Extending the German FrameNet-Constructicon: determining frame families, frame-based constructional resemblance structures and collo-profiles

Alexander Ziem
Heinrich-Heine-University Düsseldorf

Keywords: frame, FrameNet, construction, frame family, family resemblance, collo-profile

Since its beginning in 2018, the German FrameNet Constructicon Project (GFN, www.german-constructicon.de) has gone through a series of project phases that have contributed to a rich infrastructure launched in 2021 (Ziem/Flick/Sandkühler 2019), including, among others, an annotation pipeline, visualization tools, a dynamic database for frames, constructions and various relations. Since then, multiple additional features and tools were implemented and many data sets were annotated, constructicographically analyzed and integrated into the system. Currently, the constructicon comprises about 740 constructions, 1,300 frames, 140 conceptual metaphor frames, including a vast number of relations holding between them and their elements.

In this talk, I will report on recent developments and computational extensions relating to three different domains of the existing constructicon:

(a) Frame families. Frames are related to other frames by various frame-to-frame relations. Even though such relations point to various functional similarities of the related units, it is anything but obvious to what extent frames form larger, coarse-grained units in a constructicon, so-called frame families. Based on semantic frames, we developed an algorithm that determines such resemblance (Willich/Ziem 2023).

(b) Frame-based constructional resemblance structures. Grammatical onstructions that do not belong to the same family can still be functionally similar. Until now, however, it has not been possible to determine the degree of functional similarity between constructions. Based on the frames evoked by constructions, we have developed a tool that calculates degrees of functional similarities of a target construction to others and ranks them according to a score system.

(c) Collo-profiles. Collostruction analyses help identify salient slot-fillers, i.e., fillers highly attracted to a target construction. So-called collo-profiles (Herbst 2018) provide new insights both in the behavior of the target construction and its functional peculiarities. However, given the plethora of constructions in GFN, it is not feasible to conduct very labor-intensive collostruction analyses as proposed by Stefanowitsch and Gries (2003). In GFN, we developed and implemented a computational approach based on a pre-trained language model to determine collo-profiles automatically on a large basis (Ziem/Feldmüller 2023).

These computational extensions, I argue, make the German FrameNet Constructicon not only a much richer resource but also amenable to various field applications, ranging from language teaching / learning to multilingual constructicography, notably construction alignment.

References

Stefanowitsch, Anatalol & Gries, Stefan T. 2003. Collostructions: Investigating the interaction of words and constructions. *International Journal of Corpus Linguistics* 6(2). 209–243.

Herbst, Thomas. 2018. Is language a collostructicon? – A proposal for looking at collocations, valency, argument structure and other constructions. In Pasual Cantos-Gómez & Moisés Almela-Sánchez (ed.), *Lexical Collocation Analysis: Advances and Applications*, 1-22. Springer.

Ziem, Alexander & Tim Feldmüller. 2024. Dimensions of constructional meanings in the German Constructicon: Why collo-profiles matter. *Yearbook of the German Cognitive Linguistics Association*. 203-226.

Ziem, Alexander, Johanna Flick & Phillip Sandkühler. 2019. The German Constructicon Project: Framework, Methodology, Resources. *Lexicographica* 35 (1). 15-40.

Ziem, Alexander & Alexander Willich. 2023. Familienähnlichkeiten im Konstruktikon: von Frame-Familien zu Konstruktionsfamilien. In Sören Stumpf & Fabio Mollica (ed.), *Konstruktionsgrammatik IX: Konstruktionsfamilien im Deutschen*, 55-100. Tübingen: Stauffenburg.