

**LARGE-SIZE MESSAGE CONSTRUCTION FOR ETI:  
AN EXPERIMENT IN CETI**

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The aim of studies on the topic of communication with extraterrestrials is in the author's view, the creation of vehicles for the purpose of constructing for ETI interpretable messages of considerable size. The universe of discourse is taken to be symbolic descriptions of aspects of human society, using natural language. Since it cannot be assumed that the descriptive sentences are understandable *timore ipso*, they should be supplemented with extra-linguistic information, such as pictograms and other means. The second level thus introduced serves a dual purpose: clarified are on the one hand grammatical aspects of the language employed, on the other hand the information content of messages.

In previous contributions to the problem of CETI the author has advocated using constructive logic at the second (meta) level. The scope is then necessarily limited to the logic contents of texts, but there is the important advantage that formal logic expressions can be verified for correctness by computer programs, so that errors in remitted terms will not occur. In addition the verifications serve as the meanings of these terms in Wittgenstein's sense. Hopefully the receiver will be able to recognize the kind of logic employed, and by means of the meta expressions gain an understanding of not only the text, but also of the grammatical structure of the language employed.

In the paper to be presented an experiment in CETI is described. A graduate student of astronomy at Leiden University's Astronomical Department, Johanna Novozamsky, presented the author recently with a rather substantial text in the Czech language (unknown to him), with a translation only in an appendix. The text was supplemented with logical descriptions of the occurring objects and relations between them. The present paper discusses the possibilities and restrictions met during interpretation of the Czech text by the author.

At the outset several factors simplified the interpretation. The most important of these is undoubtedly the fact that the author knows the conventions of the constructive logic used. Thus the verifications carried no extra information. In addition he knows that the Czech language is configurational: it distinguishes subject and predicate in sentences. Furthermore, in the text objects occur which might represent actors, because their denominations are given with capital first letters. Hierarchy between the objects is not difficult to understand from the introductory parts of the text. More difficult to resolve is the question whether the actors are actually doing or have done something. Fortunately, Johanna N. was unintentionally somewhat helpful: the text contains dates (Gregorian calendar), to which happenings in time could be coupled.

To summarize the results of the experiment: from the meta descriptions much (incomplete) understanding of the textual contents could be achieved. For better understanding extra-linguistic information would have been useful. The logical relations furnished helped in understanding some grammatical aspects of the Czech language, even though that was not the primary aim of the project. The experience was quite satisfying.