DepEll: A Dependency Parser for Hungarian Pronoun-ellipses

Noémi Vadász
Pázmány Péter Catholic University
vadasz.noemi@itk.ppke.hu

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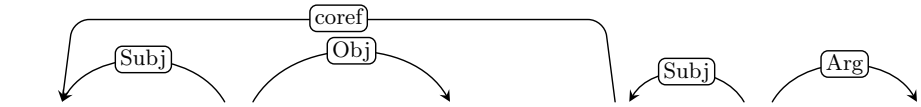
This paper presents how DepEll – a rule-based dependency parser – resolves the coreference relationship between an overt or covert **personal** or **possessive pronoun**, a **reflexive** or **reciprocal pronoun** and its antecedent.

The design of the parser is inspired by the *supply-and-demand* framework of AnaGramma (Prószéky-Indig, 2005). The output of AnaGramma is *a dependency graph with different types of edges* including coreference edge.

Since in Hungarian the person and number of the subject and the object are calculable from the inflection of the finite verb, and the person and number of the possessor are calculable from the inflection of the possessed, the personal and possessive pronouns can be dropped from the sentence. Pronominalization and the use of zero pronouns are run by an underlying rule-system which enables us to reveal the anaphora dependencies and referential identities.

The output of DepEll is a dependency graph with two types of directed edges: (1) argument edge between the verbal element and its arguments – with `Subj` label for the subject, `Obj` label for the object and `Arg` label for other arguments –, and (2) coreference edge with `coref` label between the pronoun and its antecedent. Example (1) shows the two types of directed edges which make up the dependency graph.

(1)



'The boy saw the man. He went to him.'

References: • Prószékéky, G. and Indig, B. (2015): Magyar szövegek pszicholingvisztikai indíttatású elemzése számítógéppel [Psycholinguistically motivated parsing of Hungarian texts]. *Alkalmazott nyelvtudomány* 15, 39–44 (Original document in Hungarian). • Zsibrita, J., Vincze, V. and Farkas, R. (2013): Magyarlanc: A Toolkit for Morphological and Dependency Parsing of Hungarian *Proceedings of RANLP 2013*. 763–771.