'single conceptual entity' (Talmy, 2000, 226). But on what basis is that claim put forward? Does the cognitive evidence support the idea that there is just one conceptual entity to encompass the whole of event language and thought? It might be limiting to try to place each language into a type, given the many variations within languages when it comes to describing and thinking about events.

Although not all of the research in this special issue seems to agree on this point, the majority supports a Thinking-for-Speaking (TfS, Slobin, 1996) version of linguistic relativity where people can rely on language to help them make sense of events. In some cases (see Fu & Vanek; Lesuisse & Lemmens; Soroli), there may be some linguistic influence that seeps into behaviour even when language is not explicitly activated. However, when language is suppressed, or not a consideration for communication (e.g., silent gesture; see Özçalışkan et al.), it seems to have less of an influence on people's event conceptualisation in the research reported in this volume. Some of this difference appears to pertain to the type of cognition that is drawn upon in research. One might refer to high- and low-cognitive processes, in which low-cognitive processes are less conscious or aware than high-cognitive processes. Because high-level cognitive processes occur in ways that can incorporate interpretation and semantic analysis, language could influence thought in a TfS fashion through high-level processes. However, if a stronger version of linguistic relativity were supportable, it might be expected that research examining low-level processes (and not just high-level ones) would show differences across speakers of different languages in ways that correspond to linguistic variations in event encoding. A key finding is that the context of testing matters a great deal. Both Ünal et al. and Soroli refer to the importance of the materials and the measurement situation in their discussions of the relationship between language and cognition.

Consistent with this is the message relating to the types of stimuli that are used. That is, the nuances about, for example, motion make a difference as to how events are spoken about and processed cognitively. For instance, the salience of Manner might be important to consider when designing stimuli for research. Salient Manners are more likely to be remarked upon and attended to, in all languages, not just S-languages in which the verb often expresses Manner. As has previously been noticed in linguistic research, telicity is another important facet of events, which may be preferentially expressed in some languages compared to others. Additionally, in Motion event research, there is not always agreement about what counts as Manner or Path in the literature (e.g., Cifuentes-Férez, 2009). This may have some bearing on the types of linguistic and non-linguistic findings that result from research on language and cognition. One could even broaden this conceptual difficulty into the definition of Motion event: What makes a locative event fall into the same category as translational motion? Locative events are less well studied than translational motion events. But it would seem that some of the patterns attributed to whole languages regarding translational motion do not apply as well to location and/or posture (see Lesuisse & Lemmens). Should we allow for a greater number of categories when it comes to events than what Talmy has proposed?

One proposed distinction in verb semantics relates to the focus on manner versus result (i.e., manner/result complementarity, e.g., Rappaport Hovav & Levin, 2010). This could potentially be applied to all of the framing types in Talmy's theory. That is, the framing event might be seen as a Result, with the co-event ascribed to Manner. However, there may be some difficulty in constraining events to dichotomous properties like this. For example, some notions may correspond better to scales or clines than to dichotomies. It is possible, as in Kou and Hohenstein, that Manner can be broken down into a variety of types such that there are not just two distinctions in verbs, which might be better classified according to the degree of certainty of Result they convey.

This special issue also opens up previously under-explored questions for the field. For example, several other factors may modulate the accessibility of components in one's first language. These factors include things like stress and time constraints (Combe & Stosic), degree of language involvement in a task (Soroli) and frequency of use in language input (George et al.). What other factors would have similar influences? Furthermore, the majority of studies within the Talmyan event typology unfold at the clause/sentence level. Would the clause/sentence be the optimal unit of analysis in event language? As Vesnina suggests, it might be revealing to go beyond the clause/sentence and examine lager language units, such as discourse. The papers in this volume are united in having been inspired by the wealth of Leonard Talmy's writing and research over the past half century. We hope they will contribute to the future of the field in myriad ways, in turn unlocking small pieces of the puzzle of event language and cognition.

Competing interest. The authors declare none.

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