Technology's Promise, The Copying of Records, and the Archivist's Challenge: A Case Study in Documentation Rhetoric

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Prior to 1980, writing about archival appraisal was relatively modest in quantity and scope. Most archivists had stopped thinking about appraisal once Schellenberg had enunciated his codification of appraisal practice being used at the National Archives of the United States.[1] **The notions of evidential and informational, primary and secondary values were widely accepted, representing a kind of mantra that archivists recited when queried about how they identified records as being archival. Even today, the terms are bandied about freely, even when they cannot be precisely defined or effectively applied in archival appraisal and acquisition policies and practices. Archivists *say* they keep records for a variety of values, but their rationale is often subjective, or worse, vague, and, when in a few instances in this era, they have been challenged in courtrooms to explain their approaches, archivists had found the process a difficult one.[2]**

After 1980, the function of archival appraisal was transformed, if not practically, at least

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[1] Frank Boles introduction to his 1991 research study on archival appraisal, written with Julia Marks Young, reflects the influence of Schellenberg on archival appraisal in the United States; see his *Archival Appraisal* (New York: Neal-Schuman Publishers, Inc., 1991).

[2] The best example of this was the legal challenge to the appraisal of records of the Federal Bureau of Investigation in 1979, leading to a court-ordered reappraisal in 1981-82, demonstrating that the language of Schellenberg often failed in practice; see Kimberly A. Tryka, "Reappraisal of the Records of the Federal Bureau of Investigation: A Case Study," *Records & Information Management Report* 20 (September 2004): 1-14. See also the essays by Verne Harris, "They Should Have Destroyed More": The Destruction of Public Records by the South African State in the Final Years of Apartheid, 1990-1994"; and Terry Cook, "A Monumental Blunder": The Destruction of Records on Nazi War Criminals in Canada," both in Richard J. Cox and David A. Wallace, *Archives and the Public Good: Accountability and Records in Modern Society* (Westport, Conn.: Quorum Books, 2002).

in a conceptual manner. Prior to then, archivists lumped together appraisal and acquisition (or collecting), generally operating as if their repositories could acquire documents in a limitless fashion and, as well, effectively document the universe (however they might be defining the universe). Archivists since the beginning had worried about the increasing volume of records that they need to contend with, but this reality did little to transform their attitudes or practices when it came to appraisal. They nibbled at the edges of the challenge, stressing the development of acquisitions policies, experimenting with sampling approaches, and conceiving of ideas like that of intrinsic value that would enable them to identify original documents that, once reformatted to another recording medium like microfilm, could be destroyed. That old world of archival appraisal underwent a seismic shift in the 1980s with a growing concern about the effectiveness of appraisal approaches and an assessment of their end results, a shift in which Helen Samuels was a key player.

Several critical factors emerged in the new vision of archival appraisal. Some archivists began to discuss the implications of societal changes, such as the growing sense of a global society, multi-national corporations, increasing inter-related government activities, and international research. All of these developments challenged traditional archival appraisal practices that tended to focus on records surveys and the records within a single organization, sometimes even a single office. Many archivists recognized the difficulty of documenting a single event, product, geographic region, business activity, or institution without somehow taking into account the larger documentary universe. Some archivists, records managers, and manuscript curators began to experiment with moving their focus from specific documents to business functions, from developing repository specific acquisition policies to planning cooperative documentation strategies, and from intensive surveys of existing records to analyses of trends and events and the kinds of documentation that should exist and should be gathered.[3]

A few basic questions or issues influenced the shift in archival appraisal. Archivists have always been concerned about the growing volume in records; archivists were the ones, after all, who gave birth to records management and its focus on the economy and efficiency of records work.[4] By the 1980s, it was obvious that the growing dependence of the modern office on personal computers, soon to be joined by laptops and portable data assistants, and refinements in older technologies from the telephone (cell phones) to the fax machine, all were contributing to an unprecedented growth in records volume. Before the emergence of the personal computer, for example, there were frequent reports about the continuing paperwork growth in government and corporations. In 1977, a pharmaceutical company reported that it had to fill out 27,000 government forms annually and an oil company stated that it was spending $21 million a year on government paperwork. Even a major university could report that it was employing twenty-six people a year to track and

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[3] Some sense of the debates, experimentation, and new concepts can be seen in Barbara Craig, *Archival Appraisal: Theory and Practice* (Munchen: K. G. Saur, 2004); Frank Boles, *Selecting & Appraising Archives & Manuscripts* (Chicago: Society of American Archivists, 2005); and my own *No Innocent Deposits: Forming Archives by Rethinking Appraisal* (Metuchen, New Jersey: Scarecrow Press, 2004), all with very different perspectives about what was good, what worked, and where the profession was moving. All cite Helen Samuels's writings.

[4] This was one of the characteristics I identified in my "The Documentation Strategy and Archival Appraisal Principles: A Different Perspective," *Archivaria* 38 (Fall 1994): 11-36.

complete forms on government grants and contracts.5 Study after study stressed the need to streamline federal paperwork regulations because of the costs of compliance and the burdens of administering the records and information.6 Around this time, records managers latched onto the notion of "copy management" as a new component of their field, seeking to control "copying practices, procedures, and devices to ensure the effective and economical creation of necessary copies."7 One estimate estimates that office copies moved from about 20 million a year in 1955, before the advent of xerography, to an amazing 9.5 billion a decade later to an astounding 2 trillion copies a year in 2004. As this commentator suggests, "add another trillion or two for the output of laser printers and you end up with something like five hundred xerographically produced pages *this year* [2004] for every human on earth."8 These and other technologies also indicated new ways that organizations were working, especially in the creation of the modern networked organization. Technology, despite everyone's best intention to not become determinists about such matters, did seem to be driving changes that heralded if not the end of archival work, then at least fundamental changes in its principles and practices.

Archival appraisal seemed to be on the cutting edge of such concerns and dilemmas. Samuels, and her colleagues and allies, argued that the documentary universe was expanding so rapidly that new approaches not requiring the examination of every record (or even every record file or series) needed to be developed. There were simply too many records for personal inspection, a point that many commentators made even if they did not adopt new appraisal strategies.9 These new appraisal advocates contended that methodologies allowing a broader perspective on the documentary universe, one that took into account the interrelatedness of records created and maintained by numerous organizations and individuals, needed to be formed and refined as needed. Critics of such practices and ideas developed quickly, stressing either that the documentation strategy or, later, the macro-appraisal approach, was too unwieldy and impractical or claiming that the traditional approaches worked just fine.10 And, indeed, the evidence still suggests that for

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5 "The Drive to Cut Paper Work: One Step Forward, Two Steps Back," *U.S. News & World Report* (April 18, 1977), 51.
6 Rogene Buchholz, "Reducing the Cost of Paperwork," *Business Horizons* 23 (February 1980): 82-89.
7 See B. Thomas Marking, "Copy Management: An Emerging Program," *Records Management Quarterly* 14 (Janaury 1980): 20-22, 38 (quotation, 21).
8 David Owen, *Copies in Seconds: How a Lone Inventor and an Unknown Company Created the Biggest Communication Breakthrough Since Gutenberg – Chester Carlson and the Birth of the Xerox Machine* (New York: Simon and Schuster, 2004), 282.
9 David Bearman, *Archival Methods*, Archives and Museum Informatics Technical Report 3.1 (Spring 1989), provided a very clear statement about this challenge, although he remained skeptical about some of the new appraisal approaches adopted in response. Bearman did have hope for the kinds of ideas and concepts suggested by the documentation strategy approach, noting that "The intellectual attraction of the documentation strategies approach should be that it focuses on appraisal of activities and functions rather than of records" (see chapter one).
10 See, for example, Terry Abraham, "Collection Policy or Documentation Strategy: Theory and Practice," *American Archivist* 54 (Winter 1991): 44-52; and "Documentation Strategies: A Decade (or More) Later," paper presented at the Society of American Archivists, Washington, DC, August 31, 1995, available at http://www.uidaho.edu/special-collections/papers/docstr10.htm. For an explanation of the idea of macro-appraisal, see Terry Cook, "Macroappraisal in Theory and Practice: Origins, Characteristics, and Implementation in Canada, 1950–2000," *Archival Science* 5 (2005), 101-61.

most archivists appraisal work was little changed since Schellenberg, although the rhetoric about appraisal, its principles and more theoretical dimensions, has been fundamentally transformed. Concerns about the technological dimensions of records have been at the heart of many of the claims made about weaknesses in both old and new appraisal approaches, with some worrying that the resulting quantity of records is now so great as to compromise all appraisal processes and others claiming (more like hoping) that the massively increasing storage capacity for digital memory at ever-lower cost will eliminate the need for an archival function such as appraisal.11 Of course, some of the new appraisal approaches were criticized as requiring larger staff and greater resources, although the advocates of these approaches would argue (and still do) that shifts in priorities and the reallocation of resources were just as important (perhaps more important).

Helen Samuels's early writings and some of her subsequent work was derived from working in circumstances where technology played a critical role. She was involved with the Joint Committee on the Archives of Science and Technology (JCAST), a group issuing still one of the best research and planning documents in the profession's history, even though it is now more than two decades old.12 Her work with JCAST led to her collaboratively author a methodology for appraising the records of science and technology and, simultaneously, fed her imagination to articulate the early ideas about the documentation strategy.13 Out of this came her later work, more closely reflecting the macro-appraisal concepts, on documenting higher education.14 In all of this work, the challenges of modern information technology, primarily the volume of records and the increasingly networked nature of modern organizations, were present and prominent.

Records, from the ancient to the post-modern world, have always been intimately connected to technology. And, of course, their administration and preservation have been heavily influenced by their technical foundations. A clay tablet must be handled very differently than a digital document, even though commentators about the preservation of electronic records often resort to discussing the maintenance advantages of the clay tablet.15 Yet, it is also very much the case that there has always been hype associated with and influencing how records are managed, including how they have been appraised. Thomas Misa, in his interesting discourse on the nature of technology and culture in the past five centuries, argues that we must take a "middle-ground stance towards technology, resisting the undue pessimism of some writers and rejecting the unwarranted optimism of others." Adopting "extreme positions," Misa warns, can "lead us away from a serious

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[11] For a recent example of the tension between that of losing the digital documentary heritage and the belief that perhaps everything can now be saved, see Daniel J. Cohen and Roy Rosenzweig, *Digital History: A Guide to Gathering, Preserving, and Presenting the Past on the Web* (Philadelphia: University of Pennsylvania Press, 2005), 9-10, 227-228.

[12] Clark A. Elliott, ed., *Understanding Progress as Process: Documentation of the History of Post-War Science and Technology in the United States; Final Report of the Joint Committee on Archives of Science and Technology* (Chicago: Distributed by the Society of American Archivists, 1983).

[13] Joan K. Haas, Helen W. Samuels, and Barbara T. Simmons, *Appraising the Records of Modern Science and Technology: A Guide* (Cambridge: Massachusetts Institute of Technology, 1985).

[14] Helen W. Samuels, *Varsity Letters: Documenting Modern Colleges and Universities* (Metuchen, NJ: Scarecrow Press, 1992).

[15] See, for example, James Fallows, "File Not Found: Why a Stone Tablet Is Still Better Than a Hard Drive," *Atlantic Monthly* 298 (September 2006):142, 144-145.

engagement with the problems and potentials of technology."16 This essay, partly drawing on an informal study of claims made in advertisements about the miracle of electrostatic photocopying, considers the contrasts between the promises of the technology and its reality. The essay also considers how this earlier hype was later mimicked by that surrounding the advent of the personal computer and its subsequent variations. Considering the exaggerated claims for office and personal technology suggests the need not only for the emergence of archival appraisal approaches, such as occurred in Samuels' wake in the past twenty years, but also the need for new ones for today. What continues to be needed is the development of new appraisal concepts, strategies, and methodologies, not a quest for a technological panacea for the challenge of the continuing growth of records' quantity and technical complexity. A change in resources for doing such appraisal would require staff with enhanced technical knowledge, but again the new strategies require the ability to refine priorities and re-distribute resources for these new priorities.

Since the dawn of writing, humanity has searched for and experimented with ways of speeding up the copying of documents. Polygraphs, involving the use of multiple pens, date back at least to the early seventeenth century. By the late eighteenth century, letter-press copying, a reproduction system now seeming messy and awkward with consistently uneven results but considered revolutionary in its time, was well established in business offices and government agencies; letter-press copies were created by the use of oiled and tissue papers pressed onto the original inked document by a hand-operated mechanical device. Not long after, the earliest forms of carbon paper were created, although this method of copying would not become common or reliable until the widespread use of the typewriter in offices by the end of the nineteenth century.17 Copying was especially propelled forward with the invention of photography in 1839, and by the end of that century the first organized and entrepreneurial efforts to develop systematic and reliable photocopying were evident. In 1905, George C. Beidler marketed the first commercial photocopier and within a short time libraries, archives, and corporate offices were utilizing one or more of these copiers (Photostat, Rectigraph, Cameragraph, or Dexigraph), although all of these were clumsy and expensive machines to use, producing images of often blurred or smudged quality.

This changed by the middle of the twentieth century, when Chester Carlson patented his electronic photocopier and began to market it by the late 1940s, with his machine becoming commonplace by the end of the next decade.18 David Owen, the biographer of Carlson and his machine, argues that the "invention of the Xerox machine was an epochal event in the history of communication and, therefore, in the history of civilization. It gave ordinary people an extraordinary means of preserving and sharing information, and it placed the rapid exchange of complicated ideas within the reach of almost anyone – a potent and, indeed, subversive capability, whose reach and ease of use have been exceeded only

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16 Thomas J. Misa, *Leonardo to the Internet: Technology and Culture from the Renaissance to the Present* (Baltimore: Johns Hopkins University Press, 2004), 260.

17 For an account of early copying devices, see Barbara Rhodes and William Wells Streeter, *Before Photocopying: The Art and History of Mechanical Copying 1780-1938* (New Castle, DE: Oak Knoll Press, 1999).

18 Michael E. Sawyer, "The Photocopying Machine: How Did It Begin," *Law Library Journal* 71 (Winter 1979): 91-98.

relatively recently, by the World Wide Web and email."19 These, and other forms of office equipment related to the creation of documents (such as the stapler, address machine, check writer, typewriter, and so forth), all contributed to the steady standardization of office work spaces and the uniformity of record forms.20 And, in particular, the office copier contributed to the rise of what some have termed office copier folklore, where, instead of oral transmission, myths and other folk notions are transmitted by copying technologies.21

Carlson's invention was not an overnight marvel, but, like most inventions, it emerged from trial and error, including many false starts.22 Originally designed in the late 1930s, it was not until 1960 that Haloid Xerox produced the first commercially successful photocopier, the 914. One commentator on Carlson's work, written two decades ago, suggests that "today we are addicted to copiers. We keep them in our offices, stores, schools, and libraries, and even in our homes." In the late 1980s, the copiers were generating nearly 500 billion copies annually, leading this assessment to suggest, "after the telephone, the copier is probably the most important modern communications tool in use."23 Prior to the creation of the personal computer, the photocopier was certainly the most profound and powerful office technology, a device that made many office workers forget what work was like before its invention, practical development, and commercialization.

Fascinated as a child with printing, Carlson also developed an early interest in copying techniques, registering patents for his concepts in the late 1930s and early 1940s when he was just in his thirties. He searched relevant research literature, made contacts with people who possessed skills necessary for building a prototype, and experimented with multiple versions of the technology to try to discover the right technology that could be replicated and sold for office applications. For example, Owen describes how In the early 1950s a number of different copying options employing varying technologies arrived in the marketplace, suggesting that this is common because "technology doesn't evolve steadily and continuously."24   One of the interesting aspects of the origins of the photocopier is how many companies saw it as too risky a venture, and that it was only in the production of the early machines, as highly flawed as they were, and their placement in real offices, that they were able to prove themselves. As Owen concludes, the "914 was so easy and pleasant to work with that people began using it to satisfy needs they hadn't known they had,"25 an observation reflected in the immense and rapid growth in the volume of copying.

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19 Owen, *Copies in Seconds*, 13.

20 Phil Patton, "The Evolution of Your Office," *American Heritage* 52 (June 2001): 37-42, is a popular discussion of this phenomenon.

21 See, for example, Alan Dundes and Carl R. Pagter, *Urban Folklore from the Paperwork Empire* (Austin, Texas: American Folklore Society, 1975); and *Never Try to Teach a Pig to Sing: Still More Urban Folklore from the Paperwork Empire* (Detroit: Wayne State University Press, 1991).

22 This is true, of course, for the typewriter; see Arthur Krystal, "Against Type? What the Writing Machine Has Wrought," *Harper's Magazine* 305 (December 2002): 82-88, reviewing a couple of books on the topic. The widespread acceptance of typewriters was slowed by technical flaws, costs, training, office culture, and human nature.

23 Dean J. Golembeski, "Struggling to Become an Inventor," *Invention and Technology* 4 (Winter 1989): 8-15 (quotation, 8).

24 Owen, *Copies in Seconds*, 179.

25 Ibid., 240.

The case of Xerox and its copier follows some of the features attributed to the significance of information technology in the organization. Haloid, the company that eventually became Xerox, took a risk in supporting the development of the copying technology. It invested a considerable sum in development, far more than it thought it might make up for, but the company, with its edge in a technology that was far more successful than anyone thought conceivable. In 1959 Haloid Xerox was "nothing," just a small, indistinguishable company, but in seven years the Xerox Corporation was the "fifteenth largest publicly owned corporation in America as ranked by market capitalization."26 In fact, Xerox's problems have mostly stemmed from its efforts to diversify away from copying technology, as it has always maintained its edge in the copier industry.

One approach to considering Information Technology (IT) is advanced by Nicholas Carr, and his view has implications for the day-to-day work of records professionals. Carr argues that it is time for a "more conservative approach to IT management. As the infrastructure matures, the companies that succeed will not be those that reflexively pursue innovation, that seek to push the proverbial envelope, but rather those that are pragmatic in planning and competent in execution."27 For such a long time, archivists and records managers have seen information technologies as their great nemesis, changing so quickly and effortlessly as to always outrace solutions for administering the records these systems produce. By contrast, Carr perceives a settling down, one perhaps that ought to encourage records professionals to consider the long-term possibilities of controlling all records, digital or otherwise. There is, perhaps, a limit to innovation that we have reached in creating new digital technologies, at least a level of innovation that corporations will accept in their investments in their technological infrastructures. Archivists and records managers ought to be able to consider steadier solutions to administering such records, rather than always looking over their shoulders in fear that a new technology will eradicate all their best efforts.

What we do know about the impact of office copying is how it, with other technologies, contributed to an immense change in the nature of corporations and other organizations. Abigail J. Sellen and Richard H. R. Harper, in their study on the myth of the paperless office, demonstrate that the demise of paper as a business communication and recording mechanism is another form of folklore, mustering statistics on the growing uses of paper in the typical office. Paper continues to play a role because it effectively supports many crucial tasks such as authoring, reviewing, planning, collaboration, communicating, annotating, and cross-referencing.28 These roles are an integral dimension of what an office is and what it does:

> An office is not simply an interface to information but . . . an interactive amalgam of information, people, and artifacts working harmoniously together. As such, an effective office consists of a much broader array of tools than a collection of PDAs and laptops could ever provide. It encompasses an information environment that spreads out around the desk

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26 Ibid., 253.
27 Carr, *Does IT Matter?*, 112.
28 Abigail J. Sellen and Richard H. R. Harper, *The Myth of the Paperless Office* (Cambridge: MIT Press, 2002), 53, 76.

and office walls. It consists of artifacts that support not only an individual's immediate needs, but also the needs of teams of people (such as the use of wall charts and whiteboards). It also consists of combinations of tools and artifacts used in conjunction with one another in artful ways.29

Examining the office this way also suggests something about how the implications of the advent of office photocopying was part of an array of technologies enabling organizations to network and function according to their priorities, if sometimes in ways that made their records more complicated for archivists and records managers needing to control or appraise them. The complexity of organizational records is not merely the result of digital technologies, a conclusion seemed to have been reached because of our more recent focus on the challenges posed by such technologies, but rather the result of the mix of records technologies and their generation of ever-increasing quantities of records. The archivist's response should be to focus more on strategic appraisal, as Helen Samuels suggested, a process running counter to what many others seem inclined to think: that the new technologies will enable us to save everything.

We can comprehend the nature and consequences of the older office technologies, enabling us to put them, and the later technologies, into a more useful perspective. Examining advertisements for office copying equipment is akin to studying the artifacts of ancient societies. The illustrations are quaint, the promises simple, and the equipment, bulky and ugly, almost as if it were from another universe. Yet, it is all too familiar as well. This is especially the case with copier advertisements prior to the advent of the Xerox era. A September 1950 *Office* advertisement for the "Old Town Spirit Duplicator" features a primitive looking sketch of a women operating the gray, boxy copier with the promise of turning out copies "fast . . . fast . . . fast!" The copying could also be done with "no fuss, no bother, no skill needed." Obviously, this is a much less efficient stencil copier, enabling up to 600 copies to be made from a single master, a copying process far different from what the Xerox machines would make possible just a decade later.30

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29 Ibid., 191-192.
30 *The Office* (September 1950), 59.
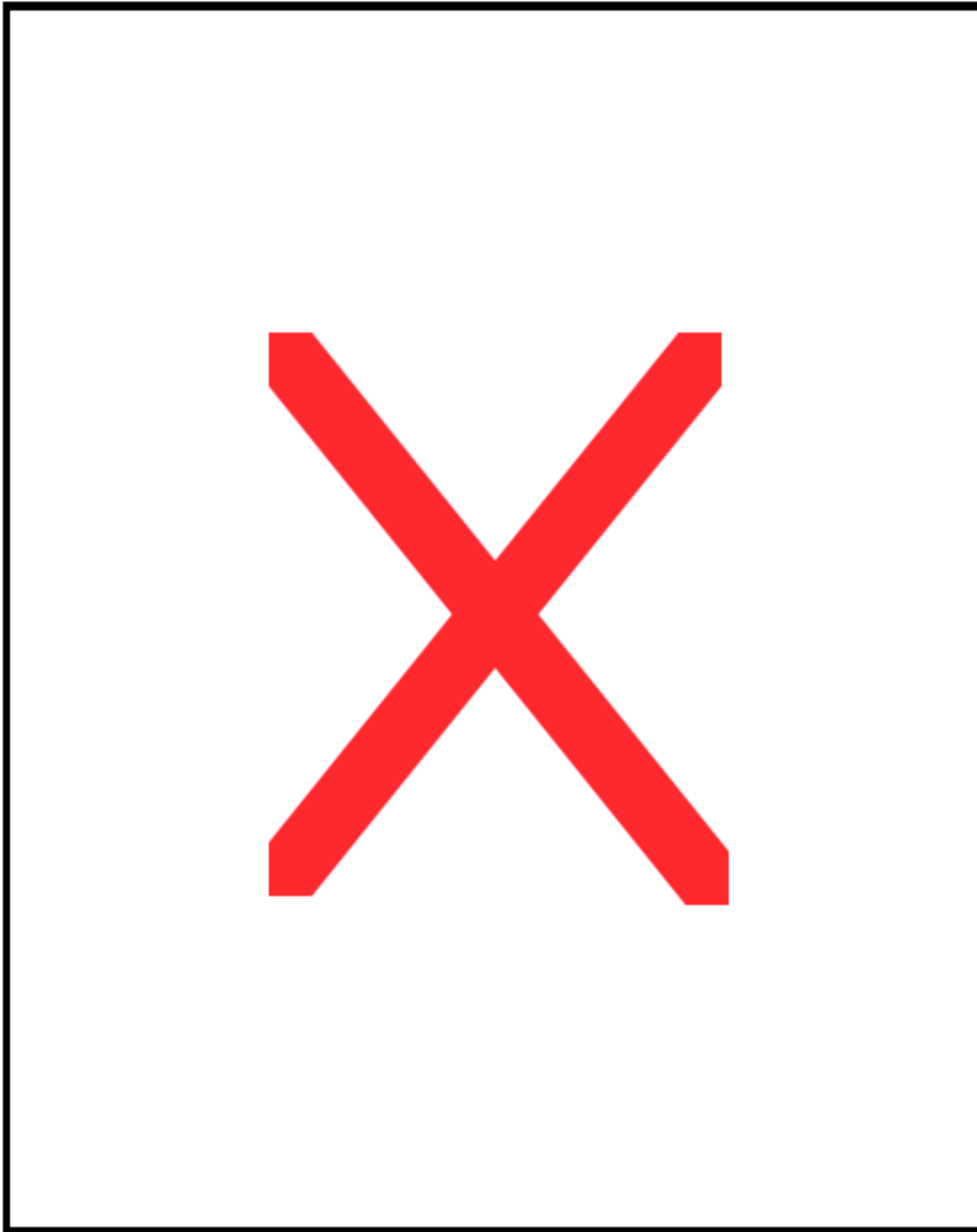
These early advertisements are also raw material for scholars interested in studying the changing roles of gender in the modern office, a topic that has been considered by some scholars for both the modern office and its antecedents;31 indeed, paging through one

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31 Such as Margery W. Davies, *Woman's Place Is at the Typewriter: Office Work and Office Workers 1870-1920* (Philadelphia: Temple University Press, 1982); and Sharon Hartman Strom, *Beyond the Typewriter: Gender, Class, and the Origins of Modern American Office Work, 1900-1930* (Urbana: University of Illinois Press, 1992).

advertisement after another, one begins to believe that in the 1950s and after, office technology was primarily to make women happy. An advertisement from 1955 depicts a cartoon of a troubled woman, crying that "I'm no chemist! I'm no mechanic!" and pleading for her boss to buy her a "Stenafax."32
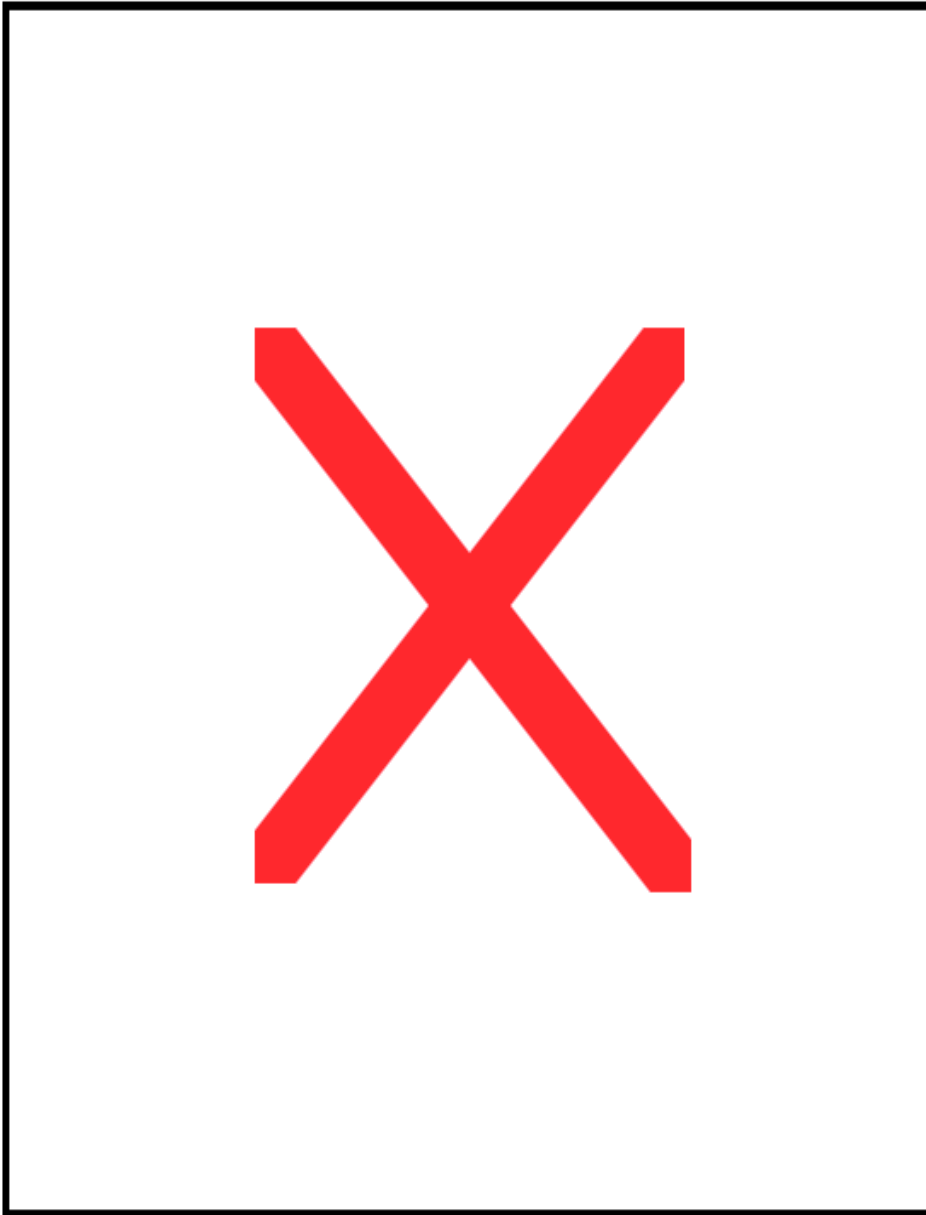
A 1958 advertisement spreads over two pages with a woman standing behind large stacks of documents, beaming, and proclaiming, "look what I turn out in one hour."33

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32 *The Office* (May 1955), 107.
33 Ibid., (January 1958), 174-175.
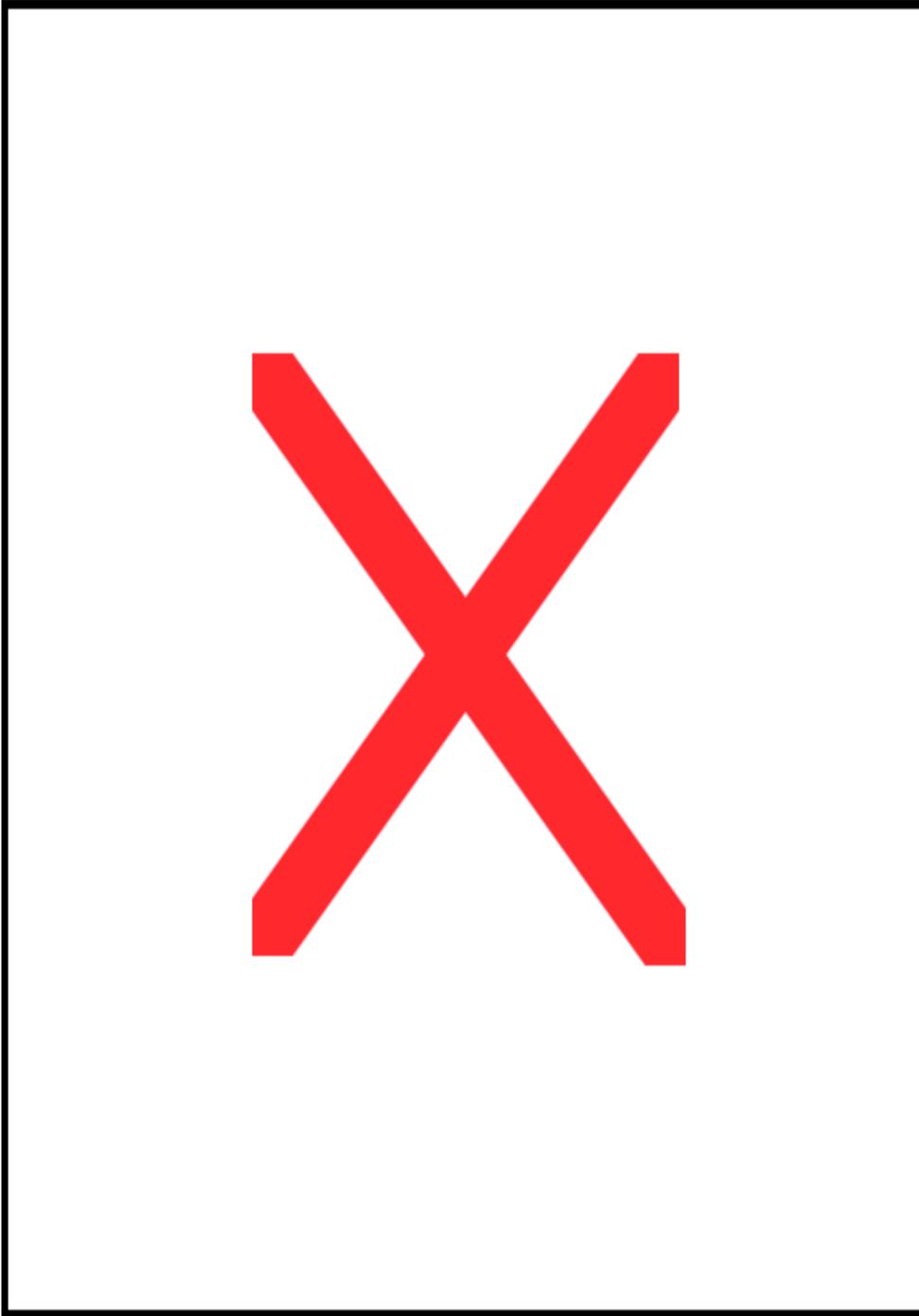
The parade of advertisements reflect an interesting array of product names for the various copiers – "Copy-rite," "Copyflex," "Copyease," " Rapid Printer," "Thermo-Fax," "Stenafax," "Speed-O-Print," "Verifax," – all designd to deny the obvious clumsy

mechanical features that they brought to the office.34

Duplicating, even as primitive as it now seems in comparison to the later development of copiers and the analogous voluminous printing from personal and laptop computers, seemed to have become the focus of office recordkeeping at the mid-point of the last century. The August 1952 issue of *The Office* is a good case in point. Full of advertisements about duplicating, this issue also features a number of essays. The issue starts off with a case study of one municipal government's duplicating program, describing that the "city's offset duplicator turns out faithful reproductions of printed and typed forms, drawings, instructions, receipt books and form letters," all at savings in money and time.35 This issue then includes straightforward, how-to descriptions of office duplicating.36

The introduction and widespread adoption of the Xerox 914 after 1960 revolutionized the copying process. By employing "ordinary paper," it brought an end to messy chemicals, complicated loading and adjusting, and enabled everything to be copied whether "written, typed, printed, stamped or drawn" in whatever color.37 It jump-started the growth of copying in an unprecedented fashion. The various models introduced by Xerox in subsequent years reflected many of the earlier advertisements. In 1969, an advertisement declared, "The Xerox 2400 is for when she has better things to do than hang around making copies," continuing the focus on women's work in the office being secretarial (no one had to tell us who the "she" was).38 Of course, advertisements for devices employing the earlier copying technologies continued for many years, even as the success of the Xerox machines transformed the process; those of us who are old enough can remember using the earlier technologies (I retired a Thermofax machine when I changed positions in 1978, replacing it with a modern photocopier and I remember being amazed that such older machines were still being used).39 Increasingly, as time passed, the advertisements declared war on Xerox, promoting their products in comparison to what Xerox had to offer, concerning buying versus renting, pricing, and other aspects. A 1977 advertisement by Toshiba declared, "O.K. Xerox, Try and Copy This," with a clever drawing of Toshiba's own copier.40 Xerox had achieved what every company wishes for, a semantic merger of its brand name and he business function or process it enables or produces.

The advertisements for the new generation of photocopiers generally focused on features and improvements certain to appeal to professional records managers urging economy and efficiency in the administration of documents. One advertisement in 1967 declared, "How 14 Dennison Copiers save Raytheon $75,000 a year on copying costs," with

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34 Ibid., (August 1955), 110, 115; (December 1955), 38; (May 1956), 104, 109, 142; (January 1958), 101.

35 Herbert Winston, Jr., "How Duplicating Stretches the Taxpayer's Dollar," ibid., (August 1952), 7-12 (quotation, 7).

36 Irvin A. Herrmann, "How to Prepare Masters for Office Duplicating," ibid., (August 1952), 47-75; George G. Hart, "Operation and Control of an Office Duplicating Department," ibid., 77-85, 134-136.

37 From an early advertisement in the July 1960 issue of *The Office*.

38 Ibid., (July 1969).

39 An advertisement was run for a stencil copier in December 1963, promising that it provided the "simplest, fastest and most economical method of making numerous copies of printed, typed, written, diagrammed or drawn originals..." Ibid., (December 1963), 23.

40 Ibid., (July 1977), 145.

a jubilant woman (of course) holding up a sign with the company's contact information.41 An advertisement for the Xerox 3600 announced "How to increase your department's productivity without increasing your department," with a photograph of the photocopier in the background.42 These appeals to economy and efficiency were standard for the records management field in this era as well, and they reflected essentially what divided records managers and archivists.

Such advertisements provide a historical window whereby one can look into the changing nature of the office and the characteristics of modern work. Twenty years ago, two scholars examined 10,000 computer advertisements over the years from 1950 through 1980, determining that the advertisements accurately reflected changing trends in the information technology and applied use of the technology. The same kind of features I saw they saw, with advertisements making promises for revolutionizing work and reflecting or mimicking social and cultural aspects of the office (such as the gender issues). Their study suggests that the "ads show quite clearly the computing industry as a microcosm of America, revealing several general themes about U.S. culture." For example, in the 1950s and early 1960s, the ads "appeal directly to the American Dream of Success – power, profit, prestige, prosperity, and unlimited growth. They tout efficiency, speed, and economy as the salient features of the new technology to be employed in making business grow bigger and larger."43

Photocopiers have had a profound impact on the modern office, in both office culture and the nature of work itself. Speeding up the possibility of copying, they have contributed to new forms of office folklore and, as well, have provided diversions to office workers.44 Erik Pell, in his history of xerography, asserts that the Xerox 914 "would become known as the most profitable item ever manufactured in the U.S.," and that the copier "would revolutionize the American office."45 Moreover, copiers provide a kind of metaphor for the means by which society handles information; one journalist seeking to characterize the Internet in a discourse on rights in cyberspace, referred to it as a "global collection of copying machines."46

For some archivists and records managers, there may be a sense of nostalgia about the older office, even before the days of efficient mechanical copying. There is always a sense of longing for older technologies, effectively captured by Charles D'Ambrosio's fictional account of a typewriter repair shop:

> There were pockets of people who warily refused the future, or the promise
> or whatever it was computers were offering, and stuck by their typewriters.
> Some of them were secretaries who filled out forms, and others were writers,
> a sudden surge of them from all over Seattle. There were professors and

41 Ibid., (January 1967), 21.
42 Ibid., (July 1971), 14-15.
43 William Aspray and Donald deB. Beaver, "Marketing the Monster: Advertising Computer Technology," *Annals of the History of Computing* 8 (April 1986):127-143 (quotations, 138-139).
44 Jean Loic Le Quellic, "From Celestial Letters to 'Copylore' and 'Screenlore,'" *Reseaux: The French Journal of Communication* 5.1 (1997): 113-144.
45 Erik M. Pell, *From Dream to Riches: The Story of Xerography* (Rochester, New York: n. p., 1998), 84.
46 Mike Godwin, *Cyber Rights: Defending Free Speech in the Digital Age*, rev. ed. (Cambridge, MA: MIT Press, 2003), 190.

poets and young women with colored hair who wrote for the local weeklies. There were aging lefties who made carbons of their correspondence or owned mimeographs and hand-cranked the ink drums and dittoed urgent newsletters that smelled of freshly laundered cotton for their dwindling coteries. Now and then, too, customers walked in off the street, a stream of curious shoppers who simply wanted to touch the machines, tapping the keys and slapping back the carriage when the bell rang out, leaving a couple of sentences behind.47

And archivists and archives were not always quick to embrace photocopying, as can been seen in the case of one of America's oldest historical societies. There was a long resistance to acquiring and using a photostatic copier because of concerns about lessening the market value of the holdings of the Historical Society of Pennsylvania (HSP) by copying. As Griffith notes, "Although the Society had been notably generous in granting access to its collections and had even sponsored the publication of many of its prized possessions, there seems to have been a distinct difference in perception between allowing a document to be copied by hand or in print and having a photographic facsimile made."48 In the 1930s, microfilming was introduced at the HSP as a means of providing access to the collections. Thirty years later, the first photocopy machine was acquired. Looking at these seemingly minor details, however, suggests that the HSP was always strapped for the resources it needed for its most basic or routine work.

What looms before us now is the matter of whether the growth of paper records, partly propelled by the photocopying technology, will end and a greater reliance on electronic records will terminate the dominance of paper. Some have been arguing that the dominance of paper has already ended. David Stephens, analyzing trends in records management a decade ago, pulled data from various sources to argue that while paper was growing still in modern organizations, from 5 to 20 percent a year, electronic records were growing from 20 to 60 percent a year. Stephens contended that what used to be the focus of records management, paper documents, had now shifted to digital information, hus fundamentally transforming the field.49 Yet this is a contested notion, one that continue to engage records professionals for a long time as legacy paper systems linger alongside the continuing development of new digital systems.

Ian Batterham, in his practical book about preserving document copies, provides a more realistic assessment, asserting that "The legacy of this 250 years of office copying, with all its invention and variation, with its overlapping and eclipsing, is the millions upon millions of copies that remain. These languish in historical collections of many types: archives, libraries, personal document holdings and even art galleries. Some copies are as pristine as the day they were created, others are showing signs of degradation such as

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47 Charles D'Ambrosio, "Drummond & Son," *New Yorker* (October 7, 2002), 85.

48 Sally F. Griffith, *Serving History in a Changing World: The Historical Society of Pennsylvania in the Twentieth Century* (Philadelphia: Historical Society of Pennsylvania, distributed by the University of Pennsylvania Press, 2001), 89.

49 David O. Stephens, "Megatrends in Records Management," *Records Management Quarterly* 32 (January 1998): 3.

embrittlement of the support, yellowing of the background and fading of the image."50

What all this suggests is that appraisal will become more and more important, given its aims of both identifying the records of critical value to the organization and reducing the bulk of data that future researchers, organizational workers, and citizens will have to go through for the information (better yet, the evidence) they require. The present and still evolving electronic networked society in which we live harkens back to the documentation challenges Helen Samuels began to write about as she reflected on the complexities of modern government, business, and educational documentation. Whatever the responses, both positive and negative, have been to her various appraisal ideas, the reality is that the records and information regime that we now face requires rigorous, planned, and constantly evaluated appraisal approaches such as she and her colleagues or followers (I admit that I followed her in her carefully placed footsteps) began to construct a quarter of a century ago. The continuing presence of the photocopier, now accompanied by the rattles and hums of the printer networks linked to personal computers and laptops, suggests that we will continue to face a complicated office environment for administering records. The glut of paper records resulted from the office revolution of half a century ago, as represented by the photocopier. The glut of information, now well represented by the torrent of electronic mail and the constant surfing on an expanding Web universe, caused by now several generations of a computer revolution, provide the other half of the picture. Archivists, as they continue developing appraisal methods and theories, also need to become more conversant with the implications of information technologies. They need to be more sensitive, following along from the very sexist advertisements of the mid-century for photocopiers, to the gender connotations of records and of their own work. Is computer technology, at least in some of its manifestation, more likely tp attract male than female users? Are men or women more attracted to recordkeeping positions in government and business and how is this reflected in the systems designed to capture and control digital records? Why do archivists accept in their own work as unquestioned the need for such traditional patriarchal concepts such as hierarchy, order, and control? While we can all smile at the blatantly sexist portrayals of the mid-century advertisements, maybe archivists need to appraise themselves for their own biases, and the biases inherent in records and systems, as much as they to appraise records. The sensitivity being shown by those studying the history of documentary forms, such as correspondence, to such matters demonstrates the value of such perspectives.[51]

The biggest hype of all, greater than the many promises of advertisements marketing the earlier photocopier, may be the chimera that every bit and byte of digital information can (and so should) be saved. Archival appraisal, as concept, strategy, and methodology, calls forth as a more convincing alternative, but still needing the work of a

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[50] Ian Batterham, *The Office Copying Revolution: History, Identification, and Preservation: A Manual for Conservators, Archivists, Librarians and Forensic Document Examiners* (Canberra: National Archives of Australia, 2008), 16.

[51] Three recent studies of letter writing consider gender issues; see Dena Goodman, *Becoming a Woman in the Age of Letters* (Ithaca: Cornell University Press, 2009); Konstantin Dierks, *In My Power: Letter Writing and Communications in Early America* (Philadelphia: University of Pennsylvania Press, 2009); and Catherine J. Golden, *Posting It: The Victorian Revolution in Letter Writing* (Gainesville: University Press of Florida, 2009).

new generation of thinkers following in the wake of Helen Samuels.