"Review of Audio Collection Preservation Trends and Challenges" was presented by Samuel Brylawski, at the time head of the Recorded Sound Section of the Motion Picture, Broadcasting, and Recorded Sound Division of LC. He talks about the death of analog preservation methods and the adoption of digital formats to preserve audio. He goes on to talk about digital repositories and mentions LC's creation of the National Audio-Visual Conservation Center in Culpepper, Virginia. Of course, today that facility is now up and running. Brylawski proposes collaboration with other institutions as a way to ensure that the vast amount of audio material held in the different archives will be digitized and stresses how these "archives should be exploring legal, as well as technical, methods to collaborate on preservation projects and share the products of those projects" (25). He mentions that Congress has charged the Library of Congress with building the National Digital Information Infrastructure and Preservation Program (NDIIPP) to help provide the legal and technical blueprint for institutions looking to establish legal means to share files as well as establish and administer storage and server networks. NDIIPP currently has more than ninety partners in its growing digital preservation network, which includes institutions both in the United States and abroad.

The chapter "Surveying Sound Recording Collections" by Hannah Frost provides a very useful guide to documenting audio collections and offers advice on how to proceed in preserving collections. Five years later, this paper is still useful for those doing a survey of their collections with the intent of launching a preservation program.

"Risk Reduction through Preventive Care, Handling, and Storage" by Alan F. Lewis is yet another chapter that holds up today. In it Lewis first lays out what he calls some "basic training," surveying the basic elements involved in machine-based audiovisual recording systems. Using laymen's language, he talks about audio recordings (or as he calls it the "stuff on the shelf"), the playback equipment, and the standards developed as a part of the invention of the system. After a brief discussion on the components of a typical audio recording medium, he launches into his "Nineteen Conservation Concerns." Without listing every concern, I can attest that such things as environment, physical security, and fire and water protection, are of great concern to any audio archive.

"The Case for Audio Preservation" by Karl Miller also addresses a number of concerns that confront audio archives today, the most important of which centers around the economics of audio preservation. For a multitude of reasons, today's economic climate is a lot bleaker than it was in 2003. Lack of financial support from the federal government and many state governments has resulted in cuts and layoffs in many colleges and universities dependent on those funds. More and more institutions are vying for grants from agencies like the National Endowment for the Arts and the National Endowment for the Humanities to fund audio preservation projects. Mr. Miller intelligently presents the economics of audio preservation by talking about essentials like hiring qualified staff to operate and maintain playback equipment, building a proper work space to do the transfer work, standards for audio storage, equipment, and the possible decision to outsource the work to a professional sound studio. Like the previously cited papers, this one also can be quite useful because the information is as valid today as it was in 2003. For example, Miller cites figures for outsourcing as costing between $90 and $100 an hour. Remarkably, according to one of my sources (Seth Winner Sound Studios) those figures have not changed much at all. Under the section on standards Miller states, "There are no mutually agreed upon standards for audio storage" (85). That may have been true five years ago, but in the interim the International Association of Sound and Audiovisual Archives' Technical Committee, IASA-TC04 has produced Guidelines on the Production and Preservation of Digital Audio Objects: Standards, Recommended Practices, and Strategies.[1]

As I stated in my opening paragraph, I am pleasantly surprised at how much of the information contained in the various papers that comprise *Sound Savings: Preserving Audio Collections* is still relevant to the field of audio preservation today. It is an essential contribution and a useful document that should be on the shelves of all audio archives.—Vincent Pelote (pelote@andromeda.rutgers.edu), Rutgers University, New Brunswick, N.J.

Reference

1. International Association of Sound and Audiovisual Archives, Technical Committee (IASA-TC), *Guidelines on the Production and Preservation of Digital Audio Objects: Standards, Recommended Practices, and Strategies* (Aarhus, Denmark: IASA-TC, 2004)

Subject Access to a Multilingual Museum Database: A Step-by-Step Approach to Digitization Process. By Allison Siffre Guedalia Kupietzky. Westport, Conn.: Libraries Unlimited, 2007. 165p. $45.00 softbound (ISBN 978-1-59158-444-5). Third Millennium Cataloging.

Subject Access to a Multilingual Museum Database is a guide to automating the collection management and cataloging functions for collections of artifacts that offers a survey of the environment and a detailed case study helpful to any museum or other cultural heritage institution at any stage of the automation process. The compact work "contains the 'whos, whats, wheres, whys, and hows' of choosing

and implementing the right computer system to manage museums' holdings, with specific emphasis on how to accomplish this in a multilingual setting" (1) for medium and large museums—what we would call automation in a library setting. As such, it is best approached as a project management handbook and should not be confused with a guide to subject access or digital imaging as the title suggests.

Allison Siffre Guedalia Kupietzky sets the stage by examining the differing approaches to description in libraries, archives, and museums. A brief preface illuminates the specific challenges of the museum community that have hampered efforts to automate and standardize collections data, including a necessary oriented to the "one-of-a kind distinctiveness" expressed through "subjective description" (x). The first two chapters lay the ground work by examining the challenges posed by the automation of museum collection records and touching on examples, both successes and failures, in conversion to computerized systems. The remaining chapters tackle the practicalities of a project to select and implement a museum collection management system.

In the opening chapters, Kupietzky raises many questions about standardization of museum data structures and content as a major challenge, but provides only a cursory survey of ongoing work and more recent developments in this field. Similarly, she frequently mentions the need for multilingual representation of data—noting, for example, the need for a database structure that allows for a multilingual lexicon—but does not provide the more extensive theoretical or practical examination of this topic I was expecting from the title. Instead, she focuses on the selection and implementation of software for the remainder of the book.

Kupietzky introduces a systematic approach for automating a museum collection she calls the Six-Step Activation Guideline for E-Kulture (SAGE-K) Process (93). The process includes the steps that precede full implementation: needs assessment, system selection, preparing the institution for change, preparing the data, piloting, and adjusting on the basis of outcomes. The process is designed to ensure that her three requirements for success are met. These requirements are that the correct software is selected, the software is well supported, and the automation project is managed by someone knowledgeable about software and museums.

The process is detailed through a case-study of the Israel Museum, where the author serves as collections database manager. I found it important to remind myself that this is a case study, as the steps and some of the details are presented generically and in the present tense, although it is clear that she is referring to the specific case of the Israel Museum in many passages. As Kupietzky leads us through the process, she provides valuable insights and practical considerations.

This practical approach is the highlight of many of the sections, which deal with technical, logistical, and organizational aspects. Kupietzky covers defining technical requirements for the software, a useful section for a systems novice. Unfortunately, this section also reveals the dated references throughout the book, with several cited items about computer systems dating back to 1999. In the logistical area, she explains the RFP process, illustrating it with an excellent table showing scoring of competing proposals.

While many works are idealistic about the condition of existing data or the possibilities for repurposing and modifying data, Kupietzky offers a more pragmatic approach. Several types of data were analyzed for conversion, and in some cases manual rekeying was identified as the best solution. Similarly, they determined that existing curator's catalog cards should be transcribed as written because the cost for normalizing that data would be too great. She also delves into the less-tangible conditions for success, in particular what she terms "socialization of the idea" (37) so that the organization will be able to accept and integrate the new processes once automation is achieved. Staff and staff training are stressed as crucial to project success. Kupietzky is particularly sensitive to the immense amount of staff time and associated cost necessary for a successful automation.

Chapter 10 is something of an epilogue addressing public access to the collections database after the SAGE-K process and implementation have concluded. Kupietzky points out the issues including the confidential nature of some information and the need to edit and package curatorial data for public viewing. Echoing the implementation process, she addresses the direct costs of paying staff to prepare date for public consumption and infrastructure costs of hardware and software. Kupietzky mentions a variety of methods of public access, from digital exhibitions to full access to the collection catalog, along with some more forward-looking ideas such as geographic information systems (GIS) integration or virtual reality. This chapter also includes the obligatory, but important and straightforward, coverage of copyright issues.

The eleven appendixes that follow the concluding remarks add to the practical orientation. From an annotated guide to monolingual thesauri to detailed instructions for manipulating spreadsheet data through Microsoft Access, there are many details of potential value to the museum system manager. I wish the glossary had been more comprehensive, particularly in regard to the Kupietzky's own usage, as many terms used have multiple interpretations and were not defined within the text.

In sum, Kupietzky covers the entire process of moving a museum

from being paper-based to using a comprehensive information system in great breadth, although generally not in depth, making this a useful survey. However, this wide-ranging approach is a drawback because the focus and coverage is not consistent throughout the book. In some sections, "digitization" appears to mean the "computerization" (15) of collections information, yet at other times "digitization" refers to digital imaging and preservation of digital files, such as in chapter 7. Although data automation and digital imaging may go together, each has its own set of requirements that bear separate and detailed consideration before being linked together. This book might have benefitted from focusing more tightly on the information systems aspects of museum automation. Nevertheless, Kupietzky raises important issues and provides a roadmap for decision making, and her bibliography provides many leads for the in-depth study on specific aspects of museum collection records automation. *Subject Access to a Multilingual Museum Database* should be read by museum automation project managers and serves as a good overview of the complexities and potential rewards of museum collection management systems for professionals involved with object collections.—*Morag Boyd (boyd.402@osu.edu), The Ohio State University, Columbus.*

UNIMARC and Friends: Charting the New Landscape of Library Standards: Proceedings of the International Conference Held in Lisbon, 20–21 March 2006. Ed. Marie-France Plassard. Munich: K. G. Saur, 2007. 133p. $95.00 (IFLA members $67.00); hardbound (ISBN 3-598-24279-4). IFLA Series on Bibliographic Control 30.

This volume brings together the texts of papers delivered at a special 2006 International Federation of Library Associations and Institutions (IFLA) conference, "to actively contribute to [the] important discussion on challenges and future directions of bibliographic standards, thus following IFLA strategic directions" (10). Twelve papers appear in these proceedings—although the preface claims "eleven excellent papers were presented" (11)—describing current and evolving activities in IFLA, national libraries, and affiliated institutions related to resource description.

The welcome address by José Afonso Furtado of the Calouste Gulbenkian Foundation, co-sponsor of the conference, sets the stage appropriately by stating, "The international agenda involving library standards encompasses more than just the latest topics of IT related standards," but also "a much larger wave of activity is taking place, in rethinking the conceptual and normative foundations of libraries" (13).

The proceedings are divided into three sections. The first, "Cataloguing Standards: Challenges and Future Directions," contains five papers. The first paper in this section, by John D. Byrum, chair of the International Standard for Bibliographic Description (ISBD) Review Group, describes work to revise and consolidate the individual, format-specific ISBDs. This entry describes the history and review process of the ISBDs in great detail, but is woefully short on detail regarding how ISBD is thought of as relating to content standards and data structure standards in use in libraries. The need to clarify the relationship of ISBD to the IFLA Functional Requirements for Bibliographic Records (FRBR) is referenced, but the only tangible result of this need described is a separate ISBD/FRBR mapping document, rather than any effect on the revised ISBD itself. Similarly, Resource Description and Access (RDA), the new Anglo-American cataloging code under development, is mentioned as likely to not require ISBD punctuation, but no effects of RDA development on ISBD are discussed, nor is the underlying issue of why ISBD would continue to prescribe punctuation at all in the current technological environment in which it is standard practice to separate data from its presentation. The second paper in this section, by Barbara Tillett, describes the activity of the IFLA Meeting of Experts on an International Cataloging Code (IME ICC) to develop a "code for code makers" (31), provides an overview of the FRBR model, and summarizes work to date on RDA. Tillet discusses how FRBR concepts and terminology fed into work on the IME ICC, but strangely does not indicate to what degree the IME ICC activity informed work on RDA, beyond stating that RDA will "refer to" IME ICC (37). The next paper, from Patrick Le Boeuf of the Bibliothèque nationale, describes FRBR and related initiatives, along with other conceptual models arising from the cultural heritage community. The final two contributions to this section, by Glenn Patton and Mirna Willer, describe the FRBR follow-on activity of the Functional Requirements and Numbering of Authority Records (FRANAR) Working Group, including the release of a draft report titled *Functional Requirements for Authority Records (FRAR)*, and changes to the UNIMARC Authorities format suggested by the *FRAR* draft.

The second section of this volume focuses on "MARC Portability and Reuse in the Open Web Environment." Michel Bottin introduces the BiblioML/AuthoritiesML languages, although does not comment on their obvious similarity to the Library of Congress's Metadata Object Description Schema (MODS) and Metadata Authority Description Schema (MADS). Vladimir Skvortsov's contribution describes the MarcXchange XML format (ISO25577), which provides for the embedding of fields allowed in UNIMARC but not in MARC21, and therefore expands upon MARCXML. The next entry, from representatives of the National Library of Portugal, sum-