

Capacity Load in Motion Event Construal: Insights from Similarity Judgments, Language Production, and Reaction Time Performance

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The conceptualization and verbalization of motion events gives insight into the nature of linguistic and conceptual representations underlying the encoding of events across languages. Motion events have been shown to elicit cross-linguistic differences when speakers are asked to describe the event. These differences have been shown to be shaped by the lexicalization pattern (e.g., Talmy 2000; Slobin 2003; Georgakopoulos et al. 2019; Lewandowski 2018) or, more prominently, the absence or presence of grammatical viewpoint aspect in a language (e.g., von Stutterheim et al. 2012; Georgakopoulos et al. 2019; von Stutterheim & Lambert 2005; Mertins 2018). Authors such as von Stutterheim et al. (2009), von Stutterheim et al. (2012), Mertins (2018) or Athanasopoulos & Bylund (2012) agree that differences in motion event construal across different languages become evident in the frequency of verbalized endpoints in event descriptions. Several contributions to the field focus on differences in the domain of grammatical viewpoint aspect, which is present in languages such as English as opposed to German. These studies report that speakers of aspect languages rather focus on the process of an event whereas speakers of non-aspect languages tend to prioritize the endpoint. Recent investigations, however, speculate that cognitive factors might influence motion event conceptualization, too (von Stutterheim et al. 2012; Bepperling & Härtl 2013; Georgakopoulos et al. 2019). Therefore, I argue that the interplay between motion event conceptualization and linguistic, grammatical factors is more complex and, more importantly, multi-factorial insofar that non-linguistic, cognitive factors need to be taken into account as well.

Language-specific differences in motion event encoding occur when event descriptions uttered by speakers of aspect languages and speakers of non-aspect languages are compared. Mertins (2018) argues that the category of aspect is grammatical in nature and it is morphologically marked, for instance, with the progressive form in English. Von Stutterheim et al. (2012) illustrate that grammatical aspect does not exist as a grammaticized category in German but that it can be found as a functional semantic category, which can be expressed by using temporal adverbials such as *Sie malt gerade* (lit. 'She draws now'), periphrastic constructions such as *Sie ist dabei ein Bild zu malen* (lit. 'She is in the process of drawing a picture') or the Rheinische Verlaufsform (Klosa 1999)

such as *Sie ist am Lesen* (lit. ‘She is reading’). While grammatical aspect is a core category in English, German does not encode aspect grammatically and the possibilities to express temporality in German are always optional.

Von Stutterheim et al. (2012), for instance, argue that salience (visual prominence) has an influence on cognitive and visual attention allocation. According to them, certain features of percept such as size, shape or color have been shown to attract attention, irrespective of individual factors, resulting in participants acting alike when confronted with stimuli that show these features. Bepperling & Härtl (2013) further argue that non-habitual aspect marking in German causes increased cognitive costs, which leads to the omission of process-markers. Slobin (2000) states that a combined position for motion and the expression of manner exists in English. Thus, using progressive forms does not cause increased cognitive costs in English as opposed to German. To test this experimentally, a similarity judgment task with and without verbal interference and a verbalization task combined with mouse tracking (Freeman & Ambady 2010) is conducted.

The first part of the study asks participants to watch animated video clips, which depict certain endpoints and movements. Afterwards, participants are shown two alternate video clips on one page. One option depicts the same movement with a different endpoint and the other option depicts the same endpoint with a different movement. Participants are then asked to choose the alternative which is more similar to the clip they saw on the previous slide. In the next part, the material and the task do not differ. However, participants are asked to say random numbers between one and ten out loud while watching the main clip in order to suppress the verbal memorization of the event. Thus, these two parts aim at revealing whether participants rate motion events as alike based on the events’ endpoints or movements.

The stimulus material for the second part also depicts animated motion events. Participants are asked to verbalize orally what they can see. Afterwards, a word appears, which describes the endpoint presented in the video clip before. Participants then have to click on the predefined clickable endpoint-related area as fast as possible. This part aims at investigating whether the reaction time interacts with previous verbalization.

Results gathered so far indicate that event descriptions uttered by native speakers of German are consistent with the prominent assumption that the most typical way of describing events in non-aspect languages includes endpoints. Learners of English with a low level of competence in English show results similar to German speakers. The results also show that German speakers did not preferentially choose the same endpoint in the similarity judgment, which might be caused by verbal interference indicating that cross-linguistic differences appear due to language use rather than a cognitive bias.

All in all, the proposed study aims at analyzing whether native speakers of German and English rate motion events as being alike based on the movement or the endpoint. Testing learners with different levels of proficiency in the target language will give insight into potential perceptual changes in motion event construal. This investigation is further expected to reveal how participants verbalize events and if the verbalization of an endpoint interacts with a faster clicking pace on the endpoint-related area. Overall, this study will provide deeper insight into the verbalization and conceptualization of motion events uttered by native speakers of English and German as well as three groups of learners with different levels of competence in English.

References

1. Athanasopoulos, P., Bylund, E.: Does grammatical aspect affect motion event cognition? A cross-linguistic comparison of English and Swedish speakers. *Cognitive Science*, 37(2), 286–309 (2012).
2. Bepperling, S., Härtl, H.: Ereigniskonzeptualisierung im Zweitspracherwerb–Thinking for Speaking im Vergleich von Muttersprachlern und Lernern. *Zeitschrift für Semiotik*, 35(1–2), 159–191 (2013).
3. Freeman, J. B., Ambady, N.: MouseTracker: Software for studying real-time mental processing using a computer mouse-tracking method. *Behavior Research Methods*, 42(1), 226–241 (2010).
4. Georgakopoulos, T., Härtl, H., Sioupi, A.: Goal realization: An empirically based comparison between English, German and Greek. *Languages in Contrast*, 19(2), 280–309 (2019).
5. Klosa, A.: Zur Verlaufsform im Deutschen. *Sprachspiegel* 55, 136–141 (1999).
6. Lewandowski, W.: A typological approach to the encoding of motion events. In: M. A. Gómez González & J. Lachlan Mackenzie (eds.), *The construction of discourse as verbal interaction*, 45–75. John Benjamins, Amsterdam (2018).
7. Mertins, B.: *Sprache und Kognition: Ereigniskonzeptualisierung im Deutschen und Tschechischen*. De Gruyter, Berlin (2018).
8. Slobin, D. I.: Language and thought online: Cognitive consequences of linguistic relativity. In: D. Gentner & S. Goldin-Meadow (eds.), *Language in mind: Advances in the study of language and thought*, 157–192. MIT Press, Cambridge (2003).
9. Slobin, D. I.: Verbalized events. In: S. Niemeier & R. Dirven (eds.), *Evidence for linguistic relativity*, 107–138. John Benjamins, Amsterdam (2000).
10. Talmy, L.: *Toward a cognitive semantics, Vol. II: Typology and process in concept structuring*. MIT Press, Cambridge (2000).
11. Von Stutterheim, C., Andermann, M., Carroll, M., Flecken, M., Schmiedtová, B.: How grammaticized concepts shape event conceptualization in language production: Insights from linguistic analysis, eye tracking data, and memory performance. *Linguistics*, 50(4), 833–867 (2012).
12. Von Stutterheim, C., Carroll, M., Klein, W.: New perspectives in analyzing aspectual distinctions across languages. In: W. Klein & P. Li (eds.), *The expression of time*, 195–216. De Gruyter Mouton, Berlin (2009).
13. Von Stutterheim, C., Lambert, M.: Cross-linguistic analysis of temporal perspectives in text production. In: H. Hendriks (ed.), *The structure of learner varieties*, 203–230. De Gruyter Mouton, Berlin (2005).