Anthony Grafton

Apocalypse in the stacks? The research library in the age of Google

Research libraries take up a vast amount of physical and psychic space. They inhabit spectacular buildings, old and new, which occupy prime real estate in cities and on campuses. They mount costly, splendid exhibitions of everything from ancient manuscripts to 1960s comic books. Every external clue suggests that they matter deeply, both to individuals and to institutions with deep pockets. And the story told by the buildings is confirmed and enriched by their collections.

American research libraries are the envy of the world: for complex historical reasons, our monoglot and often xenophobic society has created some of the biggest and most cosmopolitan collections of texts of every kind the world has ever known. Do you want to pore over incunabula? You can find thousands of them in the Northeast at Harvard's multiple libraries; in Washington, D.C., at the Library of Congress; in the Southwest at the Huntington Library; and dozens of points between. Care for Tibetan religion? Your best bet is Bloomington, Indiana. The manuscripts of James Joyce? Shuffle off to Buffalo. General collections are in some ways even more amazing. Anyone who has done research in the greatest European libraries – libraries whose collections of manuscripts and rare books dwarf American ones – knows that not one of them offers an open-stack collection of books and periodicals from the last two centuries to rival the top ten or twelve university libraries in North America. The American model – easy to enter and simple to use, powered by vast resources and vaster ambitions – has played a major role in the current dominance around the world of English-language scholarship.

Yet the styles of our great libraries vary radically, and meaningfully, and even the quickest look at the contrast reveals that they are more labile institutions than they seem. Behind the glorious facades, a strange kind of war is being waged: a war between styles of repository, reading, and research.

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Older libraries – the New York and Boston Public Libraries, Beinecke at Yale, Butler at Columbia, Widener at Harvard – and newer ones in the traditional style, like the Chicago Public Library and the new library of Rhodes College in Memphis, proclaim their allegiance to ancient cultural traditions. The names of dead white male authors, incised in stone, parade across their façades. Columns, pilasters, Gothic curlicues, and Roman triumphal arches reinforce the sense of solidity, history, allegiance to an older world. So, even more, do their contents: the endless rows of books, their spines appealingly faded but still colorful, which march down the equally endless Borgesian labyrinths of their stacks.

Newer libraries, by contrast, scream their modernity. In Seattle and Salt Lake City, glass curtain walls surround vast open spaces. Gleaming banks of computers seem to be everywhere: books, not so much. The lofty atria are redolent not with the noble rot of ancient leather and buckram, but with the coffee and fresh baked goods on offer in their cafés, whose glitz has supplanted the seedy glamour of old-fashioned reading rooms. These newer libraries are cast in a radically different formal language, one that speaks not of books, but of information: pellets of useable data, as smooth, precise, and indistinguishable as the computer screens themselves.

To many observers, perhaps most, these contrasting aesthetics embody radically different visions of what a library is and does. On the one hand, there is the traditional citadel of manuscript and print, closed and guarded, a hierarchical structure as neatly ordered as a vast set of display cabinets for butterflies. Its expert librarians pin every document, book, and journal in the collection to its proper place, the

precise category in which equally expert researchers will be sure to find it. They and their bosses assume that true knowledge exists between the covers of books and journals – those books and journals that have an acknowledged place in the world of scholarship. On the other hand, there is the gleaming spaceport of the information age, open and accessible, a vast docking station with thousands of airlocks, material and virtual. These give access, for anyone who cares to settle at one of them, to the vast buzz and bubble of electronic information. The funders and designers of these hypermodern libraries believe that the Web does a better job of finding and sorting information than old-fashioned methods of classification can. They invite users to click on a link and plunge into the virtual world, using a search engine rather than a formal catalog to find what they need. Crumbling leather and frowning curators confront Google and Wikipedia; Gormenghast duels with Starbuck's. Right now, Starbuck's seems to be winning.

These contrasting visions are stereotypes, of course: real libraries do not split neatly into reactionary temples of leather and vellum and hip, accessible banks of humming computers – though many journalists, even a few librarians, write and speak as if they did. The stateliest of paneled library halls gleam with rows of computer screens, and the glitziest of pseudo-malls still contain thousands and thousands of books. But stereotypes matter even when they don't match the facts. They frame much current thinking and writing about libraries, and they render public discussion, and the decision-making based on it, less productive than it should be. The ground is really trembling under the

great libraries; everything about them, from the form of books to the ways of readers, is changing rapidly. But there are more things in heaven and earth than most of those who write about – or build – libraries seem to realize.

Most of the recent public discussion, especially in mainstream magazines, has concerned the rise of electronic media – and with good reason. One of the main things libraries now do for their readers – and one of the main things library budgets now pay for – is the mass of electronic media that has come into existence in the last twenty years. Media available to anyone – Wikipedia, the Google Books project, Worldcat, Perseus – have given the man on the Clapham omnibus and his counterpart, the woman in the Richmond Internet café, immediate access to a vast range of material, as diverse in quality as in kind: cutting-edge definitions of mathematical terminology and hundred-year-old articles on historical problems; first editions of rare books from the nineteenth century and uncritical, unreliable editions of classics from the Renaissance. The Google Library Project and Google Book Search – closely related projects, still in their infancy – have already transformed the working life of anyone who does serious humanistic research, especially at schools, colleges, and universities that cannot afford large libraries of their own. The occasional sight of a scanner's finger or other body parts in a Google Books image detracts little from the greatness of what this remarkable company has already wrought. Sit in a café nowadays and you can compare not only weed whackers and auto insurance policies, but also multiple editions of Thomas Paine's *Common Sense* or Goethe's *Faust*. One thing libraries try to do, accordingly, is offer enough fast computers and efficient enough WiFi that many visitors will choose to do their Web research in the library, rather than in the attractive alternatives outside it.

Media available to libraries through purchase offer more: they can display texts whose originals are guarded by copyright restrictions or housed, because of age and fragility, in rare book collections – and in a polished visual and technical form far superior to what Google can offer. JSTOR and Project Muse give the reader instant command of a century's worth of journal articles in the humanities and social sciences; EEBO and ECO provide full-text access to tens of thousands of books, many of them searchable; Alexander Street offers immigrant diaries and letters, narratives of the 1960s, searchable data on more than four million Civil War soldiers, and *Harper's Magazine* from 1857 to 1912 – all grain for the mills of generations of thesis writers. Publishers offer more and more books in electronic, as well as paper, form, and university libraries find that their clientele are happy to use these virtual books. This last shift yields some savings in purchase prices, not to mention binding, shelving, and preservation costs. Even the latest scholarship is now available on screen. More and more academic journals offer (to paid subscribers) their current and past issues in electronic format, which many academic readers prefer. Audio and video media proliferate as well – and immediately become indispensable.

Every major library does its best to choose the right array of for-pay media for its particular set of readers and list those media in an efficient, user-friendly way. Within living memory, library catalogs were dull, monochrome printed records of strictly print media, on cards. Somehow they have blossomed into col-

orful, multilayered guides to sources of many different kinds, including books – for many of which they provide thumbnail images of dust jackets in living color. They are just the sort of virtual Virgils that students who arrive at college equipped with laptops, iPhones, and iPods may be willing to follow into the Web's vast heaven and hell of information. It's an astonishing achievement.

Yet this efflorescence of electronic media on every library's website comes at a price. Some of the suppliers of electronic texts and databases – jstor, muse, and Alexander Street, for example – willingly cut bargains with poorer institutions, supplying the materials most urgently needed at a fraction of what complete subscriptions would cost. Others are less generous. Journal publishers, which often began by offering free electronic access to institutional subscribers, now tend to sell separate electronic subscriptions, for which they charge as much as for print. In 2007, Oxford University Press, for example, listed print and online subscriptions to the historical journal *Past & Present* at $245 for institutions in the United States. Institutions that wanted the journal in print or online only paid $234 – no great savings there. A few years ago, Stanford University's library system considered moving all of its subscriptions to journals published by Elsevier, the world's largest publisher in the sciences, to electronic form, only to discover that the price would be 90 percent of that for the printed journals, and that the cost would actually rise if individual subscriptions were canceled.

More important still, the money for electronic acquisitions and the computers and WiFi systems needed to access them comes not from pots of fairy gold, but from the budgets once devoted to acquiring books and periodicals. Similarly, the expert time required to choose

among the thousands of available databases, add links to library web pages, and guide faculty and students must be provided by a staff that is often declining in numbers. The brilliant constellation of databases that dazzles any user of a modern library home page is a cost center as well as an asset, one that takes up something like a third of any major library's budget.

This would not be so severe a problem if the printed book and journal were really the media equivalent of the whooping crane, delicate and doomed. In fact, print is booming. Print-on-demand technology has brought production costs down, and Web-based marketing has made it possible to locate buyers for books of very limited interest. Thanks to these conditions, the number of new books published in various ways is actually rising from one year to the next, even as the prophets proclaim their disappearance. According to R.R. Bowker, a major source of bibliographic information, American publishers brought out 276,649 new titles and editions in 2007, as compared with 274,416 in 2006. This increase is small, though the total is staggering enough in itself. Meanwhile, the number of "on-demand" and short-run books rose from 22,000 to 134,773, making the projected grand total for 2007 411,422. American university presses alone are responsible for around 15,000 new titles a year.

Every research library tries to offer its readers a well-chosen slice of this enormous pie. But the logistics and economics of doing so are extraordinarily demanding. Library budgets have long been under strain. Journal prices have risen, sometimes to stunning heights: Elsevier charges more than $24,000 for a year's subscription to one journal,

Brain Science. Over time, the libraries that once offered comprehensive journal collections to faculty in all disciplines have had to drop many of their subscriptions, sometimes for journals of interest to many professors. Even so, costs for the subscriptions that remain have risen so rapidly that little room is left for maneuver. As the number of new books continues to increase, the proportion of library resources available for buying them diminishes. Research libraries, most of which now spend in the vicinity of 40 percent of their budgets on monographs, can no longer purchase all of the offerings from serious academic presses in North America. Take into account the growth in publication overseas, not only in Britain but in the Euro zone and in Asia, as well as the fluctuations of exchange rates in recent years, and the financial problems come into focus.

Tight though the financial constraints have become, libraries still buy far more material than they can make available in the stacks. Every year, tons of books enter every major collection: more than a mile's worth of new printed matter at Princeton's Firestone Library; a staggering 5.2 kilometers at Oxford's Bodleian. Finite libraries must find resources and space not only for the virtual resources on their web pages, but also for these very heavy, material books, each of which must be checked in, cataloged, and put in place. The new books enter the collection like a massive paper pile driver. Compact shelving can hold them at bay for a time; but in the end, floors can support only so many books, and campuses have only so much room for library additions.

Almost everywhere, librarians must choose between two unsatisfactory possibilities. One can move the older, rarer books that are often the glory of a re-search collection into offsite storage, in order to make room for the ephemera of hyperspecialized contemporary scholarship. Or one can store the new books – which are, in fact, the likeliest to be used, especially by students, and represent current developments in old fields and rising new ones – while the holdings in the stacks gradually fall out of date and gather dust. In either case, browsing will become less and less rewarding over time.

This pressure seems very unlikely to abate. Collections grow in a lumpy, uneven way, hard to predict and impossible to control. But one rule of academic life in the humanities persists: to win tenure at a college or university that sees itself as setting high standards, one must normally publish a book – even if it will find three hundred or fewer buyers, and still fewer readers. At the least, one must publish articles in refereed journals. So long as this system prevails (and despite the noble efforts of the Modern Language Association leadership a few years ago to modify it, it stands intact) books and articles will continue to be written. Holdings in most subject areas, accordingly, will grow, and parts of them will have to be moved, pushing one another around the library.

The vast American open-stack collections functioned, historically, not only as repositories, but as memory theaters for advanced graduate students and faculty. Nowadays the spatial organization of books and journals shifts so often and so quickly that easy browsing has itself passed into the realm of memory. Librarians, in other words, not only have to master an electronic universe that expands with stunning rapidity, but must also manage a print world that continues to dismiss its obituaries as greatly exaggerated.

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Many other factors contribute to making the head librarian's life difficult, and at least one of them calls for comment here. The cultural climate within universities – and outside them – has changed. American libraries, over the last century, have built up not only vast general collections of circulating books and periodicals, but also world-class special collections, ranging from the rarest of manuscripts and printed books to materials that were once seen as ephemera but now attract the interest of scholars – children's books, for example. Many fields of scholarship now seen as vital – from art history to East Asian studies – are sustained at numerous universities by specially endowed, separate collections. Traditionally, these collections grew not only piece by piece, but also wholesale, as alumni who bought books or manuscripts gave or sold their collections to their old universities. A shared love of rare books and manuscripts provided an element of continuity in university life and promoted collaboration among librarians, scholars, and alumni. University administrations made clear that they valued these activities, not least for the international prestige that they conveyed: just think of Yale's investment in James Boswell.

Special collections, circulating and non-circulating, continue to grow and expand into new fields. In every generation, scholars and librarians realize anew that one decade's ephemera constitute the next decade's archive: witness the splendid collection of science fiction at Syracuse University and the extensive archives of zines at Barnard and Buffalo, each of them flanked by more traditional precious materials. Meanwhile the history of books and readers, an interdisciplinary field that came into being in the 1970s and 1980s,

has exploded. Scholars and advanced students in many fields – classics, comparative literature, English, German, history, Romance languages – have realized that they can learn an enormous amount from studying "material texts," the actual manuscripts and editions in which classic and non-classic texts circulated. Practitioners of this new form of scholarship have taught us how books took shape in scriptoria and printing houses, traced the networks of agents and booksellers who brought them to the public, and recreated, from marginal annotations and other traces of many kinds, the ways in which readers responded to the books before them. Electronic media play a role in the history of books, but the original manuscripts and early printed books play a bigger one. Every one of them, it turns out, is distinctive, thanks to the clues it offers about early owners and readers. And they can't all be digitized.

University administrators praise interdisciplinary scholarship. But they show less support for the centers where this new kind of interdisciplinary humanistic research takes place than did their predecessors, who saw them simply as deposits of human culture at its best, a generation or two ago. Support for special collections rarely seems generous. Recently the Stanford administration, pressed to provide new space on campus and severely constrained by local zoning, decided to demolish the library that had housed the university's superb East Asian collections and store the vast majority of the books and periodicals off-site. Faculty who protested were assured that the half-million books in many languages would all be available in digital form – a Micawberish promise at best, given that some of the alphabets in question cannot as yet be reliably digitized, and that copyright protection ex-

tends to Asia. It is hardly in the national interest – or Stanford's – to make it harder to study Asia, at the outset of the Chinese century. Yet the decision made sense to administrators, who had to be reminded by scholars and librarians that, as an eloquent blog post put it,

> [I]mmersion in a specialized library with a cohort of friends, colleagues, intellectual critics and others around you is an exceptionally good way to learn and to do research. When shared "public space," with the resources at hand that enrich, identify and contribute to the definition of that space, is lost, the public, and private, discourse that that space engenders is diminished.

Libraries, then, face enormous technical and economic pressures, which are changing them in important and apparently irresistible ways: any plan to reconfigure or rebuild great libraries must take the full range of factors into account. Yet the transformation over the last three or four decades in the public that uses libraries has been even more dramatic – or so, at least, much commentary suggests. One shift seems particularly radical: the move away from library research by natural scientists and most social scientists. Forty years ago, scientists, natural and social alike, still depended on libraries for journals, which published up-to-date data and novel arguments. In some fields, such as mathematics, monographs continued to be published, even as they disappeared from others. In most, the article was the coin of the realm. Whatever the preferred form of publication, though, library work remained a familiar daily routine for thousands of university professors, research associates, and graduate stu-

dents whose professional interests were not, in any central way, humanistic or historical.

Between the 1960s and the present, the system of scientific publication in quantitative fields has undergone a series of revolutions. Circulated preprints, made possible by the Xerox machine, turned journals in many disciplines into archives rather than sources of fresh data. And if the Xerox machine slew its thousands, the computer slew its ten thousands. In 1991, Paul Ginsparg created the arXiv preprint server for high-energy physics. Within a year, arXiv became the standard mode for information diffusion in physics, and it has since grown to include astronomy, computer science, mathematics, nonlinear science, quantitative biology, and statistics, doing to the photocopied preprint – to say nothing of the formal journal – what the power loom did to the previously dominant handloom.

The transformation is real. In one natural science department at Princeton, a colleague tells me, all members, as soon as they rise in the morning, make a point of reading articles newly posted on the Web. Later in the morning, information about these, and evaluations of their results, circulate over coffee. Data and theses move almost instantly from university to university and continent to continent. From physicists to computer scientists, those who work in quantitative fields have developed new routines of daily work. They are utterly dependent on computer access to their virtual work space, and many – though not all – declare themselves independent of material collections of books or journals. In this new system, so it seems, libraries have lost their claim to be a universal good, either in academic or in social communities. Instead, they serve,

for the most part, a limited public, and one with limited influence within the university: practitioners of the humanities and the softer social sciences. More than one great university has recognized this fact by renaming its main collection a humanities library.

Journal subscriptions that library budgets pay for remain vital for some sectors of the science community, even if actual reading usually takes place on screen. Some social scientists continue to be dedicated consumers and producers of books: the best empirical work on the current condition of the academic research library has been done by the Chicago sociologist Andrew Abbott. On the whole, though, humanists form the majority of those who still see the library as vital in their day-to-day working lives, especially the smaller group of humanists that librarians label, a little worryingly, "heavy users," most of whom are either faculty members or students completing dissertations.

Even committed humanists, however, often use the library in very different ways than their predecessors did – and these changes, too, have had a powerful effect on the institution. Forty years ago, a scholar who wanted to do intensive research almost always spent part of his or her day physically in the library. Copying machines were few and expensive, and the glossy pages they produced were ugly and fragile. More important, the library held all the keys to the kingdom of information, as well as the empire of texts in its stacks. Bibliographies, reference books, critical editions, journal articles: the library housed all of them. One had to go there not only to carry out a research project, but even in order to plan it. Most graduate students regarded the library as their central workplace and spent long days in its stacks and reading rooms. But professors still

active in research also spent hours in the library, reading and taking notes on new periodicals and other essential materials that they could not borrow. When opportunity allowed, senior and junior scholars also spent real time working in non-circulating collections like the New York Public Library, the Newberry in Chicago, and the Huntington in California – libraries whose policies made contact among readers at different stages in their careers unavoidable. In those days, the library was something like a craft workshop for humanists. Apprentices and masters carried out some of the same tasks, side by side, and learning to do research and write it up had a personal element.

In the 1980s and after, the personal computer gave its owners a newly powerful tool, one that could be used, for the first time, to compile materials, store them, and work them up into finished articles and books. But the personal computer was an unwieldy beast, and usually lived in an office or home study. Over time, more and more scholars made the room in which their pc glowed a permanent base camp for relatively quick incursions into the library. As the computer developed more and more capabilities – as it became the central device of scholarly communication and a node in worldwide information networks – scholars became less and less likely to spend long periods in the library. Why take notes by hand, only to have to transcribe them on the keyboard? Books could be taken out; journal articles, more and more, could be downloaded. Rare and unpublished texts could be scanned. Professors – even those who do the most intensive humanistic research – became an unusual sight in library stacks.

Many other factors pushed or pulled the professoriate, and almost all of them

involved moving away from the library. The floods of money for conferences and workshops, humanities centers, and visiting professorships that irrigated the humanities academy in the late 1980s and after cut into scholars' time for home library visits. The coffee shop – usually, in the last few years, equipped with WiFi – offered an alluring alternate workplace for those who accepted the laptop's promise of liberation from the messy desk and ringing phone. And the rise of electronic resources completed the job. Nowadays, humanists in many fields can do rigorous, well-documented work without needing to consult a single physical journal – or, indeed, a book. Even those humanists who continue to use books and print periodicals intensively – and many do – generally carry them to their workplace. Graduate students are more likely than professors to camp in libraries, each of them making his or her laptop the center of a mobile study. But they, too, now have previously inconceivable resources at their disposal on their own computers.

The results of all these developments are paradoxical. Scholars and students demand, and consume, books and other print materials in great quantities – greater than ever at my university, and, I am sure, at many others. The collective interest in scholarship and its results is more intense than ever, and the big non-circulating collections continue to attract plenty of readers, especially, though not only, those to whom they provide fellowship support. But the act of scholarship, which used to be, to some considerable extent, public and collective, has been privatized. Libraries cost more, their future provokes more discussion, and their collections receive more use than in the past. Physical libraries, though, seem, especially

at universities, to be turning from honeycombs of cells, a busy reader working away in each one, into magnificent Flying Dutchmen of the mind, which sail along, brightly lit and empty – or, in other cases, into enormous Internet cafés, which purchase users by offering them fast connections, coffee, and heating or air conditioning as the season demands.

The larger culture from which students now come to college in the first place, and by which graduate students are also formed, has also dramatically reshaped readers' habits. Few come as dedicated readers. For example, a graduate student at Princeton, where I teach, asked the students in the discussion sections he ran last spring how many of them had read four books for pleasure in the last month:

> Bewildered eyes stared at me, but nobody raised a hand. "OK, so how about three books?" I persisted, but silence prevailed. When I got down to one, a student hesitantly admitted to have read something. That was one student in a class of 13 bright and promising undergraduates. The other classes I taught responded to this question similarly.

A number of other colleges and universities probably attract larger numbers of bookish students than Princeton does, and a number of Princeton students I know could have answered immediately with a list of titles. But the change in the general climate is clear to most humanities professors.

The nature of official reading – reading done for academic purposes – has also changed. In the 1960s, many students came to college already trained in the ways of library research. A well-educated freshman would already have written term papers and learned how

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to find his or her way from bibliography to sources, sources to interpretative studies, and interpretative studies to reviews. In the course of doing further research at the university level, moreover, the student automatically became acquainted with the editions, journals, and other technical literature standard in his or her field. Writing itself depended on note-taking, and note-taking on the close reading of whole texts. It was a short step from looking up an article in a new journal to browsing in adjacent volumes, and another, equally short step to browsing in related journals; a short step from finding the critical edition of a source and citing it to finding commentaries and other directly relevant publications.

All this was made easier, though no less time-consuming, by the fact that the stacks could still accommodate the bulk of library collections: browsing in any good library amounted to a pretty good literature search. Research, in this old-fashioned, material form, acquainted the student with multiple styles of scholarly work and publication, automatically and without extra effort. Most MAs and PhDs ended up in possession not only of stacks of neatly written file cards, but also of a solid, if tacit, command of one or more disciplines.

Nowadays, as a recent study cosponsored by the British Library and a research center at University College London has shown, students arrive at universities with a very different set of skills and a very different orientation. Their primary source of information on life, the universe, and everything is the Web, and they normally seek information not by making a research plan but by entering words in a search engine – usually a non-specialist one like Google or Yahoo, rather

than the more focused engines and databases available on their university library web pages. Once these students arrive at the website they seek, moreover, they do not linger for intensive study. The average amount of time spent with an e-journal is four minutes; with an e-book, eight minutes. This is reading, but reading of a particular kind: goal-oriented, focused with laser-like intensity on particular bits of information, rather than on the larger nature of the text or problem under consideration. One of the euphemistic terms for this sort of reading, "power skimming," reveals the nature of the enterprise.

At one extreme, this way of doing academic research leads to simple plagiarism, to the composition and submission of papers that are nothing more than mosaics of downloaded snippets. More serious is the larger vision of humanistic work embodied in this regime of study: texts of any kind, primary or secondary, are treated as agglomerations of information rather than as coherent wholes. Students using contemporary tools can, and do, compile stunning bibliographies of scholarly articles without having any idea of what methods or principles prevail in the journals in which they first appeared. They can deploy impressive statistical and textual information, obtained by search, without ever reading the texts analyzed. The power of search, which increases practically by the day, exempts them from learning how to pick a way through the reefs and shoals of the library and enables them to think they are making effective, critical use of materials of every kind, which are in fact torn from the context that is vital to critical judgment. This is the regime from which our future graduate students will emerge – from which they are emerging – a re-

gime in which the stacks will genuinely resemble a labyrinth, at least in the eyes of new users: an overwhelming maze of materials for which they have no Ariadne string.

Libraries apparently face at least four crises at once: a financial crisis caused by the proliferation of resources of all kinds; a spatial crisis caused by the continuing, massive production of print (only one major research library system, that of the University of Chicago, is currently trying to house all of its holdings, with a few exceptions, under one roof on its main campus); a use crisis caused by the transformation in scholars' working habits; and an accessibility crisis caused by the same changes in the larger ecology of texts and reading from which we began. It's not quite apocalypse in the stacks, but it's certainly a time of shaking, if not of breaking, what had seemed permanent institutions of unquestioned value.

No royal road leads to a solution for any of them, much less a solution for all four. But one simple recommendation may help a variety of institutions find working solutions to at least some of these problems. It's time, as many libraries on campuses and in cities have realized, for planning to become a collective activity, one in which all stakeholders play a role, rather than a top-down process. The fragmentation of knowledge is already far advanced and will become more acute with time. The difficulty of predicting the future – of knowing, for example, what working conditions might actually suit readers and fit their equipment ten years on – grows greater by the day, and even the hippest architect has no idea how research or study conditions will change over time. The only solution – a partial

one – is to bring the collective intelligence of the swarm to bear on the hive it used to inhabit, and still needs.

In doing so, we would be going – as scholars and readers sometimes should – back to the future. The great research libraries that took shape in the late nineteenth and twentieth centuries were the result of active discussion and collaboration among administrators, scholars, and librarians. Presidents tempted brilliant professors to leave one university for another by the promise of excellent collections and large budgets with which to make them even better. Often no threats were necessary since all parties agreed on the vital importance of the enterprise. Widener, the greatest of academic libraries, was planned and shaped by a historian, Archibald Cary Coolidge, who collected materials not only for scholars in existing fields, but also for new areas where he hoped that Americans would develop interest and competence.

Similar stories can be told about the smaller, but still extraordinary, collections that dot the American landscape. If we hope to reconfigure the ways we do research and the resources we use, we need to convince university administrators that this enterprise still matters, and we need to recreate the kinds of discussion and decision-making that went on a century or half a century ago.

Whether your library is marble or glass, overweeningly classical or preeningly contemporary, it's time to bring librarians and scholars, planners and users together; to provide data so that all parties understand what resources exist and what problems threaten them, as they try to strike the elusive balance between needs and possibilities. Only by doing this can we hope to fashion what we now need: libraries that can manage the tsunamis of new books and data-

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bases in ways that serve their readers; libraries that can continue to lead the world in range and depth; libraries that can regain their place as craft ateliers of scholarship and that can allure a larger number of students into discovering the seedy glamour of the printed book. Stanford faced up to the dissent provoked by the decision to demolish the East Asian library in the classic way, by impaneling a task force. Its report, now circulating on the Web, contains some surprises. Professors in many fields, it turns out – including the natural sciences – believe that browsing remains a vital, irreplaceable form of research.

A research library, the Stanford report suggests, should provide not only physical space where scholars can pursue research in books, but also virtual space where they can collect, store, and exploit electronic resources – an ingenious way to pull humanists, teachers, and students alike back into public workspace, in an environment that has the open, collective quality of a laboratory, but meets the needs of researchers who work with texts, images, and sounds. Over time, finally, scholars and scientists should collaborate to devise a form of virtual browsing that combines the qualities of the traditional experience with access to the full range of electronic sources.

These suggestions may or may not all find confirmation elsewhere, and even if they all do, they will not solve all the technical problems – much less restore the shaky foundations of a culture of books and reading. But all of them represent welcome additions to what has become a shadow duel between stereotypes. More collective efforts of this kind, efforts that draw on the experience and intelligence of library professionals, and that spring from the actual experience of scholars and students, might enable America to remain the

land of the great democratic library for generations to come. Fail to make them and we really may find ourselves confronted by what are now only spectral possibilities: Scylla and Charybdis, Starbucks and Gormenghast.