

EAD as an Archival Descriptive Standard

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Abstract: Encoded Archival Description has a great deal of potential as an archival descriptive standard. Not only is it a data structure that is widely applicable to a variety of institutions and collection types on an international scale, it may also foster common practices regarding data content for finding aids. To become an official SAA descriptive standard, EAD must pass through a rigorous internal review process and be accepted by the archival community.

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“THE MARC ARCHIVAL AND MANUSCRIPTS CONTROL (AMC) format has the potential to change the lives of archivists forever,” wrote Steve Hensen at the beginning of his paper on the use of standards in the application of the AMC format.¹ Twelve years later the same could easily be said of Encoded Archival Description, the next logical step in the evolution of archival descriptive standards and the answer to MARC for finding aids. Just as the MARC format was the mechanism that provided a consistent structure for archival catalog records and set archivists on a course toward acceptance of a host of bibliographic standards, so EAD will now be the impetus that leads us toward standardizing the structure and possibly the content of finding aids, and it may well unite the international archival community in the process.

Developing a standard for finding aids is hardly a new idea. Archivists have sought mechanisms to standardize archival description for over a century,² but the most recent efforts to standardize and automate began with SPINDEX II in the late 1960s. This was followed a decade or so later by the National Information Systems Task Force (NISTF) and the creation of the “Data Elements Dictionary”³ that formed the basis of the MARC AMC format. In 1978 the publication of *AACR2* caused the Library of Congress to draft an alternate cataloging code for archives and manuscript materials, and in 1983 the first edition of *Archives, Personal Papers, and Manuscripts (APPM)* was published.⁴ The revised edition of *APPM* (1989) fully merged the data structure to the data content by supplying extensive MARC examples for the cataloging rules. Throughout these two decades, many archivists regarded standards for finding aids as an impossibility, arguing that variations in the nature of holdings and the needs of users dictated basic differences in approach. Along with a general resistance to “library practices,” these same arguments were made against the development and adoption of MARC. Yet there were efforts afoot in the Society of American Archivists, the National Archives, and the Library of Congress to create descriptive standards,⁵ and by the early 1980s archivists were using word processing programs and databases at the local level in an effort to control the structure of their finding aids.

At about the same time, the Canadian archival community also was working diligently on descriptive standards. The Bureau of Canadian Archivists published *Toward Descriptive Standards: Report and Recommendations of the Canadian Working Group on Archival Descriptive Standards* in 1985.⁶ As a direct result of the recommendations artic-

¹Steven L. Hensen, “The Use of Standards in the Application of the AMC Format,” *American Archivist* 49 (Winter 1986): 31.

²For a concise history, see the “Chronology of Key Developments in the Evolution of Standards for Archival Description” presented as part of the “Report of the Working Group on Standards for Archival Description,” *American Archivist* 52 (Fall 1989): 441–50.

³“Data Elements Used in Archives, Manuscripts, and Records Repository Information Systems: A Dictionary of Standard Terminology,” in Nancy Sahli, *MARC for Archives and Manuscripts: The AMC Format* (Chicago: Society of American Archivists, 1985) (now out of print).

⁴Steven L. Hensen, *Archives, Personal Papers, and Manuscripts: A Cataloging Manual for Archival Repositories, Historical Societies, and Manuscript Libraries* (Washington, D.C.: Library of Congress, 1983); second edition published by the Society of American Archivists in 1989.

⁵Implementation of standardization was at least partly responsible for LC’s efforts to develop the Master Record file (1964–70), the National Archives’ use of SPINDEX to produce an index to the *Papers of the Continental Congress* (early 1970s) and NHPRC’s use of SPINDEX as the basis for the *Directory of Archives and Manuscript Repositories in the United States* (1974–78), and the publication of *Inventories and Registers: A Handbook of Techniques and Examples* (1976) by SAA’s Committee on Finding Aids.

⁶*Toward Descriptive Standards: Report and Recommendations of the Canadian Working Group on Archival Descriptive Standards* (Ottawa: Bureau of Canadian Archivists, 1985).

ulated by the Canadian Working Group in its report, *Rules for Archival Description (RAD)* was issued over a period of several years beginning in 1990.⁷ While the Canadians chose to focus on descriptive theory and content rather than on data output, and even though *RAD* follows very closely the structure of *AACR2*, implementation of *RAD* to this point in time has focused primarily on finding aids, not catalog records.

In the late 1980s the Working Group on Standards for Archival Description (WGSAD) was formed to devise "the tools and procedures for evaluating, adopting, and maintaining description standards for the profession."⁸ The working group's recommendations resulted in the establishment of a standards board within SAA, publication of a handbook on standards related to archival description,⁹ and the Society's participation in the National Information Standards Organization (NISO), which is the principal U.S. standards-developing body for libraries and publishers. In describing the evolution of archival description, the report of the working group states, "The strong consensus that now exists on the need for and desirability of standards for archival description has emerged only recently and, when viewed against opinions widely held only a decade or two ago, is just short of revolutionary."¹⁰ Why then, has it taken archivists nearly another decade to begin to implement a standard for finding aids?

EAD in the Larger Standards Setting

In one sense, EAD is already a standard, since its Document Type Definition (DTD) is compliant with the International Standards Organization (ISO) 8879 Standard Generalized Markup Language (SGML), a metalanguage for constructing markup languages. EAD also utilizes and is compatible with other technical and descriptive standards, including the ISO character sets, graphic notations such as TIFF and GIF, and the International Standard Archival Description General (ISAD(G)). Version 1.0 of EAD also will be compatible with XML (Extensible Markup Language), which may replace HTML as the standard for the presentation of documents on the World Wide Web. More importantly, however, in order to achieve the status of a descriptive standard within SAA, EAD must be embraced by the archival community as the most appropriate mechanism for the long-term electronic storage of finding aids and for their presentation over the Internet. Through the acceptance and use of EAD as the standard for the *structure* of archival finding aids, the archival community also can work toward establishing a standard for their *content*.

The library community began to standardize the descriptions of books and other traditional library materials for a very compelling reason—to share the burden of cataloging those materials. Archivists have equally compelling reasons to standardize the descriptions of the unique materials in their holdings. Aside from the pragmatism of making our finding aids intelligible to researchers not only within an institution, but also among repositories, by presenting consistent types of information in a relatively uniform paper format, we now live in a technological world that demands further standardization to

⁷*Rules for Archival Description* (Ottawa: Bureau of Canadian Archivists, 1990).

⁸Lawrence Dowler, "Introduction" to "Archival Description Standards: Establishing a Process for Their Development and Implementation: Report of the Working Group on Standards for Archival Description," *American Archivist* 52 (Fall 1989): 432.

⁹*Standards for Archival Description: A Handbook*, compiled by Victoria Irons Walch (Chicago: Society of American Archivists, 1994).

¹⁰"Report of the Working Group on Standards for Archival Description," *American Archivist* 52 (Fall 1989): 443.

facilitate the sharing and retrieval of data. The general clamor for some form of indexing and control of the vast array of Internet resources should be proof enough of that fact. Finding aids generally are not transitory documents; barring the acquisition of additional materials for a collection, a finding aid can serve generations of researchers. The need to migrate data over time and across platforms is therefore an important aspect of standardization, as well as a strong rationale for the use of EAD to encode this data.

EAD was created *by* archivists *for* archivists, which gives it several advantages over other data structures that archivists might employ. First, we are not reliant on any software vendor or other outside organization to set or maintain this standard for us. Anyone who has tried to migrate data over several versions of HTML, of a database program, or even of a word processing program, understands how frustrating data migration can be. Some archivists tried to shoehorn entire inventories into the MARC AMC format soon after its development; their lack of success is an excellent illustration of the critical need for a good fit between the data and the data structure. The hierarchical nature of SGML's nesting capabilities and the hierarchical structure of finding aids is a good fit. Second, EAD has very broad appeal. Currently the museum community, the medieval manuscripts community, and the archival communities in several countries are considering EAD as an encoding standard for their collection descriptions. Third, EAD is very flexible; while it was designed to accommodate the types of finding aids typically referred to as inventories and registers,¹¹ it is adaptable enough to be generated as output from relational databases or word processing programs. This flexibility and adaptability results from the fact that EAD is solidly based on the content of finding aids rather than their presentation format. The EAD development team made a conscious effort to accommodate existing archival descriptive practices while looking toward a future that embraces standardization.

Any discussion of Encoded Archival Description as a standard must consider multiple aspects of standardization: the standards process within SAA; the creation of formal documentation to support the standard; the broad acceptance of EAD by the archival community; and the suitability of EAD as a data structure standard and as the basis for a data content standard. Accomplishing this last aspect will require a close examination of current finding aids, exploration of the optimal level of markup for display and retrieval, and the establishment of best practices.

The Standards Process in SAA and Beyond

The Society of American Archivists controls the intellectual component of EAD, which means that suggestions for additional elements, elimination of elements, modifications of attributes, and any other changes to the Document Type Definition (DTD) will originate from archivists, be reviewed by archivists, and be implemented by archivists. Suggestions for changes to the DTD will be funneled, at least for the time being, through the Committee on Archival Information Exchange's EAD Working Group. The working group currently comprises the original Bentley Library development team (whose contributions to EAD development are described in Janice Ruth's article in this issue of the *American Archivist*), as well as representatives from RLG and OCLC, from Canada and

¹¹See "Ann Arbor Accords: Principles and Criteria for an SGML Document Type Definition (DTD) for Finding Aids," *Archival Outlook* (January 1996): 12-13.

the United Kingdom, and from several other institutions in the United States.¹² The Society of American Archivists should eventually establish a permanent body, perhaps modeled on the American Library Association's MARBI (Machine-Readable Bibliographic Information) Committee or the USMARC Advisory Committee of the Library of Congress (though perhaps on a smaller scale), to continue the development and maintenance of the DTD.¹³ The Library of Congress¹⁴ has agreed to work closely with the Society to maintain and distribute the DTD and other documentation, including EAD Technical Document #2 (the Tag Library) and Technical Document #3 (the Application Guidelines).

Maintenance and support for EAD will be a new type of endeavor for SAA. It is one thing to review standards developed by other organizations and endorse them for use by the archival community; maintaining an internally developed standard, on the other hand, requires a stable infrastructure and ongoing financial support. We can learn from the model provided by MARBI and its strong working relationship with the Library of Congress. The members of the EAD maintenance body within SAA must have a thorough knowledge of EAD structure and its application. The financial backing for the development and maintenance of EAD up to this point has come from a variety of sources, including the federal government and private foundations who have responded favorably when funding was requested for a specific purpose.¹⁵ For EAD to become a robust and viable standard, however, this piecemeal funding scenario cannot continue.

Before EAD can be endorsed as a formal SAA standard, it must pass through a fairly rigorous review process. The SAA Standards Board is concerned primarily with the process of standards development, review, and approval for standards created both within and outside the Society. The Standards Board "recognizes the central importance of consensus to the development of strong standards. However, consensus on a specific standard may not always equate with unanimous and unqualified approval by all concerned, for in most cases that will be difficult to achieve."¹⁶ To achieve as much consensus as possible, the standards review process involves activities ranging from the establishment of the need for the standard, publication of notices in *Archival Outlook* regarding the initiation and development of the standard, distribution of the full text of the proposed standard in SAA

¹²As of September 1997, the Working Group included Randall Barry (LC Network Development/MARC Standards Office), Jackie Dooley (UC Irvine), Ricky Erway (RLG), Michael Fox (Minnesota Historical Society), Anne Gilliland-Swetland (UCLA), Steve Hensen (Duke University), Kris Kiesling (University of Texas, chair), Eric Miller (OCLC), Chris Petter (University of Victoria, Canada), Daniel Pitti (University of Virginia), Janice Ruth (LC Manuscript Division), Rob Spindler (Arizona State University), Meg Sweet (Public Record Office, UK), Rich Szary (Yale University), Sharon Thibodeau (NARA), and Helena Zinkham (LC Prints and Photographs Division).

¹³In accordance with the recommendations of the Task Force on Organizational Effectiveness and with approval of SAA Council (June 1998), the Committee on Archival Information Exchange will evolve into a technical subcommittee on descriptive standards under the new Standards Committee. It is not clear at the time of this writing whether the EAD Working Group will continue as a component of this new subcommittee, or if a separate subcommittee within the Standards Committee will be responsible for the continued revision and maintenance of EAD.

¹⁴LC's Network Development/MARC Standards Office also maintains the documentation for the US-MARC format. While LC also has considerable decision-making authority regarding the intellectual structure of MARC, that will not be the case with EAD.

¹⁵Between 1993 and 1997, the EAD effort received funding from the Department of Education, the Commission on Preservation and Access, the Council on Library Resources, the National Endowment for the Humanities, the National Digital Library, the Mellon Foundation, and the Delmas Foundation.

¹⁶"Standards Development and Review in the Society of American Archivists: Introduction and Procedures for Review and Approval of an SAA-Developed Standard," developed by the Standards Board and approved by SAA Council, June 1995, 2.

publications and elsewhere, and formal invitation to representatives within SAA and from appropriate outside organizations to participate in the development and/or review of drafts. These latter groups, in turn, are expected to seek input from a wide audience. If the reviewing bodies support approval, the Standards Board makes a recommendation to SAA's Council. The final step in the process is endorsement of the proposed standard by the Council.

Beyond the SAA standards sphere, the National Information Standards Organization has more than once invited the Society of American Archivists to submit EAD for NISO approval. It was felt that submission during beta testing was inappropriate, but version 1.0 may be sent forward. The development of EAD also is being closely monitored, and its effectiveness tested, in archival repositories in Canada, in the United Kingdom and various European countries, and in Australia and New Zealand. Kent Haworth, one of the principal architects of RAD, has characterized EAD in the following way:

One of the reasons why I am so taken with the EAD is that it accommodates multi-level description, which is so vital to the application of RAD....The development of the EAD is a very positive development for the archival community, not only here in Canada and in the United States, but also internationally. Some very exciting projects are underway in the U.K., for example. I think that pilot projects need to be undertaken, in much the same way as the Berkeley Project was developed; to test, experiment, and enhance our methods for making available information in our archives. Most importantly, we need to advance our knowledge and understanding of these developments and as much as possible avoid taking easy roads out that in the end will lead us to dead ends.¹⁷

EAD Documentation

Descriptive standards require formal documentation. The EAD documentation will comprise four technical documents: the DTD, the tag library, application guidelines, and possibly a compendium of practice.

Technical Document #1 will be the DTD itself, the "rules" that must be followed in creating a valid EAD "instance," which is to say, a validly encoded finding aid. As the maintenance agency for EAD documentation, the Library of Congress will make the current version of the DTD available electronically. The DTD can be downloaded and used by anyone who wishes to do so. The EAD development team has received queries from repositories and individuals requesting permission to "adapt" EAD for their own particular uses. Adaptation is possible, of course, but then the DTD would no longer be Encoded Archival Description, and the entire purpose of standardization would have been abandoned. Naturally, EAD will evolve over time, but only within a conscientious standards review process.

Technical Document #2 is the EAD Tag Library, the EAD equivalent of the *USMARC Format for Bibliographic Data*. The Tag Library lists, in alphabetical order by their generic identifiers (tag names), all of the data elements that comprise EAD. Each

¹⁷E-mail message from Kent Haworth to ARCAN-L, the Canadian archives listserv, 12 September 1997. The discussion involved the implementation of the Canadian Archival Information Network (used with permission).

element entry contains a brief description of the element's purpose and a list of attributes that can be used to modify the element. To provide the hierarchical context for the use of a specific element, each element entry also lists other elements within which the element may occur (May Occur Within), as well as other elements that may be used within the element (May Contain). Finally, most elements in the Tag Library include one or more examples illustrating use of the element.

In an effort to keep the number of elements to a minimum, EAD makes extensive use of an SGML feature known as "attributes." Attributes are used to modify elements, making it possible to restrict the universe of elements to the most significant structural aspects of finding aids. For example, the use of attributes enabled the development team to focus on the structure of finding aids without being concerned about whether the highest level of description was a collection, a record group, or a series. The same element, Component <c>, is used to encode every level of description after the highest one in a given finding aid, but a "level" attribute is used to define each level by modifying the meaning of the <c> element. The list of options for the level attribute includes such intellectual groupings as collection, fonds, record group, series, and item. The DTD requires that a level be specified for the highest level of description in the finding aid, but the attribute is optional thereafter. The alternative approach to the use of attributes would have been the creation of separate elements for collection, record group, series, and so on. This technique of making elements do multiple duty through the use of attributes also enabled the development team to avoid the use of certain ambiguous archival terms when creating the element names; it would have been quite controversial, for example, to attempt to define what a "series" is.

Technical Document #3, the EAD Application Guidelines, articulates recommended practice for the use of the most basic and important EAD fields. For example, Date of the Unit, the <unitdate> element is to be used only for single, inclusive, or bulk dates for the archival materials being described. The Date <date> element, on the other hand, is to be used for other types of dates, such as a date of publication or the date of creation of the finding aid. The Digital Archival Object <dao> element should be used only for links to digitized surrogates of archival materials described in the finding aid, while other types of pointers and links apply to nonarchival documents and images. Elements grouped within the Control Access Headings <controlaccess> element should be used for controlled vocabulary, such as personal names from the *LC Name Authority File* or genre headings from the *Art and Architecture Thesaurus*. The Application Guidelines can be viewed as an initial step toward establishing a content standard for EAD.¹⁸

The Application Guidelines also address a repository's management of EAD in the form of FAQs (Frequently Asked Questions). Particularly useful for those wondering about implementing EAD in their institutions are FAQs that address "Do we still need to do MARC cataloging?" and "Where do we start?" The guidelines also contain a number of appendices, such as the "Ann Arbor Accords" (the design principles that were followed by the Bentley development team), a bibliography, and a glossary.

A compendium of practice is under consideration by the EAD Working Group as Technical Document #4. The compendium would include finding aids from a variety of re-

¹⁸A draft set of Application Guidelines, prepared by Anne Gilliland-Swetland and Thomas A. LaPorte, is available at <<http://scriptorium.lib.duke.edu/findaids/ead/guidelines/index.html>>. The EAD Working Group will begin work on the final version of these guidelines after EAD version 1.0 and the final EAD Tag Library are issued in late summer 1998.

positories representing various types of collections; it would provide guidance on tagging issues and establish parameters for an appropriate level of markup. The compendium would serve the same purpose as did *MARC for Archives and Manuscripts: A Compendium of Practice*, which introduced archivists to desirable styles of practice for creating MARC AMC records.

EAD as a Data Structure Standard

Janice Ruth's article in this issue of the *American Archivist* outlines the structure of EAD, which was formulated by the development team over the course of a week at the Bentley Library in July 1995, working from the Berkeley Finding Aid Project's FindAid DTD. Since the EAD structure was created, it has remained quite stable through alpha and beta testing. The beta DTD was subjected to fairly rigorous testing by a number of institutions in the United States and abroad for a period of one year; it was then opened to comments and suggestions for change in the summer of 1997.¹⁹ No major structural changes were suggested by any of the repositories who responded to the call for comments.

The high-level structure of EAD is such that most archivists readily recognize within it components of the finding aids that they routinely create in their descriptions of fonds, collections, record groups, and series. The structure is broadly applicable to all types of materials and is useable by any type of repository, whether the collecting focus is primarily textual or object-oriented, government or organizational records, private papers or historical manuscripts, photographs or museum objects, or a combination of all of these. Through the course of numerous EAD workshops, which have been attended by individuals from repositories large and small, not a single participant has said that EAD's structure does not make sense or that it cannot be applied to the finding aids at their repository. Given the results of institutional testing and the feedback received from workshop participants, it would seem that EAD is a viable data structure standard for finding aids that can be readily accepted by the archival community.

EAD has already formed the basis for a number of cooperative projects. RLG's digital collections project, "Studies in Scarlet,"²⁰ has encoded finding aids for materials at seven institutions relating to marriage and sexuality in the United States and the United Kingdom from 1815 to 1914, linking them to collection-level records in RLIN and to digital surrogates of collection materials. The University of California system has a project underway to encode finding aids in the repositories of all nine UC campuses, in which the campuses that have the resources to mark up finding aids are assisting the campuses that lack those resources.²¹ The goals of the UC project are to develop an implementation toolkit for conversion of existing finding aids and encoding new ones and to create a prototype union database of finding aids. The American Heritage Virtual Archive Project, an NEH-funded cooperative endeavor between Stanford University, the University of California at Berkeley, Duke University, and the University of Virginia, will develop a "demonstration system, which will provide a test bed to evaluate both the effectiveness of the prototype's 'virtual archive' in providing access to distributed digital library resources, and the feasibility of the decentralized 'real world' production methods that the project

¹⁹SAA's EAD Working Group sent out a formal request for comments via the EAD listserv (ead@loc.gov), the official venue for discussion about EAD, on 23 June 1997, and collected comments from the list until 22 August 1997.

²⁰For a description of the "Studies in Scarlet" project, see <<http://www.rlg.org/rlgnews/news40.html>>.

²¹The UC project grant proposal is available at <<http://sunsite.berkeley.edu/FindingAids/uc-ead/grant.html>>.

will use to create it.”²² The project will also establish, as Daniel Pitti has aptly put it, “an acceptable range of uniform practice” among these four institutions.

Archivists in small repositories (especially those that are not part of a larger institution) lacking the resources to implement EAD have expressed frustration at not being able to “keep up.” It may serve as a useful parallel to note that not all repositories have been able or willing to implement MARC in an on-line system. Some have chosen to use MARC-compatible systems such as Minaret or MicroMARC, and others have chosen not to create catalog records at all, even in a manual system. Similarly, archivists can approach use of EAD in whichever way best suits their particular situations. If the resources exist, this can be a full encoding and publishing implementation, enabling the repository to reap the benefit of the stable long-term storage for electronic finding aids that SGML provides, as well as make the finding aids available via the World Wide Web. If resources are limited, a phased approach, in which the finding aids are marked up in EAD but not immediately made available on the institution’s own server, might be an option. If no resources are available, repositories can at least take advantage of the establishment of the standard data structure that EAD provides by using it to model their paper-based finding aids, as Dennis Meissner describes in his article appearing in the fall 1997 issue of the *American Archivist*.

EAD as the Basis for a Content Standard

In fall 1996, I presented a seminar on EAD to David Gracy’s archives class at the University of Texas. As we were leaving the session, Gracy voiced his concern that repositories would use EAD in the same way that they are using HTML to make finding aids available on the Web—just marking up whatever they currently have in paper format and putting it on a server for anyone who might stumble across it. A valid concern! In their eagerness to put finding aids on the Web, some repositories are doing just that, with little regard as to whether the finding aids are “good” or complete descriptions of the materials, whether they provide the appropriate contextual information needed to understand the materials, and without thinking through the transition from a paper-based to an electronic presentation format, let alone considering the kind of background information that remote users need in order to make sense of what a finding aid is in the absence of a reference archivist to interpret it for them.

Some institutions, such as the Minnesota Historical Society, are taking the time to reengineer their finding aids—to ensure that the information is provided in a logical progression, that the finding aid provides contextual as well as content information, and that there is some explanatory text or help for users embedded in each finding aid. Like many repositories, the Harry Ransom Humanities Research Center at the University of Texas has experienced an increase in user expectations as a result of putting our finding aids on the Web in HTML. Several researchers have contacted us, asking why they couldn’t simply click on a folder title to see that folder’s contents. We will be adding some explanatory text to the finding aids stating that we have not scanned the collection materials to make them available on-line—information that certainly is not needed when researchers use the finding aids in our reading room.

²²See the American Heritage project’s website at <<http://sunsite.berkeley.edu/amher/>>.

After more than a dozen years of experience with the USMARC format, archivists readily recognize the advantage of using controlled vocabularies and standard data elements in a bibliographic database. Applying content standards to finding aids, however, may be a new concept to many. While EAD does not, for the most part, require that elements be presented in a given order, it does support a logical progression of information that is already present in many finding aids. As is true of MARC, many EAD elements are repeatable and can be applied at any level of description, from the collection or fonds level down to the item level. And, like MARC, only a handful of elements are required to produce a valid EAD document instance. Employing only the required elements does not mean, however, that the MARC record or the encoded finding aid are good or even adequate representations of the collection. It is perfectly possible to have a parsable EAD-encoded document that contains nothing but empty elements; the SGML authoring software can detect only that the required elements are present and that certain elements are in the correct order. There are no MARC police, as the saying goes, and there won't be any EAD police either. Each repository will be responsible for ensuring that the elements are used appropriately in their encoded finding aids; for example, that the Biography or History <bioghist> element actually contains contextual information such as a biographical sketch or agency history, rather than text that is more appropriately coded as Administrative Information <admininfo> or Scope and Content <scopecontent>.

The absence of a data content standard for finding aids made the formulation of EAD as a data structure much more difficult than it might have been if a content standard had been in place. While EAD had to be designed to accommodate existing archival descriptive practices in order to encourage archivists to understand and implement it, the development team also intended to foster a data content standard for finding aids. Through examination and markup of some two hundred finding aids, the Berkeley Project reaffirmed what archivists already knew but were unwilling (or unable) to admit: that common practices existed and were being followed by the participating repositories. Many of the same structural and intellectual elements are present across these finding aids—biographical sketches and organizational histories, scope and content notes, series descriptions, and container lists—regardless of what the elements are called or the order in which they are presented. In many ways, the structure of finding aids reflects their content; EAD elements focus as much on that intellectual content as they do on structure.

Each repository has been and will continue to be responsible for establishing its own level of markup. In an on-line environment, however, the issue of retrievability across finding aids from single or multiple repositories will dictate some common practices. EAD will support as minimal or as extensive a level of markup as archivists wish to apply. We need to decide as a community what the optimal level of markup will be; this decision must be informed by a solid familiarity with how the markup affects display and retrieval. A basic question that has yet to be answered is how cost effective or necessary it will be to mark up occurrences of dates of collection materials or of an individual's name every time they appear in a finding aid. The repositories that have been testing EAD at Yale University, for example, are taking a very minimal approach to markup for their initial effort, as Nicole Bouché reports in her article in the fall 1997 issue of the *American Archivist*. Their feeling is that if researchers and staff learn that a more extensive level of markup is required, they can revisit the files and encode more of the text to support more sophisticated retrieval needs. An optimal level of markup can be identified only through experience with encoded finding aids in a variety of on-line environments.

Wide variation in institutional tagging practice has already been seen in various implementations of EAD, pointing to the critical need for a content standard. The element definitions in the tag library must be clear and leave little room for misinterpretation if a content standard is to be engendered. Efforts to establish common practices are occurring at Harvard University, where eight of the forty-nine archival repositories are working together;²³ the American Heritage Project has created a set of conversion guidelines,²⁴ which also has been adopted for use in the University of California project; and the Research Libraries Group is working on a set of guidelines for its members. As more cooperative EAD projects are initiated and as more repositories get some experience with EAD, best practice will eventually be established.

Conclusion

Data structure and data content standards provide us with sets of rules through which we as archivists can readily communicate and comprehend each other's collection descriptions; even more importantly, they enable users to recognize and interpret similar types of information as they conduct their research from institution to institution. Michael Fox has stated in many of the Research Libraries Group's FAST (Finding Aids SGML Training) workshops that if EAD were to go away tomorrow, it would still have been worth the effort just to focus on the structure and content of finding aids. Perhaps the greatest and most enduring benefit of the entire EAD development process will have nothing to do with technology, but instead will be that we ultimately become convinced that there are common structural and intellectual elements in all types of archival finding aids and that a single data structure can support them. Perhaps all we needed was a catalyst that was more compelling than any we had yet encountered.

²³The Houghton/Radcliffe guidelines are available at the Harvard Digital Finding Aid Project website, <<http://hul.harvard.edu/dfap/>>.

²⁴The "EAD Retrospective Conversion Guidelines" for the American Heritage Project are available at <<http://sunsite.berkeley.edu/amher/upguide.html>>.