Linking Constructions and Categories: A Case Study for Hungarian Object Agreement

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We introduce a usage-based approach for organizing the constructicon, grounded in the actual *processing* of constructions during use. Constructions from a case study on Hungarian object agreement are used as a test case. An interactive web-demo can be found at http://www.fcg-net.org/object-agreement/.

Linguistic processing can be viewed as the sequential application of constructions that leads to successful communication. This sequence is linked together/connected by a *transient* linguistic structure[1] (TLS), which is – like the constructions themselves – an association of form and meaning. The TLS gets progressively elaborated when more constructions apply and in the final stage it contains all information necessary to render or interpret the utterance. It is only when a single construction matches the current structure of the TLS that it will be able to modify it and as such drive further linguistic processing as new constructions might match now. The key idea is that this chain of applications implies the existence of dependency relations between constructions. Linking the constructions through these dependencies gives rise to an intricate network of constructions and categories since it turns out that the grammatical categories constitute the vast majority of these dependencies. The network helps in disambiguation as well as in drastically speeding up future processing by *priming* constructions whose dependencies have been met.

We present a case study for object agreement in Hungarian, using Fluid Construction Grammar (FCG) [1], a bi-directional construction grammar formalism. As finite verbs in Hungarian do not always agree with their subject only but neither agree with their object in a non-ambiguous way, we had to include constructions with differing specificity that cover situations with different types of objects and different animacy constraints (1SG > 1PL/2 > 3) on subjects and objects [2].

(1) Szeret-i a könyv-et
love-3sgDEF the book-ACC3sg
He/she loves the book.
(2) Szeret-ø engem
love-3sgINDEF me-ACC1sg
He/she loves me.

Sentences such as 1 and 2 rely on constructions with different animacy constraints. The network shown in Figure 1 visualizes the need for a different animacy construction for events that both have third person agents but patients that can be situated lower (1) or higher (2) on the animacy hierarchy.

References

[1] This structure is transient in that it is tied to the particular usage-event instead of being persistent as the constructions are.

[1] Steels, L. & De Beule, J. (2006). Unify and Merge in Fluid Construction Grammar. In: Vogt, P., Sugita, Y., Tuci, E. & Nehaniv, C. (eds.), Symbol Grounding and Beyond: EELC, LNAI 4211, Berlin: Springer, pp. 197-223.
[2] Katalin E., K. (2005). The inverse agreement constraint in Hungarian - a relic of a UralicSiberian Sprachbund? In: Broekhuis, H. (ed.) A Festschrift for Henk van Riemsdijk. Amsterdam: John Benjamins.

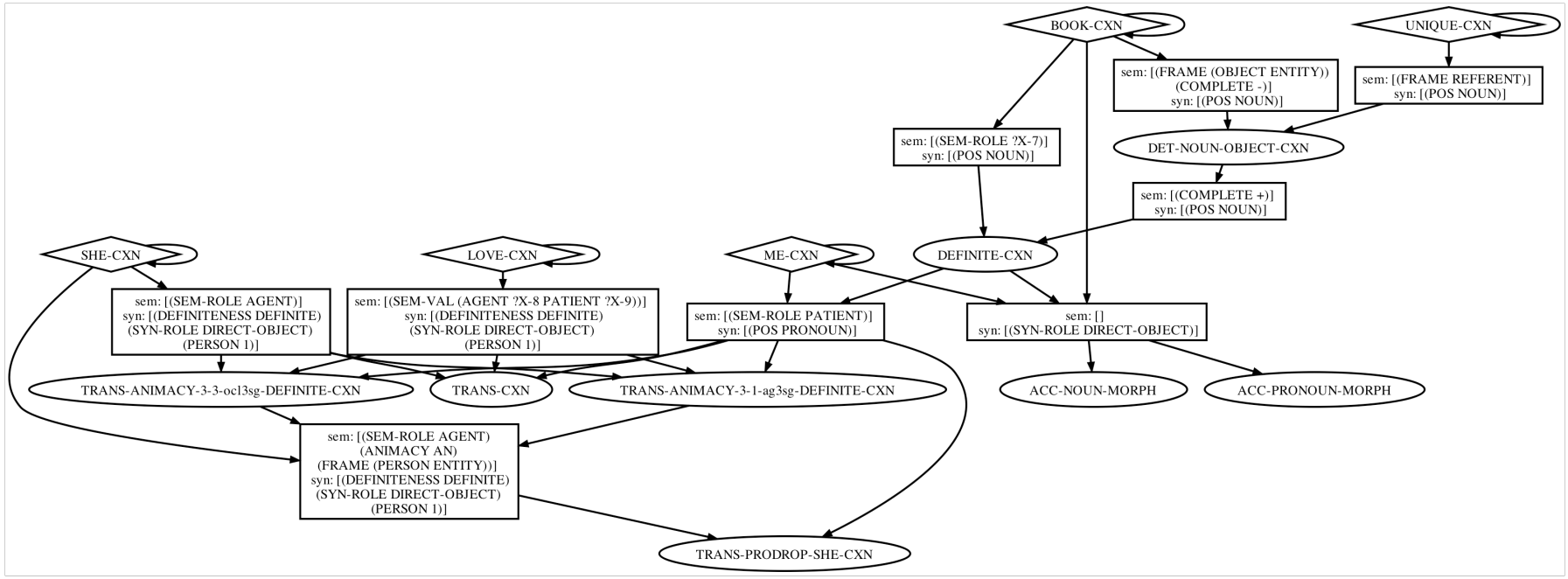

Figure 1 The dependency network as learned after processing sentences 1 and 2. Diamond shaped nodes represent constructions that could be applied independently of any other construction. Egg-shaped nodes represent constructions dependent on other constructions. Square nodes hold semantic and syntactic categories, constituting the dependencies.