

PRESENTATION AND DISCUSSION OF PAPER 3

PRESENTATION BY DR. HAYS

DR. HAYS said that nothing in phrase-structure theory or dependency theory justifies the use of heuristic devices in sentence-structure determination. The justification of heuristic devices is that by finding only one structure where several are possible, they enable one to expand the grammar. He quoted an observation of Charles Hockett, that when one person is speaking and another is listening to him, both persons are in fact listening; i.e. human generative grammar includes a filter for cutting off sentences that become imparsible, or become likely to be misunderstood. This kind of filter is not included in generative grammars published so far. It is a fact that most sentences uttered are actually easier to parse than phrase structure would suggest.

DISCUSSION

DR. MATTHEWS pointed out that in *speech*, well formed sentences are rare outside formal discourse, which should lend support to some sort of generative grammar. But in analyzing written sentences that problem is unimportant.

DR. HAYS said he meant to imply no inherent weakness in generative grammar, but the concept would need expansion.

PROF. YNGVE said that generative grammar alms at describing utterances, and is neutral about the processes actually used in speaking and listening.

DR. HAYS suggested that "enumerative" might be better than "generative". A true grammar should enumerate all and **only** the sentences actually uttered - the "only" has to be built in.

DR. UTTLEY pointed out that the optic and auditory nerves now seem to carry as much information from the brain to the sense organs as vice versa - they seem to be carrying down hypotheses for testing.

MR. SEE and DR. HAYS discussed briefly the question of the "only": should it be replaced by a series of probabilities with a threshold?

DR. MATTHEWS: Many **rules** of transformational analysis serve to break down the sentence until simple parsing is possible. But by parsing, a great deal of the underlying structure of a sentence is not brought out. Parsing alone is not a very good model of the structure of the sentence. This explains the extreme difference between the amount of structure given to a sentence by generative grammar, and that given by parsing.

DR. HAYS: I use "parsing" as synonymous with "sentence structure determination" or "grammatical recognition".

DR. MATTHEWS: In distinguishing between sentences that do occur and those that do not, one must recognize that many fail to occur because of the cultural situation, and many because they are just too long for people to conceive; but the "grammar" should exclude such sentences.

DR. OETTINGER said that Dr. Hays asserted a need to extend the theory, so as to produce a single structure for every sentence; but might the need not be rather for extending recognition methods so as to produce all possible structures?

DR. HAYS answered that he had seen the results of applying a weak grammar. As many as a hundred structures were assigned to a simple sentence. Nothing suggested that that was done by his mind.

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