Dale Askey*

The End of the Print Era

https://doi.org/10.1515/bfp-2022-0084

Abstract: By 2040, libraries will transit from viewing print books as the standard form for preservation to using digital editions as the copy of record. Libraries will pulp most of their print collections and retain mostly small special collections. Climate change and the resulting political and social instability will drive this transition, but there are potential gains for readers and research if we choose as libraries to pursue them.

Keywords: Digitization, controlled digital lending, preservation

Das Ende des Druckzeitalters

Zusammenfassung: Bis 2040 werden Bibliotheken von der Sammlung gedruckter Bücher als Standardform für die Aufbewahrung zur Verwendung digitaler Ausgaben als Kopie von Aufzeichnungen übergehen. Bibliotheken werden in Zukunft den größten Teil ihrer Druckbestände verringern und meist kleine Sondersammlungen behalten. Der Klimawandel und die daraus resultierende politische und soziale Instabilität werden diesen Übergang vorantreiben, aber es gibt potenzielle Vorteile für die Leser und die Forschung, wenn wir uns als Bibliotheken dafür entscheiden, sie zu verfolgen.

Schlüsselwörter: Digitalisierung, kontrollierte digitale Ausleihe, Bewahrung

Let's start this abruptly and clearly: by 2040, research libraries will only retain small physical book collections, deaccessioning and pulping the vast majority of their collections. They will consider digital and digitized versions to be primary preservation copies. The books that remain will be those with high artefactual, monetary, or totemic value, i. e., the kinds of books already included in our special collections.

This is not an entirely novel vision of the future of libraries, but the objective here is to pull this notion out of the realm of science fiction and instead situate it in the context of the research library mission and the rapidly declining state of the planet on which these libraries exist. Authors such as Vernor Vinge in his book *Rainbow's End* have posited futures with the notion of machine-driven, relentless digitization and destruction of printed books. Vinge conjures the Librareome, a mechanized "monster" that sucks books directly from shelves of the Geisel Library at the University of California at San Diego and shreds them into millions of fragments that are captured by "thousands of tiny cameras," with software then stitching them into digital editions.[1] Vinge's work also employed other new technologies that entered our reality within a few years after the novel's publication: autonomous driverless cars, augmented reality, and optical overlay computer displays, to name a few. One could suggest that the Librareome was a fantastical extension of the mindset put in motion by the Google Book Project, which began in 2004. The vision Vinge lays out in this book is perhaps the most graphic depiction of destructive digitization we will encounter. It is a maximalist approach meant to drive a fictional narrative, yet as it is often the case, with the passage of time it seems less shocking.

If a key component of the research library's mission is to preserve human knowledge, then we must concern ourselves with fixity to achieve that goal. In what form must we preserve knowledge so that we can retain as much knowledge as possible with the constraints of our organizations and finances? At present, we still find ourselves in an era where we tend to consider the original format of an object to be its permanent, archival form. Although we may digitize analogue media, we retain the physical copies and use the digitized versions for access.

For print books, right now we believe that our best option for fixity is to retain the print book. But just as a digital file can be altered, so, too, can a book. An angry person can deface a book, tear out pages, or throw the whole thing in the trash. A damaged book–where the content is altered–could sit on the shelves for decades. With a digital file in regulated digital preservation storage, even a minor change will alter the checksum, making it possible to identify and repair flaws at wire speed and without the intervention of humans. Moreover, many books these days appear in multiple versions at the same time, both print and digital. While libraries still clearly consider print books to be the primary preservation medium, any research library

***Kontaktperson: Dr. Dale Askey**, daskey@ualberta.ca

1 Vinge (2006) 123.

these days has hundreds of thousands, if not millions, of e-books in its collection for which there is no print copy on the shelves thanks to bundled e-book packages.

We are also experiencing a strong surge of enthusiasm for shared print management. While in previous decades the main dream was collaborative collection development, we are now engaged in rationalizing and downsizing our print collections. While off-site storage facilities emerged in the 1990s in North America and are now relatively ubiquitous, libraries are now moving away from having local book depositories and seeking ways to manage print regionally or nationally. What would have been heresy perhaps a dozen years ago, i. e., to suggest that all of the libraries in Western Canada, save one, could discard their copy of an academic book and rely on one copy of last resort is now, in fact, a reality toward which we are increasingly working.

We are already seeing large research libraries take steps toward letting go of print books. Many North American research libraries have dispensed with "tattle-taping" books, i. e., inserting the small metallic strips into book spines that trigger an alarm on a door gate. Many of these gates still exist to provide a residual visual sense that libraries are watching their books, but they have been powered down and are merely silent sentinels. Even when the alarms did sound, one would be hard pressed to find a library that did anything when they sounded in recent years.

What is the next logical step in this progression of slowly retreating from an insistence on print manifestations? We live in a world where the consumption of the written word from digital screens now surely vastly outweighs the consumption of print books. Yes, there are still scholars who decry e-books and digital formats, but their numbers are falling and their arguments–in recent years, ironically most often proclaimed via Twitter, email, or other digital platforms–seem increasingly absurd and anachronistic. From an access and research perspective, digital formats offer clear advantages.

The inherent irony in this book vs. e-book conversation is that those I would call Luddites extol the virtues of books but would damn them to an existence on shelves by demanding the primacy of the printed form over all other versions. That mindset could be said to thwart the work necessary to put books into "circulation" on the Internet, so that they can co-exist with digitally-created documents. The amount of information and thought contained in pre-Internet books is staggering and it would seem that at our current pace of making it easy and accessible online, we will never finish the project and, in fact, be overwhelmed by our increasing obligations to digital-born materials if we do not press ahead with a greater sense of urgency and less concern about manifestation (in the FRBR–Functional Requirements for Bibliographic Records–sense of this word).

There are scholars (Hayles, et al.) who raise the issue of materiality and texts, suggesting that by changing the format we alter how we consume and interpret texts. Such claims may have some validity, yet I would suggest that in a world where most of us spend an increasingly large portion of our working and leisure hours in front of a computer screen of some type, these concerns are mere curiosities and unlikely to alter our relationship with our screens. Moreover, as a personal rejoinder to such arguments, when I think back to the process of writing my dissertation in 2017, I can vividly recall some of the sources upon which I relied heavily. However, I would struggle now to recall which I read in book form, which as photocopies, which as printed PDFs, or which as online texts. Their value and their relevance to me as a reader is apparently not strongly correlated to their material form. What I *can* clearly recall is that the digital resources were infinitely more convenient to access and more flexible in terms of how, where, and when I could read them. As a scholar, such efficiency is non-trivial. As someone who has worked in academic libraries for decades and observed how thousands of students and scholars accumulate their materials, I would venture that my scholarly experience does not differ radically from what most people are doing with texts in the 2020s.

Shifting the focus away from library practice, preservation, and scholarly consumption, I would suggest that what we are currently witnessing in the world should make us question our reliance on massive storehouses of printed materials. The first phenomenon to recognize is that humans are an inherently destructive and capricious species. In other words, despite our best efforts and the undying belief–held by some–that we exist on some arc that bends inevitably toward justice, nations are still going to fall into phases of dictatorship and wage wars against each other. The most immediate and obvious example for readers of this journal will be Russia's invasion of the Ukraine. Many libraries and institutions sprang into action to preserve Ukraine's cultural heritage, most notably SUCHO (Saving Ukrainian Cultural Heritage Online). This is laudable, but in the wake of this latest example of vicious ethnically motivated wars, is it not time for us to ask how we could make it far more difficult to destroy movable forms of culture in the first place? As we have seen repeatedly just in the past generation–Sarajevo, Baghdad, Kabul, Damascus, Mariupol, etc.–the work of libraries over generations or even centuries can be obliterated in an afternoon by a raging ideologically fuelled mob. Even in the absence of violent conflict, dictators can influence or tamper with libraries and archives, rendering them servants of a political agenda.

Beyond war and political challenges, however, we now face a world where it is manifestly clear that human behaviours have set in motion radical and extreme climate change. In the coming decades, we will surely encounter disasters on a scale that we cannot well comprehend at present. Food shortages, unbearable heat, and severe weather will drive mass migration. Climate catastrophes–intense storms, fires, floods–will ravage our cities, which has already begun and will surely intensify. On June 30, 2021, the town of Lytton, British Columbia in Canada reached 49.6°C, more than double the average high temperature. A heat-fuelled wildfire obliterated nearly 90 % of the community. While this is a small example, the recent European summer brought home the destructive power of climate change to millions. Everyone on the planet has, at this point, experienced firsthand some form of unprecedented climate change.

In such a world, large, immobile memory institutions face risks that we simply will not be able to mitigate with the technologies and means at our disposal. I would argue that this makes it imperative for us to seek other methods to preserve the human record, with digital being the best option at our disposal. There are myriad advantages to digital storage. Libraries and archives can relatively easily replicate digital files, as many already do using our extant options for digital preservation. By placing multiple copies in disparate locations, we can mitigate against risks such as human error, climate disaster, political shifts, and violent conflicts. Moreover, it enables libraries and archives to address technology risk by storing the files on different media using different methods. Replicating such a digital collection in the event of a disaster–whether natural or an invasion–can be done from the command line of any computer; relocating physical collections in such a scenario is clearly not a successful strategy.

Beyond the practical issues of political and climate risk, there is perhaps also an issue of our individual and collective values at hand. Holding books in buildings is akin to hoarding treasure in a vault to some degree. While libraries are generous about lending their collections to other libraries, whether we move books to people via interlibrary loan or people to books in the form of summer research trips to Paris or Berlin, these are energy-intensive and consumptive practices. To be sure, data centres consume vast amounts of electricity, but the technology firms that control much of our global infrastructure have their own interest in lowering their energy costs and are making major investments in renewable energy sources. As drives get larger and as solid-state drives steadily replace spinning disks, energy consumption in data centres (per unit of service or storage provided) decreases steadily. As libraries, we can choose collectively to work on developing and adopting technologies that further lower our need for power consumption for digital storage. Meanwhile, many people, and in particular librarians and other academics, are questioning how their personal choices and lifestyles feed into the systems driving climate change. Calls for less travel, less flying, and less consumption fill our world now and many people in our profession have as a personal value to minimize their impact on the world, which one now sees entering the mainstream at an institutional level, as well. Institutions now compete around sustainability, as we see with the Times Higher Education Impact Rankings based on the United Nations' Sustainable Development Goals. I am suggesting here that continuing to hoard massive physical treasures in the form of book collections may look increasingly decadent and out of alignment with our personal and institutional values.

Ultimately, the main beneficiaries of such a digitally accessible collection would be our users. Yes, copyright remains a concern, but we already have the mechanism of controlled digital lending available to us, and as the world edges inevitably toward climate crisis, it stands to reason that our collective thinking about access to information and the markets that control this will shift dramatically. Accessing more information without the requirement of sending objects and people across great distances is surely something we would want to offer our users. Even buying print books feels a bit like an extravagance. In that light, a recent Supreme Court of Canada decision in July 2022 reaffirming technology neutrality leads me to wonder if this could eventually get us past having to retain the physical copy of a book. Perhaps we never even need to acquire one, merely send the payment and then circulate its digital form.

This is neither a utopian nor a dystopian view of the future of libraries, but rather a pragmatic assessment of what our future world will require and be able to sustain. As with nearly any change process humans can undergo, such a transition will encompass both great gains as well as significant losses; it is the task and obligation of libraries not only to preserve the knowledge contained in these texts, but also to ensure that the gains outweigh the losses.

Literature

Vinge, Vernor (2006): Rainbow's End. A Novel with One Foot in the Future. New York: Tor.

Dr. Dale Askey
Library
University of Alberta
5-07 Cameron Library
Edmonton AB T6G 2J8
Canada
daskey@ualberta.ca
https://orcid.org/0000-0002-7580-9854