

Appraising the Digital Past and Future

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Abstract. Archivists, and others working in the digital realm, need to reconsider archival appraisal approaches and concepts as a means of exercising rational and strategic control over what they select for digitization and select from the digital documentary universe. Control has been a defining aspect of the contemporary Information Age, and it is not something archivists and digital curators should shun. This paper briefly discusses the notion of archival appraisal and several contributions it might make to the digital curation schema.

Introduction: The Digital Dilemma. Archivists continue to devote great attention to the challenges of administering and preserving digital records and objects. Society of American Archivists President Richard Pearce-Moses made electronic records the focus of his presidential year in 2006, expounding, “As we face the challenges of electronic records, we must also face our need for new knowledge. We need new tools for new materials. Where to begin?”¹ Kenneth Thibodeau, Director of the Electronic Records Archives Program at the National Archives, sounded a similar refrain: “While we are still at the dawn of the digital era, before too many cultural assets are lost, and before the technology has raced utterly beyond our ability to catch up, we need to construct concepts, methods and operational systems that can preserve and provide access to digital information.”² It seems, then, that archivists have barely begun to confront the digital documentary universe. Now, it seems, via digitization and increasingly complex Websites, they are adding to it as well.

Yet, the archives community has a reasonably long tradition of research and development projects dating back two decades (and more) and theorizing extending back several more decades beyond the research.³ However, the mixed results of these efforts requires more explanation than that these technologies are challenging or problematic. Why is there so much fuss about the dangers of managing digital recordkeeping systems? After all, records have always been the products of technology. Why has there been such greater societal angst about newer technologies, those made possible by the computer, even as everyone embraces these technologies with digital cameras, PDAs, and cell phones? And how do the issues of digitizing archival materials relate to the concerns of administering digitally born records with archival value? One possible answer to all these questions is that the digital records are pouring out in a documentary volume never before experienced, made more complicated by a speed of technological change that is also unprecedented, and creating for archivists the proverbial situation of taking a sip with a fire hose. A better answer is that most archivists have not practiced appraisal techniques in a way that has generated confidence, and many hope that technology itself – with that old promise of lower costs and greater capacity – will solve the problem. One technology research company, IDC, just recently released a report, however, that there is insufficient storage space for all the digital information -- so maybe we need to get busier with developing better approaches for selecting what we really think is important in the digital environment and before

contributing to it.⁴

The writings by archivists and records managers about organizational use of information technologies and their impact on records and recordkeeping gives the impression of a great unstoppable force propelled by the immense capabilities of the always new and ever emerging technologies. Archivists tend to worry about the impact of these technologies on their ability to preserve the historical records of organizations and society – and they should worry, since we know that new technologies regularly die.⁵ Each new medium arrives with the promise of new technology, but it soon generates a fear of loss. As a result, the records professions always seem to be a bit out of step, or off-balance, with how organizations are employing the information technologies. And, to a certain extent, archivists have gone down the same route as others, adopting the new technologies for an array of practical ends and only later worrying about the implications of something called digital curation (well, so, yes, this is just human nature).

Some of these concerns derive from the extensive hype that has been a part of the so-called modern Information Age since its earliest days. Technologists and vendors continually predict the immense impact of the continuing evolution of the computer and software applications, and they often define the issues and make their prognostications based on the technology itself. Social commentators and critics often examine the role of technology as a necessary evil, comparing the hype to reality and looking everywhere for where the technologies cause problems or fail to deliver on promises (no matter how far-fetched the predictions have been). Archivists have usually latched onto these varying assessments, seeing the glass as either half-full or as half-empty, while not often developing realistic or rational means by which to assess the importance of information technology on their responsibilities. There is, of course, reality behind the half-empty glass, as electronic records management seems not to have kept pace with the technologies or the regulations and laws governing them.⁶ Although progress is being made in working with digital records, as more case studies in electronic records management and digitization projects appear, there is still much archivists (at least those in the field facing the real day-to-day challenges) don't know.⁷

Losing Control of the Record and Mission. Our fascination with the control of information (compounded by the immense hype associated with this digital age) may have obscured a clear sense of the record and the reasons why records are important (accountability, evidence, and memory). Archivists and other informational professionals, deciding to enhance their knowledge about the issues related to administering digital materials, have faced a daunting task. What they have encountered is a bewildering array of essays, reports, case studies, conference proceedings, workshops and training venues with an equally confusing range of recommendations, proposals, predictions, and procedures. Moreover, records professionals have found a litany of dire assessments of what can only be termed the digital dilemma. We have known for a long time that one of the impulses driving recordkeeping and the use of new technologies was control. Much of the discourse about the modern Information Age continues to gather about how we can *control* information.⁸

Embedded within every form of recordkeeping is some extension of control. Fingerprinting systems reflected the state's effort to control society by archiving information about individuals,⁹ telegraphy was used in international diplomacy to make diplomats answerable to home governments in ways not possible before,¹⁰ and eugenicists, perhaps the penultimate of modern recordkeepers, reached greater

possibilities with the aid of new encoding systems.¹¹ The continuous emerging of new digital records systems also has prompted many to focus on legal recourse as a means of fixing the digital document¹² or in contending with such issues as personal privacy and the meaning of such privacy in the networked digital age.¹³

Indeed, in any new means of disseminating information, such as printing half a millennia ago and now the constantly changing digital technologies, control emerges as an important issue. It is no coincidence, for example, that intellectual property has become a major issue since the advent and spread of modern computing technologies, something that librarians, museum curators, and archivists involved in digitization projects certainly are aware of as they consider what to digitize and place online.¹⁴ Technology has always been connected with control, as the history of printing suggests,¹⁵ and control can be seen, in this particular technology, as being aimed to create order. While the emergence of digital records creation and keeping in the past two generations has generated considerable discussion by archivists and records managers about issues such as the definition of records, the notion of reliability or authenticity in digital systems, and the prospects and future of the various elements of the records professions, similar concerns were expressed with earlier technologies. There is an irony in this, however, because as government, corporations, institutions, and even individuals have adopted digital technologies for control (as well as a competitive edge), the ability of records professionals to manage and preserve (control?) records seems to have eroded.

There is a perspective archivists and other information professionals must develop as they contend with new ways of enabling access to and preservation of documentary sources. We know from the early history of printing that certain traditional crafts associated with the earlier manuscript production of books continued, and even flourished, for a while.¹⁶ As records managers have worked hard to become *information* professionals and archivists have worried about the impact of digital systems on certain kinds of documentation (think of literary and personal manuscripts), what we might be seeing is a kind of overzealous reaction prompted by all the hype about the promise of the impact of electronic systems. McKitterick, considering the advent of printing, reminds us that we need to be self-critical of our own ability to step outside of our own time and space in order to examine how we receive, use, and re-work information. As McKitterick argues, "The way that we read, the trust that we are prepared to share, and the status with which we endow books or other documents that purport to be true representations, are products of generations whose ways of looking, and of believing, have been trained by photography and by the much greater uniformity of the machine-made book. In looking at the products of a little over half a millennium, what has been often called the age of print, in fact we look with eyes predisposed by inventions of just the last two centuries."¹⁷ In other words, we need to think bigger and more broadly than we normally have when considering the role of technology in our lives, past and present. Maybe now archivists are looking at our own professional challenges just through the lens of only three or four decades of technological innovation (rather than a systematic historical lens one might assume an archivist possessed).

Appraisal and Archival Control. Now, why discuss all of this about recordkeeping and control, when I am supposed to be discussing appraisal issues and methods in the digital realm? The reason is because archivists, despite their general sense of lacking any power, exercise (or try to, at least) control in nearly every activity they engage in. Every appraisal decision, preparation of a finding aid, conference in a reference or chat

room with a researcher, preservation action, and launching of a marketing campaign to reach new research communities has something fundamentally to do with control because some one or some group has to make a decision. Making a decision about digitizing an archival collection or fonds or a portion of a collection or fonds is another control matter. Digitizing is a form of re-appraisal, so it figures that if we are to make the right kinds of decisions in what we digitize and place on the Web, then we ought to know something about archival appraisal and its function in the archival profession. Given limited resources, financially and in terms of professional staff, the focus on digitizing ought to be on making the best-informed decisions, rather than playing with the technological tools and gadgets offering themselves to us on a daily basis. As we have seen in other sectors of the archival community, such as archival representation where we raced ahead to focus on the minutiae of standards before having much knowledge about what our researchers want and how they find it, archivists often downplay the fundamental significance of the appraisal function (perhaps because it is both an intense, time-consuming intellectual exercise and because it forces archivists to reflect on, determine, and communicate their mission and objectives).

When I use the word “control,” I am not seeking to imply something sinister or evil (control to shape historical interpretations or influencing cultural memory or blocking legal and governmental investigations). What I am describing is an effort to look at a vast universe of documentation (and a universe that is expanding quite rapidly) and then to shrink it down in some strategic, planned, or rational fashion that allows archivists to administer it and researchers to access it. This kind of control is at the heart of archival appraisal. Maybe it is also at the heart of “digital curation,” although I am not sure yet what this is, explaining why I have come to this conference. Most likely, however, given the nature of the digital universe and the need for archivists to practice digitization and preserve and manage its results, archival appraisal needs to be ramped up so that we select the right materials to digitize and pick from the digitally born records the most critically important to our researchers and society. Of course, maybe we have plunged too far ahead again with our fascination of digital stuff of our knowledge of researchers and the societal need for archival sources, just as we did with descriptive standards.

Archival Appraisal Activity and Thinking. One can discern many perspectives about appraisal among practicing archivists, so my efforts here to describe briefly this process can be challenged easily enough. However, I think there are some issues that are probably beyond argument.¹⁸ First, archival appraisal, after T.R. Schellenberg’s characterization of it in the 1940s and 1950s at the National Archives as an effort to discern how to identify the evidential and informational values of records, generated little practical or theoretical discussion for many decades. Archivists mouthed Schellenberg’s key points, although they were hard-pressed to apply meaningfully his values (even under oath in the courtroom) or to articulate in any detail just what these values meant in daily work. Second, most archivists, for the majority of the run of the modern archival community’s existence, have assumed that they are appraising records and recordkeeping systems for historical purposes and for the use of historians. This appraisal objective has been increasingly questioned in the past two decades as other research communities (from genealogists to journalists to policymakers) have emerged as important clienteles and as other values, such as accountability and cultural memory, have become more prominent. Third, archival appraisal became, in the 1980s and 1990s, the dominant topic of debate about the archival mission and archival knowledge or theory, due to a variety of complicated and interrelated reasons (including a period of professional focus on planning and a recognition of the weaknesses of existing appraisal

approaches and results). If nothing else, there was consensus that it was worthwhile to discuss what the existing universe of documentation held in archival programs represented (if it represented anything more than some cosmic grab bag of symbolically and culturally important stuff).

While the first three of these concern the historic dimension of archival appraisal, the other prevalent features of archival appraisal are firmly seated in the here and now. Fourth, there are a variety of archival appraisal models and methodologies being used in the field, with a mix of results, including the Schellenberg framework of values, the articulation of institutional collection policies, archival documentation strategies, and macro-appraisal approaches such as functional analysis. Most likely, the Schellenbergian framework reigns supreme as a convenient shorthand means to describe why and what archival appraisal is supposed to be about. There are also many who mix and match these various approaches for different kinds of documentary projects, as well as some who adopt a passive approach of taking whatever records their parent organizations or external donors offer them. Fifth, and finally, there is a sense that digitally-born records systems require new appraisal approaches, needing a blend of new technical and professional elements, that will be considerably different from what we have seen developed and used to this point. We need new means to deal with electronic mail, instant messaging, text messaging, Websites, and other newer and still emerging information forms that are replacing or supplementing the older documentary systems archivists have been accustomed to appraising. Digital curators are maybe just adding more to this mix. This latter work may also require a major new professional paradigm shift overcoming the artificial and counter-productive barriers existing between archivists, records managers, knowledge managers, librarians, and information and computer scientists. We can add to the problematic divisions, the one between appraisal archivists and those developing digital libraries and archives, where so much of the latter focus has been on the tools and techniques rather than the selection of what is to be digitized.

What Guides Us into the Brave New Digital World? In approaching appraisal decisions, and here I also include making decisions about digitizing collections and fonds held by archives, we need to have some guiding concepts. Have there been any articulated? Why, yes. Records professionals have become so immersed in the technical challenges of digital records that they forget other dimensions, as Verne Harris and his thoughts on ethics, using South Africa as his focus, remind us. Harris reminds us that an understanding of records, their creation and their use, reflects a variety of aspects of what transpires in governments, corporations, and other institutions. “For archivists and others who care about electronic memory it is time – and it has always been time – to wise up,” he writes. “Good recordmaking seems to thrive in what we could call extreme environments – oppressive environments, on the one hand, and environments shaped by the call of justice on the other. Unless we understand the political dimensions and conceptualize our struggle as a struggle for justice, we condemn ourselves to rearranging deckchairs on a sinking Titanic.” While some will certainly quibble with his assessment, Harris makes an important point: the “work of recordmaking is justice and resistance to injustice. *The issue in electronic recordmaking is ethics.*”¹⁹

Am I implying that some ethical or metaphysical purpose is what ought to drive us as we make selection decisions in the digital world? Not really, although that dimension needs to be there. My point is simpler. We need to have some collective sense of what we are

selecting from or adding to the digital universe – and *why*. While we know at present that we lack basic proven methods to preserve with confidence digital objects combining text, data, images, video, and audio,²⁰ we mostly have not even asked the right questions about how, what, and why we make selection for digitization or from the digital universe. What good will discussions about metadata, repository architecture, data sets, user services, technical education, and so forth do for us if, first, we have no sense that we have the right materials to begin with, and, second, no understanding of the limitations and potential of this digital documentary universe? This is not a new issue; supposedly, we recognized that nothing good would come out of our archival description, preservation, reference, public programming, and general administration if we had acquired, through poor planning or bad decisions, the wrong stuff for our repositories (real or virtual). This is what a critical appreciation of archival appraisal does for us. Even if we mess it all up, we can leave behind some legacy of what it is that we thought we were trying to do. And, I might add, ethically we have an obligation to society and our clientele to be more transparent about what we are doing.

What Ought to Be Present With Archival Appraisal? There is no magical formula when it comes to appraising the documentary universe. We can't select the records just by their form. Nor can we let others make the decision, as if somehow this keeps us objective. We can't rely on technology enabling us to save everything, and then allow us to find it again in an efficient and meaningful way. Appraisal is messy, subjective, and defined as much by failure as success (maybe actually more by failures since they seem to get the most attention). Even with all these hedges, there are some clear elements that must be present in our work in the digital world that can only be offered through the sensitivity generated by archival appraisal approaches.

Here is what we have learned by our thinking about and tinkering with archival appraisal through the past half-century or so:

- *Possess A Mission and Purpose.* We must have a clear sense of what we are trying to accomplish with our acquiring or managing documentary sources. Are we seeking a representative documentation? Are we trying to identify the critical events, functions, and activities of our society and its institutions and citizens? Are we trying to empower organizations and individuals to document effectively themselves? The point is that we have a clear aim in mind. This will lead to all the proper discussions necessary to notch things up and ask the same questions at higher and higher levels. Some, like Ross Harvey, have argued that the matter of “digital preservation must come from within the responsibilities of almost every creator and every user of digital information, not just those of librarians and archivists,” but this does not mean that archivists should not be the drivers in the appraisal function, especially as appraisal has expanded to be far more cooperative concept and application.²¹ And this will not happen if we cannot articulate a rationale for what we are doing.
- *Involve Records Designers, Creators, Users, and Custodians.* We need to develop mechanisms to involve the individuals who design the software, the institutions and individuals who generate the reasons for why records systems are needed and what they contain, the individuals who seek to make use of the evidence found in these records systems, and those who are seeking to create real and virtual repositories for the archival sources.

Really, the documentary universe has always been complex enough to warrant this kind of activity, but in the past, because of the traditional analog nature of the documentary sources, we were able to go about this process much more leisurely or casually. Now the pace of change and technological innovation supporting recordkeeping systems necessitates that we function in a fashion that makes us far more accountable to society and to each other than ever before. There is some evidence that organizations are learning that it is not those who innovatively use new digital information technologies who benefit the most, but rather those who can move past the allure of being on the cutting edge to work with and adapt more reliable and trustworthy applications.²²

- *Document What We Do.* It can be amusing, if not frustrating, at times to realize that we have invested quite a bit of time and energy in building a Web presence, endeavoring to enhance access in a virtual way, and digitizing resources for wider access and use without giving much attention to documenting our own appraisal decisions. It is rare to find a full appraisal report on the Web, or at least one that can be useful both to professional archivists and to the researchers in our archives (and, perhaps, we should add to this, the systems designers and digital curators). At the moment, mostly we can find guidelines issued by government agencies or other institutions for appraising electronic that imply something (but not everything) about we do when we appraise. Here are some suggestive examples from the government sector. The Texas State Archives acknowledges that the electronic record is clearly a record and must be treated like any other record, places the responsibility with agency heads and designated records managers, and deems electronic records to be an “important asset” (although this state archives only accepts records in analog formats “on paper or microforms”).²³ The National Archives of Australia works off of a broad definition of official records and “archival resources,” relies on a fairly traditional set of appraisal criteria (administrative, fiscal, legal, evidential and/or informational values), but adds that electronic records must be appraised with “some additional criteria,” “accessibility, manipulability and information system v recordkeeping system.” This archives also emphasizes government functions, seeking “to specify which records should be captured and kept accessible” and building in “recordkeeping requirements” “at the systems development or upgrade stage.” Appraisal needs to happen at the “logical level,” “independent of how the records are physically stored and of frequent system and software changes.”²⁴ The Mississippi Department of Archives and History provides a fairly explicit explanation about how it appraises electronic records from initial appraisal, through a retention scheduling system, and including on-site visits by records analysts, all based on the belief that “paper and electronic records need to be managed together.”²⁵ These are just examples of what we have. What we need are in-depth, serious appraisal studies that can both assist us all in making both the right selection decisions from among the digitally-born universe and for adding to the documentary universe new digitized materials from before the advent of the computer.

What can make all of this possible is a fairly rich conceptual literature about archival appraisal methodology and a fair number of archivists with expertise about appraisal issues.

Conclusion: Are Archivists Becoming Something Else? There may be some irony involved with the matters of laboring in the digital realm. As archivists work increasingly with electronic records, both born digitally and digitized, will the nature of their work or their basic identity change? Sue Myburgh concludes that information and communication technologies have changed “all three of the basic pillars upon which the information professions rest: the containers of information, i. e. the documents themselves, the means by which they can be communicated and the tools used to manage them.”²⁶ She worries about the basic theory supporting the practice of such information professionals, especially with so much emphasis on “document management and the management of warehouses of documents,” factors so stressed by the traditional information professions that they have not been “managing information at all.”²⁷ Well, maybe. I remained less concerned about the survival of the archivist and more interested in the survival of the archival mission. However, the problem has been that we have not been very adept at explaining ourselves, one reason maybe why Myburgh frets about those “warehouses of documents.” The problem is that we have not made society or even our close colleagues understand why those warehouses are so critical. Maybe the new efforts at digitization will give us another opportunity but, I worry that maybe even here we have raced ahead with an emphasis on technique or technology at the expense of understanding what all this fascinating new stuff on the Web means.

¹ Richard Pearce-Moses, “Becoming an Archivist in the Digital Era,” *Archival Outlook*, May/June 2006, p. 3.

² Kenneth Thibodeau, “Archival Science and Archival Engineering: Building a New Future for the Past,” *Archival Outlook*, May/June 2006, p. 6.

³ I tried to summarize and evaluate the earlier work in my *The First Generation of Electronic Records Archivists in the United States: A Study in Professionalization* (New York: Haworth Press, 1994).

⁴ “Tech Researchers Calculate Digital Info,” *New York Times*, March 6, 2007.

⁵ See Lisa Gitelman and Geoffrey B. Pingree, eds., *New Media, 1740-1915* (Cambridge: MIT Press, 2003) and Jonathan Sterne, *The Audible Past: Cultural Origins of Sound Reproduction* (Durham: Duke University Press, 2003).

⁶ See, for example, Robert F. Williams and Lori J. Ashley, *2005 Electronic Records Management Survey: A Renewed Call to Action* (Chicago: Cohasset Associates, Inc., ARMA International, and AIIM, 2005).

⁷ Julie McLeod and Catherine Hare, eds., *Managing Electronic Records* (London: Facet Publishing, 2005).

⁸ James R. Beniger, *The Control Revolution: Technological and Economic Origins of the Information Society* (Cambridge: Harvard University Press, 1986).

⁹ Simon A. Cole, *Suspect Identities: A History of Fingerprinting and Criminal Identification* (Cambridge: Harvard University Press, 2001).

¹⁰ David Paul Nickles, *Under the Wire: How the Telegraph Changed Diplomacy* (Cambridge: Harvard University Press, 2003).

¹¹ Edwin Black, *War Against the Weak: Eugenics and America’s Campaign to Create a Master Race* (New York: Four Walls Eight Windows, 2003).

¹² See, for example, Michael R. Overly and Chanley T. Howell, *Document Retention in the Electronic Workplace* (Pike and Fischer, 2001).

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- ¹³ Center for Democracy and Technology, *Digital Search and Seizure: Updating Privacy Protections to Keep Pace with Technology* (Washington, D.C.: CDT, 2006).
- ¹⁴ See Lawrence Lessig, *Free Culture: How Big Media Uses Technology and the Law to Lock Down Culture and Control Creativity* (New York: Penguin Press, 2004) and Siva Vaidhyanathan, *The Anarchist in the Library: How the Clash Between Freedom and Control Is Hacking the Real World and Crashing the System* (New York: Basic Books, 2004).
- ¹⁵ David McKitterick, *Print, Manuscript and the Search for Order 1450-1830* (New York: Cambridge University Press, 2003) suggests for example that print did not stabilize text as rapidly as has been thought, but in his analysis one can still see the importance of control at work.
- ¹⁶ McKitterick, *Print, Manuscript and the Search for Order 1450-1830*, p. 67.
- ¹⁷ McKitterick, *Print, Manuscript and the Search for Order 1450-1830*, p. 146.
- ¹⁸ For an introduction to the various debates about and models for archival appraisal, see Frank Boles, *Selecting & Appraising Archives & Manuscripts* (Chicago: Society of American Archivists, 2005); Richard J. Cox, *Documenting Localities: A Practical Model for American Archivists and Manuscripts Curators* (Metuchen: Scarecrow Press, 1996); Richard J. Cox, *No Innocent Deposits: Forming Archives by Rethinking Appraisal* (Lanham, Md.: Scarecrow Press, 2004); Barbara Craig, *Archival Appraisal: Theory and Practice* (München: K. G. Saur, 2004); and Helen W. Samuels, *Varsity Letters: Documenting Modern Colleges and Universities* (Metuchen, NJ: Scarecrow Press, 1992).
- ¹⁹ Verne Harris in Julie McLeod and Catherine Hare, eds., *Managing Electronic Records* (London: Facet Publishing, 2005), p. 126.
- ²⁰ *It's About Time: Research Challenges in Digital Archiving and Long-term Preservation*, published in August 2003 by the National Science Foundation and the Library of Congress and available at http://www.digitalpreservation.gov/repor/NSF_LC_Final_Report.pdf.
- ²¹ Ross Harvey, *Preserving Digital Materials* (München: K. G. Saur, 2005), p. 17.
- ²² Nicholas G. Carr, *Does IT Matter? Information Technology and the Corrosion of Competitive Advantage* (Boston: Harvard Business School Press, 2004). Carr's most important theme is that "information technology has increasingly become . . . a simple factor of production – a commodity input that is necessary for competitiveness but insufficient for advantage" (p. xi). For an historical case study exploring the same matter, in this case a study of how the American insurance industry used emerging computer technology for its business and service to customers from the late nineteenth century up to the 1970s, see Joanne Yates, *Structuring the Information Age: Life Insurance and Technology in the Twentieth Century* (Baltimore: Johns Hopkins University Press, 2005).
- ²³ Texas State Library and Archives Commission, "Electronic Records," June 1998, Users/richardcox/Desktop/Readings%20ERM/Electronic%20Records%20-%20Texas%20State%20Library.htm, accessed April 7, 2006.
- ²⁴ National Archives of Australia, "Keeping Electronic Records: How Long Should Records Be Kept," Readings%20ERM/National%20Archives%20of%20Australia%20-%20Commonwealth%20Recordkeeping%20-%20Electronic%20Records%20-%20Keeping%20Electronic%20Records%20-%20How%20long%20should%20records%20be%20kept.htm, accessed April 7, 2006.
- ²⁵ Mississippi Department of Archives and History, "Electronic Records Draft Guidelines," MDAH%20Archives%20&%20Library%20Electronic%20Records.htm, accessed April 7, 2006.
- ²⁶ Sue Myburgh, *The New Information Professional: How To Thrive in the Information Age Doing What You Love* (Oxford, England: Chandos Publishing, 2005), p. xiv.
- ²⁷ Myburgh, *The New Information Professional*, p. xvii.