These collected case studies demonstrate the ability to effectively transform challenges into opportunities for archival description. Readers will discover excellent models of creative and practical thinking in this well-assembled volume. The authors' honest accounts of sometimes erroneous assumptions and resulting adjustments are of primary value, particularly in the detailed analyses of why certain strategies failed.

Description demonstrates the place for innovation in every aspect of archival description, from adapting new systems, standards, and workflows, to establishing new relationships and breaking century-old psychological barriers. The variety of approaches certainly works for the volume. The pieces are not quite equal in their quality, as select chapters seem to be descriptions of works in progress rather than analyses of completed projects. Nevertheless, readers will benefit from every case study.

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Notes

1   Adrian Cunningham, Laura Millar, and Barbara Reed, "Peter J. Scott and the Australian 'Series' System: Its Origins, Features, Rationale, Impact and Continuing Relevance" (session presented at the International Congress on Archives, Brisbane Australia, 2012), http://ica2012.ica.org/files/pdf/Full%20papers%20upload/ica12Final00414.pdf.

2   See "Developing Archival Context Standards for Function in the Higher Education: Final Report," http://www.gashe.ac.uk/news/final_report.pdf.

When We Are No More: How Digital Memory Is Shaping Our Future

By Abby Smith Rumsey. New York: Bloomsbury Press, 2016. 240 pp. Hardcover and EPUB. Hardcover $28.00, EPUB $19.99. Hardcover ISBN 978-1620408025; EPUB ISBN 978-1620408032.

In *When We Are No More: How Digital Memory Is Shaping Our Future,* historian Abby Smith Rumsey provides a thoughtful and accessible exploration of a range of issues facing the future of public and collective memory. Rumsey's experience as a historian combined with a decade of experience working on digital preservation at the Library of Congress uniquely qualify her to make substantive contributions on issues in this area. No doubt, many archivists and librarians first learned about issues surrounding digital preservation from Rumsey when she worked for the Council on Library and Information Resources (CLIR) two

decades ago. In this book, Rumsey covers a wide range of history and topics. The book's breadth, however, makes it a bit difficult to pin down exactly what it is fundamentally about.

The first section—part 1, "Where We Come From"—provides a brief history of media, from cuneiform clay tablets to the silicon chip in about sixty pages. The second section—part 2, "Where We Are"—includes a brief history of materialism in the sciences and of current understanding of human memory in neuroscience. The only constant throughout the book is a somewhat strange repeated invocation of Thomas Jefferson as a kind of muse. Several chapters begin with quotes from his writings and end in consideration of how his vision has or hasn't come to be. A search through the book suggests he appears some forty times. These various stories about Jefferson are merged together with a wide range of other strands into "an exploration into new territories of memory, past and future" (p. 13). As such, this is an ambitious book. It's also an enjoyable read full of interesting examples and stories about both media and mediums which record collective and public memory and the way that the human mind functions. Still, in trying to cover so much territory in a relatively short book some significant weaknesses emerge.

The book is at its best when it is connecting threads and strands that are often not connected. I was thrilled to see substantial discussion of the history of photography and audio and video recording as part of the historical section of the book (part 1). All too often, discussions of the history of media and mediums artificially segregate the past into a digital era and an analog era. Rumsey aptly captures the ways that these older new media acted in their own disruptive way in the history of memory. Discussion of image capture in the 1830s, recording of the human voice in the 1860s, and discovery of x-rays in the 1890s helps to underscore how the "nineteenth century was marked by a series of crises around physical and intellectual control of all the evidence streaming in" (p. 104). A deluge of information and evidence is not a new phenomenon, and this part of the book helps to demonstrate how continued developments of new mediums have presented challenges to preservation and collective memory over time.

Chapter 7, "The Science of Memory and the Art of Forgetting," on human memory and understanding how people's memories work is intriguing. As the title suggests, much of this section focuses on how effective the human brain is at selecting what information to store and what information to disregard. While Rumsey's articulation of these issues intends to suggest that substantive connections here between the human brain (individual memory) and the historical record (collective memory) exist, as a reader I remained unconvinced. We use the word "memory" to refer to both our minds and to the historical record, but the affordances of tangible media and the functions of our biological brains

are fundamentally different. This section would have been considerably stronger if Rumsey had explicitly brought in discussion of cognitive extension, exemplified in the work of cognitive philosopher Andy Clark. His book *Supersizing the Mind: Embodiment, Action, and Cognitive Extension* appears in the references, but he is not directly discussed in the text or the index.[1] Clark focuses on the way that we extend our individual minds through the use of external tools and objects, which would be particularly fascinating to explore in this context. That is, the similarities between our minds and our tools and systems are interesting, but the differences in their affordances and how they can complement each other are just as fascinating; this chapter left me wanting to know more about how our media and mediums extend and complement memory. My suspicion is that Rumsey has likely thought extensively about these points, but it's possible that her focus on creating a more accessible work meant she attempted to avoid delving into some of what rapidly become very complex issues in cognitive philosophy.

The expansive nature of the book resulted in a range of points left out or problematically articulated. The history of media and mediums falls into outdated notions of the Western tradition. Specifically, it does not incorporate contributions from the golden age of Islam, or the critical roles in the history of media and mediums that India and China played. For one example, Rumsey states, "A long-lasting conversation among generations separated by hundreds and thousands of years was interrupted and almost totally silenced between the fall of the Roman Empire and the Renaissance" (p. 167). It wasn't. There was no dark age. Over the last fifty years, historians have demonstrated that knowledge advanced during this period in the Islamic world and that considerable innovation and development of knowledge in Europe occurred during the so-called dark ages. It might seem pedantic, but it's worth underscoring that the conceptually enticing mythology of "a dark age" is not grounded in current understanding of history.

On a different track, computer engineer and digital preservation expert David Rosenthal detailed a series of technical inaccuracies in Rumsey's discussion of issues in digital preservation. Specifically, the book overstates the case for the future indecipherability of digital information and remains focused on somewhat outdated ideas about the need for format migration over virtualization and emulation.[2] Rumsey at one point suggests that "the documents on our hard disks will be indecipherable in a decade" (p. 144). While issues about the sustainability of digital formats indeed exist, we can already access, interpret, and open files from several decades. This kind of overstatement can be problematic in that it, like much of the rhetoric around a digital dark age, seems to suggest that a significant new technological advance is necessary for us to really be able to undertake digital preservation. A substantial body of work to

the contrary now exists, like the results of the POWRR project that demonstrate how small organizations can (and should) take very practical and basic steps toward mitigating the risk of digital information loss.[3]

With these limitations noted, the book is not so much about these individual points but a broader picture of how they fit together. I would recommend the book as an engaging interjection into a discussion about the future of collecting and preserving memory. In the final chapter, "By Memory of Ourselves," Rumsey engages with critical issues around the kinds of memory institutions we need and tensions between a push for openness and increasing the protection of privacy. However, in that bigger picture frame, I very much wished that she would have engaged with pressing questions about the representativeness of the historical record past and future. We have and will likely continue to preserve only an archival sliver of information and records. The historical record has been largely shaped by those in power, and a range of movements and trends around community archives and projects like Documenting the Now are very much entangled with some of the questions about surveillance and big data that come through in the book.

When We Are No More touches on a range of intriguing issues and ideas. Despite some of the weaknesses I've suggested here, I found it to be engaging and thought provoking. If you are interested in an accessible and expansive exploration of the topics described here, I suggest reading it. If you are looking for a basic entry into some of the primary issues you might be facing related to digital preservation, I would recommend starting elsewhere. While discussions of DNA as a storage medium are interesting in a chin scratching sort of way, they distract a bit from the day-to-day work archivists and librarians do and need to do to ensure long-term access to digital information.

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[1] Andy Clark, *Supersizing the Mind: Embodiment, Action, and Cognitive Extension* (Oxford: Oxford University Press, 2010).

[2] David Rosenthal, "Abby Smith Rumsey's 'When We Are No More'," *DSHR's Blog* (May 26, 2016), http://blog.dshr.org/2016/05/abby-smith-rumseys-when-we-are-no-more.html.

[3] See Preserving Digital Objects with Restricted Resources (Digital POWRR), http://digitalpowrr.niu.edu/.