

## Abstracts of Current Literature

The following ISSCO working papers are available from

Mike Rosner  
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54 route des Acacias  
1227 Geneva, Switzerland

**Upward Branching Phrase Markers** (no abstract)  
*Geoff Sampson*  
ISSCO paper no. 45

**Three Strategic Goals in Conversational Openings** (no abstract)  
*Michael Rosner*  
ISSCO paper no. 46

**A Poor Man's Flavor System**  
*Franco di Primio, Thomas Christaller*  
ISSCO paper no. 47 (1983)

This paper is the result of an attempt to understand 'flavors', the object-oriented programming system in Lispmachine Lisp. The authors argue that the basic principles of such systems are not easily accessible to the programming public, because papers on the subject rarely discuss concrete details. Accordingly, the authors' approach is pedagogical, and takes the form of a description of the evolution of their own flavor system. An appendix contains programming examples that are sufficiently detailed to enable an average Lisp programmer to build a flavor system, and experiment with the essential concepts of object-oriented programming.

**A Government-Binding Parser for French**  
*Eric Wehrli*  
ISSCO paper no. 48 (1984)

This paper describes a parser for French based on an adaptation of Chomsky's Government and Binding theory. Reflecting the modular conception of GB-grammars, the parser consists of several modules corresponding to some of the subtheories of the grammar, such as X bar, binding, etc. Making an extensive use of lexical information and following strategies that attempt to take advantage of the basic properties of natural languages, this parser is powerful enough to produce all of the grammatical structures of sentences for a fairly substantial subset of French. At the same time, it is restricted enough to avoid a proliferation of alternative analyses, even with highly complex constructions. Particular attention has been paid to the problem of the grammatical interpretation of wh-phrases, to clitic constructions, as well as to the organisation and management of the lexicon.

The following papers on the TOPIC project are available from

Universitaet Konstanz  
Informationswissenschaft  
Projekt TOPIC  
Postfach 5560  
D-7750 Konstanz 1  
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**Computing Text Constituency: an Algorithmic Approach to the Generation of Text Graphs**  
*Udo Hahn, Ulrich Reimer*  
*Bericht TOPIC-8/84, in English, 66 pp.*

An algorithm for text summarization (automatic abstracting) is presented which constitutes the text condensation component of TOPIC, a knowledge-based text information system. Based on the results of text parsing knowledge representation structures of text segments are evaluated in order to determine dominant concepts. By means of interpretation schema dominant concepts are related in terms of thematic units indicative of the

topic(s) of the text segment under consideration. The mutual compatibility of topics of adjacent text segments is determined and corresponding text constituents are constructed. Finally, a text graph is generated linking appropriate text constituents on various levels of text constituency. Accordingly, facilities for text-oriented information retrieval will be based on the manipulation of these text graphs.

**A Knowledge-Based Text Analysis System for the Graphically Supported Production of Cascaded Text Condensates**

*Rainer Kuhlen*

*Bericht TOPIC-9/84, in English, May 1984, 20 pp.*

This paper outlines the system design of TOPIC and TOPOGRAPHIC, text analysis and condensation projects within the general framework of information science. Special information processing requirements (domain-specific full-texts, varying user expectations) demand knowledge-based parsing (frame model), supported by devices which are appropriate for full-text analysis (word expert model) and by suitable condensation techniques (computing of text constituents). The concept of cascaded condensates (gradation of information from generic, classification-like concepts over fragments of knowledge nets down to the original full-texts) guides the realization of the output, which is supported by graphical means. Some examples for graphically supported navigation and editing in the knowledge network are given. It is assumed that presentation on the display must find an appropriate balance between over- and under-information. The knowledge nets will be presented gradually via moving pictures. The performance of TOPIC/TOPOGRAPHIC is at the moment comparable to the information value of indicative abstracts. The texts to be analyzed and condensed deal with information technologies from the point of view of possible application in an office environment (management decisions about the acquisition of information and communication technologies). The system will be realized on an ONYX-microcomputer (under UNIX,<sup>1</sup> programming in C) and on a workstation LILITH (programs in Modula-2). <sup>1</sup>UNIX is a trademark of Bell Laboratories

**Textual Expertise in Word Experts: An Approach to Text Parsing Based on Topic/Comment Monitoring. Extended Version.**

*Udo Hahn*

*Bericht TOPIC-10/84, in English, June 1984, 37 pp.*

In this paper prototype versions of a collection of word experts for text analysis are dealt with in order to demonstrate that word experts are a feasible tool for parsing texts on the level of text cohesion as well as text coherence. The analysis is based on two major knowledge sources: context information is modelled in terms of a frame knowledge base, while the co-text keeps record of the linear sequence of text analysis. The result of text parsing consists of a text graph which represents the thematic organization of topics in a text.