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## KO Reports

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### Emerging Frameworks and Methods

#### The Fourth International Conference on Conceptions of Library and Information Science (CoLIS4).

The Information School, University of Washington.  
Seattle, Washington, USA. July 21-25, 2002.

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The fourth CoLIS conference was held this summer at The Information School, University of Washington, Seattle, WA, USA, from July 21-25, 2002 (<http://colis.ischool.washington.edu>).

The general aim of the international CoLIS conferences is to provide a broad forum for critically exploring and analyzing library and information science (LIS) as a discipline and as a field of research from historical, theoretical, and empirical perspectives. In previous CoLIS conferences, a variety of basic and applied problems have been addressed involving not only LIS but also related disciplines. CoLIS1 was held in 1991 at the University of Tampere, Finland. CoLIS2 was held in 1996 at the Royal School of Library and Information Science, Copenhagen, Denmark. CoLIS3 was held in 1999 at the Inter-University Centre, Dubrovnik, Croatia.

The CoLIS conferences are unique because they are not organized by professional or scientific organizations. Instead the conferences are organized by people from various universities with interests in the theoretical foundation of LIS, and they are organized as cooperative international ventures. Thus CoLIS4 was organized by The Information School, University of Washington, Seattle, USA, in cooperation with the Department of Information Studies, University of Tampere, Finland, the Royal School of Library and Information Science, Denmark, and the American Society for Information Science and Technology (ASIST).

Almost 200 participants attended the conference. CoLIS4 included four pre-conference tutorials, a key-

note presentation, eighteen papers, two panel sessions, eight posters, and two post-conference workshops. Paper presentations lasted 30 minutes followed by 15 minutes for discussion, which provided enough time for substantial discussions and debate.

As something new to the CoLIS conferences, a doctoral forum was introduced this time. The doctoral forum was an opportunity for doctoral students to present and discuss their research projects with senior researchers and in return receive constructive feedback. The session was organized very successfully by Pia Borlund, Royal School of Library and Information Science, Denmark. A similar doctoral forum will be included in the next CoLIS conference to be held in the summer of 2005 at the University of Strathclyde, Scotland, at the Department of Computer and Information Sciences.

LIS is closely associated with a variety of other disciplines and its practice employs technologies that are changing rapidly. It is of utmost importance, therefore, to develop a solid basis of conceptual frameworks and methods in this area. Thus the theme for CoLIS4 was "*Emerging Frameworks and Methods*," and indeed contributors at the conference took a range of approaches to new and emerging frameworks and methods, – all the contributions focused on interactions between the old and the new, between theory and practice, and among intellectual areas that are seemingly far apart. This was done in the following ways: challenging existing widely-used approaches and proposing new ways of employing them; pointing to new manners in which well established structures in

information research could be utilized; conducting empirical research to create new models or expand on existing ones; turning to existing models and theories to guide empirical research both in natural settings and in laboratories; and employing theories, concepts, and constructs from other disciplines to both theoretical discussions and empirical research.

The diversity of topics and approaches reflected on by the conference contributors (doctoral students, tutorial speakers, keynote presenter, paper presenters, panellists, poster presenters, and themes in the workshops) create a comprehensive example of current conceptions in LIS.

The following is a presentation of some of the COLIS4 contributions that may be of interest to the readers of *Knowledge Organization*. Bearing in mind the many different topics and approaches addressed at the conference some of the papers may be of only of marginal interest.

The keynote address was given by Tom Wilson, University of Sheffield, UK, who lectured on "*Philosophical Foundations and Relevance: Issues for Information Research*". Wilson explored the theoretical foundation of the field and suggested that phenomenology could serve as the basic foundation for the field (<http://informationr.net/tdw/publ/papers/COLIS4.html>).

The eighteen conference papers were divided into three overall tracks: information interaction, informetric approaches, and information retrieval (IR). The topics of the papers ranged from a re-examination of core concepts in LIS to empirical approaches for studying how people search the Web, databases and other information sources, to construction of knowledge organization systems, and to mapping of scientific fields. For full bibliographic descriptions of the selected papers presented below, see the conference proceedings: *Emerging Frameworks and Methods – Proceedings of the Fourth International Conference on Conceptions of Library and Information Science (CoLIS4)*. Edited by Raya Fidel, Harry Bruce, Peter Ingwersen, Pertti Vakkari, Libraries Unlimited, 2002.

The first track was named information interaction. In "*A Classification of Interactions with Information*," Nicholas J. Belkin, Rutgers University, USA, and Colleen Cool, Queens College, USA, present a faceted classification of interactions with information based on an empirical study of knowledge workers in their work environment. The purpose of the classification is to inform the design of information retrieval systems which is supposed to support the whole variety

of interactions with information that people engage in during the course of information seeking.

Along similar lines were two papers from the Risø National Laboratory's Center for Human-Machine Interaction in Denmark: "*An Analysis of Collaboration in Three Film Archives: A Case for Collaboratories*" by Morten Hertzum, Annelise Mark Pejtersen, Bryan Cleal, and Hanne Albrechtsen; and "*Empirical Work Analysis of Collaborative Film Indexing*" by Hanne Albrechtsen, Annelise Mark Pejtersen and Bryan Cleal. The context for both papers is research on collaborative work activities in relation to European film archives with the aim of improving information storage and retrieval. Also, the research presented in both papers relies on cognitive work analyses. Collaboratories are based on communication technologies and are intended to foster increased collaboration and sharing of resources within and among organisations. The first paper argues that the actual work analysis presented, that is, assessing the potential of designing a collaboratory that supports and enhances the work in the archives, may facilitate the archives in identifying a common ground on which to base such a collaboratory. The latter paper more specifically investigates document indexing as a collaborative work activity, and contributes with ideas for the development of future conceptual tools based on a means-end model presented.

Linda Z. Cooper, Pratt Institute, USA, in "*A Study of the Relationships between Categories of Library Information as Typified by Young Children*", presents a study of the manner in which children understand or typify relationships between broad categories of information in the library. Her aim is to investigate children's tendencies to construct personal versus cultural types of groupings, to discern possible movements towards a more cultural perspective of information clusters as grade level increases, and to consider the possibility of a culturally inter-subjective perspective of information organization which might be shared by the user and the library.

The second track was named informetric approaches. In "*Principia Informatica: Foundational Theory of the Concept of Information and Principles of Information Services*," Birger Hjørland, Royal School of Library and Information Science, Denmark, presents an understanding of a core concept within LIS, that is information. Defining LIS more broadly as simply information science, Hjørland outlines the fundamental principles of the concept of information. The paper shows the existence of hierarchies of information

processing mechanisms, such as libraries, electronic databases and related information services, and that information science is concerned with only the highest forms of such mechanisms. Further the paper relates theories of these high-level information systems to theoretical views of knowledge, language, documents, cognition, science and communication.

Jeppe Nicolaisen, Royal School of Library and Information Science, Denmark, in "*Structure-Based Interpretation of Scholarly Book Reviews: A New Research Technique*," introduces a structure-based research technique for the interpretation of opinions reflected by authors of scholarly book reviews. The structure-based technique combines two prevalent content analytical approaches, while additionally utilizing the typical rhetorical organization of book reviews as a point of analytic departure.

In "*Speculations on Browsing, Retrieval Searching, and Linking in Relation to the Bradford Distribution*," Marcia J. Bates, University of California, USA, speculates on the optimum searching techniques for the three Bradford regions delineated in Bradford's famous 'Law of Scattering'. In the process, browsing, directed searching in databases, and links are considered.

Jesper W. Schneider and Pia Borlund, Royal School of Library and Information Science, Denmark, in "*Preliminary Study of the Potentiality of Bibliometric Methods for the Construction of Thesauri*," present the overall idea of how bibliometric methods may be applied to thesaurus construction as a supplement to traditional intellectual manual construction and maintenance processes. The paper reports on the initial experiment of creating a text corpus from which candidate thesaurus terms can be extracted and relationships uncovered.

Also focusing on bibliometric methods is Fredrik Åström, Umeå University, Sweden, who in "*Visualizing LIS Concept Spaces through Keyword and Citation Based Maps and Clusters*," presents a study that tests the relation between keyword and citation based analyses in connection with the mapping of scientific fields. Three maps are compared, one based on co-citations, one on keyword co-occurrences, and one merging citations and keywords. The mappings show the same basic structure, and when merged, cited authors and keywords form corresponding relations.

The third and final track was named information retrieval. Ian Ruthven, University of Strathclyde, UK, Mounia Lalmas, University of London, UK, and Keith van Rijsbergen, University of Glasgow, UK, in their paper "*Expansion Terms with Partial and Osten-*

*sive Evidence*," examine the problem of ranking candidate expansion terms for query expansion. They show how partial relevance assessments – how relevant a document is – and ostensive evidence – when a document was assessed relevant – can be incorporated into a term ranking function. Results from user experiments indicate that the new function not only suggests terms that are preferred by searchers but suggests terms that can lead to more use of expansion terms. This study originates from traditional information retrieval (IR) research but it also reflects more user-oriented research trends within IR, so-called interactive information retrieval.

In line with the above mentioned paper is the contribution by Kalervo Järvelin and Jaana Kekäläinen, University of Tampere, Finland, "*Evaluating Information Retrieval Systems under the Challenges of Interaction and Multidimensional Dynamic Relevance*." The paper examines the rationale of evaluating IR algorithms, the status of traditional IR evaluation, and the applicability of proposed novel evaluation methods and measures. The traditional IR laboratory model is challenged for its lack of realism, but the authors point out that it is still useful for specific tasks in the development of IR algorithms.

In "*Information Access in Indigenous Languages: A Case Study in Zulu*," Erica Cosijn, University of Pretoria, South Africa, Ari Pirkola, University of Tampere, Finland, Theo Bothma, University of Pretoria, South Africa, and Kalervo Järvelin, University of Tampere, Finland, present a study that focuses on the intellectual accessibility of information in indigenous languages. Both cross-lingual information retrieval and metadata are discussed as possible means of facilitating access, and a bilateral approach combining these two methods is proposed.

Peter Ingwersen, Royal School of Library and Information Science, Denmark, in "*Cognitive Perspectives of Document Representation*," reviews and analyses the cognitive conception of poly-representation applied to information retrieval. Three types of aboutness are discussed, as well as a so called 'isness' of information objects. The assumption that highly relevant objects are found in retrieval overlaps of cognitively and functionally different origin is analysed with reference to performed empirical tests.

The last paper chosen for this report is not exactly related to the IR track it was placed in. Kimmo Tuominen, Sanna Talja, and Reijo Savolainen, University of Tampere, Finland, in "*Discourse, Cognition and Reality: Towards a Social Constructionist Meta-theory for Library and Information Science*," discuss ontological