of part 2 is on fiscal management. It may well be the most intimidating one, too, with its discussion of balance sheets, accounts and ledgers, journals, audits, encumbering, and so on. Serious students who have no background in bookkeeping or accounting will struggle to assimilate the material in this chapter. Nevertheless, the treatment is thorough and comprehensive, and will serve the student well as a resource when he or she begins working in an acquisitions department.

The third part of the book covers cataloging and processing in such a clear way that a beginning cataloger or even noncataloger has an excellent chance of understanding the material. The text is mostly free of jargon and, when it is used, terms are defined. The authors do a commendable job of discussing cataloging in simple language and at the right level of detail. "Overview and Decisions" opens part 3 with a general discussion of library cataloging and a brief preview of the chapters to follow. Chapters 14–20 form the heart of this final segment, delving into bibliographic description, access points, subject analysis, Library of Congress and Sears subject headings, Dewey, Library of Congress, and National Library of Medicine classification systems, the MARC format and metadata, and copy cataloging. These chapters make unfamiliar material accessible. One instance of the authors' ability to achieve this clarity appears in the chapter on description, in which they present a particularly lucid explanation of ISBD punctuation. If the student goes on to take a cataloging course, this explanation could be a useful complement to the treatment of the topic in a cataloging textbook; specialized texts sometimes focus too closely on the details of a topic to be able to provide the broader view that is needed. These seven chapters, without exception, are extremely effective in this regard. Chapter 21, "Processing Materials," is a worthy addition to the 2011 publication, and chapter 22 concludes the book with solid guidance for managing people and change; developing, adopting, and revising policy and procedure manuals; and acquiring the traits and skills of a good leader.

Outstanding features of the textbook include well-selected suggested readings for each chapter, though brief annotations when a title alone does not reveal its relevance to the chapter's topic would be helpful additions to these sections. Frequent in-text references to discussions of related issues in other chapters act as useful road signs for the reader. The review questions encourage rumination and review, and the plentiful examples, figures, and tables reinforce and illustrate the pertinent points covered in the text. The three indexes (topical, personal and corporate names,and figures and examples) are mostly sound, but contain some errors (e.g., the entry for "preservation" refers to a brief treatment in part 3 but fails to lead the reader to a more substantive one in part 2, and the "see from" reference from "licenses" to "order processes—licenses" is blind). The most significant weakness of this edition is lack of good copy editing. While generally not affecting comprehension, numerous syntactical and punctuation mishaps, the occasional faulty citation, and two tables whose locations in the text are reversed give the impression that the editorial work was done in a rush.

LIS students who already have some experience working in libraries are positioned to gain the most from this book; those with no related work experience will, of course, rely on the instructor to amplify and clarify various points. It will be of use to paraprofessionals who want to deepen their knowledge of technical services functions, to librarians working in one area of technical services who want to expand their knowledge of a different technical services specialty, and to librarians working outside of technical services who want a better understanding of cataloging or acquisitions work. Likewise, new technical services librarians who were unable to assimilate all that the text had to offer when they were taking the course can now return to it to fill in gaps. Finally, technical services librarians who have not kept up with the library literature will find the suggested readings to be an efficient way to identify sources to consult. All these learners, at various stages of knowledge, will find Evans, Intner, and Weihs to be adept, trustworthy guides to the past, present, and probable future landscapes of technical services work.—*Beatrice Caraway (bcaraway@trinity.edu), Trinity University, San Antonio, Texas*

Reference

1. American Library Association, "ALA's Core Competences of Librarianship," approved by the ALA Executive Board Oct. 2008, approved and adopted as policy by the ALA Council Jan. 2009, www.ala.org/ala/educationcareers/careers/corecomp/corecompetences/finalcorecompstat09.pdf (accessed June 21, 2011).

Digital Forensics and Born-Digital Content in Cultural Heritage Collections. By Matthew G. Kirschenbaum, Richard Ovenden, and Gabriela Redwing, with research assistance from Rachel Donahue. Washington, D.C.: Council on Library and Information Resources, 2010. 93p. $25 (ISBN 978-1-9323-2637-6). Also available as a free download from www.clir.org/pubs/abstract/pub149abst.html.

The purpose of this report from the Council on Library and Information Resources (CLIR) is to

> introduce the field of digital forensics to professionals in the cultural heritage sector; and second, to explore some particular points of convergence between the interests of those charged with collect-

> ing and maintaining born-digital cultural heritage materials and those charged with collecting and maintaining legal evidence. (2)

Digital forensics is the field concerned with gathering legally admissible evidence from a computer environment, and it can include activities such as discovering, authentication, and analyzing digital data. The authors also hope to start a dialogue between the digital forensics and cultural heritage fields to promote shared knowledge and identify areas of common research interests. The ninety-three page report is divided into four sections: introduction, challenges, ethics, and conclusions and recommendations. The report was drafted by the authors and reviewed in detail by experts from both the archives and digital forensics communities at the Symposium on Computer Forensics and Cultural Heritage held May 2010 in Maryland.

The introduction provides context for the work, including purpose and audience, terminology and scope, background and assumptions, and a section on prior work, which includes both a literature review and a summary of digital archival projects using digital forensic techniques. The similarities between the domains of digital archives and digital forensics are explored, as well as the differences between interacting with a physical object and the levels of abstraction inherent in digital objects for any archival or forensic activity.

The next section addresses challenges for digital archiving and digital forensics, and it comprises the bulk of the report. Even though it is the most technical section of the report, technical jargon is minimal, and readers do not need an extensive computer science background to understand the content. The first issue presented in this chapter is the challenge of dealing with legacy formats. The authors provide information about legacy file systems, legacy operating systems and applications, and legacy hardware. They address technical issues, such as how to keep original bit streams unaltered, and human issues, such as the influence of system requirements on personal file structure and naming conventions. The next challenge addressed in the chapter is the need to retain the context of the original digital files. The historical context of a digital file and its relation to external events and other archival materials is just as important as the context of the digital file within the operating system. Authors stress the need to image an entire disk and compare checksums with the original disk before beginning activities that may alter the original file. The challenge of establishing trust is next, and the authors acknowledge the trust that an archival institution or repository must establish and maintain. Traditionally, this is done by documenting provenance, and it is similar in the digital domain. Additionally, digital repositories have agreed-upon standards, such as the ISO standard *Reference Model for an Open Archival Information System (OAIS)*.[1] The need to establish authenticity also is a challenge familiar to the traditional archival community, and it is equally important for digital archives. Archivists should establish the origin of files ingested into the archive as well as the provenance and any threats to the originality of the files. After files are transferred to the repository, archivists need to ensure that original files will not be tampered with. The fifth challenge addressed in this section is the recovery of lost data. Unless a drive is physically destroyed, it may be possible to recover files or data that have previously been deleted or written over. However, whether these data were intended to become part of an archival collection needs to be addressed before serious time and effort are put into recovering this data. The final challenge the authors address is the problem of determining the costs of providing an infrastructure for digital forensics in an archival setting. Because the field is relatively new and many variables exist, the current models are probably too generic to provide adequate models to determine short-term or long-terms costs for accessioning digital archives.

Although the section on ethics is smaller than the section on challenges, it is particularly important because this is the area with the most significant differences in practice between digital forensics and digital archiving. Archivists need to be concerned with not only what is possible in the realm of digital forensics but also what is ethical and appropriate for archival activities. The authors address security of a donor records first, emphasizing the need to demonstrate to donors that access to restricted materials is well managed, access to archives is well documented, records are not misused, and unauthorized access is not possible. A donor's right to privacy is another ethical issue encountered by digital archives, and authors stress that just because information is available does not mean that it necessarily should be provided to the public. Additionally, the wishes of the donor may or may not be served through significant exploration and extrapolation of digital files, and archivists should work with the donors, when possible, to ensure that their wishes are respected.

The final section of the report lists conclusions and recommendations reached by the authors and attendees of the Symposium on Computer Forensics and Cultural Heritage. The most compelling conclusion reached by all parties was that digital forensics activities should not be adopted into the cultural heritage community in their entirety. Instead, digital forensics offers many best practices and tools that are helpful for digital archives, but archives need to establish the boundary at which digital forensics is

no longer appropriate and in the best interest of their donors and patrons. The authors conclude the report with a list of next steps to encourage forward momentum in the field.

The report also includes a comprehensive list of references and four appendixes. Appendix A uses table formats to compare several forensic software packages. Appendix B also uses tables to compare forensic hardware. Appendix C lists further resources, including books, technical references and reports, organizations, selected projects, and journals. Appendix D summarizes the Symposium on Computer Forensics and Cultural Heritage. Additionally, the report contains several independently authored full-page sidebars exploring key topics in further detail.

Although I often found the writing style of the report to be dry, it is well written, comprehensive, avoids technical jargon, and should be accessible to librarians who lack significant technical backgrounds. The report conveyed a wealth of information from the digital forensics field that is appropriate for archivists beginning to explore the complexities of digital archives.—*Amy S. Jackson (amy jacks@unm.edu), University of New Mexico, Albuquerque*

Reference

1. Consultative Committee for Space Data Systems (CCSDS), "Recommendation for Space Data System Standards," in *Reference Model for an Open Archival Information System (OAIS)*, CCSDS 650.0-B-1, Blue Book Issue 1 (Washington, D.C.: CCSDS Secretariat, 2002), http://public.ccsds.org/publications/archive/650x0b1.pdf (accessed May 31, 2011).

Digital Library Futures: User Perspectives and Institutional Strategies. Edited by Ingeborg Verheul, Anna Maria Tammaro, and Steve Witt. Berlin; New York: De Gruyter Saur, 2010. 150p. $135 hardcover (ISBN: 978-3-1102-3218-9).

Digital Library Futures: User Perspectives and Institutional Strategies compiles the proceedings of a one-day conference held at the University of Milan in 2009. The conference focuses on how international institutions are addressing changes in the information landscape and in user behavior on the web. This volume provides introductory knowledge about digital libraries while touching on current initiatives, making the text a useful resource for both beginning and experienced library practitioners.

In the welcome address, Elio Franzini sets the tone for the day's proceedings by retelling a scene about the reclusive and book-obsessed philologist, Peter Kien, from Elias Canetti's modernist novel, *Auto da Fé*.[1] In the scene, Kien dreams all his books have burned and suddenly realizes that the only safe place for them is in his mind. Franzini uses Peter's realization as an analogy, emphasizing the need for cultural institutions to develop strategic means to supply information to users in the digital age. As Franzini points out, digital media is in some ways replacing reliance on physical artifacts like books; therefore the preservation of culture and knowledge starts to depend more on how effectively this content is delivered to users in ways they want and understand.

Digital Library Futures separates the proceedings into three sessions. In the opening session, three papers about online user assessment are presented. David Nicholas, head of the information center at University College London, describes his findings collected over the past seven years that show user habits via log analysis of various scholarly platforms, such as Elsevier's ScienceDirect. According to Nicholas, users of the web typically "power browse" and jump from site to site, amassing large amounts of information with very little depth, similar to the way search engines harvest data from digital libraries. Daniel Teruggi then discusses an actual user assessment done on Europeana digital library. Teruggi delves into the various evaluation measures, from online surveys and feedback boxes to login analysis and usability testing, which the project team uses to determine whether Europeana (www.europeana.eu) meets user needs. This assessment work, Terruggi states, uncovers important knowledge about how users perceive the portal; namely, they desire the ability to generate and interact with its content, which leads the project team to rethink the purpose and goals for Europeana. Elke Griefender, the final contributor in the session, discusses problems with online user assessment. Griefender analyzes data collected by Denise Troll Covey in her 2002 Digital Library Federation–sponsored paper, "Usage and Usability," and other recent user studies.[2] Her investigation reveals that scholars are ineffectively using research methods in the virtual environment and need more training and experience. Griefender finds that researchers oftentimes are using quantitative methods to answer questions better addressed by qualitative methods, or oftentimes they cannot interpret the qualitative results, so they fall back on old methods that do not work in a virtual environment.

The second session turns from research methods and assessment to current digital libraries on the web and their usability. In the first of two papers, Einar Røttingen, professor of music performance at the Grieg Academy, relates his experience using the Edvard Crieg Collection online. He tells the story of how online access to Crieg's autographed manuscripts of Ballade op. 24 allowed him to trace the evolution of the song and make key decisions about how to play it. Røttingen concludes by emphasizing the value of these online music libraries for composers and scholars and the need for collaboration to improve discoverability and content depth on