I have been asked to speak as the ghost of librarians past – about library collection development over time – so that I can be followed by the ghosts of librarians present and future, to address new perspective and preoccupations. So, without further ado, let us divide the last 2 millennia into 6 ages and stages. If nothing else, we will see that library collection development is a creature of its time and place, and just as those times and places have changed dramatically, so has the collection development role.

I. **The Stone Age.** The word "library" was used of places where books from various sources were brought together - often with great difficulty - for the use of some community. In the beginning, libraries were collections, plain and simple. Let us think of those "librarians" as classic hunter-gatherers, and let us do so with great respect. Did the kings of Egypt really try to gather all the books of the world in their great collection at Alexandria? Was there really a "public library" in Rome in the first century BC? Down to the time of Thomas Bodley’s re-foundation of the Oxford University Library in 1602, we were in a prehistoric world of libraries. Every library was a place of refuge for books and those who would use them. In a world where books were scarce, libraries were even scarcer. It was a miracle that such places existed, and they represented technological triumphs in the production of durable writing materials and the painstaking social commitment to preservation of what was collected. Hints of the future are seen when a monastery would lend a manuscript it owned to another one to be copied – or would make the copy itself. We can see in
medieval documents plenty of traces of a longing for a world where knowledge was more accessible, more mobile, more widely shared. But those times were yet a long way off. And of course the invention of printing in the 15th century was a technological advance that greatly facilitated the production and replication of books.

II. Tools in aid of publishing and librarianship became robust enough to enter the Bronze Age in the nineteenth century. National and state libraries, in particular, could collect more ambitiously. The Bibliothèque Nationale de France took advantage of the 1789 revolution to consolidate the manuscript holdings of many shuttered libraries. The Library of Congress famously began with a gift from Thomas Jefferson. A library was still its collection; it was all about collection development, and a good library succeeded in gathering books of interest to its readers, while some increased mobility and communication among scholars made libraries less remote and isolated from one another. American college and university libraries in the 19th century bootstrapped themselves in a variety of ways. Bryn Mawr College’s strong collection in Greek and Latin collections, for example, was significantly aided by the purchase of a distinguished German scholar’s large private collection. In the absence of great libraries, large private libraries held by scholars of means were far more common than they are today.

III. Next, let us call the first half of the 20th century our Iron Age, when serious technology with tools that didn’t break could be produced and mass-produced, and the idea of cross-library cooperation could begin to take shape. Serious attempts at cooperation among libraries are just a bit more than a hundred years old.
For example, the concept and practice of institutional interlibrary loan goes back to the late 19th century. The idea was discussed in a lively exchange of articles and letters in early volumes of *Science* from 1884 and took practical form in 1894 at Berkeley under the leadership of University Librarian Joseph C. Rowell.¹ For a very long time, any sharing was slow and cumbersome. It was difficult for a prospective reader to know where the book they might seek could be held, and the costs in time spent by librarians seeking to borrow, waiting for a response to a request, and even the postage and handling costs conspired to keep the practice of sharing small and specialized. Accumulation remained the way of gaining access to material; visiting the building library was the nearly exclusive means of inspecting card catalogs and browsing shelves. The library was still its collection, and diligent scholars or collectors chose its contents. Selecting was a work of art and a high calling, as was preparation of bibliographies and holdings of books and subjects. The catalogs published by Blackwell’s of Oxford would sit for years as serious reference works on the shelves of librarians and scholars. But gradually, it became appreciated that books of value to study and scholarship in a given field could be in places other than one’s own collection.

For example, the first half of the 20th century saw the emergence of the idea and fact of the *National Union Catalog* held at the Library of Congress, a great advance, though held back by the fact that users had to be physically there in Washington, DC, to use the catalog. Gradually, printed volumes began to be produced in France, US, the UK, and other countries, and the fact of being able to track down a book at a library hundreds or thousands of miles away began to serve more and more readers. But effective progress was slow; librarians still bought and selected based on their own institutions’ desires.

¹ http://web.mit.edu/redingtn/www/netadv/SP20141006.html
Until World War II, collection development in this Iron Age remained mainly local and sometimes opportunistic. In the US, the shining examples of early cooperative development are mainly within the universities of North Carolina (1930s)\(^2\) and the Bryn Mawr-Haverford-Swarthmore triangle in Pennsylvania (1940s).\(^3\) At the margins of collecting, there were attempts to divide up the task of the most specialized (mainly foreign) collecting. Overlap studies in the period showed diversity of holdings, but economies of cooperation were not good, and sharing was thus less attractive than the perceived convenience of having local holdings. In general, collection developers worked firmly with their own institution in mind.

IV. **Now comes what we will call the Industrial Age.** The economic and social booms of the 1950s and 1960s fueled spectacular growth in research and scholarly publishing. For example, the commercial scholarly journal came into its own after World War II, when we can see the players who would later loom large. Elsevier, Wiley, and Academic Press all took their first real steps to dominance then, but the most remarkable force to emerge was Pergamon Press, especially after its takeover in 1951 by the irrepressible Robert Maxwell, who would lead it to huge success for forty years, until selling to Elsevier in 1991 a few months before his own death.

At the same time, US higher education underwent its own extraordinary boom years. By the 1960s, new library buildings were springing up across the country to fill with the outpourings of scholars, researchers, and their publishers. The sheer numbers of volumes to be processed, shelved, and presented for use were astonishing and the methods adopted were indeed industrial – they had to be.

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See a portrayal of the beginnings of this industrial approach in short documentary film called "Toute la mémoire du monde" by the French director Alain Resnais about the French national library, the Bibliothéque Nationale. Made in 1956, it's a hymn of praise to libraries, and see how much he chose to emphasize the industrial, mechanical, and therefore MODERN nature of libraries.

In the first 2/3 of the 20th century, choosing academic library collections was the likely purview of academics and scholars. "Selection" was the term often used to describe the process of building library collections, and with the rise of the library profession and the rapidly growing numbers of materials being published, these "selection" activities shifted to librarians. It was not until 1977, only 40 years ago, that an ALA preconference held the first professional event that recognized collection development as a specialization within librarianship and used the term "collection development," later expanded to include "management," i.e., decisions about the future of the materials including preservation, weeding, cancellations, and much more.

As academic library budgets slowed from the growth that had been enjoyed in the 1950s, 60s, and even 70s -- and as academic librarians more fully organized themselves for selection, polices and guidelines became commonplace. Librarians examined just what collection development meant and also whether there were opportunities for collaboration. Of course in 1967 OCLC was organized, with an immediate and direct impact on shared cataloging efforts. And one would think that shared cataloging and catalogs would have a profound and immediate impact on collection development work, but in spite of

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efforts by powerhouses such as RLG, local collections were very much the norm. Libraries were in their collection development heyday.

The usefulness of the union catalog reached its peak with the 750-odd pre-1956 volumes of the U.S. National Union Catalog published from 1968-1980, while sharing remained paper- and labor-intensive and relatively slow. In roughly the same period, the explosion in publication of books and journals reached new heights, but until some date in this period (1980 is as good an approximation for that moment as any), resource growth largely kept pace with perceived need.

And although in the 1970s photocopying became a practical tool to support resource sharing, it brought from copyright holders huge concerns, which had the effect of adding a brake to the growth of sharing alternatives. In the late 1970s, photocopied articles from ILL often came with a stamped warning about limitations on use. The US 1976 copyright act enshrined fair use, but the litigation of the period following repeatedly attacked copying as a simple solution to resource sharing needs. When digital means of reproducing and transmitting copies emerged, the brake remained firmly pressed by rights holder organizations.

The 1980s saw the emergence of discussion of serials prices as an impedance to successful collecting and a rising general awareness of budgetary limitations to collecting ambitions. Indeed, as late as the 1980s, universities could imagine building stack towers and additional floors on old stack towers as the deluge of newly acquired materials continued. Instead, the 1990s saw the emergence of off-site shelving repositories, often of the "Harvard model" (first module opened in 1986). These offered inexpensive housing, excellent preservation environments, and the complete loss of browsing for the materials housed there.
Cooperative construction of such facilities definitely facilitated local resource-sharing arrangements (e.g., the Washington Research Library Consortium).

V. With those preceding moves as the culmination of the process of industrialization (i.e., union catalogs, shelving repositories, budget crunches and constraints, and the automation of many processes), and with the rapid advance of digital communications and technologies, we see the industrial age giving way to the Information Age, with its heretofore-unimagined opportunities. In the 1990s, Andrew W. Mellon Foundation President William G. Bowen famously observed that the cost of housing journals was becoming prohibitive and redundant, and he led the creation of JSTOR, initially as an enterprise in facilitating efficient housing. The net result of these efforts was to lead to the next phase of discussions about how to reduce duplication of backfiles and curate remotely held collections. Projects like WEST (Western Regional Storage Trust) - and there are a number of other large regional repositories in the US - endeavor to achieve consistent accessibility, while reducing significantly the number of lower-used volumes actually held in a given region. Usage of materials held in such facilities varies widely, while hope is held out that better discovery tools and virtual shelf browsing will increase the visibility and usefulness of these relocated collections.

Library consortia emerged rapidly: OhioLink began in the late 1980s, followed by many more US academic library consortia in the 90s. Consortia were particularly successful in collective licensing of large publisher packages, and expediting and automating ILL. Shared courier delivery began about 2000 with BorrowDirect in the Ivies, followed by similar consoritral arrangements elsewhere (PALCI, GWLA, and others). Speed of shipment increased, digital tools for facilitating discovery, request, and control were available, and the cost of shipment or even digital transmission was judged manageable. At last,
collection development librarians began to have a robust infrastructure for cooperation.

Of course, the emergence of ubiquitous digital content post-1995 has NOT led to uninhibited digital resource sharing, due to copyright concerns and vendor business models.

Today, what is remarkable is the way so many traditional models of thinking about collections persist, even as the bulk of our "information resources" (formerly: "book" or "materials") budgets are spent on licensed digital content. What has blurred in many institutions is a clear distinction between an ambition to collect, hold, preserve, and provide access to materials that are essential to the mission of the library and the institution it inhabits – versus, on the other hand, an ambition to gain access to the largest possible universe of high quality digital information, affordably, in a timely way to address the burgeoning and diversifying interests of research and learning. With everyone licensing much of the same stuff, it seems inevitable that the unique collections of major libraries in the future – not the digital content they access, not the print content they share with other institutions in offsite repositories and distributed print collections – will be material falling increasingly under the umbrella of "special" collections and deserving to be imagined, selected, and managed accordingly.

So, all that said, let's look at job ads: what does today's collection development librarian do now? In the 1970s and 80s, subject and area trained bibliographers carefully learned the literature of a given subject or region. Now such collections specializations have mostly given way, with some limited exceptions such as area studies, to professionals who take on numerous activities – developing plans with publishers and vendors for efficient supply of books, periodicals; choosing between purchasing and licensing information; making best use of
various consortial services and options; selecting materials for retention, off-site location, and weeding; choosing between responsibilities of permanent ownership and costs of access; managing budgets and negotiating for deals; keeping abreast of technologies of linking and discovery, participating in digitization activities, creating onsite repositories (what Lorcan Dempsey has called the "inside out" collection).

Additionally, today’s collections and subject librarians must be cognizant of copyright consequences; of how their choices may impact regional partners; and the short AND long-term needs of readers, changes in scholarship, technology; where we fit with huge digital libraries such as Europeana and Hathi; and let us not forget today’s preoccupations with Open Access and how to make it work.

The power of the regional and national collections has crept into our thinking and vocabulary more than I had realized. For example, I had the opportunity in early April of attending two days of IFLA Library Visioning in Athens, Greece. The welcome speech was given by Filippos Tsimpoglou, the new National Librarian of Greece. I’m reading a portion of his remarks here to show the kind of thinking that’s more and more expressed:

* Libraries are not any more addressing to only "their own users" providing from "their own collections."

* Libraries cannot any more be separated, isolated from "the other," but, exploiting digital technologies, they cooperate with each other, overcoming geographical and scientific frontiers;

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* Libraries operate as an active component of a global grid of information resources;

* Libraries cooperate to ensure the integrity of the whole information system and not simply their own collection;

* Libraries, though acting as operationally "autonomous" entities, assign a part of their "relative autonomy" to hierarchically higher cooperative entities to fulfill their mission more effectively.

He concluded:

* For in today's complicated environment, solutions are not feasible at the level of a single library, not even at the level of libraries category, or even a country, but probably only at the cooperation and the coordination of different categories and even higher levels of systemic hierarchy.

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Powerful Words! We've briefly seen that with collection development some traditional activities persist and evolve, but it seems to me that we're at a point where actual collection development is but a subset of what our former selectors and bibliographers used to do. We may have to agree on a new vocabulary, or agree that collection development no longer meant what it once did.

Possession of unique collections and the ability to access an abundant de facto national collection are the twin goals that our old habits of collecting now aspire to.
In summary, two main themes should be seen in this narrative:

(1) Libraries have always been part of the high-tech world of their times. I’ve taken you through stone, bronze, iron, industrial, and information ages. In fact, every one of those ages of library collection development mirrored and represented technological and social revolutions. In every era, libraries have been places where the desire to expand knowledge led people to push the limits of the possible, ever hungry for more information, better information, information readier to hand.

(2) Many institutions still tend to continue to prefer accumulation to cooperation, holding to borrowing, just in case to just-in-time, bulk purchases rather than by-the-drink pricing. Aggressive cooperative collection development is still relatively less common than one might expect, as the ineffectiveness of past efforts has generated considerable skepticism. The success of the expedited consortial ILL has not yet led to significant changes in buying habits, but the scene is definitely changing.

VI. And finally we come to the Machine Age – or the Age of Machine Reading.
I can’t help but point to a very recent talk by MIT’s Chris Bourg, a friend of many here, delivered for a library leadership program at Harvard. Her jumping off point is the possibility that readers are about to become obsolete – replaced by machines! She is serious: artificial intelligence has the hypothetical potential of intervening between readers and their libraries in order to digest and process quantities of information too large for one lifetime to manage. Chris makes the case persuasively that we must think seriously about such possibilities even while critiquing them and understanding what we must do in order to maintain

space for human creativity and imagination – and to continue to train human users to bring those qualities to their work in our collections. But what if she's partially right? Might we not still be nearer the end of the information age than we think and closer to the age of ... human obsolescence?