Book Reviews

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Book Review Editor

Concepts in Context. Proceedings of the Cologne Conference on Interoperability and Semantics in Knowledge Organization, July 19-20, 2010, edited by Felix Boteram, Winfried Gödert and Jessica Hubrich**.**
Series: Biblioteca Academica, Reihe Informations- und Bibliothekswissenschaften, Bd. 1
Publisher Name: Ergon Verlag
Place of Publication: Würzburg:
Publication Year: 2011
Number of Pages:. 183 pp.
ISBN: 3899138716, 9783899138719

After completion of the translation of the Dewey Decimal Classification (DDC) into German at the Cologne University of Applied Sciences for its later utilization for subject indexing at the German National Library (DNB), the question arose of how to relate the DDC numbers to the subject headings having been in use for the German National Bibliography (DNB). Therefore a new project was established in collaboration with Cologne colleagues and the DNB, called CrissCross, funded by the German Research Foundation and also carried out in Cologne during four years. In order to present the findings of this project as well as to link them to the current problems of interoperability/compatibility especially regarding the Semantic Web, Prof. Winfried Gödert organized a two-day conference with presentations of the CrissCross project on the first day and other relevant papers on the second day. The proceedings volume which appeared in the fall of 2011 contains the twelve papers presented, irrespective of the time of their presentations.

After a general introduction by the editors, W. Gödert started with a short paper on "Programmatic Issues and Introduction," outlining the background to the topic: Concepts, being the carriers of meaning and knowledge, are also dependent on their context. He noted (p. 9) that although "the vision of the Semantic Web entails high expectations ... the concept has indistinct outlines." Thus he suggested the Semantic Web to be based on existing indexing languages, as it cannot be constructed "from scratch." From the experience of having to correlate some 50,000 DDC Classes to some 160,000 subject headings he listed some examples of bridge-building tasks for improved indexing and retrieval purposes. Also, referring to statements of Stella Dextre Clark, he outlined ten requirements to be met for a successful introduction of interoperability. In any case, a transition from term-based forms of information retrieval to concept-based forms seems necessary.

This was especially well shown in the first paper by Dagobert Soergel on "Conceptual Foundations for Semantic Mapping and Semantic Search," which he started with the following statement (p. 13): This article lays the foundation for developing the conceptual infrastructure for large-scale semantic interoperability across multiple collections using different KOS (Knowledge Organization Systems) and universal semantic based search, either directly or through a query-formulation front-end. He showed by some 18 examples on 15 pages considering four different application cases how this can be achieved, e.g. between classes of the DDC and the *LCSH* (*Library of Congress Subject Headings*) and many other combinations. For the necessary deep semantic analysis looking for 'atomic (elemental) concepts' he used (p. 15) "an extensible faceted core classification of atomic concepts" forming the backbone of the proposed system. Between any two systems to be mapped to each other he introduced a hub in which these atomic concepts are listed. These help to find the corresponding concepts of the respective other KOS. In Chapter 5 he reflected on relationships to other thought and reminds the reader in short of similar activities in history, beginning with the earliest Chinese characters and ending up with the AGROVOC Concept Server Workbench System, however in this historical snapshot he forgot our Warsaw Conference on Compatibility of 1995 with its recommendations (co-edited by D. Soergel) and its rich bibliography added to its proceedings (*Compatibility and Integration of Order Systems* 1996). Nevertheless his ingenious contribution is a milestone

to be followed in any serious undertaking of this sort.

The next paper in the volume "Insights and Outlooks: A Retrospective View on the CrissCross Project" by Jan-Helge Jacobs, Tina Mengel and Katrin Müller presents an introduction to this project and exemplifies its fruitful application in several indexing constellations concerning the German National Bibliography. For the juxtaposition of DDC numbers with the German Subject Authority File (SWD) a 'Degree of Determinacy' from 1-4 (1 being full equivalence) helped to establish a great number of Linked Data which have also been used in establishing a 'Linked Data Service' at the German National Library (DNB).

A second paper using the links established within the CrissCross project follows. "Translingual Retrieval Moving between Vocabularies – MACS 2010" by Yvonne Jahns and Helga Karg tackled its application in the Multilingual Access to Subjects (MACS) Project, including the subject headings from the French vocabulary RAMEAU (Repertoire d'authorite-matiere encyclopedique et alphabetique unifie), the *LCSH* and the SWD (Schlagwortnormdatei) of the DNB. For this purpose a database with a Link Management System (LMI) was created. It allows for an easy linking between German, French and English concepts. It is stressed that the MACS approach allows only equivalent relations and there is no starting or target language. This very interesting article informs about the project workflow, methodology and problems of mapping and future applications of MACS links. With the results of this project it will become possible to search in the collections of the national libraries of Germany, Austria, Switzerland, France and Great Britain by using one's own language.

One further contribution reflecting insights gained from the CrissCross project follows with Jessica Hubrich on "Intersystem Relations, Characteristics and Functionalities." Mrs. Hubrich explained her findings as a tiered model of interoperability, distinguishing between word-based, conceptual and differentiated interoperability. The last one considers the relations, which each system in the mapping process possesses already and which may be used to improve it and to search for functionalities in retrieval scenarios. These possibilities are made explicit in a number of examples.

Regarding exactly these possibilities, Stella Dextre Clark asked: "In Pursuit of Interoperability: Can we Standardize Mapping Types?" If the concepts of each KOS could be mapped by each other KOS and the mapping types would not differ either, an ideal situation would be given. As this is not the case at present, the author discusses the feasibility and desirability of agreeing and implementing standardized mapping types. In the Appendix to her paper she added, according to suggestions made at the conference, to possibly include her proposals into the newly established ISO Recommendation (ISO 25964, Parts 1 & 2): *Thesauri and Interoperability with other Vocabularies.*

The next two papers "A Science Model Driven Retrieval Prototype" by Philipp Mayr, Philipp Schaer, and Peter Mutschke and "Would an Explicit Versioning of the DDC Bring Advantages for Retrieval?" by Claudia Effenberger and Julia Hauser report on improving the efficiency of information retrieval; the first one on reports on research work at the GESIS Institute for Social Science Information, Cologne, the second one on research work at the DNB, Frankfurt, on a possibility of overcoming the difficulties arising from DDC revision work.

The four last contributions tackle models developed by IFLA, the International Federation of Library Associations and Institutions. Gordon Dunsire in "Interoperability and Semantics in RDF Representations of FRBR, FRAD and FRSAD" spoke about the development since 1997 of an IFLA Standard for Functional Requirements for Bibliographic Records (FRBR) as well as of Authority Data (FRAD). The latter was extended to cover also Subject Data, abridged FRSAD. The three models had been combined later with a separate Web Ontology Language (OWL). The paper covers interoperability issues of a general kind, of opaque URIs, of semantic and ontological issues and draws conclusions to improve interoperability.

Maja Zumer in "FRSAD: Challenges of Modeling the Aboutness" introduced FRSAD and the model developed by a Working Group formed in April 2005, which considered issues raised during a worldwide review of terminology.

Michael Panzer in "Two Tales of a Concept: Aligning FRSAD with SKOS" tried to assess the compatibility of the conceptual framework with formalisms and functions having emerged from the Semantic Web community which arose, e.g. when applied to a Simple Knowledge Organisation System (SKOS). His conclusions should be considered!

Finally Felix Boteram in "Integrating Semantic Interoperability into FRSAD" analyzed from his experiences gained during the work with another research