Book Reviews

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Subject Indexing: Principles and Practices in the 90s. Proceedings of the IFLA Satellite Meeting Held in Lisbon, Portugal, 17–18 August 1993, and Sponsored by the IFLA Section on Classification and Indexing and the Instituto da Biblioteca Nacional e do Livro, Lisbon, Portugal. Ed. Robert P. Holley and others. UBCIM Publications—New Series, vol. 15. Munchen, New Providence, R.I.: K. G. Saur, 1995. 302p. (ISBN 3-598-11251-3).

Normally conference proceedings are only the sum of its parts, and a review would focus on the contributions of individual papers. This will not be a normal review. Instead of reviewing the papers presented at the International Federation of Library Associations and Information Centres (IFLA) satellite meeting for their contribution to the intellectual history of the field—in this case, classification and indexing—this review will concentrate on two papers, entitled "Introduction" and "Summary." The reason for this becomes clear when you realize that this is the historic meeting where a list of principles underlying subject heading languages was brought forth out of a working group formed in 1990 and where participants from eleven countries described their existing national bibliographic systems and found, for the most part, that their practices were mainly in accord with this list of principles. If we are getting closer to Universal Subject Control (USC) to match the developments in Universal Bibliographic Control (UBC), then this is a historic moment.

"Introduction," by Dorothy McGarry, Chairperson, IFLA Section on Classification and Indexing, reported on the progress made since the 1990 Stockholm meeting of IFLA, where it was decided to look into the feasibility of formulating a list of principles underlying subject heading languages used in various subject access systems throughout the world. A working group was able to formulate such a list of principles, and it was discussed at this 1993 meeting and has been discussed since then at the 1995 meeting.

Having the benefit of reviewing the papers presented in Lisbon, Julianne Beall, in "Summary," was able to conclude that there was wide agreement among the eleven countries (Brazil, Canada, Croatia, France, Germany, Iran, Poland, Portugal, Spain, the United Kingdom, and the United States) with regard to a number of principles underlying subject heading languages. Beall's summary presents a draft of such principles, and she notes that this draft is still very much under discussion (p. 292). Further revisions of the principles have been made since the publication of this book. The latest draft, made available by Beall in late 1995, is titled "Principles Underlying Subject Heading Languages." This draft preserves almost all of the language of the principles presented in the book but groups and reorders them. In this review the language of the principles comes from Beall's summary in the book, but their grouping and order of presentation comes from the memo.

It is appropriate to review the entire list of principles and document where there was less than wide agreement. The memo of principles for subject heading languages is divided into two sections: "Construction Principles" and "Application Principles."

The section "Construction Principles" includes ten principles, four for terminol-

ogy control, one for guidance through a paradigmatic structure, three for predictability of representations, one for dynamic and documented development, and one for audience oriented vocabulary.

There was wide agreement on four closely related principles. The first principle, the Uniform Heading Principle (which covers both Terminology Control and Predictability of Representation), states:

> To facilitate synonym control and to collocate subjects in the display of bibliographic records, each concept or named entity that is indexed by a subject heading language should be represented by one authorized heading (p. 292).

The second principle, the Synonymy Principle, states:

> To collocate all material on a given subject and to increase the recall power of a subject heading language, synonymy should be controlled in the subject heading language (p. 292).

The third principle, the Homonymy Principle, states:

> To prevent the retrieval of irrelevant materials and to increase the precision power of a subject heading language, homonymy should be controlled in the subject heading language (p. 292).

The seventh principle, the Naming Principle, states:

> To facilitate integrated retrieval, names of persons, places, families, corporate bodies and works when used in a subject heading language of a given catalogue, bibliography or index should be established according to the rules used for author and title entries in that catalogue, bibliography or index (p. 293–94).

There was less agreement in principle and in practice regarding the fourth principle, the Semantic Principle, which states:

> To express the semantic (paradigmatic) structure of a subject heading language, subject headings should be linked by equivalence, hierarchical and coordinate relationships (p. 294).

The work done to formulate thesaurus construction standards (most notably ISO 2788 [1986] and ANSI Z39.19-1993) will help when this principle is put into practice by various national bibliographic systems, including the work done at the Library of Congress using *Library of Congress Subject Headings (LCSH)*. Nancy Williamson's paper, "Standards and Standardization in Subject Analysis in Systems: Current Status and Future Directions," covers the standards and standardization efforts in subject analysis systems.

The fifth principle, the Syntax Principle, had the least agreement because of the variation in practice when building precoordinated strings:

> To express complex and compound subjects, the syntax of a subject heading language should link the compound parts of a subject heading by syntagmatic relationships rather than semantic (paradigmatic) ones (p. 295).

This principle is listed under "Construction Principles," but it most assuredly should be moved to the section "Application Principles." Maybe that will be done in future drafts, when the working group realizes the confusion they cause by expecting the subject heading language structure to produce what can only be represented in an indexing record that forms part of a document description, namely how the facets of a topic are being covered in a document. The subject heading language should accommodate such description, but the expression of such an indexing record should not be built into the language. Other bibliographic systems have seen this, but not the Library of Congress or those who follow its lead. One need only investigate a Medical Subject Headings (MeSH) bibliographic record and its thesaurus to see this. Here the field can benefit from the standardization effort in the field of thesaurus construction, as Williamson points out. Unfortunately, she artificially distinguished between precoordinate and postcoordinate systems at a time when the two are converging in online systems. Her paper and Elaine Svenonius' paper entitled "Precoordination or Not?" leaves a gap of understanding about how these two types of subject heading languages have been converging—witness the provision for subheadings in MeSH, Public Affairs Infor-

mation Service (PAIS), and other thesauri. These thesauri are compiled for perusal, but the strings do not form part of the thesaurus. Most descriptors and related fields of data in the indexing record for genre, form, audience, time, and place form something very similar to the *LCSH* string, but in a way that is more controllable for "limit" commands, geographic aids, time lines, etc. Most search engines and computer-processing techniques decompose precoordinated strings before producing keyword indexes. Experts in vocabulary control will need to realize that new processing techniques will facilitate multiple views of subject heading languages and corresponding indexing records in bibliographic databases. How computer-based systems handle this information should be determined by experts in vocabulary control who can see the potential of new displays, new comparisons of retrieved sets, and relationships between indexing terms and free text.

There is widespread agreement on the next three principles:

> Consistency Principle: To achieve and maintain consistency, each new subject heading admitted into a subject heading language should be similar in form and structure to comparable headings already in the language (p. 293).

The A Posteriori Principle is renamed the Literary Warrant Principle in the memo, and states:

> To reflect the subject content of documents, the vocabulary of a subject heading language should be developed dynamically, based on literary warrant, and integrated systematically with existing vocabulary (p. 297).
>
> User Principle: To meet users' needs, the vocabulary of subject headings in a subject heading language should be chosen to reflect the current usage of the target audience for the subject heading language, whatever that might be, for example the general public or users of a specific type of library (p. 296).

Lois Mai Chan in her paper on practices in the United States reported on variations with the last principle at the Library of Congress.

The memo's grouping of two Application Principles leave a lot to be desired because they do not specifically treat the issue of citation order if a string is to be devised from the subject heading language and nothing is said about the difference between an enumerative and a synthetic subject heading language system. Clearly, this section of the Application Principles is still under revision. The memo adds a Subject Indexing Policy Principle that does not appear in the book. This principle states:

> To meet user needs and give consistent treatment to documents, indexing policies giving guidance for subject analysis and representation should be developed (p. 3).

The Specificity Principle, renamed the Specific Heading Principle, states:

> To increase the precision power of a subject heading language, a subject heading or a set of subject headings should be coextensive with the subject content to which it applies (p. 297).

Although Robert Fugmann presented a paper at this conference, it is not clear from the proceedings how well it was received. He spoke of mandatory indexing appended by free indexing—hybrid index languages—and he warned about the prospect of fully mechanized, algorithmic indexing. Had his words been heeded, the list of principles would have taken this more into account. Also, the report of significant changes in the British scene, by Ia McIlwaine, shows how far from these principles national subject heading schemes can digress.

Although there is less than universal agreement on these principles, and various national systems show a divergence of practices, I still hope that the goal of the working group will be reached—namely, to promote understanding of different subject heading languages by identifying commonalities underlying them and providing a structure for their comparative study. Efforts have been under way to carry out such a study since this conference. I hope more than library catalog systems will be investigated. The world of bibliographic control includes abstracting and indexing databases, and their subject heading languages are very important if

two other goals of the working group are to be reached, namely, the provision of a statement of what is meant by a good Subject Heading Language and the provision of a theoretical rationale for particular standards or guidelines for Subject Heading Language construction and application.

The working group has moved forward since this 1993 meeting, and it has carried out a survey of each principle as illustrated in statements and examples taken from various systems. Texts from sources published in languages other than English were translated. This survey should be published sometime in the next year. It will become another important document in the history of internationally accepted principles for subject heading languages. The working group is to be commended for its diligence, steadfastness, and cooperative spirit.

What impact the group's work will have remains to be seen because developments in cyberspace might outdistance it very soon. Hybrid systems promise to be the new standard, with clearly defined distinctions between pre- and postcoordinated systems a thing of the past. Our field may still have some impact, however, if we are seen to provide structure in the new information environment of hypertextual displays and graphic user interfaces.—*Pauline Atherton Cochrane, Graduate School of Library and Information Science, University of Illinois, Urbana-Champaign*

Academic Libraries as High-Tech Gateways: A Guide to Design and Space Decisions. By Richard J. Bazillion and Connie Braun. Chicago: ALA, 1995. 225p. $36 (ISBN 0-8389-0656-7). LC 95-14035.

Digital libraries are in our future. When the wholly digital research library will emerge, how aggressively we ought to work to achieve it, and how we might best do so are matters presently at issue. Certainly it is now technologically possible to create a true digital library, but a complex of psychological, social, legal, and economic barriers require that we proceed incrementally. Yet even if the wholly digital library were currently within our grasp, it is arguable whether it would be a desirable end when one considers the library as a physical place for the bringing together of intellectual, social, and service agents and values to create a whole much larger than the sum of its parts. But assuming the wholly digital library will happen at some point, and assuming we find it desirable from cognitive, social, and financial perspectives, the question remains: How do we get from here to there?

While *Academic Libraries as High-Tech Gateways* does not address this question directly, it does bring to the fore and at least touches on some important issues that afford us the opportunity to reflect on ways in which academic libraries are evolving in response to the digital revolution. The objects of study in this volume are the libraries of Brandon University (Manitoba) and Indiana University–Purdue University in Indianapolis; Lilly Library, Earlham College (Indiana); Leavey Library, University of Southern California; Wehr Library, Viterbo College (Wisconsin); and the Information Arcade, University of Iowa Library. All six facilities are in various ways innovative in their adaptation to, or incorporation of, digital technology in space, design, and services. These libraries might fairly be regarded as transitional libraries that collectively have taken a major step toward achieving the future library. Although Bazillion and Braun apparently intend this volume for the planner of a new facility, and so focus more on the practical aspects of planning and decision making than on the ideational bases for these and future libraries, they do provide several object lessons that all who contemplate the future of academic libraries would do well to consider.

It is unclear for whom exactly this book is intended, however, and it might be an uncertainty in the authors' minds that leads to a rather stark separation between the practical and the ideational. Two works in fact seem to be stitched together. The first, comprising chapters two, three, and four, is a detailed, highly practical (and for the hands-on project manager, potentially quite valuable) review of issues and options related to the building shell,