

# Classification Issues in 2008 Report

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## Tenth International ISKO Conference, August 2008, Montreal, Canada

The International Society for Knowledge Organization celebrated its 10<sup>th</sup> year of existence with its biennial conference at the Ecole de bibliothéconomie et des sciences de l'information, Université de Montréal in August 2008. The theme of the conference was "Culture and Identity". As with the earlier conferences, this analysis is organized according to the organization of the text of the published proceedings. However, in this case, unlike earlier proceedings which were ordered according to the order of presentation in the programme, this volume groups the 57 papers according to the 9 sub-themes of the programme. Thus the papers on a particular subtheme will have been presented in several separate sessions across the programme. For purposes of analysis this grouping has some advantages over the earlier arrangement. Some of the groups are quite large (as many as 11 papers) and the discussion below attempts to further group papers under the sub-themes.

The conference was opened with a keynote address entitled "Interrogating Identity: a Philosophical Approach to an Enduring Issue in Knowledge Organization," by Jonathan Furner. In this paper he focuses on the empirical evaluation of systems and the tools and techniques that we use in building our systems. He raises a number of questions that must be addressed in determining the "goodness" of the models that we use in our attempts to build better systems. Ultimately he is concerned with the use of philosophical theories in evaluating KO systems and the "extent to which KO schemes reflect the cultural identities of their users." His presentation is represented in the proceedings by an extended abstract.

## Section 1

The first section, entitled Models and Methods in Knowledge Organization, contains ten papers. Three of these papers tackle classification in its broadest sense. Louise Spiteri (Canada) discusses "Causality and Conceptual Coherence in Assessments of Similarity." Starting with the notion that objects, events or entities form a concept because they are similar to one another, Spiteri examines traditionally based concept theories and finds that they do not adequately support concept coherence. To support her findings she uses two types of theory – those that are similarity-based and those that are knowledge-based. She concludes that library and information science needs to further explore "the impact of knowledge and causality upon people's construction of concepts to see whether it is possible to achieve a *consensus of coherence* for these concepts within a given domain." In their paper on "Hermeneutic Approaches in Knowledge Organization: An Analysis of Their Possible Value" Fulvio Mazzocchi (Italy) and Mela Bosch (Argentina) consider how hermeneutics and other related theories may bring new insights into KO. They briefly compare the heuristic model for which the methodologies take one of two forms – procedural form and declarative form – with the hermeneutic approaches. Sources are cited and the main features of the two types described. A case study was carried out on computer applications of selected samples from applications in Europe, especially from Italy. Here it is briefly described. In the language context the term "Education" in English versus Éducation (French) is used. The purpose is to show how some of these theories might be used "to provide a more realistic representation of the complexity of knowledge and language in KO systems.

Three of the papers in section 1 focus on aspects of existing universal systems – specifically, Dewey, Bliss

and UDC. "Making Visible Relationships in the Dewey Decimal Classification: How Relative Index Terms Relate to *DDC* Classes" by Rebecca Green (United States) is amply described by its title. The author is dealing with the relationship between two types of informational notes that regularly appear in *DDC*. These are "class here" notes in which topics are described as "approximation of the whole" and "including notes" that contain topics that are being given "standing room" only. These notes perform slightly different roles. The terms in "including" notes are assumed to be terms that are more-or-less comprehensive with the topic under which they sit, while "standing room" terms are also seen as comprehensive to the topic but they are restricted in number building. In reality, they are presented as subtopics of the main class and may at some future date be given class numbers of their own.. Currently, the two types are not differentiated in the *DDC* Relative Index and no record is kept as to which terms are kept and how semantic factoring may have been applied in each group. The author explains that it would be useful to be able to ascertain the relationship between these terms and to be able to do it automatically. As explained in the methodology the differences are not always applied consistently and the difficulties are outlined. The process of distinguishing the two types is described and the matching of Relative Index terms with schedule entries is discussed. Some statistics have been derived but there is still work to be done. This investigation is part of an analysis of the classification which is intended to lead to supporting automated reasoning within the scheme. In a paper entitled "Language Related Problems in the Construction of Faceted Terminologies and Their Automatic Management" Vanda Broughton (United Kingdom) "describes current work on the generation of a thesaurus format from the schedules of the *Bliss Bibliographic Classification*, 2d edition (BC2). This paper capitalizes on the long-held recognition of the possible use of faceted classification in the construction of a thesaurus and on the recent acknowledgement of faceted terminologies reference in British Standard BS8723. This research is further related to current work on BC2 where it is desirable to produce an integrated classification, index and thesaurus." It appears possible that facet methodology can be applied to all three formats but there is work to be done on terminology control. It is this latter aspect that is addressed in this paper. Four aspects of the language problem are discussed – 1) automatic generation of the thesaurus from the classification; 2) vocabulary control in class headings; 3) managing equivalence re-

lationships; and 4) compound terms and semantic factoring. Findings indicate that "semi-automatic management ... is shown to be viable." One of the problems to be faced is the fact that, up to now, vocabulary control has not been applied in BC2. For fully automated derivation of terms much work is needed "on establishing rules for formatting of class headings and the control of vocabulary." In the third paper in this group entitled "Medicine and the UDC: The Process of Restructuring" Ia McIlwaine (United Kingdom) and Nancy Williamson (Canada) describe the progress in the development and revision of Class 61 Medical Sciences in the *Universal Decimal Classification*. This is an on-going experiment in the possible conversion of UDC into a fully faceted system. Intellectual support for the project comes from the work of the Classification Research Group and *Class H: Anthropology, Human Biology, Health Sciences* of BC2. Phase I of project (now completed) is briefly described and illustrated. Phase I has produced a workable base for proceeding to Phase II. Findings from Phase I are identified and the procedures being used in Phase II are described. It is hoped that Phase II will bring the project to a usable conclusion.

Another three of the papers in Section 1 deal with specialized subject areas.

John DiMarco (United States) presented a paper entitled "Examining Bloom's Taxonomy and Peschl's Modes of Knowing for Classification of Learning Objects on the PBS.org/teachersource Website." Learning objects are described as videos and animated clips that are "deployed into classrooms through public television websites." The research is a study of metadata representations of learning objects. The goal of the study is to propose and apply a comparative taxonomy to classify learning objects using these two systems. In his paper entitled "Cultural Markers and Localising the MIC Site" James M. Turner (Canada) addresses language problems in making websites produced in one language usable by users who do not speak the language of the original. His starting point is the fact that simply "translating" the website is not sufficient. To be understandable the results must be "localised" so that users may understand the content in terms of their own culture. This paper describes a project in which a kit for "localising" a chosen website (MIC) was developed and tested using selected pages from the site in French, Spanish and Arabic. The kit in the form of a pdf file is usable with other languages. Jobo Alberto de Oliveira et. al. (Brazil and Spain) presented "A Time-aware Ontology for Legal Resources" that describes a new approach to associating metadata to

legal documents. The system exploits a fully developed information ontology of legal resources. Their model builds on the Functional Requirements of the Bibliographic Record (FRBR) Model and takes time into account. The derived model is described in detail and is accompanied by illustrations.

The remaining papers in Section 1 address a variety of factors and methods. Melanie Feinberg (United States) presented a paper entitled "Classificationist as Author: the Case of the Prelinger Library" in which she describes the system used in the Prelinger Library in San Francisco. The library is a private owned non-circulating collection of 50,000 items, not catalogued but arranged in a progressive order from one end to the other. The order has been determined by the owners Megan Shaw Prelinger and her husband Rick. (hence, they are the authors of the scheme). The system is intended for browsing and reflects a conscious attempt "to represent the realms of thought that bounce around the insides of both our (i.e the authors') minds." Different sections are marked with subject headings written on masking tape. For example, a series of headings on shelf 5 runs from US Internal Dissent to Nuclear Threat, then to War, Conflict and on to Peace, followed by Radical Studies and then Utopia. When location is relevant, location precedes subject in most cases but adapts genre innovatively. Using this collection as a base and delving more deeply into the nature of order, Feinberg finds the authorial voice "works as a persuasive mechanism, facilitating a rhetorical purpose for the collection." Finally in Section I paper by Yves Marcoux and Élias Rizkallah (Canada) discussed "Knowledge Organization in the Light of Intertextual Semantics: A Natural Language Analysis of Controlled Vocabularies." In short the authors provide an example to show that intertextual semantics might be applied to controlled vocabularies expressed in SKOS (*Simple Knowledge Organization System*).

## Section 2

A section on Multilingual and Multicultural Environments contains five papers on various aspects of the subject. K.S. Raghavan and A. Neelameghan (India) presented "Design and Development of a Bilngual Thesaurus for Classical Tamil Studies: Experiences and Issues." In doing so, the authors examined aspects of the design and development of vocabulary management in multilingual thesauri in a culture specific domain particular to the Tamil language, looking at alternative ways of linking certain descriptors to long lists

of NTs and RTs, They discuss advantages of the integrated use of two or more knowledge organization tools, and the use of a bilingual thesaurus for certain types of research in Tamil. Among the concerns, are issues related to equivalence, non-hierarchical associative relationships, homographs and NT's. Elaine Menard (Canada) focuses on "Indexing and Retrieving Images in a Multilingual World." Her paper presents the problem statement and methodology and preliminary results of a project comparing two approaches to image indexing – traditional image indexing using a controlled vocabulary and free image indexing e3wcontrolled vocabularies and natural language together enhance the results.

Maria Odaisa Espinheiro de Oliveira (Brazil) dealt with "Knowledge Representation Focusing [on] Amazonian Culture." Her research uses cultural terms from popular histories collected from residents of eight municipal districts in the country. Knowledge representation in the Amazon Culture is discussed and the methodology described. A classification and a thesaurus were constructed. The project resulted in a deeper knowledge of the Amazon culture and "a better understanding about the linguistics, the terminology and the theory of the classification." A fourth paper by A;gnes Hajdu Bar;ct (Hungary) was concerned with "Knowledge Organization in the Cross-cultural and Multicultural Society." Her interest is in the fact that "cross language retrieval systems are needed for those who can search in only one language. She identifies three problems – the lack of consensus on the definition of culture, the distinction between cultural and national boundaries, and the measurement of cultural attributes of organizational functioning due to lack of clarity of the definition of culture." Possible solutions to the problem - use of multilingual thesauri, use of multilingual subject headings, and the adaptation and use of classification systems not based on language - are discussed in turn in the paper. Finally Joan Mitchell (United States), Ingebjorg Rype (Norway) and Magdalena Svanberg (Sweden) addressed "Mixed Translation Models for the Dewey Decimal Classification (DDC) System." They are looking at the issues involving use of two languages in a single edition of DDC. Two models, Norwegian/English and Swedish/English DDC data are described, together with the design of a pilot study "to evaluate use of a mixed translation as a classifier's tool." Some challenges and issues related to content and representation were identified. Also the study addresses DDC as a classifiers' tool. Yet to be considered are the implications for end users.

### Section 3

Six papers fall under the broad heading of Knowledge Organization for Libraries, Archives and Museums. Kathryn Le Barre (United States) considers facet analysis in the "Discovery and Access Systems for Websites and Cultural Heritage Sites." She finds that facets function equally well as "browsing and searching devices" in digital museum portals and online catalogues. The author surveyed American practice on 200 websites in 2005, repeated in 2008. The 200 sites formed a base for comparison with 6 online library catalogues and 3 museum interface prototypes "that self-identify as using facets." The results are obviously not perfect but the author feels certain that improvements will come. Mats Dahlström and Joacim Hanusson ((Sweden) presented a paper "On the Relation Between Qualitative Digitization and Library Institutional Identity." It highlights and discusses "concepts and practices of national library digitization." Two conceptual models are suggested and the purpose of the paper is "to discuss and rethink concepts of digitization and knowledge organization (KO) practices in relation to cultural heritage digitization and library identity." The authors do not provide answers but rather aim to provide a basis for further questions and a platform for future research. Amelia Abreu (United States), in a paper entitled "Every Bit Informs Another" provides a "Framework .Analysis for Descriptive Practice and Linked Information." Her concern is the problems of coherent description in the convergence of information from the divergent sources of libraries, archives and museums on the web. In this paper, she examines the practices of description in subject cataloguing and archival practices along with social tagging in search of "possible new paths for integration.

Jean Riley (United States) addresses problems of "Moving from a Locally-developed Data Model to a Standard Conceptual Model." She points out that while work is being done on the "connection between conceptual models and system functionality" the situation is as yet unclear. The purpose of her paper is to summarize recent developments in work with conceptual models in the LIS field. She examines the effects on interoperability and describes work done and lessons learned "from conceptual modeling efforts to improve interoperability in a set of metadata." Finally in this section, Jan Pisansky and Maja Zumer (Slovenia) attack the intriguing subject "How Do Non-librarians see the Bibliographic Universe?" A pilot

study was carried out on three tasks to test the instruments for acquiring mental models of a bibliographic universe. The three tasks included: sorting cards into pairs based on substitutability, card sorting in concept exercises Not surprisingly, it was found that users do not have a consistent model of the bibliographic universe. The experiments` are described in detail and reasons for the results carefully identified. The experiment is part of a larger study ongoing. While there was failure to identify a consistent model approach to the bibliographic universe, it provided an interesting profile of users' inadequacies in understanding the nature of information.

### Section 4

Section 4 of the proceedings Knowledge Organization for Information Management and Retrieval contains 11 papers making it one of the three largest sections of papers. Examination of the contents suggests that the "information management " appears to be somewhat of a misnomer here. The papers included here fall into various aspects of knowledge organization systems (KOS) and fall into such areas as :design of new systems, the improvement of existing systems, improvements for retrieval, and the organization of special materials using some existing methods.

In response to the inadequacies of existing systems two papers focus on the design of radically new approaches. Rick Szostak (Canada) and Claudio Gnoli (Italy) presented a paper on "Classifying by Phenomena, Theories and Methods". It uses a variety of theories across the social sciences to demonstrate how documents might be classified by theory type using an approach by phenomena as opposed to classification by discipline. The approach taken follows through from the development of the Leon Manifesto (<http://www.iskoi.org/ilc/leon.htm>) developed at the conference of ISKO/Italy in Leon in 2007 and uses the Integrative Level Classification (ILC) (<http://www.iskoi.org/ilc/>) The theories are explained and the methodology described. Examples focusing on the social sciences are used. Michael Buckland and Ryan Shaw (United States) wrote a paper entitled "4W Vocabulary Mapping Across Diverse Reference Genres." The term 'genre' refers here to various reference sources (e,g, bibliographies, biographical dictionaries, catalogues, encyclopedias, gazetteers). They are divided into facets "what, where, when and who" and mapping is done between both similar and dissimilar vocabularies, using the principle that "understanding requires a knowledge

of context" to create the functionality of a reference library in a digital environment." The process is described and examples given.

A number of papers in Section 4 focus on improvements to the existing tools and processes that serve our KOS. Two papers provide new tools for the use of LCSH. Kwan Yi and Lois May Chan (United States) in a paper entitled "A Visualization Software Tool for Library of Congress Subject Headings" describe a software tool (Visual CSH) to be used for effective searching, browsing and maintenance of LCSH. A conceptual framework for converting the hierarchical structures of LCSH into tree structures is described and implemented. Similarly, Nicolas George, Elin Jacob, et. al. (United States) presented "A Case Study of Tagging Patterns in del.icio.us." project proposes a conceptual framework for LCSH and develops a new tool for visualizing the structure of LCSH. Referred to as Visual.CSH, features of the new tool are described and demonstrated. Both sets of authors describe its features enumerated by the researchers and reveal multiple aspects of a heading; normalize the hierarchical relationships; show multilevel hierarchies of terms in LCSH sub-trees, improve the navigational functions of LCSH in retrieval and enable the implementation of generic searching (i.e. the 'exploding' feature in LCSH).

Another attempt to improve a system, is a paper by Amanda Hill (United Kingdom) entitled "What's in a Name?" a discussion of "Prototyping a Name Authority Service for UK Repositories." This paper is concerned with name authority control as part of a "Names project" funded to investigate issues related to the identification of individuals and institutions in repositories of research outputs in the United Kingdom. It deals with names of researchers and research institutions that are unlikely to appear in the library authority files. This project is intended to "right" a situation in which names have previously been entered in unorthodox and inconsistent ways resulting in problems in retrieval. The paper describes the existing situation and the approach to improving it.

Similarly, Xu Chen (Germany) studied "The Influence of Existing Consistency Measures on the Relationship Between Indexing Consistency and Exhaustivity." The research examines previous studies and carries out research on a large sample (6,614 records) from two Chinese bibliographic catalogues. Measurements were taken from two formulae used in earlier studies. The levels of consistency found were 64.21% in one case and 70.71% in the other and relationships were high when two indexers had

the same exhaustivity and low when they used different levels of exhaustivity.

Turning to the Internet, a paper on "A Survey of the Top-level Categories in the Structure of Corporate Websites," Abdus Sattar Chandhry and Christopher S.G Khoo (Singapore) take another approach to improving access. They examined websites "to identify common categories, structures, facets and terms used to organize these websites." The researchers drew on the websites of IT companies. From this a taxonomy was constructed and used to analyze the top level websites of corporate product types. New categories found were incorporated into the taxonomy. The resulting taxonomy is expected to be used as a tool in designing websites.

Two papers in Section 4 focused on the construction and use of thesauri. Veronica Vargas and Catalina Naumis (Mexico) in their "Water-related Language Analysis" addressed "The Need for a Thesaurus of Mexican Terminology" They are faced with two problems: the need for uniformity in the terminology of the Spanish language in their chosen subject area and the lack of a reliable thesaurus on the subject of water in Spanish. The domain itself presents problems of multi and inter-disciplinarity, while the literature of water management is diverse, requiring the researcher to think broadly in terms of "the phenomena of information transmission and retrieval." This paper presents the methodology used and the results of the analysis. The authors conclude that a new thesaurus is needed. Also concerned with thesaurus use, Ali Shiri and Thane Chambers (Canada) describe research into "Information Retrieval from Digital Libraries" by investigating and "Assessing the Potential Utility of Thesauri in Supporting Users Search Behaviour in an Interdiscipliinary Domain" Transaction log data was obtained from the use of a nanoscience and technology digital library. The characteristics of users queries and search terms were analyzed. These were used to determine the extent to which users search matched terms found in two established thesauri – the INSPEC thesaurus and the Compendex database. Methodology is described and data analysis provided. Encouraging results indicate that the thesauri can be helpful to users, especially in query formulation and expansion of searches. There is potential to support both interactive and automatic query formulation, The investigation also revealed that acronyms as well as full forms are needed in the thesauri. The authors believe that the research has something to say to aspects of knowledge organization and search behaviour studies.

One paper in this section focuses on KOS for special materials. Sabine Mas, L'Hèdi Zaher, and Manuel Zacklad (France) described "Design and Evaluation of Multi-viewed Knowledge System for Administrative Electronic Document Organization." The research is taking place at the Université de Technologie de Troyes and investigates the creation and use of a faceted classification system for handling personal administrative documents in electronic format. The authors' findings indicate that a faceted classification is a viable alternative to the use of the "hierarchical paradigm."

Gercina Ângela Borem (Brazil) in her paper on "Hypertext Model – HTXM": reported on "A Model for Hypertext Organization of Documents" reported on the construction and implementation of a system for the organization and representation of human knowledge. It is based on four systems – facet analysis theory (FAT), conceptual map theory (CM), a semantic structure of hyperlinks and a set of technical guidelines. It is envisioned that the prototype might eventually be used to organize a digital library.

## Section 5

Epistemological Foundations of Knowledge Organization is a very cohesive group of 11 papers. As this analysis indicates there is still a strong sense of the importance of the fundamentals and theories of knowledge underlying knowledge organization.

Peter Ohly (Germany) presented a paper entitled "Knowledge Organization Pro and Retrospective." The author takes a long view of the nature of the term 'knowledge organization' as it has come to be known. Beginning with Ingetraut Dahlberg's answer to the question "What is knowledge organization? he describes the German definition of "Organization" and concludes that term means more than organizing and extends to "the processes of saving, finding and communicating thoughts" In further discussion it is seen as a counterpart of society.. The factors of its development are discussed and the major steps – content, sustainability, public availability, persistence, coding, processing and organizing are identified. Finally future expectations for the discipline are discussed. The paper is a fitting introduction to the section.

In her discussion of "Knowledge and Trust in Epistemology and Social Software/Knowledge Technologies" Judith Simon (Austria) indicates that her paper aims "to identify connections between trust and knowledge inherent in the software/technologies and connections of knowledge and trust." She identifies

various points and argues for "intensified intellectual exchange between different theoretical approaches to knowledge as well as between ... theoreticians and ICT (information and communication technologies) developers." A paper by Grant Campbell (Canada) entitled "Derrida, Logocentrism and the Concept of Warrant on the Semantic Web" uses Derrida's theories to consider "warrant" as understood in the traditional library. Following from an analysis of the two types of systems, he concludes that "library information practice has evolved as a complex discourse around questions of warrant that provide a subtlety and richness to knowledge organization that the Semantic Web has not yet attained.." Further, he says that the Semantic Web would need to find new approaches to handling this problem.. Jian Qin's (United States) paper entitled "Controlled Semantics Versus Social Semantics" describes "An Epistemological Analysis" Comparisons are made and examples given. The purpose of the paper is to explain the differences and connections between the two types of semantics from the perspective of knowledge theory. These connections have implications for further research.

In her presentation "Wind and Rain and Dark of Night" Hope Olson (United States) addresses "Classification in Scientific Discourse Communities." This paper explores the links between natural or scientific classification and classification of knowledge. It uses discourse analysis of selected standards for natural phenomena to address two research questions: "Are scientific categorization standards of natural phenomena subject to the same principles as bibliographic classification (warrant, hierarchical force, etc.)?" and 'What discourses operate in scientific communities that shape their categorization standards?' In the analysis she uses 'temperature scales' to measure single variables. Two standards are used to categorize complex phenomena – those classifying hurricanes and planets. The author states that this line of research is worth pursuing further "because of its potential to reveal the discourses behind both approaches to classification." Further research might address the question "Are these discourses parallel to discourses that operate in relation to bibliographic classifications?"

A presentation by Thomas Dousa (United States) entitled "Empirical Observation, Rational Structures and Pragmatist Aims" deals with "Epistemology and Method" in Julius Otto Kaiser's Theory of Indexing." The author selects a typology of epistemological positions underlying methods for designing KO systems designed by Birger Hjorland to analyze the theory. The goal is to measure the degree of consistency in in-

dexing - a goal in which Kaiser did not entirely succeed. However in using Hjorland's work the author sought "to pierce Kaiser's veil of consistency, uncover the hybrid nature of his epistemology, and learn the ways in which the epistemological position (s) related to his ethnological prescriptions." He notes the usefulness of Hjorland's typology in uncovering aspects of Kaiser's system and suggests that its application to other KO systems could lead to an understanding of both historical KO systems and ways that different epistemological positions interact with other classification and indexing schemes.

In Richard Smiraglia's (United States) paper "Noesis" perception is seen as a "crucial element" in the viability of knowledge organization systems. The author sees it as a filter in contextual information with potential for categorization. In this research he seeks to "increase understanding of the role of cognition in every day classification by developing a fuller profile of perception." Pictures of mailboxes from various locales are the everyday objects used to demonstrate the *noetic* process. In the analysis, tag clouds are used to demonstrate the perceptual differences that suggest different user perceptions involved. Findings indicate that social contexts, cultural moderation and perceptual fluidity are constants in the *ego* acts of classification." Another ever present concern in knowledge organization is "bias." Birger Hjorland (Denmark) addresses this problem in his paper "Deliberate Bias in Knowledge Organization? Starting with Melanie Feinberg's view that if we cannot eliminate bias in classification we should acknowledge this and be responsible about it and defend it, the author suggests that history indicates that classificationists see their role as being documentalists and compilers as opposed to designers. In examining these claims Hjorland raises such questions as "Is KO an objective and neutral activity? Can it be? Should it be? In conclusion, he suggests that the epistemological arguments put forward by Feinberg and Hjorland should be applied to specific domains. Some domain analysis is available from the humanities and the social sciences but "further investigation is needed, especially in the social sciences."

Two papers in Section 5 address the theories that underly knowledge organization. Joseph Tennis and Elin Jacob (United States) pose the idea of leading "Toward a Theory of Structure in Information Organization Frameworks." In it, they seek to lay the groundwork for the development of such a theory and begin defining "structure" in the context of a number of previous writings. Finally they examine Mooers'

method of descriptors. Then Jack Andersen (Denmark) looks at "Knowledge Organization as a Cultural Form." In doing so he draws on Lev Manovich's arguments about the database as a cultural form. He argues that knowledge organization is "a prime communication and production form of new media, turning knowledge organization into knowledge design." He begins by outlining Manovich's argument and follows it with a discussion of its implications for knowledge organization research. "Aesthetics", he says, "brings as new dimension to knowledge organization theory."

In the final paper in section 5, Hur-Li Lee (United States) describes the "Origins of the Main Classes in the First Chinese Bibliographic Classification." Her purpose was to provide an "improved understanding" of the classification "applied in the *Seven Epitomes*, the first documented classified library catalogue in China" which was completed in the first century BC. The author discusses the findings of an analysis of the first six classes and identifies three major issues for further consideration - the concept of 'discipline', the limitations of the classification in relation to literary warrant and "the political overtones of the classification stemming from the fact that the catalogue was a by-product of a government-sponsored collation project."

## Section 6

Section 6 is a small group of two papers on Non-Textual Materials. This is surprising, given recent emphasis on the organization and representation of non-print material. Abby Goodrum et. al. (Canada) presented a paper entitled "The Creation of Keysigns: American Sign Language Metadata." It sets out preliminary results of a pilot test on the creation of "a folksonomic gestural taxonomy for sign language indexing and retrieval." Sign language interpreters and deaf participants were involved in the creation of the metadata. This kind of metadata is not commonly understood, making the project cognitively challenging. The paper concludes with suggestions for making the creation of such data easier from "cognitive and physical perspectives." The second presentation, "Visual Knowledge Organization" by Ulrika Kjellman (Sweden) addresses the question "Towards an International Standard or a Local Institutional Practice?" The context of the paper is the digitization of visual heritage collections to make them accessible through the Internet. The author states that there are obvious reasons for following standards but in this paper has cho-

sen instead to “discuss the pitfalls with this development.” Kjellman raises two points - over the years different institutions have developed different ways of collecting and organizing pictures, and secondly this differentiation is challenged by digitization. Specifically the context is one institution where the representation of the collection and the KO tools are in conflict.

## Section 7

Section 7 is also a small group of 3 papers covering “Discourse Communities and Knowledge Organization. Aaron Loherlein (United States) considers “The Benefits of Participating in a Form` of Life” in the context of “Interpretations of Complex Concepts Among Experts and Novices in Records Management.” The paper is concerned with the understanding of concepts and language in a specialized discipline. The participants were presented with passages representing complex concepts for ranking. The responses of the experts were then compared with the responses of two groups of novices. The experiment is explained in detail. Findings indicate “that specific wording has a great effect on use of these complex` concepts.” In the second of these three papers Widad Mustafa El Hadi (France) presented a “Discourse Community Analysis: Sense Construction Versus Non-Sense Construction.” It examines the nature of political discourse of international organizations such as the World Bank, the UN, the European Union, etc. The discussion originates “from a fundamental paradox: how can we use the same descriptive linguistic tools which we use in analyzing the production of sense for the production of non-sense?” with the analysis, the author describes she proceeded to answer the question “How can this paradox be explained?” In the third paper Chaomei Chen, Roberto Pinho, et. al. (United States, Brazil) investigated “The Impact of the Sloan Digital Sky Survey on Astronomical Research” looking at the influence and “The Role of Culture, Identity, and International Collaboration.”

Texts from the three area were analyzed using text mining systems. The research is described, supported by illustrations and diagrams

## Section 8

Section 8 contains 8 papers on “Users and Social Context.” Not surprising the researchers still consider the user to be an important component in the knowledge organization equation. In “Social Tagging and Com-

munities of Practice” Edward Corrado and Heather Moulaison (United States) presented the results of two “Case Studies.” Each study describes how two disparate communities of practice use tagging to disseminate information to other members of the community. The first study looks at Code42Lib, a community of users made up largely of librarians and systems developers. The second study looks at tagging on video sharing sites used by French teenagers. Methodology, results and discussion are provided in both cases. The two studies show similarities in the way social tagging can be used in organization and retrieval. Suggestions are made for future research in this area, including larger data sets. In “Searching with Tags” Margret Kipp addresses the question “Do Tags Help Users Find Things?” The authors experiment with users who were asked to use “a social bookmarking tool specializing in academic articles (CiteULike) and an online journal database (Pubmed)” to see whether users found tags useful in their searches. It was found that, yes they did use the tags as guides to searching an as hyper links. However they used controlled vocabularies in the journal database as well,

Lynne Howarth (Canada) described “Creating Pathways to Memory: Enhancing Life Histories Through Category Clusters.” She discussed the fact that memory plays a part enabling humans to categorize knowledge and add new knowledge to these categories. She raises the question “When memory and/or language is impaired, how does such contextualizing and categorizing occur?” The paper reports on a preliminary pilot study of “mixed methods research examining the sense-making, sorting, categorization and recall strategies” of individuals with mild cognitive impairment in the early stages of dementia. Details of the research are given and preliminary findings identified. In a paper entitled “Machine Versus Human Clustering of Concepts Across Documents” Christopher Khoo (Singapore) and Shuyan Ou (United Kingdom) discuss “an automated method for clustering terms/concepts from a set of documents on the same topic.” The clustering method that “makes use of a combination of lexical overlap between multiword terms, syntactical restraints, and semantic considerations” is evaluated as is the human clustering approach. The research raises questions “about whether machine-generated clustering can be evaluated by comparing with human clustering.”

In keeping with the main theme of the Conference, Maria López-Huertas presented a paper on “Cultural Impact on Knowledge Representation and Organization in a Subject Domain.” The aim of this discussion

is to consider how different cultures. impact on subject areas and how this may affect knowledge organization and representation in KOS. A methodology was developed and applied to a sample. Gender studies was chosen as the subject area. Uruguay and Spain are the cultures chosen. To determine differences the areas studied were terminology, categorization and conceptualization. To gather the data an information analysis of gender studies was carried out on each of the countries. Data from the analysis is presented in the paper and several conclusions drawn.

Inge Alberts (Canada) provided "A Pragmatic Perspective of E-mail Management Practices in Two Canadian Public Administrations." The author examines contextual factors involved in the use of e-mail by middle managers in Canadian institutions. The intent is to find a way to alleviate some issues in e-mail management. As a result of the research an *E-mail Pragmatic Framework* is presented. aiming at the needs of a different group of users, June Abbas (United States) gave a paper entitled "Daddy, How do I Find a Book on Purple Frogs?" that focused on "Representation Issues for Children and Youth." Subject access tools and controlled vocabularies are examined and Wittgenstein's Language Games Theory is presented as a possible framework for controlled vocabulary construction. Background is provide and four research questions are given, accompanied by a discussion of each. There are interesting findings as well as revealing gaps in the research and literature concerned.

In the last paper in this section José Guimaraes, Juan Fernández-Molina, et. al. (Brazil and Spain) gave a presentation entitled :Ethics in the Knowledge Organization Environment." to provide "An Overview of Values and Problems in the LIS Literature." A premise that library and information science literature has been more focused on information access and dissemination than on ethical aspects of knowledge organization and representation lead the authors to investigate the existence of ethical values and problems in the field. They analyzed the contents of five well known journals in the field over the years 1995 to 2004. They found two complementary dimensions - "one reflecting the respect of diversity and the other concerning the specificity of warrant." An analysis of the results lead them to reflect on KO education suggesting that "the focus must not only be set on content issues but also social (and consequently ethical) issues." This is because subject access to information systems is intended to serve diverse types of users.

## Section 9

In the last section, Section 9, there were two papers on the broad topic **Systems, Tools and Evaluation**. Ismail Timimi and Stéphane Chaudiron (France) investigated "Information Filtering as a Knowledge Organization Process," with emphasis on "Techniques and Evaluation." They begin by showing that information filtering systems may be considered to be "semi-automatic knowledge organization devices." Then they point out how the technical dimension of the system must be related to the user dimension. Finally they describe an overview of software called InFile (Information Filtering, Evaluation). At the time of writing the software had not been tested but the goal to define the evaluation protocol is in place. In the final paper, "Retrieving Terminological Information on the Net" Carles Tebé and Mari-Carmen Marcos (Spain) pose the question "Are Linguistic Tools Still Useful?" The paper is a comparative evaluation of the effectiveness of search engines and linguistic tools in retrieving information from the net. The experiment used student translators. Two scientific texts in English were selected. Participants read the texts and were asked to propose translations and indicate the level of success they thought they had achieved. The search engines were more effective than the linguistic tools.

## Reference

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## Report.

### IFLA Section on Classification and Indexing

At each annual IFLA Conference, its Section on Classification and Indexing mounts a programme which includes two or three papers on aspects of subject analysis, classification and indexing. Topics are germane to the Section's interests and activities but are of interest to researchers and practitioners at large. Full texts of the papers can be accessed through the IFLA website.

In 2008, at Quebec, Canada, three papers were presented. Anita Angjeli (France) and Antoine Isaac (Netherlands) presented a paper entitled "Semantic

Web and Vocabularies Interoperability: An Experiment With Illuminations Collections." The paper describes research carried out through collaboration by the Bibliothèque nationale de France and Koninklijke Bibliotheek (National Library of the Netherlands) under the framework of the Dutch project STITCH (Semantic Interoperability To Access Cultural Heritage). It investigates semantic interoperability in relation to searching. It is an attempt to find answers to the question "How can we conduct semantic searches across several digital heritage collections? The experiment is carried out on two iconographic collections. The collections are similar in two significant ways, They have been processed differently and the vocabularies used to index them are very different. The vocabularies are both hierarchical and controlled but have different semantic structures. The experiment began with a "precise analysis" of each vocabulary. Then researchers "studied and implemented mechanisms of alignment of the two vocabularies." Because the models were different a common standard was needed to accomplish the alignment. RDF and funded by the German Federal Ministry of Education and Research and the German Research Foundation SKOS were used. The product was a prototype that permits querying "in both databases at the same time through a single database." Further research is needed.

Somewhat akin the first presentation is a paper entitled "Cross-concordances: Terminology Mapping and its "Effectiveness for Information Retrieval" by Phillip Mayr and Vivien Petras (Germany). The topic of this project to develop a "terminology mapping initiative to organize, create and manage cross-concordances" between various controlled vocabularies was funded by the German Federal Ministry of Education and Research and the German Research Foundation. At the time of presentation, "64 cross-walks and more than 500,000 relations" had been established. A major evaluation of the project to test and measure the effectiveness of the vocabulary mappings in an information system was carried out.. This paper reports on the development of the cross-concordances and the evaluation results. The project is ongoing.

The third paper on this programme, by Michael Kreyche (United States) discussed "Subject Headings for the 21<sup>st</sup> Century: The lsh-cs-org Bilingual Database." In this case the subject headings are in the Spanish language. The situation is one in which various institutions have developed their own systems were very little effort to collaborate or use the same it. The author has posited the idea that current technology could be used to improve this situation. This project

"demonstrates this concept in a practical way and suggests a new model for international cooperation in authority control."

In 2009 at Milan, Italy, two papers were presented. "Introducing FRSAD and Mapping it With SKOS and Other Models." by Marcia Zeng (United States) and Maja flumer (Slovenia) introduces the Functional Requirements of Subject Authority Data and considers it in relation to other conceptual models. The second paper on this programme by Alberto Cheti, Anna Lucarelli, and Federica` Paradisi (Italy) dealt with "Subject Indexing in Italy" with a focus on "recent advances and future perspective." of the Italian library scene. For many years, there has been a tradition of including in the section's programme a paper on some aspect of the subject analysis methods used in the libraries of conference's host country when possible. Italy has recently published a new cataloguing code (RE-CAT). This paper documents recent developments in subject indexing, standards and systems in Italian libraries.

## Report. International UDC Seminar 2009

A two-day International Seminar entitled Classification at a Crossroads: Multiple Directions to Usability was presented at the Koninklijke Bibliotheek, in The Hague, Netherlands, on October 29<sup>th</sup> and 30<sup>th</sup> 2009. The conference itself was preceded by a one day UDC Round Table and policy session of some 20 editors and contributors to the UDC system. Approximately 133 persons attended the Seminar at which two keynote addresses were made and 22 papers on various aspects of classification research were presented in 6 sessions.

The Seminar opened with a keynote address by Dagobert Soregel (United States) entitled "Iluminating Chaos: Using Classification to Harness the Web." He described the Web as a chaotic place increasingly complicated by Wikis, blogs and social tagging. His purpose was to present some of the ways in which classification might help the situation. In the first part of his talk he concentrated on the need for structure and provided examples of ways in which classification might provide that structure and aid the users in developing queries. In the second part of his talk he discussed the partial overlapping of ontologies` and other KO systems and introduced a conceptual hub approach to KOS mapping to provide the basis for universal facet-based search of the

Web. His presentation set the stage for the presentations of the first day of the seminar.

In session 1, three papers addressed the topic Classifying Web Resources. Anders Ardo (Sweden) spoke on "Automated Classification: Insights into Benefits, Costs and Lessons Learned." Ardo recognized that automated methods of classification have been around for some time but that exponential growth of the World Wide Web has brought these methods to the forefront of a number of different research areas, including "machine learning (Artificial Intelligence), document clustering (Information Retrieval) and weighted string-matching against controlled vocabulary (Library and Information Science)." In this context he described research carried out in the NetLab at the Lund University Library beginning with the use of "UDC in Nodric WAIS/WWW as early as 1992 and continued research in the 1990s testing automatic classification on *Engineering Index* classification and *DDC*." Similarities and differences of three approaches were discussed and the problems of automatic classification were recognized. A major issue is the evaluation and comparison related to "the challenge of identifying the *aboutness*" of the documents and the quality of the indexing. However, an effort was made to "discuss general benefits and costs, resulting quality and lessons learned." Linda Kerr (United Kingdom) described "Intute: From a Distributed Network to a Unified Database, Lessons Learned and Future Developments." Intute (<http://www.intute.ac.uk>) is a UK service funded by the Joint Information Systems Committee (JISC) which catalogues the best Internet resources for education and research. The system is a unification of seven subject catalogues previously funded separately by the JISC. The paper describes the processes and challenges of integrating the systems into one catalogue using one standard metadata scheme, as well as describing a 'course and theme' view onto the resources. It also outlines two projects for evaluating the cost effectiveness of manual and automatic metadata creation. The projects are designed to assess the requirements for the most effective retrieval of resources aimed to improve the efficiency of metadata generation processes and user satisfaction in retrieval. In the third paper in this session, Jakob Voss (Germany) addressed the topic "Wikipedia as Knowledge Organization System." This paper began with a general introduction citing it as system designed for the distribution of knowledge and went on to show how the system could also be used in knowledge organization and how it is con-

nected with other knowledge organization systems. He described how it could be viewed as a controlled vocabulary "built of articles, languages, categories and links." In doing so, he refers to the possibilities of semantic linking and dynamic concept hierarchies. Since it is not limited to a subject domain he sees Wikipedia as a top level ontology like UDC, *DDC*, CyC and WordNet. Also he outlines how Wikipedia could be used in subject indexing and how it can be "linked and mapped" to other controlled vocabularies using Open Linked Data and Resource Description Framework (RDF) technology.

Session 2 focused on Classification and Thesaurus and contained four papers. Emphasis was on the integrated use of classification and a thesaurus. In a paper on thesaurus construction and use, Marlene van Doorn and Katrien Polman (Netherlands) addressed the question "From Classification to Thesaurus ... and Back? Subject Indexing Tools at the Library of the Afrika-Studiecentrum, Leiden. This is an African Studies thesaurus constructed, from 2001 to 2006, for use in subject indexing and retrieval at the University of Leiden. Word-based, it was developed as a more user-friendly alternative to the use of the UDC codes used at the time. In the construction, the UDC codes were used as a starting point. The UDC codes were 'translated' into thesaurus descriptors using the basic thesaurus relationships. "In a parallel but separate operation ... each UDC code ... assigned to an item in the library's catalogue was subsequently converted into one or more thesaurus descriptors." Also, the UDC codes, updated, were included in the thesaurus, leaving "open the possibility of linking the thesaurus to different language versions of the UDC MRF in the future." Victoria Frâncu and Cosmin-Nicolae Sabo (Romania), in a paper entitled "Implementation of a UDC-Based Multilingual Thesaurus in a Library Catalogue: The Case of BiblioPhil" described an approach to improving classification based subject access in a library catalogue. The authors represented UDC classification numbers with thesaurus descriptors and used them in an "automated way." The system is called BiblioPhil and standard formats used are UNIMARC for bibliographic and subject authority records with MARCXML support for data transfer. "The verbal equivalents, descriptors and non-descriptors, are used to expand the number of concepts and are given in Romanian, English and French." This approach is seen as a time-saver for the indexer and easier access for the user. Similarly, in her paper "Integration of Thesaurus and UDC to

“Improve Subject Access: the Hungarian Experience” Agnes Hajdu Barát (Hungary) explores two possible solutions for integration a thesaurus and a classification scheme. She reports on two projects, one in which UDC and thesauri are combined under a homogenous framework called MÁTrIkSz (Hungarian Comprehensive Information Retrieval Language Dictionary) and the other a project of thesaurus construction in the Hungarian National Library (Széchényi). The role of UDC is analyzed, structured and well documented examples are given supported by literature research into UDC theory and use. The importance of cognition as a basis for concept-building is emphasized and some possibilities for integration of thesauri and UDC are identified. The final paper in Session 2, “Providing for Interoperability Between Thesauri and Classification Schemes in ISO 25964” presented by Stella Dextre Clarke (United Kingdom) discussed of the importance of interoperability across systems in general. The ISO 225964 Standard is being developed to replace existing thesaurus standards ISO 2788 and ISO 5964 will cover not only construction of thesauri but also interoperability with classification schemes and other types of controlled vocabulary. Clarke explained how this will be handled. Issues that need to be resolved include: the handling of pre-coordinated classes, the provision for classes not enumerated in the scheme but synthesised on demand, and the question of whether (and if so how) to include a data model for each type of KOS. ISO 25964, at the time of presentation, still in the “initial drafting stage” and Clarke was hoping for useful ideas from this Seminar to aid in solving some of these problems.

Session 3, the final session of the first day, contained three papers focusing on Classification Frameworks, Concepts, Structure and Relationships. The first paper “Concepts and Terms in Faceted Classification” presented by Vanda Broughton (United Kingdom) addressed the importance of faceted classification and its role in the development of modern classification systems. Specifically she noted the impact of faceted classification on recent revisions of UDC. In particular, she identified the removal of compound classes from the main UDC tables and the more radical revisions of classes (especially Medicine and Religion). Among the effects are rigorous analysis, a clear sense of citation order, and the building of compound classes according to a more logical system of syntax. The result is the formalization of relationships in the classifications making them explicit and enabling machine recognition. However, she notes

vocabulary control is not without difficulties, notably in the differences in the way terminologies in the humanities and the sciences should be handled. Yet to be resolved is a balance between the rigour in the structure of the classification and the complexities of natural language – “a fertile field for further research.” In his paper entitled “Classification Transcends Library Business.” Claudio Gnoli (Italy) addressed the needs for the classification of objects as opposed to bibliographic classification and called for “a broader conception of classification … that can be applied to any knowledge item.” The subject of his research was bagpipes in Northern Italian folklore, using a variety of types of sources, including published documents, police archives, painting details, museum specimens and ethnographic organizations. For this kind of search he found the use of traditional classification inadequate. Needed were tools from which knowledge items could be “retrieved independently from other topics with which they are combined or the context where they occur.” He determines that the concept ‘bagpipes’ should be retrievable and browsable in combination with other phenomena, discipline or media. Examples were provided using notation from a draft of the Integrative Level Classification. In the third paper “Specifying Intersystem Mapping Relations: Requirements, Strategies and Issues” by Felix Boteram and Jessica Hubrich (Germany) focus was on the improvement and development of intersystem relations at the level of comprehensive international knowledge organization systems and between typologically different indexing languages. Intersystem relations may differ considerably from interconcept relations. From the authors’ experience the characteristics of specific mapping depend largely on the characteristics of the systems they are to be connected with. They examine the differences and peculiarities of mapping systems and first approaches to such a system are made in linkages between Universal Decimal Classification and thesauri.

The second day of the Seminar began with a keynote address on “Open Web Standards and Classification: Foundations for a Hybrid Approach” by Dan Brickley (Netherlands). Brickley began with a discussion of the current state of knowledge and its increasing accessibility through machine-processable formats, the creation of, communally maintained data sets in the Web and the use of open Web standards “to ensure these works are all cross-referenced and richly linked. New Web standards are bridging the gaps between thesauri, ontologies and data-

bases." This approach is opening up vast opportunities for collaboration, information sharing and user interface design. The author used examples from television, subject based information gateways and Web 2.0 trends to propose some foundation steps to ensure that "professional subject classification remains central to resource discovery, annotation and linking."

Session 4 included 4 papers on Classification and the Semantic Web. Ceri Binding and Douglas Tudhope (United Kingdom) gave a paper on "Terminology Services" which addressed the problem that traditional classification and vocabulary control have not solved all the problems of subject access to online resources. The authors note that examination of social book marking sites suggests a need for structuring of Web resources. Moreover, social tagging has terminological problems and the use of controlled vocabularies other than by libraries is sparse. The authors suggest that terminology services should provide solutions to some of these problems. In this paper they related their experiences in "creating terminology Web services and associated client interface components for the archaeology domain in the STAR project (<http://hypermedia.research.glam.ac.uk/kos/STAR/>) and demonstrate how the same principles can be readily adapted to other subject areas ([http://hypermedia.research.glam.ac.uk/kos/terminology\\_services/](http://hypermedia.research.glam.ac.uk/kos/terminology_services/)).". The second paper "Signposting the Crossroads: Terminology Web Services and Classification-Based Interoperability" by Gordon Dunsire and Dennis Nicholson (United Kingdom) focused on the JISC-funded HILT project. The paper dealt specifically with HILT Phase IV which developed pilot Web services for purposes of delivering "machine-readable terminology and cross-terminology mappings data likely to be useful to information services" in enhancing their subject searches or browsing services. The authors described some of the user interface enhancements created by UK information services. HILT currently has 11 subject schemes mounted, including *DDC*, *MeSH* and *AAT*. It also has high level mappings between *DDC* and some of the other schemes. The last two papers were experimental in nature. A.R.D. Prasad and Devika Madalli (India) presented a paper entitled "Classificatory Ontologies." Their presentation described an application of Colon Classification, as enunciated by Ranganathan, in developing ontologies. He explored issues in modeling the Colon Classification using the Web standard Simple Knowledge Organization System (SKOS). In another application of the SKOS standard, Antoine Isaac (Netherlands) discussed "Us-

ing SKOS in Practice, with Examples from the Classification Domain." He began with a brief presentation of the features of the SKOS model and its role with respect to knowledge organization systems and the Semantic Web and identified some practical problems that need to be overcome in using SKOS. Examples were taken from typical classification schemes such as UDC and the author demonstrates what the SKOS model can accomplish, identifying some key features, such as concept coordination, "which are still lacking proper means of representation." Hints are given as to how SKOS might be extended to overcome these problems, and the author endeavours to answer the question: "To what extent can consensual extensions be devised to use SKOS successfully with classification systems?"

In Session 5, three papers addressed the topic New Approaches to Classification. Veslava Osinska discussed "Visual Analysis of a Classification Scheme" in which she proposed "a novel methodology to visualize a classification scheme." The Association for Computing Machinery (ACM) Computing Classification System (CCS) was used in the demonstration. "The attributes, classes, subject descriptors and keywords were processed in a dataset to make a graphic representation of the documents." A similarity matrix of co-classes was made and "a spherical surface was chosen as the target information space. Classes and documents node locations on the sphere were obtained by means of Multidimensional Scaling coordinates. By representing the surface on a plane like a map projection, it is possible to analyze the visualization layout. The author sees this methodology being used in interdisciplinary research fields. Alenka Sauperl (Slovenia) discussed "UDC and Folksonomies." Folksonomies are social tagging systems which have come to represent an important part of Web resource discovery. Their main advantage is that they "enable free and unrestricted browsing through information space." The tags are assigned by users, consequently there is a drawback in that there is no expression of semantic relationships as there is in a thesaurus supported system. Searching is based on coincidence rather than on logical and meaningful connections between related resources. This paper proposes the use of UDC semantic structure to support and complement tag-based browsing of the system. "Two specific questions were investigated: (1) Are terms used as tags in folksonomies included in the UDC? and (2) Which facets of UDC match the characteristics of documents or information objects that are tagged in taxonomies? The universality of UDC was addressed. The results

suggested that UDC supported folksonomies could be used in resource recovery “in particular library portals and catalogues.” The final paper in this session, by Phillippe Cousson (France) focused on “UDC as a Non-disciplinary Classification System for a High-School Library.” In this project, the problem addressed was the requirement of students who often need access to interdisciplinary subjects partw of which may be scattered in UDC. It dealt with establishing “a user-friendly systematic collection arrangement” resulting from the merging of two collections - a high school library and a college library collection classified by UDC. Interpreting UDC topics as phenomena and doing some local indexing, topics diversified by UDC were brought together. In practice it may be necessary to overcome the constraints of a disciplinary classification system.

In the final session, session 6, the seminar addressed Classification in Library Networks. Three papers were presented. Marie Baliková (Czech Republic) spoke on “The role of UDC Classification in the Czech Subject Authority File” She outlined the standardization function of the authority file and explored the role of the UDC as a switching language between various indexing systems In doing so she addressed compatibility problems such as level of specificity, syntax, and usage of terminology. and

suggested ways in which the difficulties may be overcome using UDC. The subject systems used included those in libraries, museums, galleries and archives. Darija Rozman (Slovenia) considered “The Practical Value of Classification Summaries in Information Management and Integration.” The paper explored the use of short extracts from UDC classification tables to provide a method of broader classes for use in bibliographic` listings, organization of physical documents, presentation of web resources and information integration in network resources. Illustrations were drawn from the Slovenian union catalogue COBISS/OPAC. In the final paper, Rose San Segundo (Spain) discussed “Using MARC Classification Format for UDC and Mappings to Other KO Systems for an Enriched Authority File.” The Seminar closed with a brief panel discussion and question and answer session.

This report has been prepared from the abstracts. All papers will be published. The full text of several papers appear 36 pages in *Knowledge Organization* vol. 37 nos. 3 and 4 (2010). Shorter versions of some of the papers will appear in the UDC Consortium’s annual publication *Extensions and Corrections to the UDC*, no. 31. This was the second of these biennial UDC Seminars, the first having been held in 2007. The next one will be held in 2011.