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Marek M. Zawadowski

PRE-ORDERED QUANTIFIERS IN ELEMENTARY SENTENCES OF NATURAL LANGUAGE

An elementary (English) sentence (e.e.s.) consists of a single predicate (verb) with its obligatory NP-arguments (always considered as quantifier phrases), each containing a specifier and a count noun. For example:

Two philosophy students stalked two linguists.

We propose a semantics for such sentences. We give this semantics in two steps:

1. *disambiguation*: determination of all readings of e.e.s.'s
2. *interpretation*: explanation of what e.e.s'.s mean in each of their readings.

With every reading of any e.e.s. we can associate an N-free pre-order in a natural way. We propose a formal language L having formulas of the form

$$QP(x_1, \ldots, x_n)$$

where P is a n-ary predicate and Q is a prefix of n (generalized) quantifiers binding variables $x_1, \ldots, x_n$ organized in an N-free *pre-order*. For the N-free pre-ordered prefixes we define their interpretations in a compositional way. Then we say that a sentence $QP(x_1, \ldots, x_n)$ is true if the interpretation of the predicate P belongs to the interpretation of the prefix Q.

Finally, we give a method of translating e.e.s.'s into finite sets of formulas of the language L corresponding to all and only (distributive) readings

of these sentences. It is done in the following way. We impose certain restrictions on specifiers concerning the places in prefixes (pre-orders) in which they can occur. Then for a given sentence ϕ, we build up all prefixes from its quantifier phrases, respecting the imposed restrictions. These prefixes followed by the verb of ϕ form the required set of sentences of L.

Institute of Mathematics
Warsaw University
Poland