

International UDC Seminar 2017

FACETED CLASSIFICATION TODAY

Theory, Technology and End Users



14-15 September
London, UK

UDC
CONSORTIUM

PROGRAMME



Conference Programme at a Glance

Day One - Thursday, 14 September 2017

9:00 Registration, Coffee/Tea
9:45 Welcome: John Akeroyd (UDC Consortium), A. Slavic (Programme Committee)
10:00 **Keynote: Facets as discourse: how facets and facet analytical theory reveal cultural dimensions in 21st century knowledge organization systems**
Richard P. Smiraglia

11:00 Coffee/Tea

SESSION 1: FACETED CLASSIFICATION IN A BROADER CONTEXT

Chair: Claudio Gnoli

11:30 **Faceted classification, analysis, and search: some questions on their interrelations**
Martin H. Frické
12:00 **The principle of compositionality and entity-relationship modelling: faceted classification in a broader context**
Dagobert Soergel
12:25 **Facet analysis and semantic frames**
Rebecca Green
12:50 **Posters introduction** (conference room)
13:20 Lunch

SESSION 2: FACETS AS A SOLUTION

Chair: Rick Szostak

14:20 **Numbers, instruments and hands: the impact of faceted analytical theory on classifying music ensembles**
Deborah Lee
14:45 **The contribution of Ranganathan's facets to the determination of aboutness in novels**
Patrícia de Almeida, Maria da Graça Simões & Daniel Martínez-Ávila
15:10 **Indexing KOSs in BARTOC by a disciplinary and a phenomenon-based classification: preliminary considerations**
Andreas Ledl & Claudio Gnoli
15:35 Coffee/Tea

SESSION 3: FACETS IN PRACTICE

Chair: David Bawden

16:05 **Facets of the UDC and their performance in NEBIS**
Jiri Pika
16:30 **The challenge of managing access to new and novel forms of data: an application of UDC**
Suzanne Barbalet & Nathan Cunningham
16:55 Close of Day One
17:00 Reception: drink & nibbles

Day Two - Friday, 15 September

09:30 **Keynote: Faceted classification as the basis of all information retrieval**
Vanda Broughton

10:30

Coffee/Tea

SESSION 4: CHALLENGES FOR FACETED CLASSIFICATION

Chair: Rebecca Green

11:00 **Facets and change: design requirements for analytico-synthetic schemes in light of subject ontogeny research**

Joseph T. Tennis

11:30 **DERA: from document-centric to entity-centric knowledge modelling**

A.R.D. Prasad, Fausto Giunchiglia & Devika P. Madalli

12:00 **Facet analysis in UDC: questions of structure, functionality and data formality**

Aida Slavic & Sylvie Davies

12:30

Lunch | Book lottery draw

SESSION 5: ISSUES AND OPPORTUNITIES FOR CLASSIFICATION DATA

Chair: Dagobert Soergel

13:30 **The thought behind the symbol: about the automatic interpretation and representation of UDC numbers**

Attila Piros

14:00 **Similarity measurement between UDC classmarks and its application**

Paweł Lula & Urszula Cieraszewska

14:30

Coffee/Tea

SESSION 6: ISSUES AND OPPORTUNITIES FOR CLASSIFICATION DATA

Chair: Richard Smiraglia

15:00 **Syntax of facets and sources of foci: a review of alternatives**

Claudio Gnoli

15:30 **Facet analysis as one among other theories of classification**

Birger Hjørland

16:00 **Theory versus practice in facet analysis**

Rick Szostak

16:25

PANEL DISCUSSION

17:00

Conference Close

POSTERS

Chair: Sylvie Davies

Turn over a new facet: an analysis of the applications of faceted systems for facilitating the explorations of museum collections on the Web

Marcia Zeng, Shu-jiun Chen

Comparative approaches to facets in interdisciplinary KOSs: UDC and Basic Concepts Classification

Richard Smiraglia & Rick Szostak

Coli-conc: mapping library knowledge organization systems – a report

Uma Balakrishnan

UDC facets in action in Slovenia

Darija Rozman

Establishment of correspondences between Web of Science subject areas and UDC

Viktor N. Beloozerov et. al.

Comparative analysis of universal library classification: the Dewey Decimal Classification and the Korean Decimal Classification

Inkyung Choi

Richard P. Smiraglia
University of Wisconsin-
Milwaukee (USA)

Facets as discourse: how facets and facet analytical theory reveal cultural dimensions in 21st century knowledge organization systems

Faceted analytical theory and the implementation of 'facets' have had major impact on the development of systems for knowledge organization and information retrieval, ranging from major general bibliographic classifications to e-commerce. The discourse of facet analytical theory as a research front is represented in the literature produced by that research front. The discourse that emerges tells an over-arching story about the growth, concretization and shifting intension of the concept of the facet. This research front often is associated with the Dorking conference in 1957, but of course has roots in knowledge organization that can be traced to the 19th century. Diverse meanings of the concept of facet range from 'broad facet categories', often used as the bases of bibliographic classifications, to 'analytical categories', often used in e-commerce. Outside of the domains of KO and information science usages range from geology to dentistry to philosophy and beyond. Insofar as facets represent dimensions of knowledge they also reveal cultural influences. How is it that such a concrete idea can lead to so many divergent implementations? The answer lies in the analysis of cultural synergy. Cultural synergy is the merging of perception and behaviour that shapes knowledge within and among the intellectual nodes of the diverse domain of 'facets'. This presentation begins with pointers to the discourse as they emerge from an informetric analysis of published research concerning facets and facet analytical theory, within the knowledge organization and information science communities as well as across all other visibly active domains. We will explore the ways in which what we call classification theory has had effect much beyond our own domain. Faceted analytical theory is one 21st century realization of a multi-verse of cultural synergy, emerging from classification theory to provide impetus to improved information architecture at large.

RICHARD P. SMIRAGLIA is Professor in the Knowledge Organization Research Group of the iSchool at the University of Wisconsin-Milwaukee, a Visiting Professor for 2016-2017 at DANS - Data Archives and Networked Services (a Division of the Royal Netherlands Academy of the Arts and Sciences) and Editor-in-Chief of the journal Knowledge Organization. He has also been on the faculties of the Palmer School of Library and Information Science at Long Island University (1992-2009), the School of Library Service at Columbia University (1986-1992) and was Music Catalog Librarian at the University of Illinois at Urbana-Champaign (1974-1986). He is the author of more than 300 publications in information science and knowledge organization. His work explores ontology extraction and evolution of knowledge in domains, classification interaction, classification-based knowledge maps, the cultural role of authorship, the representation of knowledge in knowledge organization systems and the phenomenon of instantiation among information objects.

SESSION 1: FACETED CLASSIFICATION IN A BROADER CONTEXT

Chair: Claudio Gnoli

Martin H. Frické
University of Arizona
(USA)

Faceted classification, analysis and search: some questions on their interrelations

A description is provided of basic faceted classification which involves combinations of foci across facets, where the foci within a facet are dependent (i.e. exclusive) and the foci across facets are independent (i.e. orthogonal). This is shown to be suitable for organizing the basic goods that Amazon, the online retailer, sells and for progressive filtering as a mode of search. However, on closer inspection, the Amazon case involves a sorted domain. This is problematical for basic faceted classification. Additionally, books from Amazon would typically carry subject classification which also is difficult for basic faceted classification. It does not support filtering as a mode of search. Then subject classification really requires relatively sophisticated linguistic and logical constructors and modifiers, such as adjectives, adverbs, functions, binary relations, and transitive verbs. These can be part of a synthetic subject classification scheme, but they pose a challenge for faceting.

The principle of compositionality and entity-relationship modelling: faceted classification in a broader context

Dagobert Soergel
University at Buffalo (USA)

Compositionality (the idea that 'the meaning of a complex expression is determined by its structure and the meanings of its constituents') and entity-relationship modelling are intertwined structural

principles underlying thought, language, and classification / knowledge representation / data modelling. Drawing on examples from many contexts, this paper illustrates common principles for representing and understanding reality, imagination, and conceptualization as they apply to thought, natural language, and systems designed for organizing and applying knowledge, classification for organizing documents and document-like objects, knowledge representation for artificial intelligence, and data modelling for managing databases. Examples include the arrangement of the Greek alphabet, Chinese characters, sign language, frames and semantic networks as models for the organization of knowledge in the mind and in computer systems, faceted classification (including facets in the UDC), record structures and entity relationship modelling (done properly) in databases. To make these ideas more concrete, the paper provides an entity-relationship model that represents the facet structure of the UDC. The examples demonstrate that the idea of facets, if not known by this name, has been around for a long, long time. Following the principle of compositionality and entity-relationship modelling through many contexts improves our understanding of faceted classification

Facet analysis and semantic frames

Rebecca Green
OCLC (USA)

Various fields, each with its own theories, techniques, and tools, are concerned with identifying and representing the conceptual structure of specific knowledge domains. This paper compares facet analysis, an analytic technique coming out of knowledge organization (especially as undertaken by members of the Classification Research Group (CRG)), with semantic frame analysis, an analytic technique coming out of lexical semantics (especially as undertaken by the developers of FrameNet). The investigation addresses three questions: (1) How do CRG-style facet analysis and semantic frame analysis characterize the conceptual structures that they identify? (2) How similar are the techniques they use? (3) How similar are the conceptual structures they produce? Facet analysis is concerned with the logical categories underlying the terminology of an entire field, while semantic frame analysis is concerned with the participant-and-prop structure manifest in sentences about a type of situation or event. When their scope of application is similar, as, for example, in the areas of the performing arts or education, the resulting facets and semantic frame elements often bear striking resemblance, without being the same: facets are more often expressed as semantic types, while frame elements are more often expressed as roles.

SESSION 2: FACETS AS A SOLUTION

Chair: Rick Szostak

Numbers, instruments and hands: the impact of faceted analytical theory on classifying music ensembles

Deborah Lee
City, University of London
(UK)

This paper considers a particularly knotty aspect of classifying notated music: the classification of instrumental ensembles, where the term 'ensembles' is defined as music written for multiple players with only one player per part. Facet analysis is used to examine this area of music classification and as the basis of a model for classifying ensembles. The conceptual analysis is aided by examples drawn from two classification schemes, British Catalogue of Music Classification (BCMC) and Flexible Classification. First, this exploration reveals that there are conceptually four sub-facets for classifying instrument ensembles, and that the omission of any of these sub-facets causes issues within classification schemes. Next, the different type of relationships between pairs of these sub-facets is delineated, including hierarchical and associative relationships. The classification of ensembles is depicted in a novel way, as a series of inter-connected relationships between sub-facets. Finally, the paper ascertains exactly what is being counted, including introducing potential extra sets of sub-facets pertaining to performers and hands. So, facet analysis helps to create a model for classifying instrumental ensembles which provides a novel solution to this historically problematic area of music classification, as well as suggesting a potentially generalizable new way of thinking about complex relationships between sub-facets.

The contribution of Ranganathan's facets to the determination of aboutness in novels

Patrícia de Almeida
University of Coimbra
(Portugal)

The subject indexing of fiction is a complicated matter. In addition to the difficulties that affect the indexing of non-fiction, the determination of the aboutness of narrative fiction makes the process even more challenging. The disparity in the understandings of the concepts of subject and aboutness (sometimes across languages, such as in the case of Portuguese) complicates the matter

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*University of Coimbra
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*São Paulo State University
(Brazil)*

even more. Some have addressed this problem with a method of facet analysis. Despite the multiplicity of views of these studies, none of them seems to have worked with the strict application of Ranganathan's fundamental facet categories (Personality, Matter, Energy, Space and Time - PMEST). In this paper, we study the possibilities and contribution of Ranganathan's PMEST formula for the determination of the aboutness of novels. We aim to determine the effectiveness of this approach for the indexing and retrieval of this kind of fiction in relation to the users' views. We distributed a questionnaire among the readers of a public library in Portugal in order to know their views on the PMEST facets of the novels they read.

Indexing KOSs in BARTOC by a disciplinary and a phenomenon-based classification: preliminary considerations

Andreas Ledl

*Basel University Library
(Switzerland)*

Claudio Gnoli

University of Pavia (Italy)

The paper discusses the Basel Register of Thesauri, Ontologies & Classifications (BARTOC) and its suitability as a tool for testing knowledge organization systems (KOS), and in particular how two different classification schemes perform when applied to the same items. It examines the recently launched project on using Integrative Levels Classification (ILC) for classification of top-ranked KOSs in BARTOC. The knowledge organization accomplished with ILC is compared to that produced by the application of Dewey Decimal Classification (DDC). This represents a case study for evaluating phenomenon-based classification in comparison to a disciplinary classification. The comparative study also contrasts a faceted classification (ILC) with an enumerative scheme (DDC). Some technical aspects, such as importing ILC into Drupal CMS and creating URIs for terms to use them as Linked Open Data, are addressed exactly like some intellectual aspects of this subject indexing endeavour.

SESSION 3: FACETS IN PRACTICE

Chair: David Bowden

Facets of the UDC and their performance in NEBIS

Jiri Pika

*UDC Editorial Team
(Switzerland)*

The UDC classmarks and their verbal representation in the NEBIS (Netzwerk von Bibliotheken und Informationsstellen in der Schweiz) subject index provide both detailed subject access in the process of retrieval and a desktop tool for systematic indexing and classification. The subject authority control provided by NEBIS supports simple and advanced searching of UDC notations and their verbal representation comprising both hierarchical navigation (semantic expansion to broader and narrower topics) as well as advanced searching. This authority control tool enables searching for combinations of the main topics with common auxiliary facets such as Place, Time, Form and Language of the document and makes good use of the UDC analytico-synthetic structure. Elements of complex subjects that are expressed with complex UDC notations can be searched for in isolation or as combinations (e.g. via Boolean logical operators). Whereas most of the traditional catalogues depend primarily on Boolean logic, NEBIS also provides an enriched subject index that contains additional, closely related terms and synonyms for each concept to assist the search. The significance of the NEBIS subject index for searches is given by its simultaneous use of descriptors in three languages, along with expanded vocabulary related to a specific topic, and its capability of parsing alphanumeric notation, which helps increase the return of a search query.

The challenge of managing access to new and novel forms of data: an application of UDC

Suzanne Barbalet

*UK Data Archive,
University of Essex (UK)*

Nathan Cunningham

*UK Data Archive,
University of Essex (UK)*

Topic searches pose a challenge for web-scale discovery. A pilot study of the application of Universal Decimal Classification (UDC) to manage topic access to the collection was underway when the UK Data Service began to plan for the management of new and novel forms of data (NNfD) such as 'big data' or administrative data. This paper reports on the results of the pilot project and explores an application for managing end user access, not only to data with a clearly defined scope and accompanying metadata, but also to data which will challenge current curation procedures. NNfD will not have been collected for research purposes but nevertheless may be a rich source of primary data. Users of NNfD will want to evaluate the suitability of this data for a particular research project and may also wish to access similar data from our collection that was curated for the purpose of secondary data analysis. Application of a standard classification code such as UDC, we anticipate, will assist us to negotiate discoverability issues that will undoubtedly arise as researchers explore new and novel sources of data.

DAY 2

KEYNOTE ADDRESS

Faceted classification as the basis of all information retrieval

Vanda Broughton
University College London
(UK)

The Classification Research Group (CRG) manifesto of 1955 proclaimed its members' commitment to the techniques of facet analysis as a general methodology for organizational, indexing and retrieval systems. In the 1950s this was hardly the case, but sixty years later the influence of faceted classification can be seen in all kinds of representation and discovery tools, and goes far beyond the limits of the conventional bibliographic classification that many of the original CRG envisaged as their objective. However, the CRG's purpose was not just to encourage the faceted approach to designing and constructing classifications, but to propose it as a fundamental theory of knowledge organization, at the core of the disciplines of library and information science. At the time, faceted classification theory was in many respects poorly articulated; many of the elements of 'classical' facet analysis were yet to be properly identified and defined, and it would be the work of some years to arrive at a mature theory. Yet that rudimentary model would eventually provide a foundation for much modern information retrieval. What are the distinctive features of facet analysis that make it so compatible with current needs, particularly in a digital environment? Some of the truth resides in the integrated nature of the faceted model, its clear explication of categorisation, order and intra- and inter-facet relationships, which can be rolled out across different species of knowledge organization system. The logic of this structures is readily exploited in automated systems, and can in part be expressed by representation languages. The complexity of the fully faceted classification, while internally consistent, is, nevertheless, challenging to realise in the same way.

VANDA BROUGHTON is Emeritus Professor of Library & Information Studies at University College London and the author of a number of books and articles on faceted classification and controlled vocabularies. She has worked on faceted classification systems since 1972 when appointed as Research Fellow on the Bliss Classification revision (BC2) project to work with Jack Mills. From that time, she was a member of the UK Classification Research Group (CRG), then under the Chairmanship of Mills alongside such leading figures as Douglas Foskett, Eric Coates, Jason Farradane, Robert Fairthorne and Derek Austin. She had Joint Editorship of BC2 with Jack Mills until his death in 2010 when she became sole Editor and Chair of the Bliss Classification Association. She has also been an Associate Editor of the Universal Decimal Classification, sometime member of the IFLA Committee on Classification & Indexing and a founder member of the UK Chapter of the International Society for Knowledge Organization, which she chaired from 2007-2011. In addition to the ongoing revision and development of the Bliss Classification, her current research work, focuses on the development of a broader theory of facet analysis and the use of encoding to support automatic generation of both thesaural and systematic knowledge structures from core terminologies.

SESSION 4

CHALLENGES FOR FACETED CLASSIFICATION

Chair: Rebecca Green

Facets and change: design requirements for analytico-synthetic schemes in light of subject ontology research

Joseph T. Tennis
University of Washington
(USA)

S. R. Ranganathan's conception of faceted classification was an amelioration to the problem of an 'ever expanding universe of knowledge'. It went a long way to solving many problems that strictly enumerative schemes created. However, there are many assumptions behind faceted classification and one of them is stability in semantics. This paper will explore this assumption in light of subject ontology research. While creating new facets and the ability to combine facets to create new classes is one way to accommodate change, I will point out where we must go beyond Ranganathan's designs in order for our faceted and analytico-synthetic schemes to retain their value over time.

DERA: from document-centric to entity-centric knowledge modelling

A. R. D. Prasad
DRTC, Indian Statistical
Institute (India)

S. R. Ranganathan is credited with developing analytico-synthetic faceted classification. He proposed five 'fundamental categories' which were deemed necessary and sufficient to create a knowledge classification able to describe the content of all documents envisaged to be held in a library. In the context of the Web and digital context in general we find an abundance of heterogeneous resources of a very fine granularity from various knowledge domains. While domains provide the context, it is the entities in the domains that need unambiguous

Fausto Giunchiglia
University of Trento (Italy)

Devika P. Madalli
*DRTC, Indian Statistical
Institute (India)*

representation. Hence, we advocate an entity-centric approach, where examples of entities are people, locations, mind products and organizations. Entities are either abstract or concrete. Within each domain, entities are described with a set of properties. The authors propose that there should be a logical progression of representation techniques from library resources or document metadata about entities in the bibliographic domain to representation of entities in information resources on the Web. To deal with the content of a knowledge domain in the broadest possible sense, we need to consider 'fundamental categories' that are necessary and sufficient to characterise web resources. The authors propose a new faceted knowledge representation model, DERA (Domain, Entity, Relations, Attributes), based on a faceted entity-centric approach. DERA makes use of Ranganathan's principle-based approach of analytico-synthetic classification to help formalise and reuse knowledge. A key advantage of DERA is that it is amenable to logical formalisation.

Facet analysis in UDC: questions of structure, functionality and data formality

Aida Slavic
*UDC Consortium (The
Netherlands)*

Sylvie Davies
*Robert Gordon University
(UK)*

The paper will look into different patterns of facet analysis used in the UDC schedules and how these affect the scheme presentation, the underlying data structure and the management of the classification scheme. From the very beginning UDC was designed to represent the universe of knowledge as an integral whole allowing for subjects/concepts from all fields of knowledge to be combined, linked and the nature of their relationships made explicit. In Otlet's original design, the emphasis for his new type of classification was on the coordination of classmarks at the point of searching, i.e. post-coordination, which he firmly rooted in an expressive notational system. During its long history, while the main analytico-synthetic principle remained unchanged, knowledge fields in UDC grew naturally, i.e. without a coherent theoretical framework that can be recognized across all fields. Thus, while some UDC classes exhibit various patterns of facet analytical theory proper, others, although used in an analytico-synthetic fashion, follow less canonical structural patterns. The authors highlight the lack of connection made throughout the various stages of UDC restructuring between: a) theoretical requirements of an overarching facet analytical theory as a founding principle guiding the construction of schedules; and b) practical requirements for an analytico-synthetic classification in terms of notational presentation and data structure that enables its use in indexing and retrieval, as well as its management online. The authors recommend that, in addition to the rigorous application of faceted theoretical framework, equal consideration must be given to improve formality in notational representation and in synthesis functionalities.

SESSION 5: FACETED CLASSIFICATION AND AUTOMATION

Chair: Dagobert Soergel

The thought behind the symbol: about the automatic interpretation and representation of UDC numbers

Attila Piros
*University of Debrecen
(Hungary)*

Analytico-synthetic and faceted classifications, such as Universal Decimal Classification (UDC) provide facilities to express pre-coordinated subject statements using syntactic relations. In this case, the relevance, in the process of UDC-based information retrieval, can be determined by extracting the meaning of the classmarks as precisely as is possible. The central question here is how the identification mentioned above can be supported by automatic means and an analysis of the structure of complex classmarks appears to be an obvious requirement. Many bibliographic sources contain complex UDC classmarks which are stored as simple text strings and on which it is very difficult to perform any meaningful information discovery. The paper presents a phase of an ongoing research focused on developing a new platform-independent, machine-processable data format capable of representing the whole syntactic structure of the composite UDC numbers to support their further automatic processing. An algorithm that can produce the representation of the numbers in such a format directly from their designations has also been developed and implemented. The research also includes implementing conversion methods to provide outputs that can be employed by other software directly and, as a service, make them available for other software. The paper provides an overview of the solutions developed and implemented in since 2015 and outlines future research plans.

Similarity measurement between UDC classmarks and its application

Paweł Lula
*Cracow University of
Economics (Poland)*

This paper discusses the problem of similarity measurement between UDC classmarks. The main purpose is to propose a general formula for the calculation of the similarity coefficient reflecting relatedness between two different UDC expressions. Assuming that the UDC expression has the

**Urszula
Cieraszewska**
*Cracow University of
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form of a sequence of UDC class identifiers joined by UDC operators it seems obvious that for calculating similarity between two expressions two phases must be defined: formulas for expressing similarity between UDC classes and rules of aggregation of these partial results. The process of similarity evaluation should also take into account additional conditions relating to language, form, place or time (which can be defined in UDC expressions as auxiliary conditions). Some example calculations are presented to show practical aspects of similarity evaluation of two UDC classmarks. In the final part of the paper some possible applications of the proposed method are discussed.

SESSION 6: METHODS AND THEORY OF FACETED CLASSIFICATION

Chair: Richard Smiraglia

Syntax of facets and sources of foci: a review of alternatives

Claudio Gnoli
University of Pavia (Italy)

Although the notion of facet occurs in many knowledge organization systems (KOS), the term facet has been used with different meanings and roles over time. Generally, the term suggests the combination of several concepts in order to specify the subject of a document. However, the syntax of such combinations varies considerably, as do the sources from which the possible values of a facet (known as 'foci') can be taken. This paper provides an overview of syntactical alternatives in faceted systems. Concepts can be simply juxtaposed without expressing the relationship between them (free combination); or the relationship can be expressed and link two concepts taken from any part of the scheme (freely faceted systems, phase relationships); or it can be characteristic of only a given basic class and allow it to link to a choice of other concepts according to a facet formula (classical faceted classification, special facets); or it can link any basic class to a choice of auxiliary concepts such as space, time or form (common facets). Foci, in turn, can be taken from any other part of the system, or typically from a certain part, or be defined in the context of the facet itself. When describing a KOS as 'faceted', which now seems to be a fashionable attribute, the nature of such 'facets' should be made explicit. Finally, the supposed 'rationalistic' theoretical basis of facet analysis, as opposed to 'empirical' or 'pragmaticist', is briefly discussed.

Facet analysis as one among other theories of classification

Birger Hjørland
*University of Copenhagen
(Denmark)*

There has been a tendency within the community of knowledge organization (KO) to consider facet analysis as the only approach to classification. Jack Mills, for example, wrote that he does not see faceted classification 'as a particular kind of library classification but as the only viable form enabling the locating and relating of information to be optimally predictable'. My own research findings, however, show that there are different 'approaches', 'paradigms' or theories to classification which remain relevant and that these theories of classification and KO basically corresponds to theories of knowledge. In my earlier research, I argued that facet analytical theory should be viewed as a rationalist/logical approach (in contrast to empirical approaches, genealogical and hermeneutical approaches and pragmatic/critical approaches). I also observed that knowledge about the theory of knowledge can serve as an indicator of the relative strength and weakness of a given approach to classification, in this case facet analysis. In this talk I will revisit this problem again, and consider counterarguments to the argument that facet-analysis basically is a pragmatic approach and the argument that it represents eclecticism. Although it is well known that labels such as 'rationalism', 'empiricism', 'historicism' and 'pragmatism' are polysemantic, it is possible to offer an understanding of these concepts, that would provide much needed guidance in our field. The theory of classification needs to consider different perspectives.

Theory versus practice in facet analysis

Rick Szostak
*University of Alberta
(Canada)*

Can we achieve the goals of facet analysis without actually performing facet analysis? There is, perhaps, an implicit assumption in the field that the answer to this question is no. This paper will suggest that the answer may well be yes. We review the goals of facet analysis and discuss ways in which these might be achieved. We then discuss some of the challenges faced in performing facet analysis – and thus the potential advantages of an approach that maintains the goals of facet analysis while foregoing the means. We explore whether the use of basic grammar in subject strings, coupled with flat schedules of controlled vocabulary addressing (separately) nouns, verbs, and adjectives/adverbs, can achieve the goals of facet analysis. Classifiers might then move fairly directly from a sentence in a document description to a sentence-like subject description. Though different grammatical elements can be identified with different facets the classifier need not do so. We briefly apply this technique to a small sample of recent books. We draw lessons from PRECIS

(Preserved Context Index System), an indexing approach employing grammar to a considerable degree that was applied in the British National Bibliography and elsewhere for a couple of decades from the 1970s. We also briefly reflect on the goals and means of facet analysis as elucidated by the Classification Research Group in the 1950s, arguing that our approach addresses concerns they raised in a manner that would have been difficult to pursue technically at that time.

POSTERS

Chair: Sylvie Davies

Turn over a new facet: an analysis of the applications of faceted systems for facilitating the explorations of museum collections on the Web

Marcia Zeng

*Kent State University
(USA)*

Shu-jiun Chen

*Academia Sinica, Taipei,
Taiwan (China)*

This poster discusses the applications of faceted systems seen from the end user interfaces designed for facilitating the explorations of museum collections on the Web. With the increased investments in digitization during the last two decades, many museum objects that may take over a hundred years to be physically exposed to the on-site visitors of the exhibitions now are presented (through their digital surrogates) to online visitors across the globe. How can the museum websites present the unique objects meaningfully across their collections, while also allowing visitors to explore the collections based on the objects' unique and common properties? The authors conducted a series of visits (on-site and online) of selected museums, examined their websites and mobile apps, and sorted out the common and unique approaches used by museums in facilitating the explorations of museum collections on the Web. A part of the study will be reported in this poster.

Comparative approaches to facets in interdisciplinary KOSs: UDC and Basic Concepts Classification

Richard P.

Smiraglia

*University of Wisconsin-
Milwaukee (USA)*

Rick Szostak

*University of Alberta
(Canada)*

Interdisciplinarity in knowledge organization is an increasingly critical component of the theory of how knowledge might be usefully clustered around particular phenomena rather than in disciplinary hierarchies. Gathering by discipline provides certain epistemic assurances concerning the treatment of phenomena, but concomitant scattering by discipline prevents the phenomenon-based knowledge discovery that is a hallmark of interdisciplinary research. This poster connects interdisciplinarity to facet analysis. We share results from an exploratory study that compares the approach to interdisciplinarity provided by the Universal Decimal Classification's synthesis and faceted auxiliaries to that provided by the Basic Concepts Classification, which uses basic grammar to incorporate elements of facet analysis. A set of use cases was assembled for which complex multiple UDC strings were compared to grammatically structured BCC strings. The nodes, auxiliaries, and connectors in classified strings, in both UDC and BCC, constitute a network among elements of each classified string. We show how the network structures are comparable, not just as descriptive data, but as networks underlying classification as navigable pathways among concepts.

Coli-conc: mapping library knowledge organization systems – a report

Uma Balakrishnan

VZG/GBV (Germany)

Over the past decade, the availability of tools and standards has contributed to the increase in use and exchange of knowledge organization systems (KOS). Concordances between these systems are, however, rather rare. Project Coli-conc aims to address this gap by developing tools, methods and techniques to simplify and accelerate the intellectual creation of concordances. It also aims to ease their use and exchange and at the same time to provide quality monitoring that aids quality management. The project creates a set of reusable software modules to enable uniform access to KOSs, concordances and concordance assessments. These modules are provided as a web application to support effective processing of concordances. In addition, existing software have been evaluated and enhanced with new components for storage of, access to and analysis of different concordances.

UDC facets in action in Slovenia

Darija Rozman

The poster outlines an approach to using UDC's faceted structure in Slovenian libraries. Subjects are often context specific and related to a certain region, language or people. In UDC, various facets, whether denoting common concepts or concepts specific to certain subject fields, can be

combined to describe complex subjects in a more specific and detailed way. For instance, basic subject classmark can be extended with any number of attributes to denote language, ethnic grouping, place, time, form, etc. This makes classification culturally relevant and widely applicable. In Slovenian libraries, examples of such use of facet-based indexing can be observed in bibliographic records, in different examples of classification summaries, in physical arrangement of documents, etc. The importance and the role of UDC facets in improving subject access is examined in a controlled list of UDC codes used in the field 675 (COMARC format) which are extracted from the standard version of the scheme UDC MRF 11. Special attention is paid to the principles of construction and use of UDC classmarks for works of fiction (literature). In particular, the presence of common and special auxiliaries is observed in relation to ethnic aspects, which are often present in the classification of literature.

Establishing correspondences between Web of Science subject areas and UDC

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et al.**

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The poster represents an automatic mapping between Web of Science (WoS) subject categories and UDC using a pivot method. Semantic relationships between subject areas of WoS and UDC classes are established through the relationships each of these two systems has with classes in the Russian official national classification for scientific and technological information, known as State Rubricator of Scientific and Technological Information (GRNTI). The work undertaken shows that in most cases, whenever UDC and WoS headings were linked to the same GRNTI category, a direct link between the UDC and WoS headings could be determined by an algorithmic inference. This method of mapping classifications provides a rough estimate i.e. an approximation of the headings' correspondence the advantage being that it is fully automated. This makes the task of matching complex classification schemes feasible within a reasonable time framework and limited resources. Our poster shows the schema and tables of the logical inference of the relations between headings. The parameters of the UDC and WoS concordance tables, produced by this method, are also shown. This work is a part of a larger project of automatic mapping of subject vocabularies used in information indexing in Russia which is undertaken by VINITI (All Russian Institute of Scientific and Technical Information, department of the Russian Academy of Sciences) with a support of the Russian Foundation for Basic Research (project 17-7-00153).

Comparative analysis of universal library classification: the Dewey Decimal Classification and the Korean Decimal Classification

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Given increasing cross-cultural use of classification, it is no longer true that current classifications exist for only one society or one culture. However, few knowledge organization (KO) studies have illustrated how two cultures are reconciled through conflict and harmonization within a KO structure beyond pointing out the need to recognize and identify plural sociocultural perspectives. The changes in KO systems induced by sociocultural influences may include those in both classificatory principles and cultural features. This poster presents some aspects of a study examining the Korean Decimal Classification (KDC)'s adaptation of the Dewey Decimal Classification (DDC) by comparing the two systems. This case manifests the sociocultural influences on KOSs in a cross-cultural context. The preliminary analysis indicated variations between the two schemes in comparison of the knowledge structures of the two classifications, in terms of the quantity of class number that represent concepts and their relationships in each of the individual main classes. This comparison, parts of which are graphically depicted in this poster, is intended to lead a secondary analysis with a qualitative coding of selected main classes. The qualitative content analysis is expected to categorize individual concepts and relationships into various strategies of adaptation in the attempt to have the KDC meet local sociocultural needs.

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