

Instant Documentation: Cell-Phone-Generated Records in the Archives

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Abstract

Cell-phone-generated voicemail messages, text messages, still images, and video footage are often viewed as ephemeral, but cell phones can also create records of enduring value. Despite the importance of cell-phone-generated materials, few archivists have addressed the problems of how to appraise, provide access to, and preserve these materials. This paper invites discussion about integrating these materials into archival collections. It uses email interviews with two archivists who are pioneering this uncharted territory to address issues of appraisal, acquisition, preservation, authenticity, and description surrounding cell-phone-generated documents.

Consider these scenarios:

On 11 September 2001, Melissa Hughes, a San Francisco-based executive on a business trip to New York, was meeting clients on the 101st floor of the World Trade Center when an airplane hit the tower. Using her cell phone, she called her husband in San Francisco and left this message on his answering machine: "Sean, it's me. I just wanted to let you know I love you, and I'm stuck in this building in New York. A plane hit the building, or bomb went off. We don't know, but there's lots of smoke and I just wanted you to know that I love you always. Bye."¹

On 30 December 2006, Iraqi dictator Saddam Hussein was hanged at an Iraqi army base in Baghdad. Two unknown witnesses used cell-phone cameras to videotape the execution, revealing that Hussein was taunted and insulted in his final moments. The cell-phone-generated footage stood in stark contrast to

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The author thanks Tom Scheinfeldt and Grace Lile for their generosity in agreeing to be included in this paper and for their groundbreaking work in this vital new area.

¹ "Voicemail Delivers, Retains Final Words," *St. Petersburg Times*, 8 September 2002, http://www.spstimes.com/2002/09/08/911/Voice_mail_delivers_.shhtml, accessed 7 October 2008.

the official footage of the execution released by the Iraqi government, which was silent. These cell-phone-generated videos were posted online and viewed by millions of people across the globe, sparking an international controversy over Hussein's treatment.²

On 16 March 2008, thousands of ethnic Tibetans took to the streets in protest in cities across China. While China's official news service claimed that police acted only to control violent mobs, cell-phone-generated still photographs and videos painted a very different picture, showing Chinese police firing randomly into crowds of peaceful demonstrators. Defying Chinese orders, unidentified photographers used cell-phone cameras to photograph murdered Tibetan monks. These images were uploaded to The Hub, a website that describes itself as "the world's first participatory media site for human rights" and added to a growing collection of citizen-generated documentation of human rights abuses across the world.³

These powerful examples illustrate not only the ubiquity of cell phones in contemporary society, but also the important role that they play in documenting extraordinary events. Much has been written about the ways cell phones are changing cultures of communication across the globe.⁴ Many scholars note the growing impact of cell-phone use during catastrophic events of the past seven years, with a particular emphasis on the importance of cell phones in creating "spontaneous networks of communication . . . [that] circumvented and undermined more formal hierarchical systems of communication" during the events of 11 September 2001 and subsequent terrorist attacks. Scholars note that cell-phone technologies are "used by both heroes and villains . . . [and] highlight the broader double-edged nature of communication."⁵ Indeed, terrorists use cell phones both to communicate tactical information and to trigger bombs (in the case of the Madrid bombings in 2004); victims to say goodbye to loved ones; rescue workers to locate survivors; and police both to track terrorists through mobile phone records (again, in Madrid in 2004) and gather evidence (as London police requested cell-phone-generated photos and videos from witnesses in 2005).⁶ Archivists should be

² "Video Shows Taunts at Execution," *BBC News*, 31 December 2006, http://news.bbc.co.uk/2/hi/middle_east/6220829.stm, accessed 7 October 2008, and "New Unofficial Saddam Video Posted," *BBC News*, 9 January 2007, http://news.bbc.co.uk/2/hi/middle_east/6243747.stm, accessed 7 October 2008.

³ For one example, see "Images of Murdered Monks: China's Brutal Crackdown on Ngaba Protests," The Hub, 18 March 2008, <http://hub.witness.org/en/node/4492>, accessed 7 October 2008.

⁴ While a more thorough discussion of the impact of cell phones on global cultures is beyond the scope of this paper, further resources on this issue include Peter Glotz and Stefan Bertsch, eds., *Thumb Culture: The Meaning of Mobile Phones for Society* (Copenhagen: Transcript Verlag, 2005); Jarice Hanson, *24/7: How Cell Phones and the Internet Change the Way We Live, Work, and Play* (Westport, Conn.: Praeger, 2007); and Rich Ling, *The Mobile Connection: The Cell Phone's Impact on Society* (San Francisco: Morgan Kaufmann, 2004).

⁵ William H. Dutton and Frank Nainoa, "Say Goodbye: Let's Roll: The Social Dynamics of Wireless Networks on September 11," *Prometheus* 20, no. 3 (2002): 238.

⁶ Glotz and Bertsch, eds., *Thumb Culture*, 11–12.

concerned with collecting such materials, as they reflect what Schellenberg classically defined as “evidential and informational value.”⁷

While cell-phone-generated voicemail messages, text messages, still images, and video footage are often viewed as ephemeral, tailored to meet the needs of a fast-paced, “disposable society,” cell phones can also generate records of enduring value. Rick Barry, one of a growing number of archivists considering the impact of this new technology, wrote in 2005:

It remains to be seen whether text-messaging mobile phones, multi-authoring “wikis,” “podcasts” or other new technologies will rise above hype and hip to become serious generators of business records. They could. . . . If, as some predict, PCs begin to be replaced by smart, wireless, handheld appliances, there will be new business solutions creating and rendering new record forms.

He describes these new record forms as “more trouble” for archivists and records managers.⁸ Writing two years later, Richard Cox reflects a more nuanced attitude toward cell-phone-generated documents, less tentative about their importance but still ambivalent about their form:

The cellular telephone has become a symbol of society’s love-hate relationship with information technology, and many archivists and records managers have lamented the impact of such technologies on traditional records formats. . . . Archivists and records managers have long since stopped lamenting the impact of telephony on written documents, and, in fact, they now seem interested in how cellular telephones enable capturing events from the inside as they unfold (as can be seen in the efforts to document and memorialize the events of the terrorist attacks of September 11, 2001).⁹

Indeed, Barry and Cox authored the only two references to cell-phone-generated documents in the archival literature that the author could find, and both discuss the events of 11 September 2001 as a pivotal moment proving the importance of this new form.¹⁰

⁷ T. R. Schellenberg, “The Appraisal of Modern Public Records,” *A Modern Archives Reader: Basic Readings in Archival Theory and Practice* (Washington, D.C.: National Archives and Records Service, 1984).

⁸ Rick Barry, “Ya Got Trouble (Right Here in River City),” presentation to NARA staff (May 2005), <http://www.mybestdocs.com/barry-r-nara20th-anniversary.htm>, accessed 7 October 2008.

⁹ Richard Cox et al., “Machines in the Archives: Technology and the Coming Transformation of Archival Reference,” *First Monday* 12 (2007), <http://www.uic.edu/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2029/1894>, accessed 8 October 2008.

¹⁰ In addition to the Barry and Cox articles, Katherine C. Shilton’s presentation at the 2008 SAA Annual meeting touched on cell-phone-generated records in archives in the context of issues of ethics and privacy. While the presentation did not explicitly address the events of 11 September 2001, its exploration of electronic records created through tracking devices has significant implications on the ways in which major historical events (such as 11 September 2001) could be documented in the future. Katherine C. Shilton, “Ethics in the Digital Archive: Balancing Privacy, Participation, and Representation,” unpublished paper presented as part of the panel, “Archival Ethics with Changing Practices: The Impact of Technology,” Annual Meeting of the Society of American Archivists, San Francisco, Calif., 30 August 2008.

Yet, despite the growing importance of cell-phone-generated materials, few archivists have addressed the problems of appraising, providing access to, and preserving these materials. This paper uses email interviews with two pioneering archivists to initiate discussion about the integration of cell-phone-generated materials into archival collections. Tom Scheinfeldt is managing director of the Center for History and New Media at George Mason University, which operates the September 11 Digital Archive;¹¹ and Grace Lile is media archive and distribution manager for the human rights organization Witness, which operates both the Witness Media Archive¹² and the Hub.¹³ This paper explores their perspectives on the importance of cell-phone-generated materials, the technical issues raised by their formats, options for their preservation, and issues of authenticity, outreach, and description. This research was conducted via email interviews with both Scheinfeldt and Lile in March, April, and October 2008. No standardized survey was employed; rather, interview questions and follow-up inquiries were tailored to investigate the different functions and goals of each project.¹⁴ Although the author investigated the possibility of including the opinions of other archivists in this paper, she was unable to find others who had, at that point in time, acquired cell-phone-generated materials. The two projects featured in this paper do not constitute an exhaustive list of repositories collecting cell-phone-generated materials; indeed, the author hopes that other repositories are in the midst of grappling with the same issues explored here.

The American Social History Project at the City University of New York Graduate Center and the Center for History and New Media at George Mason University formed the September 11 Digital Archive in 2001 to create a permanent record of that day. Additionally, the project seeks to “foster some positive legacies of those terrible events by allowing people to tell their stories, making those stories available to a wide audience, providing historical context for understanding those events and their consequences, and helping historians and archivists improve their practices based on the lessons we learn from this project.”¹⁵ The project already serves as a catalyst for archivists to consider digital collections; in September 2003, the Library of Congress accepted the Digital

¹¹ “The September 11 Digital Archive,” The Center for History and New Media (2004), <http://911digitalarchive.org/>, accessed 7 October 2008.

¹² “Witness Media Archive,” Witness (2008), http://www.witness.org/index.php?option=com_content&task=view&id=224&Itemid=175/, accessed 10 October 2008.

¹³ “The Hub,” Witness (2008), <http://hub.witness.org/>, accessed 7 October 2008.

¹⁴ The author’s interview with Grace Lile was informally published on the Witness Media Archive Blog. “Archiving Cell Phone Video,” Witness (2008), <http://archive.witness.org/2008/09/12/archiving-cell-phone-video/>, accessed 12 September 2008.

¹⁵ “About the September 11 Digital Archive,” <http://911digitalarchive.org/about/index.php>, accessed 7 October 2008.

Archive into its permanent collections, “an event that both ensured the Archive’s long-term preservation and marked the Library’s first major digital acquisition.”¹⁶

In appraising materials for the September 11 Digital Archive, director Tom Scheinfeldt found it obvious to collect cell-phone-generated materials. “The decision to include voicemails was really made for us when users started contributing these items to the archive.”¹⁷ He notes that the largest collection of phone-generated materials (originating from both mobile phones and land lines) came as part of a gift from the Sonic Memorial, an audio collection of materials relating to 11 September produced by the Kitchen Sisters for National Public Radio.¹⁸ Although cell-phone technology was still young in 2001, and still image and video capabilities were not yet widespread, Scheinfeldt believes voice-mail messages recorded during and after the attacks represent an important shift in the type of materials available to researchers:

Voicemail messages from . . . September 11 are particularly interesting because they are so immediate and because they represent the real-time reactions of ordinary historical actors. In the past, recorded responses to events were either somewhat delayed (as in the case of written letters) or they were produced by governments or institutions (for instance, in the case of radio and television broadcasts). We have very few examples prior to September 11 of ordinary people documenting their own experiences in real time as historical events unfolded. The growth of Internet access and the prevalence of handheld technologies like cell phones made that possible on a large scale for the first time around 2001, and 9/11 is the first event for which we have preserved a large body of these kinds of sources. . . . This may provide an exciting new perspective from which to write and understand history and promises to democratize the historical record in ways we would not have expected just a decade ago.¹⁹

Democratizing the archival record was also foremost in archivist Grace Lile’s decision to accept cell-phone-generated materials at the Hub, a digital human rights archives operated by the organization Witness, where ordinary people can upload, tag, and share images. Lile views cell-phone-generated photos and videos as “citizen-generated documentation”²⁰ of human rights abuses that “are part of a larger framework of tools (images, traditional research and documentation, jurisprudence, statistical analysis) which are used in concert . . . to promote and defend human rights.”²¹ Examples of cell-phone-generated images in

¹⁶ “About the September 11 Digital Archive.”

¹⁷ Tom Scheinfeldt, email interview with the author, 1 April 2008.

¹⁸ For more information, visit Sonic Memorial, <http://www.sonicmemorial.org>, accessed 8 October 2008.

¹⁹ Scheinfeldt, interview, 1 April 2008.

²⁰ Center for Research Libraries, “Human Rights Documentation,” *Focus on Global Resources* 27, no. 2 (2007–2008): 9. Full text available at <http://www.crl.edu/focus/TOC.asp?id=42>, accessed 22 January 2009.

²¹ Grace Lile, email interview with the author, 21 March 2008.

the Hub's collection include those of members of the Burmese military junta beating Buddhist monks, of police in Egypt and Malaysia torturing prisoners, and of dead Tibetan monks in China.²² For Lile, the medium itself makes cell-phone-generated materials important: "Cell phones are small and easy to hide, ubiquitous, and exist primarily for other purposes, can be carried at almost all times, used surreptitiously, and therefore have more chance of being deployed in unpredicted, high-risk or chaotic situations."²³ In the human rights context, these cell-phone-generated materials provide evidence of atrocities that cannot be captured with other media, and they can increase public awareness of these documented human rights abuses as tools of outreach and advocacy. Lile writes:

There is no question that we need to take the responsibility to preserve this media. First, cell-phone video may be the only documentation of a crime, abuse, or event. Second, in some cases the cell-phone video may be the catalyst for ensuing events, and as such is essential as part of a story. Third, it is part of the ongoing story and record of human rights advocacy itself.²⁴

Although both Scheinfeldt and Lile are committed to including cell-phone-generated records in their collections, they each must rethink traditional appraisal policies to fit the context of these new records. For example, the September 11 Digital Archive developed an open selection policy that differentiated it significantly from most paper-based archives in that it accepted every submission it received. "It is our policy to preserve everything,"²⁵ writes Scheinfeldt, harkening back, albeit unintentionally, to the archivist-as-keeper mentality most clearly articulated by Hilary Jenkinson after World War I.²⁶ Many archivists bristle at the Jenkinsonian "moral defense of archives," in which he sees members of the profession as neutral custodians of evidence. Yet, this same broad brushstroke attitude toward selection seems to be resurfacing in the era of electronic records, as the constraints of physical space give way to those of digital storage capacity.²⁷

Because a cell-phone-generated record is easily made and the storage capacity of cell phones is limited, the quality of submissions to the September 11 Digital Archive can be questionable. As a result of the archives' open selection policy, the project includes a number of sound recordings and voicemail messages that are

²² To view footage and still images, visit <http://hub.witness.org/>.

²³ Lile, interview, 21 March 2008.

²⁴ Lile, interview, 21 March 2008.

²⁵ Scheinfeldt, interview, 1 April 2008.

²⁶ Indeed, archivists were known as "keepers" in the U.K. Hilary Jenkinson, *Manual of Archive Administration* (London: P. Lund Humphries, 1965, originally published 1922), now available as an SAA e-publication at <http://www.archive.org/details/manualofarchivea00jenkuoft>, accessed 31 January 2009.

²⁷ Of course, even in the digital realm, archives do not have the capacity to keep everything, particularly given both the huge volume of records that are being produced as a result of digital technologies and the current constraints of preserving and managing digital formats.

incomprehensible or lack clear research value.²⁸ However, the archives asserts the historical importance even of unreliable submissions, stating in its official policy:

Every submission to the September 11 Digital Archive—even those that are erroneous, misleading, or dubious—contributes in some way to the historical record. A misleading individual account, for example, could reveal certain personal and emotional aspects of the event that would otherwise be lost in a strict authentication and appraisal process. That said, most people who take the time to submit something to the September 11 Digital Archive share the goal of its organizers—that is, to create a reliable and permanent record of responses to the 9/11 attacks—and therefore most contributions are authentic. Nevertheless, as with any historical sources (including, for example, newspaper accounts), there are always questions about reliability, and all researchers need to evaluate their sources critically.²⁹

In this way, the September 11 Digital Archive shifts more of the burden of determining reliability and authenticity³⁰ to the user than a paper-based repository does.

It is our policy . . . to allow researchers to determine what is authentic and what is fake. The extent of the archive and the ease with which it is possible to manipulate digital information make it impractical to “authentic[ate]” every item in the archive and we count on our users to use their skills as researchers to make determinations for themselves. That said, we do our best to make sure that the September 11 Digital Archive is as useful as possible to our visitors.³¹

Thus, authenticity and reliability are major concerns with cell-phone-generated materials, particularly given their widespread availability over the Internet to users who can easily manipulate them and may lack the skills to evaluate them.

In this regard, establishing authenticity and reliability in cell-phone-generated materials poses the same problems as it does in other electronic records, which have been the subject of much recent discussion. Luciana Duranti summarizes:

The easiness of electronic records creation and the level of autonomy that it has provided to records creators, coupled with an exhilarating sense of freedom from the chains of bureaucratic structures, procedures, and forms, have produced the sloppiest records creation ever in the history of record making. . . . [E]lectronic records, as presently generated, might be authentic, but they are certainly not reliable.³²

²⁸ Several recordings in the archives are retrievable to users are just noises or people making sounds.

²⁹ Scheinfeldt, interview, 1 April 2008.

³⁰ For an explanation of the difference between authenticity and reliability in the context of electronic records, see Luciana Duranti, “Reliability and Authenticity: The Concepts and Their Implications,” *Archivaria* 39 (Spring 1995): 5–10.

³¹ Scheinfeldt, interview, 1 April 2008.

³² Duranti, “Reliability and Authenticity,” 9.

Archivists and researchers may determine authenticity of electronic records through the use of consistent and accurate metadata.³³ Scheinfeldt stresses the importance of collecting this metadata in the context of the September 11 Archive's open appraisal policy:

The Archive harvests metadata from every contributor—including name, email address, location, zip code, gender, age, occupation, date received—and suggests that these metadata be examined in relation to one another, in relation to the content of the submission, and in relation to other authenticated records. Sound research technique is the basis of sound scholarship.³⁴

Although the Hub does not have the same open selection policy as the September 11 Digital Archive, Lile shares Scheinfeldt's concerns about reliability and authenticity. Witness staffers review all submissions to the Hub before making them public, rejecting approximately 5 percent due to irrelevance, questionable authenticity, or inappropriate content. Additionally, they remove anything on the site that is proven to be misleading or false. The quality of cell-phone-generated images is also a concern, as the footage is inferior to that taken with traditional video cameras, often making the actions it captures difficult to decipher.

Despite careful review of submissions, determining the authenticity of the Hub's cell-phone-generated records continues to be a major issue, particularly since many of the site's contributors remain anonymous because of possible security risks. Lile writes:

The biggest difference in appraisal [between cell-phone-generated materials and paper materials] is less about digital vs. analog and more about user-generated or anonymous sources vs. trusted sources. With cell phone video and other user-generated media, we need to be very selective because we don't have a relationship with the creator, nor is the footage coming from a known source.³⁵

Like Scheinfeldt, Lile believes sufficient metadata are crucial in determining the authenticity of her collection's records:

Ultimately, not all [cell-phone-generated] videos [in the collection] can be authenticated. It may happen in the future that unauthenticated or questionable content is published in an "unverified" space or context. This points to just how crucial it is for users and contributors to submit sufficient metadata. If we have the date, location, the facts and context about what we are seeing, and—when security is not an issue—who shot or created it, there is a much better chance of verifying or corroborating its authenticity.³⁶

³³ "Authenticity," in *A Glossary of Archival and Records Terminology*, Society of American Archivists, http://www.archivists.org/glossary/term_details.asp?DefinitionKey=9, accessed 10 October 2008.

³⁴ Scheinfeldt, interview, 1 April 2008.

³⁵ Grace Lile, email interview with author, 8 October 2008.

³⁶ Lile, interview, 21 March 2008.

Although many of the questions surrounding the authenticity of cell-phone-generated documents are also applicable to other archival materials regardless of format, the speed and anonymity associated with cell phones are of particular concern.

In some ways, however, the difficulty of establishing the authenticity of cell-phone-generated records pushes the boundaries of traditional archival understandings of authenticity.³⁷ Reflecting the influence of postmodern philosophy, scholars such as Heather MacNeil and Bonnie Mak explore the history of archivists' notions of authenticity, pointing out that "authenticity is contingent and changeable" and "is best understood as a social construction."³⁸ In this regard, archival notions of authenticity may have to change to meet the current realities of record creation in the cell-phone era. Any future protocols established for ensuring the authenticity of cell-phone-generated records will have to take into account the context of their creation. For example, metadata required to establish authenticity should not have to include the name of record creators when they must remain anonymous to protect themselves, as is the case for many who post videos on the Hub documenting human rights violations. Thus it would be impossible to establish a static list of metadata required to establish authenticity accurately in cell-phone-generated records, as each record reflects the realities of the context in which it was created. As MacNeil and Mak write, "the authenticity of digital materials . . . cannot be defined in any monolithic sense. Just as people, art, text, and records possess their own kinds of authenticity, each digital resource will also have its own authenticity or indeed authenticities."³⁹ Indeed, the anonymity embedded in many cell-phone-generated records could engender a new approach to authenticating them, one that does not necessarily depend on identifying the creator.

Turning to acquisitions, Scheinfeldt and Lile administer collecting repositories, and both formulated acquisition plans that rely on user contributions of materials. Each discusses outreach as a particular challenge in acquiring cell-phone-generated records. Scheinfeldt says that some of his main challenges are "to convince the public that their cell phone produced materials are worthy of saving, to make them aware of repositories that are willing, interested, and capable of archiving their materials, and to get them to actually donate these materials to those repositories."⁴⁰ He also describes the possible connection between

³⁷ Authenticity is one of the five commonly accepted archival characteristics, as described by Terry Eastwood in one of the profession's most influential essays. Terry Eastwood, "What Is Archival Theory and Why Is It Important?," *Archivaria* 37 (1994): 122–30.

³⁸ Heather MacNeil and Bonnie Mak, "Constructions of Authenticity," *Library Trends* 56, no. 1 (Summer 2007): 26–52.

³⁹ MacNeil and Mak, "Constructions of Authenticity," 46.

⁴⁰ Scheinfeldt, interview, 1 April 2008.

archival repositories and video-sharing sites like Flickr.com, to which users can contribute cell-phone-generated images, but for which no provision is made for long-term preservation. "We either have to encourage Flickr to become an archive or convince archives to become more like Flickr—and then convince ordinary people to use these services to help preserve the materials they are producing," he writes.⁴¹

Lile also describes outreach as one of her greatest challenges, but names archivists and human rights activists as the targets of her outreach efforts:

We need to create the understanding that [archiving cell-phone-generated materials] is something that we need to do, both within the archives community as well as in the advocacy world. In the archival world, the materials seem like ephemera; in the advocacy context there is often a difficulty in thinking beyond the immediate present because of the urgency to take action, prevent abuse, or create change.⁴²

The tensions between the immediacy of these records and their long-term preservation, and between instant communication and enduring value, are apparent not just in the human rights context, but in all cell-phone-generated materials and will need significant attention to convince archivists of the importance of the format.

Both Scheinfeldt and Lile also grapple with the issue of long-term preservation. At the September 11 Digital Archive, the majority of cell-phone-generated documents arrive in .wav format, with some coming in .mp3 format. Although Microsoft and IBM developed the proprietary .wav format, also known as a waveform audio file, for Windows operating systems, most Web browsers are equipped with a playback system for .wav files. One advantage of the format is that it stores uncompressed files. The .mp3 format, approved by the International Organization for Standardization (ISO), by contrast, "uses compression algorithms that drastically reduce the audio files while retaining a high level of quality."⁴³ The September 11 Digital Archive uses a MySQL database and a custom PHP collection management system. But, while the archives has not migrated the materials to other formats, it entered into a preservation partnership with the Library of Congress, to which it delivered a hard drive containing a database dump and file system of the entire collection in 2003. The Library of Congress is experimenting with various methods to ensure the long-term preservation of the materials. Scheinfeldt writes that, though staff at the Library of Congress "have not found a satisfactory permanent solution yet, they have learned a lot of general lessons from the exercise and will continue to work on the materials." He concludes, "As you know, there are no

⁴¹ Scheinfeldt, interview, 1 April 2008.

⁴² Lile, interview, 21 March 2008.

⁴³ William Saffady, *Managing Electronic Records* (Lenexa, Kans.: ARMA International, 2002), 69. For further information about file formats for electronic records, see chapter 3.

firm ‘answers’ yet to questions of digital preservation.”⁴⁴ Indeed, the Library of Congress’s recent efforts to develop a large-scale strategy for digital preservation remain a work in progress, and standards for digital preservation are still being developed.⁴⁵

Similarly, Lile has no firm answers on preservation, though she intends to focus on it in the future. Still images and video footage are currently uploaded from cell phones to the Hub in a variety of formats, including .tif, .jpg, .gif, .flv, and .mp3, which can be hosted by popular video sites like YouTube and viewed with RealPlayer or Adobe Flash Player 9.⁴⁶ The variety of formats poses a difficult preservation challenge, particularly in dealing with compressed formats like .jpg from which valuable detail could be lost. The anticipation of cell-phone uploading capabilities, which will allow users to contribute images directly to the site from their cell phones without the use of an intermediary computer, compounds the challenge. As cell-phone systems are not yet standardized or interoperable, the Hub will have to offer a separate application for each existing system.

The Hub recently implemented a digital workflow system that saves new acquisitions in both preservation and access formats on a NAS/SAN server system. But, as market-driven forces engender an ever-increasing array of new formats, many of the records in the Hub’s collection could soon be rendered obsolete. As a result, Lile could face the same dilemma that most electronic records managers do—whether to migrate old records to new formats or use emulation software to simulate the old programs. “Cell phones are one technology having an impact on archives . . . with which we haven’t grappled sufficiently,” she comments. “The sheer magnitude of electronic communications and recordkeeping, not only the tools with which we communicate, collaborate, and document, but the ensuing changes in behavior, and the rapidity with which the technology evolves are all truly challenging.”⁴⁷ In this case, preservation technology has not yet caught up with communication technology.

Cell-phone-generated materials also raise key issues in description. Lile notes, “The biggest misconception . . . is that images speak for themselves; they don’t. Factual data is imperative to root images in truth and give them context.”⁴⁸ Without sufficient descriptions of when the documented event

⁴⁴ Scheinfeldt, interview, 1 April 2008.

⁴⁵ For more information on the complex issues surrounding digital preservation and the Library of Congress’s role in developing a national strategy for the preservation of electronic records, see “Building a National Strategy for Digital Preservation: Issues in Digital Media Archiving,” Council on Library and Information Resources Report, April 2002, <http://www.clir.org/pubs/reports/pub106/contents.html>, accessed 13 October 2008. For information from that report specifically on the preservation of digital audio files, see Samuel Brylawski, “Preservation of Digital Recorded Sound,” <http://www.clir.org/pubs/reports/pub106/sound.html>, accessed 12 October 2008.

⁴⁶ For a further description of each of these formats, see Saffady, *Managing Electronic Records*, chapter 3.

⁴⁷ Lile, interview, 21 March 2008.

⁴⁸ Lile, interview, 21 March 2008.

happened, who the key players were, and who documented the event and why, archival users can neither authenticate cell-phone-generated materials nor reliably access them. The Hub employs an interactive system of description in which contributors and users assign tags to video contributions, creating a “folksonomy” of descriptive metadata akin to the system employed by the “next generation” finding aid at the University of Michigan’s Polar Bear Expedition Digital Collections.⁴⁹ This user-assigned system of tagging presents interesting new possibilities for description and access in archives, providing the sort of user-supplied contributions that Michelle Light and Tom Hyry suggested in 2002, albeit, in the case of the Hub, in a format entirely outside that of the traditional archival finding aid.⁵⁰ As Web 2.0 technologies such as user-assigned tagging are likely to have an increasing impact on archival description and access, ongoing work needs to be done on the ability of folksonomies (such as that created by users of the Hub) to describe documents accurately and meet user needs.

As these conversations with Scheinfeldt and Lile reveal, cell-phone-generated records expand the range of documents archival repositories collect and present new challenges to archivists in acquiring, appraising, publicizing, and describing records. The ease with which cell-phone-generated records are created, as well as their volume, anonymity, and potential for manipulation, raises a host of issues that test the boundaries of traditional archival theory and practice. In particular, how these two repositories appraise and describe cell-phone-generated documents calls into question the traditional archival emphasis on authenticity and reliability. Similarly, cell-phone-generated records are transforming the landscape of record-making and recordkeeping, creating new frontiers and challenges in digital records management and user-generated folksonomies. It remains to be seen if these changes will necessitate a “new paradigm” in archival theory or if traditional models will bend to fit current (and future) practice. As Linda J. Henry says concerning the appraisal of electronic records, “Solutions will come, as they have for other new types of records, from archivists’ first examining what they know and the extent to which it is applicable, before dismantling archival theory and practice.”⁵¹

More work needs to be done on the new formats engendered by cell phones and other newly available portable recording devices, as well as on the implications that the immediacy of the records these devices create will have for the traditional archival concepts of appraisal, preservation, authenticity, and description. Topics for further study include how cell-phone-generated records are

⁴⁹ For a more thorough discussion of this Web 2.0 finding aid, see Magia Ghetu Krause and Elizabeth Yakel, “Interaction in Virtual Archives: The Polar Bear Expedition Digital Collections Next Generation Finding Aid,” *American Archivist* 70 (Fall/ Winter 2007): 282–314. Visit the site directly at <http://polarbears.si.umich.edu/>, accessed 9 October, 2008.

⁵⁰ Michelle Light and Tom Hyry, “Colophons and Annotations: New Directions for the Finding Aid,” *American Archivist* 65 (Fall/Winter 2002): 216–30.

⁵¹ Linda J. Henry, “Schellenberg in Cyberspace,” *American Archivist* 61 (Fall 1998).

being collected by corporate and government archivists, how social networking sites such as Twitter (the self-described “telegraph system of Web 2.0”⁵²) provide access to and description of cell-phone-generated records, and the ethical and privacy concerns that arise when the precise identity and location of record creators can be archived using cell phone-enabled tracking devices.⁵³ Additionally, archivists should be a part of the discussion concerning how the use of text messages (generated and received via cell phones) to mobilize political constituencies, to register people to vote, and, in the case of the 2008 presidential election, to announce a vice-presidential candidate, will influence not only the appraisal, description, and preservation of the historical record, but history itself. Cell-phone-generated records pose an interesting challenge to archives that will continue to assert itself as cell phones become more deeply entrenched in our society and new technologies further enhance their capabilities. The sooner archivists adapt to the brave new world of cell-phone-generated records, the sooner they will be able to preserve and make accessible these records of enduring value for future generations of scholars and citizens.

⁵² Twitter.com, <http://twitter.com/>, accessed 10 October 2008.

⁵³ Some of this work has already been undertaken by Katherine C. Shilton as previously described.