

works. I hope you enjoy the reviews in this issue! In addition to reviews of publications in the journal, *The American Archivist* invites reviews of digital resources, exhibits, technologies, and tools on the Reviews Portal, <https://reviews.americanarchivist.org/>. Feel free to contact me with any suggestions or to discuss contributing a review.

The Science of Managing Our Digital Stuff

By Ofer Bergman and Steve Whittaker. Cambridge, Mass.: The MIT Press, 2016. 296 pp. Hardcover and EPUB. Hardcover \$29.95, EPUB \$20.95. Hardcover ISBN 978-0-2620-3517-0; EPUB ISBN 978-0-2623-3627-7.

As an archivist who works with personal digital archives, the notion that managing our digital stuff can be reduced to a science is certainly an appealing one. So, I was keen to dive into Ofer Bergman and Steve Whittaker's recent book in which they argue just that, drawing on previous research in personal information management (PIM) to theorize about current approaches to organizing our digital data and how they could be improved. I approached this book as someone only tangentially familiar with PIM, but interested to learn more about how research in this field might inform my own work in digital archives.

Ofer Bergman and Steve Whittaker's expertise in the relatively new field of PIM is made evident by the body of work referenced in support of their arguments. Both have spent almost twenty years conducting research into human computer interaction (HCI) and PIM, and have collectively published over forty papers on the subject. *The Science of Managing Our Digital Stuff* follows on from those (in particular, ten papers previously coauthored by the pair) and serves as the culmination of their research to date. Bergman is a senior lecturer in the Department of Information Science at Bar-Ilan University in Israel. Whittaker is a professor in the University of California, Santa Cruz's Department of Psychology, where he specializes in HCI. He is the editor of *Human Computer Interaction* and received the 2014 Lifetime Research Award from the Association for Computing Machinery's Special Interest Group on Computer Human Interaction (ACM SIGCHI).

Throughout *The Science of Managing Our Digital Stuff*, the authors draw on previous studies, many of which they conducted themselves, to examine the current state of PIM as it pertains to our expanding collections of personal digital data. Parts 1 and 2 lay the groundwork by first defining what we mean when we talk about PIM in a digital context before analyzing how effectively

existing technologies support the management of our files. Part 1, “Personal Information Management: The Curation Perspective,” sets out the distinctions that separate PIM from the discovery and retrieval of public data. The key difference, the authors argue, is that personal data (unlike public data) are used and reused by the same individual (pp. 8–9). This is a model that Bergman and Whittaker refer to as “curation,” a three-step process that includes the selection of data that we choose to keep, the subsequent organization (or nonorganization) of that data, and the retrieval of that data as they are reused. For those of us working with archival collections, digital or not, this immediately raises familiar questions about how best to navigate the convergence of public access and private data.

In part 2, “Hierarchical Folders and Their Alternatives,” the authors explore how current technologies support the effective curation of personal digital data. Bergman and Whittaker examine several technologies thought to offer viable alternatives to the ubiquitous but limited hierarchical folder method, including search functionality, tagging, and collaborative file management systems, such as Dropbox and Google Drive. However, the authors reference studies that suggest adoption of these technologies has been slow. Despite the supposed advantages of tagging and searching and the shortcomings of the hierarchical folder method, Bergman and Whittaker indicate an ongoing preference for folder navigation as the primary method for PIM curation. The final chapter of part 2, “Why Is Navigation the Preferred PIM Retrieval Method?,” explores possible reasons for this, positing that the navigation of a hierarchical folder structure puts less demand on the cognitive functions of the brain (p. 173).

The third and final part of the book, “The User-Subjective Approach to PIM Systems Design,” introduces Bergman and Whittaker’s user-subjective approach to PIM. This approach, developed in response to their research on the process of curation, is presented as the first of its kind specifically intended for PIM systems. Without negating users’ apparent preference for hierarchical folder structures, it takes as its basis the idea that users rely on subjective attributes, rather than globally understood or externally observed attributes to organize their data. Specifically, this approach assigns value to three subjective attributes: the perceived importance of the data to the user; the topic or project to which the data are related (and thereby other files with which the data are associated); and the context in which the data are used. Files organized according to these principles will, the authors maintain, be more effectively managed and efficiently retrieved. Bergman and Whittaker describe several prototype applications to illustrate how each attribute could be implemented in practice to better support the curation of our digital data.

Bergman and Whittaker’s book serves as an excellent introduction to some of the challenges and theories underpinning PIM research. Their writing is

consistently clear and avoids the use of jargon, and illustrative examples serve to clarify the book's central thesis at every stage. Similarly, the prototype applications described in the final section of the book nicely demonstrate the link between the authors' user-subjective approach to PIM as a theory and its implementation in practice. The book's content is well organized, with the purpose of each part and chapter explicitly stated and restated in handy summary sections, and playful illustrations bring some humor to what could be a fairly dry subject.

Overall, *The Science of Managing Our Digital Stuff* provides a useful articulation of the challenges facing archivists and researchers who work with large collections of personal digital data. This is especially true of part 1, which describes the three stages of the curation process as defined by the authors. In particular, the authors highlight findings that suggest that decision-making related to the disposal of personal digital data is often irrational and infrequent, with many content creators erring toward retention. Bergman and Whittaker's research also indicates that an overload of digital data limits the extent to which it can be processed and results in the accumulation of often irrelevant data. The subsequently large and indiscriminate collections of personal digital data make retrieval difficult and time consuming, even for the collection's owner, raising familiar questions for archivists about how best to facilitate search and discovery for our researchers. While these challenges are likely not new to most archivists working with personal digital collections, Bergman and Whittaker's research might provide some useful talking points when discussing a collection with donors prior to and following acquisition and may help couch conversations about good personal digital archiving practice in terms that foreground the donor rather than the archives.

Exactly what this means for archivists wrestling with how to effectively provide access to vast and potentially unwieldy collections of data falls outside the scope of this PIM-centered book. That said, their discussion of the prototype applications designed to support a user-subjective approach to managing personal digital data could, if implemented, help researchers (and archivists) interpret these large collections just as they might help their owners manage them. ItemHistory, for example, creates connections between files, Web pages, and emails that were opened at the same time under the assumption that this reflects some contextual relationship between the documents. This functionality means that a user viewing a particular file can track all of the items that had previously been opened concurrently. Another prototype application, ContactMap, maps relationships between email contacts, allowing the user to sort emails and attachments based on social groupings. It's difficult to know how effective these tools would be in bringing some order to the ever-increasing amounts of digital data that Bergman and Whittaker describe. ItemHistory, for example, depends on the assumption that we can make up for our shortcomings in managing our

digital stuff through focused work habits in which our attention (and, subsequently, the documents we have concurrently open) relate, on the whole, to just one project at a time. Even so, these prototypes offer an interesting lens through which to consider context-based tools for discovery and access.

For me, the book's biggest weakness is that it does, at times, feel a little dated. Most of the studies cited in support of the book's central arguments were published prior to 2010, with many dating back to the late 1990s and early 2000s. One paper, frequently cited during the authors' reflections on how users manage their email, is now twenty-one years old. Some of the technologies referenced also seem rather out of date. In their chapter on tagging, Bergman and Whittaker include Delicious as a current example of a social tagging system, despite the fact that the site's popularity has waned in recent years and that it was acquired and shut down by Pinboard in 2017.¹

Bergman and Whittaker do acknowledge early in the book that some of the studies used are approaching twenty years old, but argue that, in spite of their age, this research exposes "problems that . . . are depressingly familiar, even though the technologies are different" (p. 29). In some cases, I am confident this is true. Based on experience both with my own collection of personal digital data and that of our donors at Emory University, it's clear that the management of digital stuff remains challenging despite developments in related technologies and tools. That said, their assertions regarding the shortcomings of alternatives to the hierarchical folder method fell a little flat for me given that their analysis of search and tagging technologies is often grounded in research examining tools or versions of tools now several years old. I often found myself wondering if and how improvements to these technologies in recent years might affect the results of these cited studies.

As an archivist, as opposed to a scholar of PIM, I am not necessarily the intended audience for *The Science of Managing Our Digital Stuff* and I cannot speak with authority to its bearing on that field of study. What I can say is that this is an incredibly useful introduction and very accessible to those who, like me, are relatively new to the field. I have found this book to be especially helpful in talking to students, donors, and the general public about managing their own personal digital collections. The model of curation as defined by Bergman and Whittaker provides an effective foundation on which to build conversations that are, crucially, centered on the user rather than on the archives. It is a book that I am confident I will refer to often, both as I prepare for conversations with local communities wrestling with the management of their own digital stuff and with living donors preparing eventually to transfer their materials to an archives.

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NOTE

¹ Andrew Liptak, "After acquisition, Pinboard will shutter social bookmarking site Delicious," *The Verge*, June 4, 2017, <https://www.theverge.com/2017/6/4/15736722/pinboard-shutter-delicious-after-acquisition>.

Life on Ice: A History of New Uses for Cold Blood

By Joanna Radin. Chicago: University of Chicago Press, 2017. 288 pp. Hardcover and EPUB. \$40.00. Hardcover ISBN 978-0-226-41731-8; EPUB ISBN 978-0-226-44824-4.

After having guided her reader through technical, biological, philosophical, and ethical questions around the collecting and archiving of biological samples, Joanna Radin ends *Life on Ice* by asking a question: "What are the problems for which preservation provides solutions?" (p. 188). This is a bold ending to a book that questions scientific practices and invites both scientists and historians to reevaluate their relationship to biological traces from the past being used in the present and preserved for the future. One possible outcome of this question, Radin posits, is to raise awareness of the ongoing relationships and obligations between bioarchival materials, their originators (or their originators' descendants), and today's researchers. Such commentary also rings true in the case of nonbiological archives, and, while Radin's primary focus is on biological samples, the questions she raises within the context of bioarchives resonate in many ways with archivists dealing with analog and digital records.

Radin is an assistant professor in the history of medicine, anthropology, and history at Yale University. On her website, her research interest is described as the history of "'biological futures'—the ideas, materials, and practices that have shaped contemporary systems of knowledge about life and its potential."¹ *Life on Ice* is her first singled-authored book, and it considers historical and contemporary aspects of blood collection. More specifically, Radin describes different practices around the collection of biological samples gathered, transported, analyzed, and stored for reasons not always clear from the outset. These practices range from the technological (the development of suitably stable and transportable freezers) to the pragmatic (how to gain the trust of Indigenous populations to be allowed to take a sample of blood), and include the philosophical (is a frozen sample still alive?). Over the course of five chapters, the reader is introduced to many characters involved in the theory and practice of biological sampling: Basile Luyet is a Swiss priest-cryobiologist who founded an academic journal "for the elaboration and the experimental Study of Working Hypotheses on the Nature of Life" (p. 30); Henrietta Lacks is a woman whose