been useful to harmonize the styles and to avoid little irritating quirks such as repeating *ad nauseam* that "bibliographic records" are "surrogates" and vice-versa.

Overall, this is an excellent work, on an ever increasingly pertinent topic. This long-awaited second edition provides a thorough and comprehensive update of an already important text. I very highly recommend it to professionals and academics alike ; both neophytes and veterans will find it valuable. It is a fundamental work that cannot be ignored in the field of subject analysis and retrieval for all bibliographic systems, including online catalogs.

Notes

1 Hans H. Wellisch. Review of "Subject analysis in online catalogs." *Library Resources and Technical Services* 35(4) 1991, p. 479.
2 *Op. Cit.* p. 480.
3 Lois Mai Chan. *A guide to the Library of Congress Classification*. 5th ed. Englewood, Colo. : Libraries Unlimited, 1999, p. 429.
4 Lois Mai Chan. *Cataloging and Classification : An introduction*. 2nd ed. New York : McGraw-Hill, 1994, p. 281.

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Relationships in the organization of knowledge. Edited by Carol A. Bean and Rebecca Green. Dordrecht ; Boston : Kluwer Academic Publishers, c2001. ix, 232 p. (Information and knowledge management; v. 2). ISBN 0-7923-6813-4.

With fourteen contributions grouped in two sections, "Theoretical background" and "Systems", this work discusses the most common relationships used in the organization of recorded knowledge to facilitate information retrieval: the relationships between bibliographic entities, intra- and intertextual relationships, relevance relationships, and subject relationships in thesauri and other classificatory structures. The editors' goal is to "spur further interest, debate, research, and development".

A first chapter by Rebecca Green serves as an overview whose principal merit is to introduce the basic types of relationships and to list their properties. Stella G. Dextre Clarke, in "Thesaural Relationships", describes how standards and other texts present the well-known equivalence, associative and hierarchical relationships. Jessica L. Milstead's contribution, "Standards for Relationships between Subject Indexing Terms", reflects her long-standing commitment to standardization efforts. Her description of the process of preparing and adapting a standard in the United States and her comparison of provisions of the ISO and ANSI/NISO standards and of different editions of the same standard applicable to thesauri and indexes are enlightening. Milstead's contribution shows great concern for the users and their retrieval problems. Both Dextre Clarke and Milstead believe in the necessity for more rigorous distinctions between types of relationships, for a greater diversity of relationships in information organization and retrieval systems, and for a wider range of vocabulary control in automated contexts.

Michèle Hudon, in "Relationships in Multilingual Thesauri", examines two questions: 1) Are all types of thesaural relations transferable from one language to another? 2) Are the two members of a valid relation in a source language always the same in the target language(s)? Not satisfied with the provisions of standards for the development of multilingual thesauri, she reaffirms the importance of equal status for each language in multilingual thesauri. Numerous examples illustrate problems encountered with cross-lingual and interlinguistic relationships due to political, economical, philosophical, religious and cultural differences, and several possible solutions are proposed. Even if research in anthropology and intercultural psychology has shown that several types of relationships are indeed universal, this does not mean that semantic structures in different languages are equivalent.

We note a similar preoccupation with intercultural differences in Clare Begthol's contribution, "Relationships in Classificatory Structure and Meaning". Taking for granted that a classificatory structure is a theoretical and cultural construct imposed on reality, Beghtol raises several research questions. Implicit relationships in classification systems, besides explicit

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ones, come from the stated objectives and the sociocultural context and help disambiguate meaning. With the whole-part relationship, a universally recognized relation, we can verify that cultural differences in subdivisions exist and we can realize how important it is to incorporate points of view in the systems.

In the same vein, "Relationships among Knowledge Structures: Vocabulary Integration within a Subject Domain", by Olivier Bodenreider and Carol A. Bean, presents some of the difficulties that must be faced when different terminological knowledge structures in the same domain, conceived independently and for different needs, are integrated. This is the case in the Unified Medical Language System (UMLS). Criteria for synonymy, hierarchical and explicit mapping relationships in several medical vocabularies must be provided before the resulting product can be used in a computerized environment.

Two different topics are covered in chapters 2 and 8. In "Bibliographic Relationships", Barbara B. Tillett relates her own taxonomy of relationships to the more recent IFLA model for coping with relationships between bibliographic units in library catalogs, taking into account a hierarchy of four bibliographic entities: work, expression, manifestation and item. Online catalogs and Internet call for more explicitness, more consistency in the displays, and a larger spectrum of relationships. The editors Bean and Green, in a joint chapter on "Relevance Relationships", suggest that topical relevance relationships between queries and relevant documents include a great variety of semantic relationships besides topic matching, and they describe an empirical study supporting a proposed typology.

In the second part of this volume, six papers address relationships in a range of well known information organization and retrieval tools: the Library of Congress Subject Headings (LCSH), the Art and Architecture Thesaurus (AAT), the Medical Subjects Headings (MESH), the OM Information Service, the Colon Classification (CC) and the Dewey Decimal Classification (DDC).

Lynn M. El-Hoshy's contribution, "Relationships in Library of Congress Subject Headings", encompasses the history and scope of the system since the end of the nineteenth century. She reports the conclusions of major studies concerning the deficiencies of, and the improvements needed in the reference structure. Explanations and examples about criteria and rules for applying relationships and writing scope notes are sufficient and clear enough so that the reader can identitfy and assess the remaining weaknesses. The evolving technology will facilitate a more efficient use of LCSH in online catalogs. With "The Art and Architecture Thesaurus: Controlling Relationships through Rules and Structure", Pat Molholt illustrates how users benefit from a rigorous and coherent methodological approach to organization and retrieval language construction: once the section of the world that needs to be described has been circumscribed, the vocabulary is organized in facets and hierarchies, and 20 potential relationships between concepts are defined with strict rules for their implementation.

Stuart J. Nelson, W. Douglas Johnston and Betsy L. Humphreys must be commended for raising the question of the differences between a concept structure and a subject structure, and for distinguishing the role of relationships between different objects (term, concept, descriptor class). They conclude their chapter, "Relationships in Medical Subject Headings (MeSH)" by asserting the differences between a document-retrieval thesaurus and a concept-representation language.

A. Neelameghan, in "Lateral Relationships in Multicultural, Multilingual Databases in the Spiritual and Religious Domains: the OM Information Service", introduces the same kind of theoretical preoccupation, but with regards for associative relationships. Leaning on Ranganathan's work and choosing examples from spiritual and religious texts, Neelameghan illustrates many lateral relationships between distinct entities: information sources, databases, records of databases and concepts. He also describes how it is possible to cope with different conceptualisations according to culture, religion and language. With "Relationships in Ranganathan's Colon Classification", M. P. Satija describes how CC copes with the multidimensional structure of knowledge, reminding his readers that changing relationships must be taken into account in future editions of the classification system. Joan S. Mitchell adopts a descriptive and detailed stance in "Relationships in the Dewey Decimal Classification System", explaining both explicit and indirect devices which constitute the network of relationships in the Dewey structure.

Overall, this collection offers a wide range of illustrations of existing practices in the most widespread knowledge organization systems in the library and information world ; the subject index testifies to the multiplicity of points of view. *Relationships in the organization of knowledge* provides evidence of continu-

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ous efforts for improving systems and adapting them to automated contexts. It also describes theoretical preoccupations and reiterates the necessity to question some practices. As such, it will be useful for many practitioners, teachers and students, in information science as well as in other fields. But, in my opinion, the work suffers from a few drawbacks. First, because of its structure, the provisions of standards for thesaural relationships are described too often. Secondly, I would have appreciated a clear statement of objectives at the beginning, so that no unreasonable expectation is raised. And, most importantly, the book lacks a chapter with clear definitions of: 1) the different knowledge organization systems, especially index languages, thesauri, subject headings lists and classifications schemes; 2) what is represented in them: concepts, document subjects or topics, knowledge domains; 3) and what is used as representation: terms (not "words"), descriptors, phrases, symbolic notation, and so on. It is only incidentally that readers will be encouraged to make those important distinctions, and some assertions are confusing. Finally, at the end of the book, a concluding chapter with the state of the art and the future directions, both at the theoretical and at the implementation levels, would have been useful.

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