

### **On the Idea of Uniqueness\***

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#### **Abstract**

Archivists have generally described the records in their care as unique. While this description seems straightforward and absolute, it has in fact been used to denote several different attributes of archives: the uniqueness of records; the uniqueness of information in records; the uniqueness of the processes which produce records; and the uniqueness of the aggregations of documents into files. This essay explores how the idea of uniqueness has evolved, especially in relation to the changing technologies of record-making, and it speculates on the future usefulness of the idea for archival theory and practice.

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*"No one to talk with,  
All by myself;  
No one to walk with,  
But I'm happy on the shelf..."*

—Fats Waller

Archivists' understanding of what they do, how they do it, and why it is important all turn on a core group of concepts or ideas. Most of these derive from the particular nature of archival materials. Because records and manuscripts have certain characteristics, because they differ from other forms of recorded information, archives are perceived to require certain methods and techniques, and not others. Throughout their professional education and subsequent practice, archivists come to take these fundamental characteristics of archival records for granted, ticking them off readily if asked to do so. Archives are permanent records: they therefore deserve more protection and care than materials with only temporary usefulness. Archives are original: they are the best and most direct form of evidence available, because they are generally set down in immediate circumstances by the primary participants in human events. Archives are organic: they grow, largely unobserved, out of individual and corporate activity, and they must therefore be understood in the context of that activity. Archives, particularly in the modern era, are potentially quite voluminous, and their meaning is thus collective: large accumulations of records are more significant than individual items. Archives are useful, not just to their original creators for their original purposes but also to other people later on for entirely different purposes.

In daily professional practice, archivists seldom have either the need or the leisure to analyze the content of these ideas, but a periodic examination of them illuminates the nature of the archival enterprise and affects the way archivists actually do their work. What do we mean by these characteristics of archival materials? What have we meant by them in the past, and how have those meanings, which we encounter as fixed absolutes, evolved through time? Are these ideas as clear and unambiguous as we think they are? What might these archival ideas mean in the future, as technology and other factors change both the nature of records and the role they play in human society? The present study is part of the author's ongoing examination of these fundamental archival ideas, an attempt to articulate a kind of "systematic theology" (to borrow the now-common metaphor) of archives.

Of all the core archival concepts, none has been more central or more frequently identified than the idea of uniqueness. Archival records are thought above all to be unique, and much of their value is seen as a consequence of this inescapable circumstance. Unlike other forms of information, especially library materials, archival records are one of a kind. In professional practice, archivists rest secure in the knowledge that the uniqueness of the materials in their care justifies their efforts and makes their collections valuable. Users can find in archives information they can find nowhere else. The importance of preserving those unique records thus seems morally unassailable, even if programs to accomplish that preservation are not as widely recognized or as fully supported as they deserve to be.

From the point of view of day-to-day archives work, the presumption of uniqueness may be unavoidable. Unfortunately, however, the idea of uniqueness has never been as clear in professional thinking as we may assume; changing forms of archival records have subjected it to serious challenges, and new challenges continue today. Thus, it is worthwhile to explore the idea of uniqueness. What do archivists mean when they say that archival records are unique? What have archivists meant in the past by this uniqueness? Does the idea have a future?

### **Uniqueness in Archival Thinking**

"Modern archives are unique in character," said T. R. Schellenberg in his 1956 work, *Modern Archives*, which became the basic textbook for more than one generation of archivists. The statement had a directness that was difficult to assail or doubt. Archives "do not exist in large and widespread editions as is often the case with publications of various kinds," he went on. "While many copies of particular records may be made, the archivist is usually concerned only with the unique files in which they may be embodied."<sup>1</sup> Defining archives in this way, by an explicit contrast with other sources of information, Schellenberg found uniqueness at the heart of the distinction. "Records are unique," he said again a decade later in a book exploring the similarities and differences of archival and library practice. "Publications usually exist in multiple copies. The content of one record repository, for this reason, varies almost completely from that of another; but the content of various libraries is more or less

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<sup>1</sup> T. R. Schellenberg. *Modern Archives: Principles and Techniques* (Chicago: University of Chicago Press, 1956), 114.

approximately alike.”<sup>2</sup> Even when there had been “prodigality” in the production of “numbers of copies of individual documents,” archival records retained their uniqueness, and everything archivists did with them flowed from that characteristic.<sup>3</sup> Schellenberg’s contemporary, Margaret Cross Norton, expressed a like sentiment, highlighting the same comparison between archives and libraries: “The quality which distinguishes an archive [sic] from a library is its uniqueness,” she said.<sup>4</sup>

By stating the case in this way, Norton and Schellenberg, whose professional outlook was framed by their work in the management of public records and who were leaders of the “founding generation” of the American archival profession, were making explicit an attribute of archives that had remained largely implicit in the work of the earlier English-language archival theorist Hilary Jenkinson. Jenkinson was reluctant to speak of “uniqueness” as such, but the idea was not very far beneath the surface of his “moral defense” of archives and his emphasis on the importance of preserving the sanctity of their original order. An unbroken chain of custody of records was critical to Jenkinson, who thought their protection from subsequent, outside contamination the most important task the archivist could perform. Precisely because the information in archives was unavailable elsewhere, Jenkinson believed, “the person or persons responsible”

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<sup>2</sup> T. R. Schellenberg, *The Management of Archives* (New York: Columbia University Press, 1965), 68-69.

<sup>3</sup> Schellenberg, *Modern Archives*, 50.

<sup>4</sup> *Norton on Archives: The Writings of Margaret Cross Norton on Archival and Records Management*, edited by Thornton W. Mitchell (Carbondale: Southern Illinois University Press, 1975), 87.

for creating them had to maintain them inviolate from other influences "for their own information" and that of "their legitimate successors." Any archival record might someday be required in legal proceedings, for example, and the preservation of its pristine character, and therefore its validity as evidence, was essential. Jenkinson did acknowledge the problem of duplicate copies of individual documents; he even distinguished between "word-for-word duplicates" and "sense duplicates." Even so, he thought both might be useful if they provided evidence that was otherwise unavailable.<sup>5</sup> The careful preservation and guarding of information that could be found nowhere else was the archivist's first responsibility.

For Schellenberg and subsequent archival theorists, however, the uniqueness of archives assumed a greater importance, and the meaning of uniqueness became most apparent in the difficult problem of appraisal. Jenkinson had thought that making decisions on which records to keep and which to discard was best left to administrators, but Schellenberg argued that this was the archivist's duty, and he offered a set of criteria for shaping the surviving documentary record. In determining what he called the informational value of records, uniqueness was the first and most important of three tests Schellenberg proposed. Writing in a National Archives staff bulletin, later expanded into his general archival textbook, he defined what he

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<sup>5</sup> Hilary Jenkinson, *A Manual of Archive Administration*, rev. 2nd ed. (London: Lund Humphries, 1965; originally published 1922), 11. His discussion of the role of duplicates is at pages 140-155. My own opinion is that Jenkinson did not stress the idea of uniqueness as such because it related too closely to the value of archives for historical research. Since he sought to deemphasize the idea of archives as useful primarily for scholarship and to emphasize instead their role in ongoing administration, he was less concerned than other writers with characteristics that made archives useful in outside research.

meant by the uniqueness of records and why it was important. Uniqueness might be seen in records themselves or in the information they contained, but in either case the appraising archivist was enjoined to “apply the test of uniqueness ... with great severity.” In an age of easy duplication, absolute uniqueness was probably rare, but if records and information “cannot be found elsewhere” or if they constituted “the sole adequate source of information,” they had a legitimate claim on archival preservation. Thus, the value of records was directly proportional to their uniqueness. As rarity increased toward complete singularity, archival value similarly increased; as records became more plentiful and duplicative, their importance for archives was vitiated.<sup>6</sup>

Schellenberg’s discussion of uniqueness deserves careful attention, however, because, even though he stated his case in the language of absolutes—uniqueness was apparently like pregnancy or death: one either was or was not, with no in-between—he in fact saw the matter as a comparative or relative one. Unique information, he said, was that which could “not be found in other documentary sources in *as complete and as usable a form*” (emphasis added): if relative levels of completeness or usability were admitted into consideration, varying gradations of the quality were apparently available. Absolute uniqueness was untypical, since information in certain records was often “similar or approximately similar” to that available elsewhere. The demand to preserve unique information in some records might even be satisfied if it could not be located “as fully or as

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<sup>6</sup> T.R. Schellenberg, *The Appraisal of Modern Public Records*, Bulletin of the National Archives no. 8 (Washington, D.C.: National Archives and Records Service, 1956), 22-24.

conveniently" in others.<sup>7</sup> If mere "convenience" and records that were "approximately similar" could be accommodated, the precise assessment of uniqueness was even more slippery. This seemingly ironclad test of informational value had some very large loopholes.

Most writers on archival theory after Schellenberg echoed his stress on the uniqueness of archives, though they did not always seem to appreciate the tension he had introduced between the absolute and the relative. James Gregory Bradsher and Fredric Miller, for example, grounded their discussion of the nature of archives on the distinction between archival records and published books, and they traced the development of several characteristic archival practices to this distinction. Archives, Bradsher wrote, were "unlike books," which could almost always be replaced if lost, while Miller asserted that archival collections were wholly unique, unlike the materials "duplicated and collected in thousands of libraries."<sup>8</sup> Writers on appraisal in particular followed Schellenberg's lead in making the test of uniqueness essential in deciding whether to keep or destroy records. In one of the first single-volume treatments of appraisal, published in 1977, Maynard Brichford maintained that "unique records are unequalled in kind or excellence," while Frank Boles, writing fifteen years later declared it "a truism that archives seek and preserve information that is unique."<sup>9</sup> Writers on physical

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<sup>7</sup> Schellenberg, *The Appraisal of Modern Public Records*, 22, 23.

<sup>8</sup> James Gregory Bradsher, "An Introduction to Archives," in *Managing Archives and Archival Institutions*, edited by James Gregory Bradsher (Chicago: University of Chicago Press, 1988), 7; Fredric M. Miller, *Arranging and Describing Archives and Manuscripts* (Chicago: Society of American Archivists, 1990), 4-5.

<sup>9</sup> Maynard J. Brichford, *Archives and Manuscripts: Appraisal and Accessioning* (Chicago: Society of American Archivists, 1977), 8; Frank Boles, *Archival Appraisal* (New York: Neal-Schuman, 1991), 41.

conservation also stressed this quality of archival materials. Original records "possess unique and desirable characteristics lost in copying," wrote William Barrow, a pioneer in conservation technique, and these characteristics justified the expense and bother of restoring records that had deteriorated rather than simply microfilming or reproducing them.<sup>10</sup> Researchers, too, treasured the uniqueness of archival records for their own reasons. In what was a methodological guide for a generation of American graduate students in history, Philip Brooks told prospective researchers that, of all the characteristics of original source materials, "uniqueness is the most significant": copies, even if precise duplicates, were "not quite the same." Scholars thus had to be especially assiduous in identifying the information that was "not duplicated" in other sources.<sup>11</sup>

This uniqueness of archival holdings was taken as the foundation for many of the distinctive archival methods for ensuring the organization and accessibility of information. Appraisal continued to be the area where identifying the unique record seemed most critical. In the most recent summary of the subject, F. Gerald Ham proposed a series of questions for archivists to ask themselves in appraisal, including the blunt, if grammatically somewhat suspect, "How unique

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<sup>10</sup> William J. Barrow, "Deadification and Lamination of Deteriorated Documents, 1938-63," *American Archivist* 28 (April 1965): 285.

<sup>11</sup> Philip C. Brooks, *Research in Archives: The Use of Unpublished Primary Sources* (Chicago: University of Chicago Press, 1969), 11. Brooks's vague assertion that copies were "not quite the same" echoed Barrow's belief that originals had unspecified "desirable characteristics" absent from mere copies. Both, I think, were alluding to the emotional and evocative impact of original documents, especially old ones. I have tried to explore some of these issues in "The Symbolic Significance of Archives," *American Archivist* 56 (Spring 1993): 234-255.

is the physical record?" and "How unique is the information in the record?"<sup>12</sup> Archival arrangement and description, too, took the form they did because of the uniqueness of records, many writers said. Norton had sounded this theme early on, maintaining that the singular nature of archives meant that archivists could not rely on "a preconceived [cataloging] scheme" as librarians did; rather, archivists had to "construct [their] classification scheme anew to fit the different types of records kept by each department." In the same way, Miller argued that, without "the impetus of common holdings" among repositories, shared cataloging and other cooperative descriptive programs had been slow to develop among archives. Uniqueness also remained essential for successful preservation programs. Mary Lynn Ritzenthaler emphasized the measurement of uniqueness in deciding which of the available conservation treatments might be appropriate in any particular case, though she did allow that uniqueness could be affected by "how many items of a comparable nature (such as Civil War diaries)" were also available.<sup>13</sup>

The treatment of records in special formats also seemed to require attention to their unique character. Not even changing physical forms could diminish the importance of this trait for archives. In fact, archivists might themselves alter the format of records in their collections through various reprographic techniques in the interest of sound management of their holdings. Audiovisual records were, of course, generally made with the intention that they would be

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<sup>12</sup> F. Gerald Ham, *Selecting and Appraising Archives and Manuscripts* (Chicago: Society of American Archivists, 1993), 54.

<sup>13</sup> Norton *on Archives*, 92; Miller, *Arranging and Describing Archives*, 5; Mary Lynn Ritzenthaler, *Preserving Archives and Manuscripts* (Chicago: Society of American Archivists, 1993), 12.

duplicated, but the idea of uniqueness still applied to them; in fact, the traditional standard of uniqueness might be more important for such material, not less. One recent author cautioned photographic archivists to look always for "camera originals or magnetic masters" in order to "avoid the unknowing acquisition of materials that are duplicated at other institutions." Another warned that maps and architectural drawings have "less and less value with each duplication." Archivists should therefore concentrate only on "blueprints and similar photocopies that bear manuscript annotations," since "each is a unique document that must be considered on the merits of the annotations," not on those of the duplicated information. Still another maintained that electronic records, perhaps the most easily replicable of all, made archivists' judgments about uniqueness more important, rather than less.<sup>14</sup>

**Uniqueness of Records** The apparent unanimity of archival opinion is deceptive, however, for while most writers have identified uniqueness as an essential characteristic of archives, a closer reading indicates that they have not at all agreed on what the idea really means or where the uniqueness of archives resides. In fact, when they have applied the word *unique* to archival records, archivists have been designating four very different things. For some, the term meant the uniqueness of *records themselves*. The actual physical

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<sup>14</sup> William H. Leary, "Managing Audio-Visual Archives," in *Managing Archives*, 108; John A. Dwyer, "Managing Cartographic and Architectural Archives," in *Managing Archives*, 95; Bruce I. Ambacher, "Managing Machine-Readable Archives," *Managing Archives*, 129. For a concise statement of archival uses of copying, see Carolyn Hoover Sung, *Archives and Manuscripts: Reprography* (Chicago: Society of American Archivists, 1982).

items, individually and collectively, which archivists encountered were unique, Ham said, even if the information in them was duplicated or approximated elsewhere. It was this artifactual uniqueness that accounted, perhaps, for Barrow's slightly mystical reference to the "unique and desirable characteristics lost in copying." Unique records were, Brichford said, "the opposite of duplicated records" and the more valuable for it. A library might occasionally acquire one-of-a-kind items, such as rare books, Bradsher acknowledged, but archives necessarily consisted of "unique documents, created in the course of specific transactions."<sup>15</sup> In its most direct sense, the uniqueness of archives applied to the physical documentary objects themselves.

**Uniqueness of Information** For other archivists, the form of uniqueness in records that really mattered was found not in the actual items but rather in *the information* they contained. Schellenberg had, after all, originally introduced the idea of uniqueness in his discussion of the informational content of records, and most subsequent writers similarly emphasized the unique information one could find in records, regardless of whether the physical objects were or were not duplicated. The proper goal of an archival program, said Boles, was to "seek and preserve information that is unique"; the "absolute uniqueness of the records" themselves was secondary. Given Schellenberg's observation on the "profligacy" of modern duplication, Boles noted approvingly that contemporary archivists were coming to acknowledge a genuine "interest in limiting the number of individually unique yet collectively similar documents that are the product of modern society." Scarce resources were thus

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<sup>15</sup> Ham, *Selecting and Appraising Archives*, 54; Barrow, "Deacidification and Lamination," 285; Brichford, *Appraisal and Accessioning*, 8; Bradsher, "Introduction to Archives," 8.

focused more properly on “truly unique information” than on unique items. Maygene Daniels agreed, summarizing the common view by saying that, in order to qualify for archival preservation, “records should contain information that is not available elsewhere.” If they contained duplicate or published information, she said, “they are probably relatively unimportant.”<sup>16</sup> Though applied somewhat loosely to particular documents, the idea of uniqueness applied more importantly, these archivists said, to the information documents contained.

**Uniqueness of Processes and Functions** Other writers emphasized neither the physical record nor its information content. For them, what mattered was the uniqueness of *the processes and functions* that produced records. Archival records were “the product of specific and unique activities,” Miller wrote, and this explained why no two repositories had identical holdings. Bradsher’s reference to the “specific processes” which created “unique documents” echoed this belief that whatever uniqueness there might be in records or information was an effect of something else. Luciana Duranti, making a case for the application to modern records of the “old science” of diplomatics, maintained that every record was inescapably “linked by a unique bond to the activity ... producing it.” Understanding that bond had to precede understanding the records. Helen Samuels, among others, argued that only by analyzing the functions of contemporary institutions would archivists be able to cope with the massive amounts of documentation they produced. Identification of the functions that generated records, rather than detailed analysis of

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<sup>16</sup> Boles, *Archival Appraisal*, 41, 105; Maygene F. Daniels, “Records Appraisal and Disposition,” in *Managing Archives*, 62.

their contents, she said, was the essential starting point in archival appraisal. Terry Cook maintained that, in an archival world in which "the very notion of an original, physical record" had become increasingly rare, shifting concentration to the larger functions and activities of which records are the by-product was the only systematic way for archivists to proceed. "Macro-appraisal" of functional and procedural forms was more likely to succeed than "micro-appraisal" of particular records or isolated bits of information, no matter how unique or informative.<sup>17</sup> Writers who approach uniqueness in this way have taken a step back from both the documents themselves and the information in them, emphasizing instead the processes that generate both.

**Uniqueness of Aggregations of Records** Finally, when still other archivists spoke of uniqueness they meant neither documents nor information nor processes, but *aggregations of records*. Uniqueness derived from the way individual items had been assembled into files; it was those assemblages—and the fact that they had been put together in that way and not some other—which gave them the uniqueness archivists should care about. Individual documents and even the same bits of information might be widely duplicated in the files of many different offices or people, but each of those files was at least slightly different from the others, and this gave them their

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<sup>17</sup> Miller, *Arranging and Describing Archives*, 5; Bradsher, "Introduction to Archives," 8; Luciana Duranti, "Diplomatics: New Uses for an Old Science", *Archivaria* 29 (Winter 1989-1990): 15; Helen W. Samuels, *Varsity Letters: Documenting Modern Colleges and Universities* (Metuchen, N. J.: Scarecrow Press and the Society of American Archivists, 1992), 1-18; Terry Cook, "Mind Over Matter: Toward a New Theory of Archival Appraisal," in *The Archival Imagination: Essays in Honour of Hugh A Taylor*, edited by Barbara Craig (Ottawa: Association of Canadian Archivists, 1992), 38-70 (esp. 46-47).

uniqueness. It was the "unique aggregations of records" produced by daily activity that archivists were interested in, Mary Jo Pugh wrote, and these had to be understood "in the context of other documents created by the same activity over time." Archives were "file units created or accumulated in connection with a specific business or administrative transaction," Bradsher said, and that accumulation gave them their uniqueness. Other kinds of information might be assembled, but these were random and unofficial, and they were not "unique, at least in the sense archives are."<sup>18</sup>

Not only have recent archival writers identified these varying connotations of the idea of uniqueness, but all of them have also agreed, tacitly or aloud, with Schellenberg that uniqueness is best understood in relative rather than absolute terms. This qualifying of uniqueness is practically universal in the archival literature. Ham's formulation of the appraisal question as "How unique is it?" apparently indicates that the "uniqueness-switch" has more settings than just "on" and "off"; the characteristic can admit of degrees. Daniels's conclusion that information lacking uniqueness is "probably relatively" unimportant indicates a double-barreled qualification of the finality that would come from a simple declaration that some records are unique and others are not. Boles's contention that the "virtue" of archival collections was "not the absolute uniqueness of the records" but rather "the web of interrelated information" is indicative of what

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<sup>18</sup> Mary Jo Pugh, *Providing Reference Services for Archives and Manuscripts* (Chicago: Society of American Archivists, 1992), 3; Bradsher, "Introduction to Archives," 7.

may be a larger movement away from the statement of any archival principle in universal, absolute terms.<sup>19</sup>

Such diversity of opinion in specifying what the idea of uniqueness really means may indicate that, like many other archival ideas, this one is clearest if one has in mind a very narrow range of archival materials. In particular, uniqueness may be most clearly defined if one primarily has in mind manuscripts, in the literal, etymological meaning of the word: things written by hand. An original letter John Adams wrote to Thomas Jefferson—but perhaps not, as we shall see, a letter that Jefferson wrote Adams—may be readily understood as a unique item: there are no other copies of it. Moreover, such a letter also satisfies the other kinds of uniqueness archivists have written about: the information it contains and the particular formulation are probably not duplicated elsewhere in precisely that way; the process that produced it was singular; and the compilation of that letter with others Jefferson received is also not replicated somewhere else. In the same way, the Declaration of Independence and the Constitution are unarguably unique documents on all four grounds, even though precursors and drafts of both exist. The items themselves are unique—indeed, they are venerated as such; the information in them is likewise unique; the processes that produced them were original at the time and have since been imitated but never repeated; their compilation (or lack of it) with related records and their subsequent treatment as unique items sets them apart from the rest of the nation's documentary heritage.

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<sup>19</sup> Ham, *Selecting and Appraising Archives*, 54; Daniels, "Records Appraisal and Disposition," 62; Boles, *Archival Appraisal*, 41. I have argued elsewhere that other apparently absolute ideas about archives are under similar challenge; see my "On the Idea of Permanence," *American Archivist* 52 (Winter 1989): 23-24.

But what of everything else? If uniqueness applies to exceptional archival documents, which constitute only a very small fraction of the recorded information in existence, does it also apply to bulky collections of modern records? How do the four kinds of uniqueness—of records themselves; of information in records; of processes that produce records; of aggregations of records—apply to the materials archivists encounter more frequently? Does uniqueness still have meaning for changing record formats and technologies—and not just those of the present day, like electronic records, but to all the innovations in record-making technology in the last five hundred years, including even the printing press and the typewriter? How does the existence of archival records in such formats affect the idea of uniqueness? Is that idea still a useful one for archivists?

### **Originals and Copies**

In a culture just learning to use literacy and the skills associated with it, the act of writing something down is an unusual one, far less common than it is in a literate-minded society like our own. The cost of the materials needed to produce a written record and, even more important, the cost of the skilled personnel able to write are sufficiently high that comparatively few documents are created. One medieval historian, for example, has estimated that a book of laws, compiled from other sources in ninth-century Italy, cost the equivalent of ninety-six two-pound loaves of bread, a staggering sum for the time.<sup>20</sup> When the world of documents is populated only by

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<sup>20</sup> Rosamund McKitterick, *The Carolingians and the Written Word* (Cambridge: Cambridge University Press, 1989), 136-137; see also M. T. Clanchy's discussion of the

handmade originals that require so much effort to create, the uniqueness of each one remains largely undiminished.

Moreover, in newly literate cultures, documents once made may be reproduced only with similar difficulty. Copies, themselves handmade, certainly may be needed for a variety of reasons, but they can be created only by means that, like those for making originals, are slow and cumbersome, and these factors inhibit "profligate" copying. It is also difficult to make such copies without some corruptions, whether accidental or deliberate, creeping into the text. Thus, the distinction between an original and a copy remains reasonably clear. Indeed, societies undergoing a transition to literacy find it necessary to establish procedures for differentiating originals from copies and genuine documents from suspect ones. These range from such simple techniques as reliable means for dating documents to more elaborate procedures such as diplomatics. Traditional diplomatics is at some pains to specify the various kinds of copies that may be made: simple copies, containing a mere transcription of the contents of the original; imitative copies, which reproduce not only the contents but also the forms of originals (in layout, script, and medium, for example); copies in the form of originals, identical to the original but sent separately, often for security purposes; authentic copies, those which are officially authorized as substitutes for the originals; and pseudo-originals, produced in an effort to deceive.<sup>21</sup> Copies have many uses,

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costs of document production in Norman England: *From Memory to Written Record*, 2nd. ed. (Cambridge, Mass.: Blackwell, 1993), 121-123.

<sup>21</sup> Duranti, "Diplomatics," *Archivaria* 28 (Summer 1989): 19-22. In specifying these various types copies, Duranti says (page 22) that the diplomatic analysis of copies is most useful when applied specifically to medieval documents. To attempt a genealogy of modern copies, she maintains, would be "extremely difficult and probably a sterile exercise." See also the discussion of the various means, including signatures and

but traditionally they were rare and generally recognizable as copies rather than unique originals.

In the West, the copying techniques of the classical and medieval eras demonstrate the comparatively neat distinction it was possible to make between originals and copies. Professional copyists were available in the ancient world, and the circulation of literary texts in particular depended on them to no small degree, with authors generally arranging for their own works to be copied. The literate orders of society in the Middle Ages developed more regular means for the making and copying of important texts. Royal chanceries relied on formularies for the replication of routine administrative documents, and even the process of signing these became “automated” through the use of seals. An official edict was often distributed like a kind of chain letter, each recipient making a certain number of additional copies and sending them on to other people, who repeated the process. Monastic religious orders prescribed that a certain amount of time be set aside each day for intellectual activity, including copying. To be sure, the survival of a particular text was therefore subject to a certain amount of chance: why was this document copied rather than that one, and who decided?<sup>22</sup> Still, the number of reliable copies could grow, if at a slow pace.

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reliable dating, for authenticating and therefore trusting documents in Clanchy, *From Memory to Written Record*, 294-327.

<sup>22</sup> On copying in the ancient world, see William V. Harris, *Ancient Literacy* (Cambridge, Mass.: Harvard University Press, 1989), 14 and 298. See also Clanchy’s discussion of the origins of bureaucratic document production and copying, *From Memory to Written Record*, 62-68. On the chance copying of particular texts, see Elizabeth L. Eisenstein, *The Printing Press as an Agent of Change*, (Cambridge: Cambridge University Press, 1979), vol. 1:46, n. 9).

In university towns, professional “stationers” made their living by lending texts to students for individual reproduction. Such texts, known as exemplars, were lent out (usually quire by quire), copied by the borrower, and then returned so the stationer could lend them to someone else. This practice and the fees associated with it were highly regulated: university officials were empowered to scrutinize exemplars before they were borrowed to ensure their conformity with the originals, and errors were subject to heavy fines. As late as the Renaissance, authors were still for the most part acting as their own publishers, circulating as many copies of their work as they could afford to patrons and friends, who would in turn make and distribute new copies. Indeed, such writers as Boccaccio and Petrarch seem to have chosen noble patrons as dedicatees of their works precisely in the hope that they would arrange for copying and distribution.<sup>23</sup> In all such cases, the uniqueness of individual documentary items might be partially compromised (though with difficulty) by the making of copies, but no small effort went into guaranteeing the uniqueness and integrity of their information content nonetheless. Copies usually identified themselves as copies, distinct from the originals.

Forgeries always remained a special problem, of course. Since errors and corruptions could appear in texts unintentionally at any time, it can be difficult to say exactly when the word *forgery*, in the sense of

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<sup>23</sup> For these methods of copying, see Marcel Thomas, “Manuscripts,” in Lucien Febvre and Henri-Jean Martin, *The Coming of the Book: The Impact of Printing, 1450-1800*, translated by David Gerard (London: NLB, 1976), 18-21; C. H. Talbot, “The Universities and the Medieval Library,” in *The English Library Before 1700: Studies in Its History*, edited by Francis Wormald and C. E. Wright (London: Athlone Press, 1958), 67-80; and Robert K. Root, “Publication Before Printing,” *Publications of the Modern Language Association* 28 (1913): 417-431.

a deliberately falsified document, applies. In the Middle Ages, some forgeries became quite famous, none more so than the eighth-century Donation of Constantine, which purported to show that the first Christian emperor had granted the pope permanent political jurisdiction over Italy and the western Empire four hundred years before. The document, which appeared conveniently enough just as popes were struggling with secular rulers for power, was like many later medieval forgeries in that it was produced less for personal motives than in support of some cause or perceived higher purpose. In the modern era, forgeries are understood to be purposefully misleading documents made, as often as not, with a view toward financial gain, but the line between copies, reproductions, facsimiles, and outright falsifications may still be a thin one.<sup>24</sup> Even so, a unique original is still acknowledged (in theory, if not always in practice) as the authoritative version of particular information.

The introduction of movable type printing changed the relationship between unique originals on the one hand and copies on the other. Producing uniform and accurate copies purely by manuscript means is always a risky proposition, as anyone who has tried to copy even a short passage of text by hand knows. Copying highly technical matter—diagrams, drawings, or tables of numbers, for instance—with as much accuracy as they usually demand is extremely difficult.

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<sup>24</sup> For a good discussion of this entire question, see Giles Constable, "Forgery and Plagiarism in the Middle Ages," *Archiv für Diplomatik* 29 (1983): 1-41; see also Clanchy, *From Memory to Written Record*, esp. 318-327. An interesting perspective on this problem from the art world is offered in Rudolf Arnheim, "On Duplication," *New Essays on the Psychology of Art* (Berkeley: University of California Press, 1986), 274-284.

Printing made the production and distribution of faithful copies much easier, and at the same time it also helped fix a distinction between hand-written originals and printed copies, a distinction that for a long time was taken as the essential difference between archival and library materials. In addition to making possible the distribution of information on a wider scale, printing also promoted a uniformity and standardization previously unavailable. Illustrations of all kinds, both decorative and technical, could be reproduced exactly by means of woodcuts and engravings. Printed text was also easier to read than manuscript, since it minimized the variations of different hands or even within a single hand; this in turn may have helped speed the transition from oral reading to silent reading.<sup>25</sup>

Printing did, not completely solve the problem of corrupt texts, of course. The so-called Wicked Bible of 1631, for example, omitted the crucial word "not" from the commandment pertaining to adultery—to the relief, no doubt, of many readers. Still, the idea of "standard editions" of a given text, as contrasted with "errata," took on a clearer meaning with printing than was possible in a purely manuscript culture. Print also had a significant preservative effect, assisting the survival and transmission of documents simply by multiplying the number of copies in existence: even if only a few of them managed to survive physically, the information would not be lost. The comparative ease of production and distribution meant that

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<sup>25</sup> See Eisenstein's discussion of the "features" of printing and print culture in *Printing Press*, 1:71-159. Note also her telling analysis of printing's impact on the ability to reproduce illustrations and technical material (1:52-53). The importance of the transition from manuscript to printing is also considered in J. David Bolter, *Turing's Man: Western Civilization in the Computer Age* (Chapel Hill: University of North Carolina Press, 1984), 139-140.

selection of texts for reproduction could be more liberal with printing than it had been with manuscripts. Most important, however, printing made the distinction between originals and copies increasingly sharp.<sup>26</sup>

The clear line between the two began to erode at the end of the eighteenth century with the appearance of the first of many technologies that made multiple copying easier and more common. In 1780, James Watt perfected a kind of ink that could be used to produce copies of handwritten original documents by putting them through a press. The U.S. State Department was using a Watt press for routine business a decade later, and many prominent individuals, including George Washington and Benjamin Franklin, also acquired them for personal use. More significant, however, were the "multiple writing" machines that made their appearance at about the same time. Just after the turn of the nineteenth century, the American painter Charles Wilson Peale patented and sold a device originally called a "pentagraph." Perfecting earlier English and German models of the same basic idea, Peale's machine was constructed so that, as the writer moved one pen along a sheet of paper, another pen, attached to it by wooden arms, wrote the identical words on a second sheet. "It is, in fact, writing two original letters at once," an early advertisement for the contraption boasted. Peale's device attracted its partisans, including Thomas Jefferson and Benjamin Henry Latrobe. "It is so superior to the copying press of Bolton and Watt," Latrobe said in 1805, "that no comparison can exist between them."

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<sup>26</sup> Eisenstein, *Printing Press*, 1:80, describes the Wicked Bible and the heavy fine its producers incurred. On the importance of selection for reproduction through printing, see Febvre and Martin, *Coming of the Book*, 260.

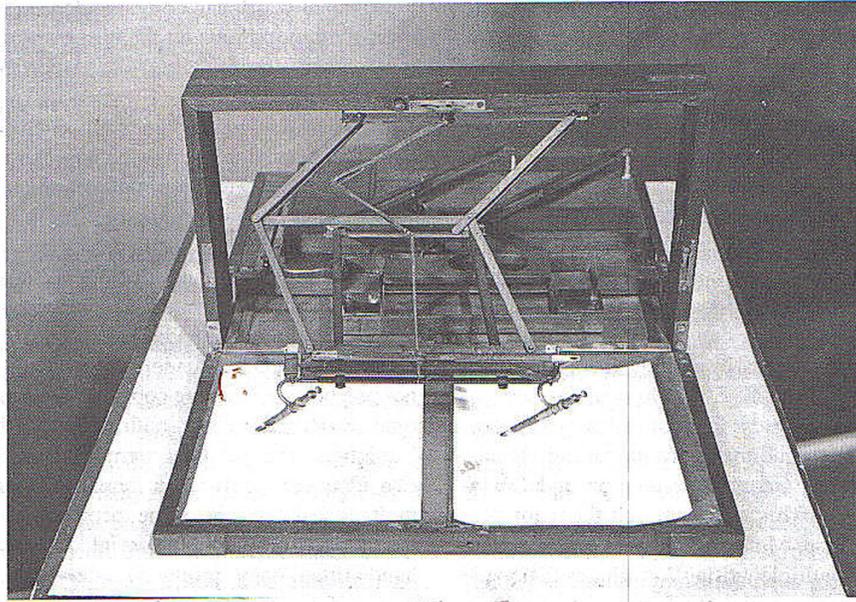
Jefferson had acquired such a "polygraph" (literally, "many writing") a year earlier, and he used it enthusiastically for the bulk of his personal and official correspondence. He even tried to improve on the idea by working, never successfully, on a portable model.<sup>27</sup>

Multiple writing machines proved to be a dead-end technology: never a commercial success, they went out of production shortly after their introduction. Their significance for the distinction between unique originals and duplicate copies, however, cannot be overstated. The newspaper advertisement had made the point precisely: the machine made two originals—not one original and one copy—at the same time. Strictly speaking, both could not be "unique," and yet they were. Here were two identical handwritten items, made simultaneously by the same person, not a handwritten original and a printed or even handwritten copy produced afterward. It was as if one could write the same message legibly with a pen in each hand. Some might want to argue that, with the polygraph, the original was the document produced by the pen actually held by the writer, while the copy was the one produced by the pen in the mechanism. On the face of things, such a distinction has a certain common-sense logic about it. But why should that be the case rather than the opposite? Is physical contact between the writer and the writing implement really essential to the definition of "original"? If so, dictated works would

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<sup>27</sup> The brief life and early death of this technology is told in Silvio A. Bedini, *Thomas Jefferson and His Copying Machines* (Charlottesville: University of Virginia Press, 1984); the quotations are at pages 152 and 122. On the State Department's use of a Watt press, see Schellenberg, *Modern Archives*, 82. Jefferson's enthusiasm for the "polygraph" has led many writers (myself included: *Understanding Archives and Manuscripts* [Chicago: Society of American Archivists, 1990], 17) to assert incorrectly that Jefferson invented the machine; Bedini has demonstrated conclusively that he did not.

properly be considered the product of the scribe rather than the author. Just as important, in documents produced by the polygraph, there was no opportunity for subsequent corruptions of the text since both had been created together. Both were unique originals, were they not? Presuming the writer could develop some skill at manipulating the machine, not even a trained eye would be able to tell which document had come into contact with the writer's hand and which had been produced mechanically; nor would it matter.



A "multiple writing machine." (Courtesy of Thomas Jefferson's Copy Machine, Prints File, Special Collections Department, University of Virginia Library.)

Later in the nineteenth century and on into the twentieth, other copying technologies continued to obscure the clear line between the ideas of "original" and "copy." The press copying process developed

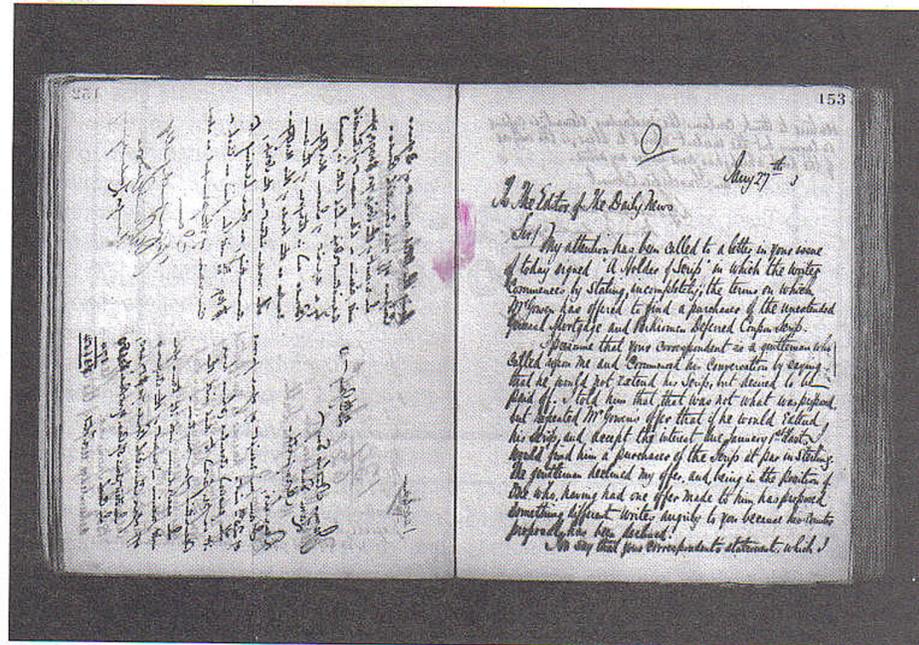
by Watt, for example, proved much more popular than Peale's polygraph. In administrative offices of government and business, the press became the most common means for copying outgoing correspondence. Letters were written with a special copying ink, the original was then placed between the onion-skin pages of a copy book, the surface was moistened, and the book put in a screw press. With pressure, enough of the ink blotted into the copy paper to produce a facsimile while leaving the original legible enough to be sent. Skilled operators could produce copies nearly identical to the original, though it was clear which was which, as it was not with the polygraph, if only because the copy was on a different kind of paper.

Press copying had its problems, however. Copies had to be made quickly, while the ink of the original was still fresh, and at most only one or two copies could be made of a given original. In unskilled hands, it was easy to make a mess of the whole business. Filing and indexing the correspondence were also difficult: at a most basic level, it was necessary to file incoming and outgoing letters separately, since the former were loose sheets and the latter were pages of a bound copybook. Finally, the deliberate intention to make a copy had to be present at the time of making the original. If you decided several days later that you wanted another copy, it was too late: writing out a new longhand version was the only alternative.<sup>28</sup> The

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<sup>28</sup> Jo Anne Yates, *Control Through Communication: The Rise of System in American Management* (Baltimore: Johns Hopkins University Press, 1989), 25-39, discusses this and other copying techniques. I have seen (most notably in the collections of the Archives of the Roman Catholic Archdiocese of Boston, where I was once employed) instances in which, after the press copy was made, that sheet was cut out of the copybook and then filed with the incoming letter in filing folders and cabinets. This remained the standard office procedure in the archdiocese well into the 1920s.

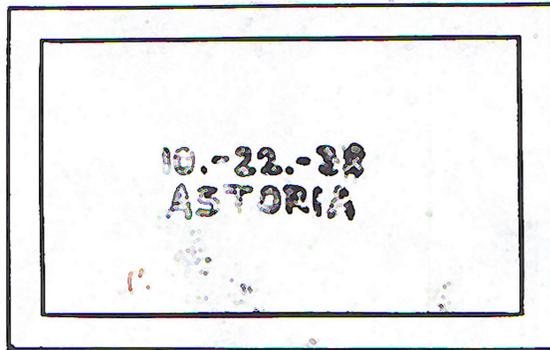
Watt press and its successors produced copies that looked something like originals but could still be distinguished from them.



Pennsylvania Railroad letter press book. (Courtesy of Hagley Museum and Library, Wilmington, Delaware.)

The development of the typewriter in the 1880s made it possible to produce neat documents that looked something like printing, but more significant was the concurrent development of carbon paper. This represented an improvement on press copying, but in the process the line between original and copy shifted back and forth. The first commercially available carbon paper was coated with ink on both sides. Writers sandwiched it between a piece of stationery on the bottom and a thin tissue paper on the top, writing on the tissue

paper with a stylus. In that procedure, the “original” was the bottom sheet, its visible text produced by the underside of the carbon paper; the “copy” was the top sheet, with the ink from the top of the carbon paper visible through from its underside. As single-sided carbon paper developed, the designations were reversed: now the “original” was the top sheet, with ink from the pen or typewriter on its surface, and the “copy” was the bottom sheet, produced by the carbon paper. In either case the copy approximated the original in appearance, though it was still easy enough to tell them apart. Other copying techniques of the nineteenth and twentieth centuries—including various processes for mass duplication of copies from original masters, blueprinting, and other “wet” photocopying procedures—had the same effect: the copy looked more or less like the original, but one was readily distinguishable from the other.<sup>29</sup>



The first successful xerographic copy. (Courtesy of Xerox Corporation.)

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<sup>29</sup> On carbon paper and some of the other duplicating processes, see Yates, *Control Through Communication*, 46-56; see also Bedini, *Jefferson and His Copying Machines*, 191-199. There is no good, recent history of the typewriter, but see two classics: Bruce Bliven, Jr., *The Wonderful Writing Machine* (New York: Random House, 1954), and Richard N. Current, *The Typewriter and the Men Who Made It* (Urbana: University of Illinois Press, 1954).

The movement in all these forms of copying was in the direction of producing more copies of single originals at a steadily declining cost, but they still left the idea of the uniqueness of documentary records reasonably intact. Only with the multiple writing machines of the early nineteenth century and the later two-sided carbon paper was the distinction between original and copy so hazy as to challenge seriously the meaning and applicability of uniqueness. If anything, the others supported the notion that there was and always had to be a unique original version of a document; copies of it, "profligate" or not, were copies. Anyone (administrator, scholar, or archivist) interested in preserving information could still usefully employ the common understandings of uniqueness. Generally speaking, a particular physical item could still be identified as the unique original record; unique information was also recognizable in the limited number of copies it was possible to make; the processes that produced documents were still few in number and character; unique sets of files containing documents were similarly identifiable. All these were aspects of copying "B.C."—that is, "Before Carlson": Chester Carlson, the inventor of xerography. With the appearance of that technology, the problem of unique originals and their copies became far more complex.

### **Xerography**

The first successfully photocopied message was not as inspiring as Samuel F. B. Morse's "What hath God wrought"; it was more on a par with Alexander Graham Bell's frantic "Watson, come here; I want you." It said simply, "10.—22.—38. Astoria," thereby identifying the

date and place of its creation. Chester Carlson, an underemployed engineer working for a patent attorney, had recognized a need to produce many copies of individual documents, copies that could be made cheaply whenever one wanted them in the course of transacting business. Photography was an expensive and time-consuming option, and so was the traditional resort to hand copying, with all the attendant risk of errors. Neither was entirely satisfactory. Accordingly, Carlson began to experiment with processes that would reproduce documents by exposing them to static electricity and light. The experiments proved successful, and by 1940 Carlson had received patents for what he called an "electrophotography" machine; later, it came to be known as "xerography," a neologism formed by combining the Greek words for "dry writing." In 1948, coincidentally on the tenth anniversary of his making the first copy, he announced his discovery at a meeting of the Optical Society of America.<sup>30</sup>

At first, no established business was interested in manufacturing Carlson's machine, forcing him to form his own company, eventually known as Xerox Corporation. Copying machines would always be a convenience and luxury in business offices, the conventional wisdom concluded, not a necessity. Carbon copies worked well enough for most purposes, experience seemed to show, and in any case they were familiar. Thus, it was to almost everyone's surprise when the appearance in 1958 of the Xerox 914 copier (so named because it could reproduce documents on sheets of paper with dimensions up to 9 by 14 inches) ushered in a revolution. Now it was possible, cheaply

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<sup>30</sup> Chester F. Carlson, "History of Electrostatic Recording", in John H. Dessauer and Harold E. Clark, eds., *Xerography and Related Processes* (London: Focal Press, 1965), 15-49; for a technical description, see also in that volume M. Levy and Lewis E. Walkup, "Introduction to the Xerographic Process", 51-63.

and quickly, to make many more copies than ever before, and the making of copies itself came to seem necessary and entirely normal. The first machines were slow by later standards, yielding only seven copies per minute; today, some can make up to one hundred copies per minute. Initial projections envisaged the sale of only 3,000 of the 914s over the entire lifetime of the product; in fact, more than 200,000 were sold. The company estimated that xerographic copies were being made at a rate of 50 million per month in 1961; by 1966, they estimated the monthly copying total at 490 million; in 1986, they guessed that the number of copies made annually was in the neighborhood of 2.5 trillion.<sup>31</sup> Contrary to all the established rules of economics, the supply of this technology succeeded in creating the demand for it.

The most obvious change wrought by xerography was surely this vast increase in the number of copies of documents in circulation, but more subtle changes were also at work. The very nature and meaning of copies and their role in documentary processes was shifting. Both quantitatively and qualitatively, the world of records and information was now very different from what it had been. Perhaps most significantly, the new copying technology severed more sharply than ever before the temporal and intentional links between original and copy. In contrast to press copying or mimeographic reproduction, xerography did not require the intent to make a copy at the time one

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<sup>31</sup> See the history of the development of office copiers in J. Mort, *The Anatomy of Xerography: Its Invention and Evolution* (Jefferson, North Carolina: McFarland, 1989), 53-69. For a broader cultural view of this whole subject, see Hillel Schwartz, *Striking Likenesses: The Culture of the Copy in the Modern World* (New York: Knopf, forthcoming).

made an original. One no longer had to make that original in a particular way, using specific materials (special inks, for example) in order to be able to make a copy of it. Copies of virtually anything could now be made at any time, even long after the fact. Indeed, documents written centuries ago could now be successfully copied. Because it was so easy and so cheap, this "unplanned copying after the point of creation"<sup>32</sup> made copying random and unpredictable, done without a second thought in response to constantly changing circumstances.

The nature and appearance of xerographic copies also represented an important change. Copies could now look more or less the same as the original, and they could be produced on the same kind of paper. The "imitative copy" of diplomatics could be generated with a fidelity that had been at best difficult in the past. In fact, copy quality improved to such a degree that governments everywhere became concerned that the criminally inclined would produce passable counterfeit money, and they moved to take countermeasures. Copies could be made of copies, introducing more of a direct generational effect than had been evident with earlier techniques. Because the xerographic process was at base a photographic one, copies of handwritten items showed the same penmanship as the original. Early photocopies were readily recognized as such: the paper was shiny and felt strange, the ink could rub or wash off easily. As time went on, however, the quality of the copies improved to the point where one might be unable to tell whether one was holding an original or a subsequent copy. In such a circumstance, did the traditional distinction between the two even matter any more?

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<sup>32</sup> Yates, *Control Through Communication*, 54.

All these changes, which derived from the perfecting of xerography, served to undermine the traditional ideas of uniqueness. Individual items might still be identified as unique, though the technology was purposely making this difficult: copies that looked exactly like the original, including even the replication of color, were achievable. As copies could be made more and more indistinguishable from originals, the uniqueness of the latter was less clearly defined. Records creators made several copies of an original in the first place, and the designation of any one of these as the "first among equals" was problematic: a form letter could now be made to look less like a form and more like a personal, individualized letter.

Inexpensive and widespread copying likewise compromised the uniqueness of information in documents. With so many copies, the same information was in many different places at the same time. A prodigious duplication of information in records and files became the daily fact of life for records managers and archivists. In the average university, for instance, how many copies of course registration forms were created and circulated? Similarly, information on an organization's personnel—resumes, correspondence, appointment and discharge records, evaluative materials—exists in several places at once. The files of department supervisors, personnel officers, and others in the organizational hierarchy all have the same records on individual employees. That information is not uniquely recorded anywhere. Financial and purchasing records are likewise duplicated on a massive scale. If copying has made the identification of unique record items difficult, it has also served to vitiate the meaning, the significance, and even the existence of unique information.

The uniqueness of the processes that produce records has fared slightly better in the face of these changes, but even so its significance is diminished. Copying allows greater standardization of the processes that generate records: all personnel matters are now handled in the same way, all purchase orders conform to the same specifications, and so on. Thus, the information recorded and retained in these processes may diminish in variety, moving toward a smaller number of unique types. At the same time, however, information in organizations can be more easily shared across departmental lines, and information gathered for one purpose can be used for others. The same records pertaining to college students are found in the admissions office, the bursar's office, the various academic offices, and elsewhere. The connection between the information and the particular process that creates it is no longer singular and necessary, and the uniqueness of that process therefore simply matters less. There may still be unique processes that produce records, but they are less significant.

Unique aggregations of documents also suffer a mixed fate born truly profligate copying. On the face of things, the uniqueness of record aggregates seems to be multiplied toward infinity. Hundreds of offices produce collections of files, each slightly different from the others in its contents and structure, even though the documents and the information they contain is largely duplicated elsewhere. In the 1980s, for instance, the records pertaining to one function of the Canadian national government (that of promoting employment) were being produced by 50 distinct programs operating out of 1,000

offices, generating about 3 million case files every year.<sup>33</sup> Though they contained much duplication, each of those files was at least partially different from each of the others and, thus, in its own way unique. The uniqueness of the aggregations of records was apparently unassailable. The significance of that uniqueness, however, was lessened. Even if each of the files was unique, did that matter to the archivist? The Schellenbergian notion of appraisal—that one preserves records if they contain unique information—is of little use in dealing with such files. The Canadian employment records, surely unique aggregations of documents, were accumulating at the rate of 100,000 linear feet every year. Where is the archives big enough to accommodate those unique files even if it wanted to? Thus, as the uniqueness of collections of records increases, a corresponding decrease occurs in the meaning of that uniqueness for what archivists actually do with these collections.

The copying that has become so characteristic of the modern era challenges all four of our traditional understandings of the idea of uniqueness. As uniqueness comes to mean both more and less, its usefulness in analyzing archival records is more and more problematic. Similar challenges come from other changes in the way modern records, in contrast to their ancient, medieval, and early modern predecessors, are produced.

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<sup>33</sup> Cook, "Mind Over Matter," *Archival Imagination*, 42-43.

### **Photography and Sound Recording**

The last century and a half has been the age of the photograph and the sound recording. More directly than we could before, these technologies have allowed us to capture and reproduce what the eye can see and the ear can hear. By transforming the way information is recorded and transmitted, they have changed the way we perceive the world around us. To some degree, of course, all recorded information offers a transcendence of time and space: we can read the manuscript of the Declaration of Independence, just as Jefferson (or his amanuensis) wrote it out longhand, and the words still touch us across the years. Photography reaches through time even more clearly: we now, through photographs, precisely what Lincoln looked like, as we do not with Jefferson, whose image comes to us only as interpreted through portraiture. Recorded sound, too, gives an immediacy to the past: we can hear the familiar cadences of Franklin Roosevelt or John Kennedy, just as they sounded to contemporaries, whereas we can only reconstruct and guess at Lincoln's accent or intonation.

Photography in particular enhances our hold on unique information. Individuals, objects, events, and the natural world can all be recorded, apparently just as they are. The camera, says one student of its impact and meaning, has been generally understood as a means "to record supremely accurate traces of the objects before them." Human intervention seemed minimal; the camera was "automatic, physically determined, and therefore presumably objective."<sup>34</sup> The historian's desire to know the past "as it actually happened" seemed never more easily within reach. Unique

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<sup>34</sup> William J. Mitchell, *The Reconfigured Eye: Visual Truth in the Post-Photographic Era* (Cambridge, Mass.: MIT Press, 1992), 27-28.

photographic records—"supremely accurate" ones, at that—could be created on unique occasions, capturing unique information otherwise unavailable, information never quite put together in that same way again.

The uniqueness of photographic records was clearest at the beginning, with the daguerreotype. In 1834 Louis Daguerre succeeded in making images on metal plates and, more important, in fixing those images so as to stabilize and thus prevent them from continuing to develop into complete illegibility. Daguerreotypes were images that were made directly. In contrast to the later and ultimately more successful photographic processes, there was no intervening negative: each image was printed directly onto the plate that was the finished product of the process. This gave daguerreotypes a clarity that has been difficult to equal since, and it also made each one quite literally unique. The daguerreotype could not itself be reproduced: if one wanted more than one copy (of a portrait, for instance) one had to take that many originals. This directness gave it an apparent objectivity and reality for, as one historian of photography has written, it offered the "magical verisimilitude and mirror-like presence of an astonishingly new kind of image." More broadly, the "mirror-like" daguerreotype helped form our earliest understanding of what photography was and what it could do: here was a singularly real and accurate reflection of the world.<sup>35</sup>

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<sup>35</sup> Alan Trachtenberg, "Photography: The Emergence of Keyword," *Photography in Nineteenth-Century America*, ed. Martha A. Sandweiss (Fort Worth, Tex.: Amon Carter Museum, 1991), 20, 25. There are many general histories of photography, beginning with the daguerreotype; see, for example, Joel Snyder, "Inventing Photography," in Sarah Greenough, et al., *On the Art of Fixing a Shadow: One Hundred and Fifty Years*

The daguerreotype enjoyed only a short-lived popularity before it was supplanted in the middle of the nineteenth century by a succession of processes that produced photographic images on paper. These worked by first taking a negative-polarity image and then printing positive copies from it. This represented a fundamental change from the directness of the daguerreotype. Instead of being a singular item, each photograph was now created precisely for the purpose of being reproduced. The image had already been reproduced at least once before most people encountered it, and the reproduction might continue indefinitely. The economic and other advantages of the newer methods were many.

Within only a short time of its invention, photography was popular with and readily accessible to almost everyone; creating their own markets, its promoters made this the most democratic of art forms. Photography never entirely replaced the traditional arts of painting and sculpture, as some of its more enthusiastic early partisans asserted it would, but it did nonetheless challenge the monopolization of originality and did make widely available some of the talents once restricted to the artistically gifted and their patrons. It also altered the relationship between the image and the person who perceived it, as Oliver Wendell Holmes, Sr., noted in an essay in the *Atlantic Monthly* in 1859. The daguerreotype had been a one-of-a-kind object, experienced privately in a personal and individual way. By contrast,

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*of Photography* (Washington, D.C.: National Gallery of Art, 1989), 3-38, and the introductory chapters of Mary Lynn Ritzenthaler, et al., *Archives and Manuscripts: Administration of Photographic Collections* (Chicago: Society of American Archivists, 1984). See also Susan Sontag's nontechnical meditation, *On Photography* (New York: Farrar, Straus and Giroux, 1977).

mass-produced photographic images (such as stereographic travel scenes) were multipliable, presenting the same image over and over to thousands of potential viewers. In fact, that was the whole point: when one owned a photograph, what mattered was ownership of the image (the "information," if you like);-ownership of the thing itself was far less important.<sup>36</sup>

Photographic images thus affected the idea of uniqueness in conflicting ways. On the one hand, each image retained its unique quality: the subject or event being photographed looked just that way only at the instant the photograph was taken, and it never looked precisely that way again. The camera captured the unique moment and the unique information present in that moment. On the other hand, because that unique image could subsequently be reproduced, perhaps infinitely—often, the very deliberate intention of the photographer was to do exactly that—neither the photographic record nor the information it presented were ever really unique. Both would be multiplied. The distinction between originals and copies lost much of its meaning. What was the "original" in a photograph: the negative or the positive print? If the latter, which print was the original, the first one or the technically best one? Are photographs produced by so-called instant cameras (the famous Polaroid, for example) originals in a way that negative-to-positive photographs are not?<sup>37</sup> The difficulty of answering such questions suggests that, with

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<sup>36</sup> Trachtenberg, "Photography," 43. On the significance of the reproduceability of photographs, see also Estelle Jussim's essay, "The Reflexive Camera," in her collection, *The Eternal moment: Essays on the Photographic Image* (New York: Aperture, 1989), 3-13.

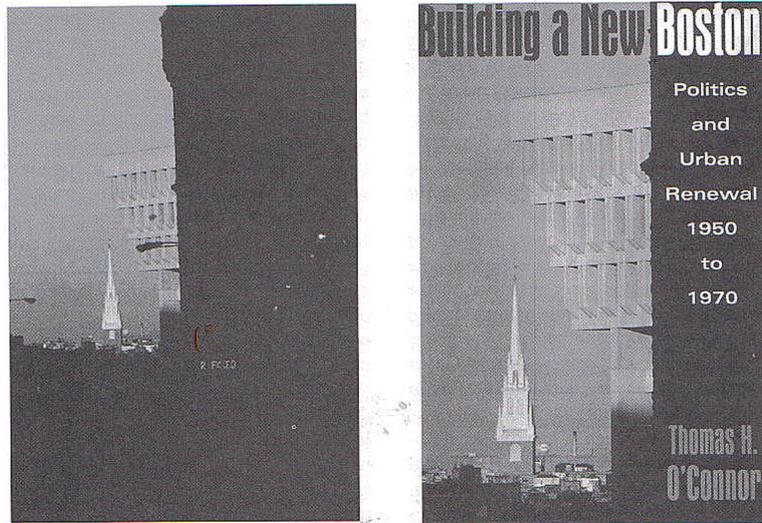
<sup>37</sup> Some of these questions are posed forcefully in Mitchell, *Reconfigured Eye*, 49.

photography, the traditional understanding of originals and copies is largely beside the point. Photographs thus had a paradoxical effect, both preserving and dissipating uniqueness at the same time.

More problematic still is the recent advent of the digital manipulation of photographic images. Until the last few decades, when we encountered a photograph we could take as given that the image we saw corresponded to some objective reality. What we could see in the photograph had actually been there at some point, and the camera had recorded it, "mirror-like"; its reality was or at least seemed, as one writer has said, "unequivocal."<sup>38</sup> To be sure, it was possible to doctor photographs, retouching them to make them seem to represent something they did not. The most famous example of this capability may be a photograph of Lenin and Trotsky standing together at some Soviet event, later altered on Stalin's orders to remove Trotsky's image after he had fallen from power. Such retouching was awkward and difficult to accomplish, however, and in most circumstances it was relatively easy to detect. Accordingly, we generally took for granted the veracity of the information presented to us in photographs. After all, "pictures don't lie."

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<sup>38</sup> Snyder, "Inventing Photography," 4; see also Estelle Jussim, "The Eternal Moment: Photography and Time," in *Eternal Moment*, 49-60.



Digital manipulation of photographs. Note the two street lights (left and right) in the photo at left that have been removed from the image on the dust jacket at right. (*Photograph copyright by Peter Vandenwarker.*)

We now know that they do. The ability to reduce photographic images to digital information has severed the apparently necessary connection between photography and reality. From its origins in the American space program in the 1960s, where it was first used to enhance the quality of pictures sent back from the moon, the digital manipulation of photographs has become progressively common. Indeed, while earlier retouching had required considerable skill and hours of work, the new means for altering photographs can be accomplished easily: they may now be done by almost anyone with a personal computer.

The skillful can create deceptions that are extremely difficult to detect, and examples of this technology have begun to appear with distressing regularity. *National Geographic* magazine suffered no small embarrassment—the editors were forced to apologize publicly—when, in its February 1982 cover photograph, it pushed two of the pyramids at Giza closer together so they would fit the available space better. In early 1994, the popular television and radio reporter Cokie Roberts and her crew were scolded by network officials after they had digitally spliced a scene of the U.S. Capitol building behind her to make it look as if she were really there, when in fact she was standing in a studio a couple of miles away: she had even put on an overcoat to enhance the deception. *Scientific American*, featuring a story that explained the technology of digital doctoring, ran on its cover an apparently flawless photograph of a dour Abraham Lincoln with a laughing Marilyn Monroe on his arm.<sup>39</sup> Popular assumptions about photographic reality die hard, but photography is apparently in the process of transforming itself from a singularly trustworthy means of recordmaking into a distinctly untrustworthy one.

The implications of this development for the idea of uniqueness are at best ironic. As images are manipulated to produce scenes that do not exist in reality and never did, their uniqueness may be said to be

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<sup>39</sup> *National Geographic* 162 (February 1982): cover; *Washington Post*, February 15, 1994, page E4; William J. Mitchell, "When Is Seeing Believing?" *Scientific American* 270 (February 1994): 68-73, especially Mitchell's suggestions for how to detect digital forgery (71-73). For a good summary of this technology and the issues it raises, see Fred Ritchin, *In Our Own Image: The Coming Revolution in Photography; How Computer Technology Is Changing Our View of the World* (New York: Aperture, 1990). An interesting discussion of the ethical implications of this technology for the new business in the wake of the Roberts incident is in the *Chicago Tribune*, 20 February 1994, page 6.

increasing. Abraham Lincoln and Marilyn Monroe photographed together: yes, that is undoubtedly unique. If so, however, uniqueness has lost its value, and it ceases to be a reliable guide to anything. Its presence or absence becomes at best irrelevant and at worst misleading to our assessment and use of information. In appraising the Lincoln-Monroe match, of course, an archivist might well decide that this was an image worth preserving, but the decision would probably be made on grounds other than the uniqueness of either the item itself or the information it contained. The image might be considered evidence of a unique process that produced it, but it is not even that: as the technology spreads, the process is by no means unique. With tongues deep in their cheeks, archivists might try to assert that this represented a unique assemblage of information, but as an image constructed deliberately to lie, to misinform (“disinform,” perhaps), does it have value? The assumption that uniqueness is a positive quality in records—keep the information that is unique and disregard that which is not—is thus under serious attack.

By the end of the nineteenth century, shortly after the development of practical photography, perfection of the ability to record sound worked on the same principles and had much the same effect. Sounds had originally been the only means for the transmission of information, but they were necessarily fleeting. Spoken words existed only as they were in the process of going out of existence, and they were then gone forever unless someone could remember and repeat them. Sound recordings offered the possibility that, like the visual information in photographs, aural information, too, could be captured and preserved more immediately. In recording sound, an original “master,” comparable to the photographic negative, was made first.

This might itself become the archival record—such as the tape recording of a meeting or of a political speech—with no other copies made. An original recording could also be easily duplicated, however, multiplied in any number of copies. Recordings of musical performances, for example, reproduced and sold commercially, were created in just this way. Thousands, sometimes millions, of copies were made from the original, created so they could be distributed far and wide, just as millions of copies of a photograph might be seen around the world.<sup>40</sup> Thus, comparatively few sound recordings may be identified as unique items.

Moreover, the capacity to record and re-record sound, especially in digital formats, is the functional equivalent of the “computerized air-brushing” of photographs. In fact, with the exception of recordings specifically identified as having been made from live performances, most commercially available recordings of music are the result of extensive editing, reworking, and re-recording. A phonograph record or compact disc of a piece by a symphony orchestra, for example, does not contain music that the orchestra simply sat down and played straight through from beginning to end, with no break, even though we hear the piece that way when we listen. Rather, the music is the product of countless takes and re-takes, during which portions are played again and again until just the desired effect is achieved. The results are then put together and smoothed into a whole that seems to have been continuous but was not. The result is as much the product of the sound engineers as of the conductor and the musicians. Such a recording may well represent a unique assemblage of scattered bits of aural information but, as with the computer-

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<sup>40</sup> For a historical overview of this entire subject, see Peter Copeland, *Sound Recordings* (London: British Library, 1993).

altered photographs, this kind of uniqueness is unconnected to any preexisting reality. A new, artificial reality has been constructed instead.<sup>41</sup> Thus are the traditional understandings of uniqueness undermined by technological change.

### **Electronic Records**

Today, technological change is most clearly apparent in the area of electronic records—everything from the now-common word processor to more sophisticated systems for recording, storing, and manipulating information. In just the last thirty years, computer technology has worked a revolution that many observers justifiably rank as comparable to that of the printing press.<sup>42</sup> For archivists and other managers of information, the challenge is particularly acute, with many professionals believing that the skills and habits of mind suitable for the manuscript and printed record are inapplicable or

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<sup>41</sup> Helpful in sorting out these issues are Ken C. Pohlmann, *Principles of Digital Audio* (Indianapolis: Sams, 1985) and Dietrich Schuller, "The Ethics of Preservation, Restoration, and Re-Issues of Historical Sound Recordings," *Journal of the Audio Engineering Society* 39 (December 1991): 1014-17. The ability to manipulate the final product of sound recording and to create multiple unique performances has now extended to the listener. In 1994 the Boston Symphony Orchestra recorded two different endings for Bela Bartok's *Concerto for Orchestra*, in order to incorporate both the version usually heard and a manuscript alternative Bartok wrote but never published. Listeners may program their CD players to hear whichever one they choose.

<sup>42</sup> Documenting the impact of the computer is a bit like documenting the impact of the sun coming up in the East. Studies fall behind the times technically almost before they are published, but among the most useful approaches to the entire phenomenon and its meaning, are Bolter, *Turing's Man*, and Tom Forester, *High-Tech Society: The Story of the Information Technology Revolution* (Cambridge, Mass.: MIT Press, 1987).

even misleading for the electronic record. The challenge the computer represents to our received ideas of uniqueness is serious.

Several attributes of computerized information bear particularly on this question. The first is the essential intangibility of information in electronic formats. Unlike manuscripts, printed documents, photographs, and other traditional forms of records, electronic records have no material existence—at least none that can be perceived without the intervention of both hardware and software. Though mechanical, computers are at the same time non-mechanical, operating only by invisible, fast-moving electrical impulses. In contrast to some of the early machines that could “compute,” such as Charles Babbage’s eighteenth-century “difference engine” or even the abacus, modern computers depend not on gears or moving parts but rather on a regulated flow of electricity the user cannot see. This immateriality makes largely irrelevant any attempt to identify a particular, unique record. What is the record in a computerized format: the invisible electromagnetic bumps on the plastic disk or the “virtual” document the software assembles for us on the screen? Does it matter? As Hugh Taylor has noted more than once, finding and “securing” the original becomes “increasingly elusive”: both the act that creates a record and the record itself “occur simultaneously with little or no media delay or survival.”<sup>43</sup>

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<sup>43</sup> Hugh A. Taylor, “‘My Very Act and Deed’: Some Reflections on the Role of Textual Records in the Conduct of Affairs,” *American Archivist* 51 (Fall 1988): 468; see also Hugh A. Taylor, “Transformation in the Archives: Technological Adjustment or Paradigm Shift?” *Archivaria* 25 (Winter 1987-88): 12-28. On the intangibility of electronic records, see also Bolter, *Turing’s Man*, 38.

Deriving from this intangibility is a more significant feature of electronic information: its mutability. Recording information by hand, printing, or other process requires deliberate and time-consuming effort; when that effort ceases the record is fixed and finished. Documents produced in this way may go through a succession of draft stages, but eventually the text and the information in it stop evolving and "stand still," at least for a while. Information recorded in an electronic format, by contrast, may be changed so easily, quickly, and generally undetectably that change is the rule and stability the exception. Anyone who has written on a word processor knows firsthand that mutation is the norm. Texts are always flexible and tentative, always subject to alteration, both subtle and substantial. The idea of such malleability has even entered the language itself. In 1984, U.S. Treasury Secretary Donald Regan, signaling his willingness to negotiate with Congress over an administration tax proposal, said, "It was written on a word processor. That means it can be changed."<sup>44</sup> One wonders what George Orwell would have made of the coincidence in the date of Regan's metaphor.

The instability of electronic information is even more apparent in hypertext and hypermedia possibilities. It may be true that most archivists have yet to encounter this technology personally, but it seems only a matter of time before they will. As early as 1945, the

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<sup>44</sup> Regan is quoted in Michael Heim, *Electric Language: A Philosophical Study of Word Processing* (New Haven: Yale University Press, 1987), 212. On this subject generally, see also Bolter, *Turing's Man*, 162-163; J. David Bolter: *Writing Space: The Computer, Hypertext, and the History of Writing* (Hillsdale, N. J.: Lawrence Erlbaum Associates, 1991), 5 and 31; and Phil Mullins, "The Fluid Word: Word Processing and Its Mental Habits," *Thought* 63 (December 1988): 413-428.

computer pioneer Vannevar Bush had proposed but never built a "memex" in which the reader could display two texts on a screen simultaneously, creating linkages between them and storing the connections on microfilm. With hypermedia, readers of one text can today open a window on particular words or ideas, call up detailed notes, texts, or images related to them, repeating the process almost indefinitely wherever their own inclinations lead them. More than two thousand paintings from London's National Gallery, for instance, together with detailed artistic, cultural, and historical notes, are now available on a CD-ROM for less than \$100 and operable on a personal computer.<sup>45</sup> This technical capability means that texts and other recorded information are now so fluid and unstable that no two readers will read them in precisely the same way. Users of information can reconfigure and reassemble it in as many different ways as they like. Formerly, several different readers could discuss a work of literature, an original letter, or even a table of statistical data on the assumption that they had all encountered the same information, the same formulation, and the same presentation of it. That assumption may no longer be warranted. Readers as much as writers can now make texts; users of information as much as recorders can form that information.

As yet more common than hypermedia, networks of all kinds provide a glimpse of the ease with which linkages can be made with electronic information. This connectability of electronic information is

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<sup>45</sup> Bolter, *Writing Space*, 23-24, contains a brief history of hypertext, and a discussion of the impact of these capabilities on the decline of the idea of the "author as authority," 153-56. *The Microsoft Art Gallery: The Collection of the National Gallery, London* (Redmond, Wash.: Microsoft Corporation, 1994) was reviewed in *New York Times Book Review*, 6 March 1994.

another of its central characteristics. In a purely manual world of information, the cross-referencing and linking of data from different sources are always cumbersome procedures, but technology opens new possibilities. The advent thirty years ago of even primitive computerized methods allowed social historians, for example, to attempt analyses undreamed of by their predecessors. The many studies of colonial New England towns were founded in no small measure on the ability to connect large amounts of data from a variety of sources, including church records, land deeds, wills and probate inventories, genealogies and family Bible records, and tax and census data. In an automated world, these linkages can now be interactive, themselves subject to constant change, allowing the user to say over and over, in effect, "What would this subject look like if we put the data together in *this* way?" Today, fully automated networks—everything from the ubiquitous Internet terminal to the "information superhighway" politicians promise to build us—provide the ability for users of information to make ever-new connections among disparate and apparently unconnected sources.<sup>46</sup>

All these developments have been generally bad news for the idea of uniqueness. The traditional understanding of physically unique records is difficult to sustain in a world of intangible, constantly changing, interconnected bits of data. The computer manipulation of information is so easy that, from one perspective, all documents may be said to approach an absolute uniqueness. Every version of a word-

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<sup>46</sup> For a discussion of the significance of linking and network possibilities, see Heim, *Electric Language*, 160-64. For a good summary of the New England town studies and what they do (and do not) add up to, see Douglas Greenberg, "Our Town," *Reviews in American History* 9 (October 1981): 454-58.

processed text, every hypertext "reading" of a shifting body of information, every electronic linkage along a network is unique: each differs from all the others, and each can at any time be changed into yet another different version. If everything is unique, however, how useful is that idea? If complete singularity is multiplied without end, does uniqueness offer any help in understanding or managing the information? In appraisal, for instance, where we have thought the uniqueness of records most meaningful, the category ceases to provide the archivist much guidance. Everything is unique, and the quality's usefulness in making appraisal decisions thus disappears: it no longer permits the archivist to distinguish one kind of record (the unique) from another (the not-unique). Gilbert and Sullivan said it best: "When everyone is somebody, then no one's anybody."

The other forms of archival uniqueness are also undermined. If unique documents may be multiplied infinitely, so may the unique information in them. No one source of text or raw data is likely to be any less singular than any other. In fact, as networks and other linkages proliferate, it is likely that the same information will be even more widely replicated, distributed, and available. Indeed, that is the point. Duplication on a massive scale, more readily accomplished and more open-ended even than that of the Xerox machine, becomes commonplace. The information in archival records becomes available in countless other places and ways; the encouragement that archivists search for the "truly unique"<sup>47</sup> as the only fit candidates for archival preservation is therefore fruitless.

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<sup>47</sup> Boles, *Archival Appraisal*, 105.

Unique aggregations of records will also have little meaning, if only because they, too, are constantly multiplying. A particular assemblage of information put together this morning will be changed by this afternoon, and maybe sooner. Similarly, the unique processes which produce records are multiplied past the point of meaning. Whereas archivists could formerly take these characteristics as proof of archival value, using them as justifications for the maintenance of provenance and original order, the fluidity of electronic information yields what might be thought of as “too many” unique processes. Neither aggregations nor processes are stable, and trying to document them all proves impossible.

### **Conclusion: The Future of Uniqueness**

With this possibly frightening vision of the nature of the modern record, what does the idea of uniqueness finally mean? Can archivists continue to apply it to the materials in their care? Is it still useful for us to speak of archival records as unique? While I am reluctant to spell out too precisely the immediate implications of these challenges for day-to-day archival practice—the ongoing professional dialogue must attend to that—I will hazard a few general conclusions.

We must begin with an acknowledgment that uniqueness has always been and remains a complicated and relative idea. To say that our collections are unique has offered us all the comforts of an absolute, identifying a characteristic for which substitutes seem not readily available. In fact, however, archivists have consistently used this absolute in relative or comparative terms. “How unique” are records, we have wondered. Grammatical precision has not troubled us and, in

this instance, it probably need not: we have always seen uniqueness as a quality that is shaded and measured by degrees. If we were to insist on uniqueness as an absolute, it would prove entirely useless. In the end, everything differs from everything else, and the presence or absence of uniqueness thus permits us to draw no meaningful distinctions.

If we are to continue to think about archival uniqueness, however, it will help us to restrict its application to certain kinds of archival records where it is still meaningful. Original, handwritten manuscripts, for instance, may still be usefully characterized as unique, and a range of appropriate archival actions—in appraisal, arrangement, description, and preservation—may be derived logically from that condition. When dealing with such materials, we shall probably want, for example, to save the unique original, while being less concerned for subsequent copies. Increasingly, however, such documents are a smaller portion of the total archival record, and the usefulness of this notion of uniqueness is thus either limited or beside the point. As a result, before off-handedly applying the characteristic of uniqueness and the implied values that accompany it, archivists should by to sort out those circumstances in which uniqueness is a helpful mental category and those in which it is not. The complications surrounding uniqueness and its meaning should serve as a caution against archivists' applying the notion too loosely to their collections.

When archivists do think of uniqueness, the four different varieties of that attribute which archival writers have unintentionally identified over the years remain useful. We should continue to distinguish among them but should do so more carefully. The uniqueness of

records themselves; the uniqueness of information in the records; the uniqueness of processes that produce records; and the uniqueness of aggregations of records—these are still important distinctions. Not all records will have an identifiable uniqueness, but for those that do, these four aspects still encompass the phenomenon. Archivists will help crystalize their analysis of the materials in their care by attending to these differences, differences that are sharp even though they have all gone familiarly by the same name. If we are to identify uniqueness in some archival records, we must be precise about which of the four distinct characteristics we mean and why, in any particular case, one particular kind of uniqueness is important. The simple and often unspoken assumption that archival records are unique and that unique records are archival is insufficiently nuanced. Rather, in examining any body of records, we must inquire how they are unique (if they are) and, just as important, whether and why that matters.

In archival practice, more careful use of the idea of uniqueness can lead to a more thoughtful approach to our holdings and to the actions we take in managing them. In the area of appraisal, the various tests for uniqueness demand that we be clear about the uniqueness we can identify in records. Having taken that step, we can be more explicit about why such uniqueness imparts enough value to the records to warrant their archival preservation. Making such determinations conscious and explicit, rather than leaving them adrift in a vague, generalized assertion of uniqueness, will itself be a step toward better, more considered appraisal. In arrangement and description, archivists have already begun to overcome their long-held assumption that unique documents demand unique procedures for their effective organization. If the value of uniqueness continues to

erode in the face of technological change, movements in the direction of standardized description will be all the more necessary. In preservation, the unique individual document is a rarity. As a consequence, lavishing time and treasure on maintaining it in a pristine physical condition or on restoring it to some near-ideal original state becomes less and less justifiable. A return to the older notion of "multiplying the copies" may make more sense: such copies will not, by definition, be unique, but will that make any difference?

Beyond these considerations, a reexamination of the idea of uniqueness should lead us to a similar rethinking of other central archival ideas. The goal should not be revisionism for revisionism's sake, either as an effort to knock down received archival notions simply because they are tempting targets or as a means for demonstrating that we are smarter than our professional forebears. Rather, thinking about archival ideas and their implicit and explicit values *for us* can reinvigorate our approaches to problems both old and new. The increased self-awareness that may result from that process is essential to the continued intellectual vitality of the profession.