The nature of a program for testing connectability with respect to coordinative functions (coordination, apposition, etc.) is suggested.

Punctuation and Automatic Syntactic Analysis*

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In this paper we discuss how algorithms for automatic analysis can take advantage of information carried by the punctuation marks.

We neglect stylistic aspects of punctuation because they lack universality of usage and we restrict ourselves to those rules which any punctuation must observe in order to be intelligible. This involves a concept we call "coherence" of punctuation. In order to define "coherence", we introduce two characteristics, which we prove to be mutually independent, namely "separating power" and "syntactic function".

The *separating power* is defined by three experimental laws expressing the fact that two punctuation marks of different separating power prevent to a different extent syntactic links from crossing them. These laws are defined independently of any particular grammatical character of the punctuation marks or of the attached grammatical syntagms.

On the other hand, whichever grammatical system we choose, we may assimilate the punctuation marks to the ordinary words, to the extent that we can assign to them a known *grammatical character and function,* well defined in any particular context. They differ however from the other words by their large number of homographs and synonyms i.e. by the fact that almost every punctuation mark can occur with almost every grammatical value in each particular case, and in quite similar contexts.

The syntactic functions, in general, and in particular those of the punctuation marks, *can be ordered* according to an arbitrary scale of decreasing "value" of syntactic links, where the "value" of a link is directly related to the number of syntactic conditions the links must satisfy.

The law of coherence, then, shows that in a given context, a particular punctuation mark cannot indistinctly represent all its homographs, so that a certain number of assumptions about its syntactic nature and function can be discarded. This law can be stated as follows: "When moving from a punctuation mark to its immediate (left or right) neighbor in any text, the separating power cannot increase if the value of the syntactic function increases and vice-versa".

In addition we review two related topics, namely the stylistic character of punctuation and the necessity and existence of intrinsic criteria of grammatically, i.e. independent of punctuation. We propose such a criterion, and suggest a formalism related to the parenthesis free notation of logic.

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Application of Decision Tables to Syntactic Analysis

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Decision tables have recently become an object of investigation as a possible means of improving problem formulation of data processing procedures. The initial emphasis for this new tool came from systems analysts who were primarily concerned with business data processing problems. The purpose of this paper is to investigate the suitability of decision tables as a means of expressing syntactic relations as an alternative to customary flow charting techniques. The history of decision tables will be briefly reviewed and several kinds of decision tables will be defined.

As an example, parts of the predicative blocking routine developed at Wayne State University will be presented as formulated with the aid of decision tables. The aim of the predicative blocking routine is to group a predicative form together with its modal and temporal auxiliaries, infinitive complements, and negative particle, if any of these exist. The object of the search is to define such a syntactic block, but it may turn out instead that an infinitive phrase is defined or that a possible predicative form turns out to be an adverb.

Simultaneous Computation of Lexical and Extralinguistic Information Measures in Dialogue

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An approach to the study of information processing in verbal interaction is described. It compares patterns of two indices of dispersion in recorded dialogue. The lexical measure is the mean segmental type—token ratio, based on 25-word segments of the running conversation. It is computed from a key punched transcript of the dialogue without regard to the speaker of the words. The extralinguistic measure is the H statistic, computed from the temporal pattern of the interaction. The latter is prepared from a two-channel tape recording by a special analogue to digital converter (AVTA system) which key punches the state of the vocal transaction 200 times per minute. Probabilities of the four possible states (either A or B speaking, neither speaking, both speaking) are the basis for the computation. All analyses are done on the IBM 7090. The methodology is part of an investigation of information processing in dyadic systems, aimed toward the reclassification of pathological communication.