

Beyond syntax: a Radical Usage-Based approach to Argument Structure

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The present research proposes a quantitative approach to the discursive and usage-relevant aspects of Argument Structures that allow a bottom-up building of Argument Structure Constructions as conceptual/cognitive categories. The theoretical concept of Argument Structure, and the principles that govern the structure of a sentence in general, are subject to an ongoing debate between different approaches to the nature of language-knowledge. These include, for example, the basic structure of clauses in terms of the combination of verbs and their complements, the realization of semantic relations in syntactic structure, and word order. Traditionally, it is argued that the grammar of a language determines how participants in an event are expressed in a clause (Perek, 2015). Currently, there are two main approaches within linguistic research; the Generative and the Cognitive approaches. The Generative syntactic theories, and the Minimalist Program as one of its current manifestations (e.g., Chomsky, 2013), discuss the formation of syntactic structures in terms of computational operations, focusing on competence as categorically different from performance (Chomsky, 2013). Sentence structure (i.e., syntax) is thus derived from predicate valency (Müller & Wechsler, 2014), together with abstract rules of projection or labeling (Chomsky, 2013). In the Cognitive Linguistics tradition, the concept of Argument Structure is mostly related to Argument Structure Constructions (Goldberg, 1995). In a constructional approach to Argument Structure, a verb's particular meaning is usage-specific rather than lexically dictated (Bybee, 2010; Perek, 2015). Thus, a verb's Argument Structure cannot always be analyzed as stemming from the particular verb's lexical entry; it has to be searched for elsewhere. Specifically, the Goldbergian Construction Grammar puts forward two propositions: First, schematic clausal expressions are represented as Argument Structure Constructions. Second, a verb is always used in context; this context is the particular Argument Structure Construction. The verb-construction interaction grants the verb its particular meaning such that any verb (with several functional limitations) inserted into the V slot of the construction will 'gain' the constructional meaning (Dattner, 2008).

However, most of the Argument Structure research seems to be correlated with a formal, theoretical approach to language. This approach limits the scope of research in two respects. First, methodologically, such a qualitative, introspective account of linguistic phenomena does not have the advances one can gain by accounting for the same phenomena through a quantitative, item-specific, statistically-driven corpus research. Second, theoretically, numerous studies have shown that the language user's knowledge about a form-function correlation consists of more than merely the lexical-syntactic-semantic triad; rather, language knowledge is inherently multifactorial, and multiple parameters such as frequency, collocational information, and encyclopedic knowledge (to name a few) have to be taken into account when analyzing linguistic phenomena (e.g., Baayen, 2007; Dattner, 2015a; Elman et al., 2005; Gries, 2012). This methodological and theoretical gap between Argument Structure studies on one hand, and quantitative, empirical linguistic and psycholinguistic fields on the other

renders the Argument Structure debate blinkered, looking into the human cognition through a peephole, missing the magnificent scenery that can be captured by opening the door wide.

In the present research I fill this gap. I argue that one can account for the whole picture—both methodologically and theoretically—only by looking at Discourse Profile Constructions (Dattner, 2015b): emergent form-function conventional correlations that simultaneously consist of multiple sources of formal (e.g., lexical, morphological, syntactic) and functional (e.g., semantic, pragmatic, discursive) information. I define these radically Usage-Based constructions by working within an Exemplar-based representation framework, considering multiple aspects of usage, using exploratory multivariate statistical tools such as Multiple Correspondence Analysis and Hierarchical Clustering on Principal Components on a large corpus of spoken Hebrew I have built and annotated.

References

- Baayen, Harald R. 2007. Storage and computation in the mental lexicon. In G. Jarema & G. Libben (eds.), *The Mental Lexicon: Core Perspectives*, 81–104. Elsevier.
- Bybee, Joan L. 2010. *Language, Usage and Cognition*. Cambridge: Cambridge University Press.
- Chomsky, Noam. 2013. Problems of projection. *Lingua* 130. 33–49.
- Dattner, Elitzur. 2008. *Lower Transitivity Constructions in Hebrew: The Case of Motion Verbs*. Tel Aviv Tel Aviv University MA thesis.
- Dattner, Elitzur. 2015a. Enabling and allowing in Hebrew: a Usage-Based Construction Grammar account. In Brian Nolan, Gudrun Rawoens & Elke Diedrichsen (eds.), *Causation, Permission, and Transfer: Argument realisation in GET, TAKE, PUT, GIVE and LET verbs*, 271–293. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Dattner, Elitzur. 2015b. *Mapping Hebrew Dative Constructions*: Tel Aviv University dissertation.
- Elman, Jeffrey L., Mary Hare & Ken McRae. 2005. Cues, Constraints, and Competition in Sentence Processing. In Michael Tomasello & Dan Isaac Slobin (eds.), *Beyond Nature-Nurture: Essays in Honor of Elizabeth Bates*, 111–138. Mahwah, New Jersey: Lawrence Erlbaum Associates.
- Goldberg, Adele E. 1995. *Constructions: A Construction Grammar Approach to Argument Structure*. Chicago: University Of Chicago Press.

- Gries, Stefan Th. 2012. Behavioral profiles: A fine-grained and quantitative approach in corpus-based lexical semantics. In Gary Libben, Gonia Jarema & Chris Westbury (eds.), *Methodological and Analytic Frontiers in Lexical Research*, 57–80. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Müller, Stefan & Stephen Mark Wechsler. 2014. Lexical Approaches to Argument Structure. *Theoretical Linguistics* 40(1–2). 1–76.
- Perek, Florent. 2015. *Argument structure in usage-based construction grammar: Experimental and corpus-based perspectives*. Amsterdam: John Benjamins Publishing Company.