

UC Merced

Proceedings of the Annual Meeting of the Cognitive Science Society

Title

Universality and Diversity in Event Cognition and Language

Permalink

<https://escholarship.org/uc/item/9gw479mq>

Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 44(44)

Authors

Ji, Yue
Andrews, Caroline
Sauppe, Sebastian
et al.

Publication Date

2022

Peer reviewed

Universality and Diversity in Event Cognition and Language

Yue Ji (jiyue@bit.edu.cn)

School of Foreign Languages, Beijing Institute of Technology

Ercenur Ünal (ercenur.unal@ozyegin.edu.tr)

Department of Psychology, Özyeğin University

Anna Papafragou (anna4@sas.upenn.edu)

Department of Linguistics, University of Pennsylvania

Keywords: events; event apprehension; gesture; event role; thematic role; case; telicity; aspect

Humans are surprisingly adept at interpreting what is happening around them – they spontaneously and rapidly segment and organize their dynamic experience into coherent event construals. Such event construals may offer a starting point for assembling a linguistic description of the event during speaking (Levelt, 1989). However, the precise format of event representations and their mapping to language have remained elusive, partly because research on how people mentally segment and perceive events (see Radvansky & Zacks, 2014 for a review) has largely proceeded separately from analyses of how events are encoded in language (see Truswell, 2019 for a review).

This symposium aims to integrate these two lines of event research and offer insights into how event cognition interacts with event language using cross-linguistic and multi-modal (speech, gesture) approaches. The contributed papers explore both how linguistic universals may reflect cognitive primitives and (inversely) the extent to which event cognition might be susceptible to linguistic effects. Specifically, the first paper investigates potentially universal patterns across different languages in expressing an event concept. The second paper explores how multimodal encoding of events in speech and co-speech gesture contributes to event processing. The last two papers test whether cross-linguistic differences in encoding event structure have corollaries in non-linguistic event cognition.

The current approaches highlight how interdisciplinary studies on events can throw light onto event representations, and further enrich current models of the language-cognition interface in ways relevant to many sub-branches of cognitive science.

Shared thematic role prototypes across three Germanic languages

Lilia Rissman, Saskia van Putten, Asifa Majid

Thematic roles such as Agent and Patient have been analyzed as having prototype structure (Dowty, 1991) and have argued to be cross-linguistically universal (Fillmore, 1968). We ask whether the Instrumental role (e.g., *Toni cut the bread with a knife*, see Koenig et al., 2008; Rissman & Rawlins, 2017) also has prototype structure and whether

this prototype is shared across languages. Previous analyses characterize the prototypical Instrument as an inanimate object manipulated intentionally in order to causally affect a patient, i.e. a “tool” (Luraghi, 2001). In the current study, 43 English, 39 Dutch and 36 German speakers described events of tool use (e.g., breaking a plate with a hammer) as well as events that shared some but not all the properties of tool use (50 videos in 10 conditions in total). For example, in one non-tool condition, the patient did not undergo a change of state (e.g., hitting a box with a pen), and in another non-tool condition, the agent used a part of their own body (e.g., knocking over a tower with your hands). For each description, we coded which lexical term the instrument was a complement of (e.g., in *she knocked over the tower with her hands*, the term is “with”). To determine linguistic similarity across the 50 videos, we constructed a matrix for each language with counts of how often each term was used for each video and submitted these matrices to agglomerative hierarchical clustering. The three languages clustered the videos in similar but not identical ways, consistent with the proposal that Instrument is a stable cross-linguistic category.

Multimodal encoding of events in speech and gesture guides visual event apprehension

Ercenur Ünal, Francie Manhardt, Aslı Özyürek

Prior work has shown tight links between event apprehension and language production, such that conceptualization of messages for language production guides speakers’ visual attention to events (Levelt, 1989) in language-specific ways (Papafragou et al., 2008). Nevertheless, this work is based on event encoding in speech only. However, language is a multimodal phenomenon and speakers frequently use gestures to encode aspects of events and these co-speech gestures vary cross-linguistically (Kita & Özyürek, 2003). Here, we ask whether visual attention to events is further guided by production of language-specific co-speech gestures. We focus on Turkish where speakers express path of motion mostly in the main verb and accompanied by path gestures. In an eye-tracking study, Turkish-speaking adults viewed motion events while their eye movements were recorded during non-linguistic (viewing-only) and linguistic (viewing-before-describing) tasks. Path over Manner looks were higher in the linguistic than in the non-linguistic task. During the linguistic task, Path over Manner looks increased when speakers (a) encoded path in verbs versus in post-

positional phrases only and (b) used additional path gestures versus not. Together, these findings demonstrate that visual attention to events is guided by language-specific event encoding not only in speech but also in gesture.

Case marking influences visual event apprehension

Arrate Isasi-Isasmendi, Caroline Andrews, Sebastian Sauppe, Monique Flecken, Roberto Zariquiey, Itziar Laka, Moritz Daum, Martin Meyer, Balthasar Bickel

When presented with a picture of an event, people can apprehend the gist of the event rapidly—in as little as 100–300 ms. Event apprehension has been argued to be a non-linguistic (or prelinguistic) process, i.e., language should play no role in the gist extraction. We present cross-linguistic evidence showing that grammatical differences can, however, impact event role apprehension.

In a brief exposure experiment, Spanish and Basque speakers were shown event pictures for only 300 ms in a corner of a computer screen. This allowed them to place only a single fixation into the event picture and required top-down decisions on what to focus on. Stimulus presentation was followed by either a picture description task or a recognition task. We found that speakers of Basque recognized agents more accurately and fixated on agents more than speakers of Spanish across tasks. This is in line with a difference in case marking in these languages: in Basque agents are overtly marked through an ergative case, which makes agents especially salient and requires increased attention to agents during sentence planning. In contrast, in Spanish agents are not singled out by case marking. In addition, we discuss preliminary results from a similar experiment in Shipibo-Konibo (Peru). This language also marks agents consistently through the ergative case, and it further allows to expand cross-linguistic research on event cognition beyond WEIRD populations. We argue that the grammatical features of a language can modulate early event apprehension processes. By targeting cross-linguistic variation, our studies give insights into the interaction between language and event cognition.

Do cross-linguistic aspectual differences affect event individuation?

Yue Ji, Anna Papafragou

Language distinguishes *telic* predicates which denote *bounded* events with an inherent, natural endpoint (e.g., fix a car, eat an apple) from *atelic* predicates which denote *unbounded* events without an inherent or natural endpoint (e.g., drive a car, eat ice-cream). Across theoretical frameworks, telicity is recognized as a foundational and universal semantic distinction (see Filip, 2012; von Fintel & Matthewson, 2008). However, telicity can be encoded in different ways across languages (e.g., Botne, 2003). Our study compared English speakers' descriptions of bounded and unbounded events with those from Mandarin speakers, and further examined whether the differences between the

two languages could lead to different judgments about event boundedness.

In event description, English speakers mostly produced telic predicates for bounded events, and atelic predicates for unbounded events. By contrast, Mandarin speakers specified the inherent endpoints in bounded events much less frequently, due to two main reasons. First, telicity in Mandarin is overtly expressed through a more complex resultative verb compound (e.g., *xiu-hao* “mend-good”) rather than a simple verb such as the English “fix”. Second, bare nouns are legitimate and widely used in Mandarin, while predicates with bare nouns are ambiguous about telicity (e.g., *chi pingguo* “eat apple” may refer to eating apples, or eating a specific apple). In a judgement task where people rated their likelihood of seeing an event as having a natural endpoint or as having no natural endpoint, the performance of English speakers and Mandarin speakers did not differ. These results suggest that the cross-linguistic differences in how people talk about events may not affect how people think about events.

References

- Botne, R. (2003). To die across languages: Towards a typology of achievement verbs. *Linguistic Typology*, 7, 233-278.
- Dowty, D. (1991). Thematic proto-roles and argument selection. *Language*, 67(3), 547-619.
- Filip, H. (2012). Lexical aspect. In R. I. Binnich (Ed.), *The Oxford handbook of tense and aspect*. OUP.
- Fillmore, C. J. (1968). The case for case. In E. W. Bach & R. T. Harms (Eds.), *Universals in linguistic theory*. Holt, Rinehart and Winston.
- Kita, S., & Özyürek, A. (2003). What does cross-linguistic variation in semantic coordination of speech and gesture reveal?: Evidence for an interface representation of spatial thinking and speaking. *Journal of Memory and Language*, 48(1), 16–32.
- Koenig, J.-P., Mauner, G., Bienvenue, B., & Conklin, K. (2008). What with? The anatomy of a (proto)-role. *Journal of Semantics*, 25(2), 175-220.
- Levelt, W. J. M. (1989). *Speaking: From intention to articulation*. The MIT Press.
- Luraghi, S. (2001). Some remarks on Instrument, Comitative, and Agent in Indo-European. *STUF - Language Typology and Universals*, 54(4), 385-401.
- Papafragou, A., Hulbert, J., & Trueswell, J. (2008). Does language guide event perception? Evidence from eye movements. *Cognition*, 108, 155-184.
- Radvansky, G., & Zacks, J. (2014). *Event cognition*. OUP.
- Rissman, L., & Rawlins, K. (2017). Ingredients of instrumental meaning. *Journal of Semantics*, 34(3), 507-537.
- Truswell, R. (Ed.). (2019). *The Oxford handbook of event structure*. OUP.
- Von Fintel, K., & Matthewson, L. (2008). Universals in semantics. *The Linguistic Review*, 25, 139-201.