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Contents page

O. Ferret, B. Grau, M. Hurault-Plantet, G. Illouz, C. Jacquemin, L. Monceaux, I. Robba, A. Vilnat. (2002). **How NLP can improve Question Answering.** *Knowledge Organization*, 29(3/4). 135-155. 28 refs.

ABSTRACT: Answering open-domain factual questions requires Natural Language processing for refining document selection and answer identification. With our system QALC, we have participated in the Question Answering track of the TREC8, TREC9 and TREC10 evaluations. QALC performs an analysis of documents relying on multi-word term searches and their linguistic variation both to minimize the number of documents selected and to provide additional clues when comparing question and sentence representations. This comparison process also makes use of the results of a syntactic parsing of the questions and Named Entity recognition functionalities. Answer extraction relies on the application of syntactic patterns chosen according to the kind of information that is sought, and categorized depending on the syntactic form of the question. These patterns allow QALC to handle nicely linguistic variations at the answer level.

K.-H. Chen (2002). **Evaluating Chinese Text Retrieval with Multilingual Queries.** *Knowledge Organization*, 29(3/4). 156-170. 28 refs.

ABSTRACT: This paper reports the design of a Chinese test collection with multilingual queries and the application of this test collection to evaluate information retrieval systems. The effective indexing units, IR models, translation techniques, and query expansion for Chinese text retrieval are identified. The collaboration of East Asian countries for construction of test collections for cross-language multilingual text retrieval is also discussed in this paper. As well, a tool is designed to help assessors judge relevance and gather the events of relevance judgment. The log file created by this tool will be used to analyze the behaviors of assessors in the future.

S. Siddhom, M. Hassoun (2002). **Morpho-syntactic Parsing for a Text Mining Environment: An NP Recognition Model for Knowledge Visualization and Information Retrieval.** *Knowledge Organization*, 29(3/4). 171-180. 11 refs.

ABSTRACT: Sidhom and Hassoun discuss the crucial role of NLP tools in Knowledge Extraction and Management as well as in the design of Information Retrieval Systems. The authors focus more specifically on the morpho-syntactic issues by describing their morpho-syntactic analysis platform, which has been implemented to cover the automatic indexing and information retrieval topics. To this end they implemented the Cascaded "Augmented Transition Network (ATN)". They used this formalism in order to analyse French text descriptions of Multimedia documents. An implementation of an ATN parsing automaton is briefly described. The Platform in its logical operation is considered as an investigative tool towards the knowledge organization (based on an NP recognition model) and management of multiform e-documents (text, multimedia, audio, image) using their text descriptions.

F. Ibekwe-SanJuan, E. SanJuan (2002). **From Term Variants to Research Topics.** *Knowledge Organization*, 29(3/4). 181-197. 21 refs.

ABSTRACT: In a scientific and technological watch (STW) task, an expert user needs to survey the evolution of research topics in his area of specialisation in order to detect interesting changes. The majority of methods proposing evaluation metrics (bibliometrics and scientometrics studies) for STW rely solely on statistical data analysis methods (co-citation analysis, co-word analysis). Such methods usually work on structured databases where the units of analysis (words, keywords) are already attributed to documents by human indexers. The advent of huge amounts of unstructured textual data has rendered necessary the integration of natural language processing (NLP) techniques to first extract meaningful units from texts. We propose a method for STW which is NLP-oriented. The method not

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only analyses texts linguistically in order to extract terms from them, but also uses linguistic relations (syntactic variations) as the basis for clustering. Terms and variation relations are formalised as weighted di-graphs which the clustering algorithm, CPCL (Classification by Preferential Clustered Link) will seek to reduce in order to produce classes. These classes ideally represent the research topics present in the corpus. The results of the classification are subjected to validation by an expert in STW.

L. Bowker (2002). **Information Retrieval in Translation Memory Systems: Assessment of Current Limitations and Possibilities for Future Development.** *Knowledge Organization*, 29(3/4). 198-203. 11 refs.

ABSTRACT: A translation memory system is a new type of human language technology (HLT) tool that is gaining popularity among translators. Such tools allow translators to store previously translated texts in a type of aligned bilingual database, and to recycle relevant parts of these texts when producing new translations. Currently, these tools retrieve information from the database using superficial character string matching, which often results in poor precision and recall. This paper explains how translation memory systems work, and it considers some possible ways for introducing more sophisticated information retrieval techniques into such systems by taking syntactic and semantic similarity into account. Some of the suggested techniques are inspired by those used in other areas of HLT, and some by techniques used in information science.

D. L'Homme, M.-C. L'Homme, Ch. Lemay. (2002). **Benchmarking the Performance of Two Part-of-Speech (POS) Taggers for Terminological Purposes.** *Knowledge Organization*, 29(3/4). 204-216. 19 refs.

ABSTRACT: Part-of-speech (POS) taggers are used in an increasing number of terminology applications. However, terminologists do not know exactly how they perform on specialized texts since most POS taggers have been trained on “general” corpora, that is, corpora containing all sorts of undifferentiated texts. In this article, we evaluate the performance of two POS taggers on French and English medi-

cal texts. The taggers are TnT (a statistical tagger developed at Saarland University (Brants 2000)) and WinBrill (the Windows version of the tagger initially developed by Eric Brill (1992)). Ten extracts from medical texts were submitted to the taggers and the outputs scanned manually. Results pertain to the accuracy of tagging in terms of correctly and incorrectly tagged words. We also study the handling of unknown words from different viewpoints.

R. Fugmann (2002). **The Complementarity of Natural and Index Language in the Field of Information Supply. An overview of their specific capabilities and limitations.** *Knowledge Organization*, 29(3/4). 217-230. 28 refs.

ABSTRACT: Natural text phrasing is an indeterminate process and, thus, inherently lacks representational predictability. This holds true in particular in the case of general concepts and of their syntactical connectivity. Hence, natural language query phrasing and searching is an unending adventure of trial and error and, in most cases, has an unsatisfactory outcome with respect to the recall and precision ratios of the responses. Human indexing is based on knowledgeable document interpretation and aims – among other things – at introducing predictability into the representation of documents. Due to the indeterminacy of natural language text phrasing and image construction, any adequate indexing is also indeterminate in nature and therefore inherently defies any satisfactory algorithmization. But human indexing suffers from a different set of deficiencies which are absent in the processing of non-interpreted natural language. An optimally effective information system combines both types of language in such a manner that their specific strengths are preserved and their weaknesses are avoided. If the goal is a large and enduring information system for more than merely known-item searches, the expenditure for an advanced index language and its knowledgeable and careful employment is unavoidable.

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Reference citations within the text should have the following form: (author, year). For example, (Jones, 1990). Specific page numbers are optional, but preferred when applicable, e.g. (Jones, 1990, p.100). A citation with two authors would read (Jones & Smith, 1990); three or more authors would be: (Jones et al., 1990). When the author is mentioned in the text, only the date and optional page

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Dahlberg, I. (1978). A referent-oriented, analytical concept theory for INTERCONCEPT. *International Classification*, 5(3). 142-151.

Graesser, A., Person, N. & Huber, J. (1992). Mechanisms that generate questions. In T. W. Lauer, E. Peacock, & A. C. Graesser (Eds.). *Questions and Information Systems*. Hillsdale, NJ: Lawrence Erlbaum Associates. 167-187.

Sager, J.C. (1990). *A Practical Course in Terminology Processing*. Amsterdam: John Benjamins.

Sukiasyan, E. R. (1996). Change as a problem of classification system development. In R. Green (Ed.). *Knowledge Organization and Change: Proceedings of the 4th International ISKO Conference*. Frankfurt: Indeks Verlag. 119-122.

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Scope

The more scientific data are generated in the impetuous present times, the more ordering energy needs to be expended to control these data in a retrievable fashion. With the abundance of knowledge now available the questions of new solutions to the ordering problem and thus of improved classification systems, methods and procedures have acquired unforeseen significance. For many years now they have been in the focus of interest of information scientists the world over.

Until recently, the special literature relevant to classification was published in piecemeal fashion, scattered over the numerous technical journals serving the experts of the various fields such as

philosophy and science of science
science policy and science organization
mathematics, statistics and computer science
library and information science
archivistics and museology
journalism and communication science
industrial products and commodity science
terminology, lexicography and linguistics

Beginning 1974, KNOWLEDGE ORGANIZATION (formerly INTERNATIONAL CLASSIFICATION) has been serving as a common platform for the discussion of both theoretical background questions and practical application problems in many areas of concern. In each issue experts from many countries comment on questions of an adequate structuring and construction of ordering systems and on the problems of their use in opening the information contents of new literature, of data collections and survey, of tabular works and of other objects of scientific interest. Their contributions have been concerned with

- (1) clarifying the theoretical foundations (general ordering theory/science, theoretical bases of classification, data analysis and reduction)
- (2) describing practical operations connected with indexing/ classification, as well as applications of classification systems and thesauri, manual and machine indexing
- (3) tracing the history of classification knowledge and methodology
- (4) discussing questions of education and training in classification
- (5) concerning themselves with the problems of terminology in general and with respect to special fields.

Aims

Thus, KNOWLEDGE ORGANIZATION is meant to be a programme for the improvement of classification methods and processes, a forum for discussion for all those interested in the organization of knowledge on a universal or a subject-field scale, using concept-analytical and/or concept-synthetic approaches as well as numerical procedures and comprising also the intellectual and automatic compilation and use of classification systems and thesauri in all fields of knowledge, with special attention being given to the problems of terminology.

KNOWLEDGE ORGANIZATION publishes original articles, reports on conferences and similar communications, the Newsletters of the International Society for Knowledge Organization (ISKO News) and the Committee on Classification Research of the International Federation for Information and Documentation (FID/CR News) as well as book reviews, letters to the editor, and an extensive annotated bibliography of recent classification and indexing literature, covering some 500 items in each issue.

KNOWLEDGE ORGANIZATION should therefore be available at every university and research library of every country, at every information center, at colleges and schools of library and information science, in the hands of everybody interested in the fields mentioned above and thus also at every office for updating information on any topic related to the problems of order in our information-flooded times.

KNOWLEDGE ORGANIZATION was founded in 1973 by an international group of scholars with a consulting board of editors representing the world's regions, the special classification fields, and the subject areas involved. From 1974-1980 it was published by K.G. Saur Verlag, München. Back issues of 1978-1992 are available from ERGON-Verlag, too.

As of 1989, KNOWLEDGE ORGANIZATION has become the official organ of the INTERNATIONAL SOCIETY FOR KNOWLEDGE ORGANIZATION (ISKO) and is included for every ISKO-member, personal or institutional in the membership fee (US \$ 55/US \$ 110).

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