

## The Virtual Library of Babel: Seeking Wisdom in an Information Age

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Libraries offer a good vantage point to observe the impact of computer culture on liberal arts education. As institutions that have been early adopters of technology and yet persist in believing the printing press continues to be a powerful agent of change, academic libraries are the commons of a new borderland where tradition and technology coexist.

Sometimes this borderland seems a chaotic place, where meaning isn't fixed and where, perhaps, the very notion that there is such a thing identifiable as the liberal arts comes into question along with the Canon and the shelf of Harvard Classics that is only five feet in length, yet big enough to contain the basics of culture. Jorge Luis Borges addressed this sense of unease in his short story, *The Library of Babel*. He imagined the universe as a library – one composed of an indefinite number of galleries containing an infinite number of books, none of which is identical and many of which are faulty copies of other books. This library is a sphere with an unattainable circumference and an unfixed center. Its vastness is both exhilarating and overwhelming. The narrator tells us “When it was announced that the Library contained all books, the first reaction was unbounded joy ...” but adds later, “[t]hat unbridled hopefulness was succeeded, naturally enough, by a similarly disproportionate depression.” (1) Though Borges wrote *The Library of Babel* in 1941, he could have been describing our ambivalence about the Web.

The early claims for the transformative nature of the Internet sound like Borges narrator in his manic phase. You may recall a 1995 television advertisement for MCI in which a precocious Anna Paquin pronounces in a spookily intelligent Commonwealth-inflected voice, “It will connect all points. Its speed will be the speed of light. It will not go from here to there. There will be no there. We will all only be here.” (2) Somehow this artful ad combined our desire for transformation with fear that children and people with foreign accents would figure it all out before we did. Better get signed up with MCI fast or those young foreigners will be running the show without us.

Academics have been less, well, Borgesian in their claims than MCI but we've all heard pundits say that teaching and learning will be more interactive, more democratic, and more exciting than ever before if we just get with the program. Others seem to think civilization is on the brink of extinction thanks to computers. For example, a few years ago David Rothenberg in a *Chronicle* essay said bluntly the Web destroys the quality of students research papers. In his words, students much prefer the fabulous jumble to the hard work of stopping to think and make sense of what they've read. (3) He goes on to chide libraries for sending the wrong message by spending money on computers instead of on books. Gertrude Himmelfarb, shivering in neo-Luddite distaste, has gone so far as to view the Internet and those that laud its democratizing and non-linear nature as part of a pomo plot. In an essay entitled “Revolution in the Library” she says “If I were given to conspiratorial theories, I might speculate that

Bill Gates, the chairman of Microsoft, is a secret agent of Jacques Derrida, the high priest of postmodernism. For the new technology is the perfect medium for the new ideology.” (4) Somebody, call the Justice Department, quick. If we cant nail Bill on antitrust, maybe we can arrest him for subversive activities.

Claims and counter-claims have been made about the benefits of computers, but one thing is certain: for better or for worse, computers have had a profound impact on teaching and learning, on the production of scholarly knowledge, on the exchange of intellectual property -- in short, on everything we do as academics, so we will certainly have much to talk about today. This morning I thought Id start our conversation in the library, partly because its what I know and partly because a library in many ways embodies what we value in the liberal arts. An academic library is an attempt to provide an organized approach to an infinite universe, just as a liberal arts education provides a setting and a curriculum designed to ground students in a realm of knowledge that is changing and boundless. This is by definition a paradoxical enterprise. And, indeed, every claim that can be made about the benefits of computers carries with it a paradoxical shadow of its opposite.

Let me give you an example of one of these paradoxes. One of the wonderful advantages of an electronic text is that it can be altered, expanded, and updated as the knowledge it addresses changes – a good idea, no? Well ... yes, but its awkward when a text you’ve used and want to return to morphs or disappears. The pre-electronic system of linking related texts by means of citations may not have been hyper, but it essentially constructed a web of connections, allowing a reader to follow links to related works, functioning like hyperlinks embedded in a Web page. It provided a form of indexing that used an algorithm of non-linear, contextual connections rather than the more hierarchical structure of indexes and catalogs. But now it is quite possible that the work a researcher confidently cited no longer says what it did when last read, if it’s there at all.

This naturally offers our students a sophisticated variation on the dog ate my homework. Now, added to the network was down and the printer wasn’t working or somethings wrong with my disk, there’s always the ability to dismiss some dubious evidence with I really did find that fact, that quote, that information – gee, I guess that sites gone now. In my more paranoid moments I cant help thinking were opening ourselves to a more sophisticated version of revisionism that is described in the book, *The Commissar Vanishes*, which chronicles the crude ways in which Soviet leaders altered the past by inserting or deleting figures from the historical record. (5) And in small ways, that is happening. An important Web site devoted to electronic book publishing disappeared overnight. Turns out the site was funded by the company that produced an e-book reader that had been criticized in one of its forums. The plug was pulled and the two people that ran the site were pink-slipped in a matter of hours. And of course anyone who visits a bookmarked federal government Web site after a change in administration will find that much of the information previously available has, like the commissar, vanished. (6)

Law enforcement officials speak of preserving the chain of evidence. To make a prosecution, they must handle evidence carefully so it isn’t tainted. When that chain is disrupted, a jury may question that evidence is intact and hasn’t been contaminated. Doubt becomes most reasonable. This is where the

facility for updating and improving information electronically meets its evil twin: those changes can disrupt the scholarly chain of evidence.

Publishers are now offering libraries electronic subscriptions to expensive print reference works with the promise that the electronic version will be constantly updated. That's nice – though the hefty annual fees aren't. You can purchase, say, the *New Grove Dictionary of Music and Musicians* for \$4,850 and add an electronic copy that promises both campus-wide access and updates for a mere additional \$1,200 a year. I'm waiting to see what impact that might have in the production of new print editions. It may be that publishers find it more profitable to collect annual fees than to produce and market pricey revised editions. It also could mean that once the facts compiled in a reference book have fallen out of favor, they will essentially be erased from the record.

These erasures can be telling. An early 20th century reference work that covered the literary history of the United States had entries on many women writers. When the now old-hat new critics took the helm, those damned scribbling women were erased from literary history because they were considered writers of fiction, not literature. A more recent version has restored them. (7) If the latest edition were the only one of record, we would lose that most interesting pattern of inclusion and exclusion. And we'd never know which truth the changing winds of literary studies might become in another era.

There are other cases in which publishers have embraced this mutability with a certain troubling hamfistedness. In May of 2000, Doreen Carvajal reported in the *New York Times* that Oxford University Press was beginning to publish scholarly books without their bibliographies. In order to produce a smaller, less stodgy and – bottom line – a cheaper book, the bibliographies were being posted on the Web for those picky few that felt compelled to read the fine print. (8) The argument was made, of course, that this was a good thing because the bibliography would be updated. About six months after Carvajal's article appeared, I asked Marlie Wasserman, director of the Rutgers University Press and one of Carvajal's sources if that practice, having been exposed on the front page of the *Times*, was still a trend. I was dismayed when she told me the jury was still out. I should have asked if any scholars had been empanelled on that jury. It troubles me that OUP would not know enough about how we read their books to realize that we flip to the fine print to assess the validity of a claim – or to get to the juicy bits, since the real vitriol is generally buried in the notes. It casually undermines the evidentiary underpinnings of the text in the name of convenience. It's rather like a newspaper publisher deciding not to clutter the pages by naming sources in their stories. Bat Boy would be pleased.

Libraries have been enriched and bedeviled by the many ways in which computers and networks make it possible to expand our collections. Take the case of periodicals. In our library, and it's probably true for most, we now have thousands more full-text periodicals than print, and far more than we ever could afford without electronic access. Yet many, perhaps most of those publications are ones we never would subscribe to individually. Electronic aggregation of full-text material allows publishers to sell us more while offering us less choice. We now have any number of competing companies offering us full text packages of essentially the same periodicals. These subscription-based package deals are one-size-fits-all and their contents can change without warning and certainly without any input from its subscribers. Whether a supposedly full text journal is included in its entirety seems a whimsical matter, and the

quality of the data entry, conducted almost entirely in great haste and at low cost in third world sweatshops, gives rise to typos that make keyword searching open to erratic matches of misspelled search terms. Borges wasn't aware of how literally the virtual library of Babel would fulfill his description of being full of imperfect copies.

When it comes to the growing portion of a library's collection that is electronic, selection of periodicals is no longer tailored to fit the institutions curriculum. Instead, libraries rent access to a collection of virtually the same stuff every other library has. And what an oddball mix it can be: the two databases with the largest market share for general, undergraduate-level periodical databases, InfoTrac and EbscoHost, offer news magazines, junk business newswires, the contents of the sort of magazine you can buy at your local grocery store, and an assortment of scholarly journals. No wonder students, unfamiliar with the conventions of scholarly discourse, have trouble selecting good sources in this mess of options. And libraries end up subscribing to a lot of materials that have nothing to do with the curriculum they exist to support because the market – all libraries of all types – welcomes materials that are not ones you'd have found in a liberal arts college library in the past. Or because the aggregator can sign up a new publisher and make some money.

This is another of the paradoxes of the virtual library of Babel: the availability of electronic resource collections offers us more than any one library could possibly contain, which means more diversity, right? Yet oddly enough, it also facilitates a cultural blandness because the big players dominate and provide the same to everyone, no matter how diverse their needs.

And, by-the-by, the electronic versions of serious scholarly publications – the ones a liberal arts college library really needs – are generally not less expensive than their print counterparts. In fact, a colleague of mine has done an analysis of the pricing of scholarly journals with and without electronic analogues and found that those that offer an electronic version are significantly more expensive than those that don't. The start-up costs no doubt factor into that paradox, but so does the fact that there is no reason for publishers to share with consumers any savings that accrue through electronic delivery. In the case of scholarly publishing, the irony is the consumers are also the producers. Now, this is a paradox that makes no sense at all.

We have fallen into the absent-minded habit of giving away our work while expecting our libraries to ransom it back for us. Academics aren't in it for the money. The benefits we reap from publication come through having our work circulated, read, and put to use. Contributing to the ongoing scholarly conversation in some significant way is the measure of our success. And of course the political economy of tenure and promotion has fueled the haste with which we part freely with our intellectual property. In some fields, its even common for authors to pay the publisher to print their articles. This is most common in the same fields in which the average library subscription price of its journals runs around two thousand dollars a year – in other words, these publishers collect from both authors and libraries at an extravagant rate. Yet for many authors those pesky page charges are no sweat; they build it into the federal grant that funds the research. Isn't it a comfort to know that our tax dollars are at work?

This giveaway of the fruits of our research has turned into a nightmarish juggernaut. More intellectual property has to be churned out, more scholars must find a publisher kind enough to see their articles into print, and libraries are faced with higher and higher ransom demands from publishers who produce no intellectual content but own the rights to a huge percentage of higher education's intellectual capital and, incidentally, make some of the highest profit margins in the publishing business. This is absurd. And it's very dangerous because we've let the balance of our constitutional rights tilt toward property owners who, in this case don't even produce the stuff.

Since the 1978 copyright revision, libraries have had to follow what is called the 5/5 rule, a limitation about which many academics are blissfully ignorant. It limits any library from requesting through interlibrary loan more than five articles from any one periodical published within the most recent five years. That's five articles for the entire college. If we need a sixth article from that journal, we can only obtain a copy of it for the person requesting it if we pay a copyright fee which can cost as much as a typical book. That money goes to purchase information that is used by one individual, it isn't a contribution toward a lasting and shareable campus resource.

The passage in 1998 of the Digital Millennium Copyright Act has tipped that already unstable balance between protecting the rights of property owners and the public right to information even further off kilter. Talk about paradoxes. This law passed with a built-in Catch 22: it reaffirmed we have a constitutional right to the fair use of electronically published materials, but if the material we wanted to use is protected by some electronic barrier we were subject to criminal prosecution if we exercise that right. A little over a year ago the Copyright Office issued a ruling that settled the problem for now in favor of publishers. Their right to prosecute us for circumventing electronic barriers trumps our fair use rights. In other words, there's no such thing as fair use for electronically-protected information. This troublesome law passed in the same year as law that lengthens the period of time before a work enters the public domain – a law with the apt popular title, Sonny Bono Copyright Extension Act. It should have been called the Mickey Mouse Act, since Disney played a major role in seeing it passed in order to keep their rodent from going public.

And it could get worse. UCITA, the Uniform Computer Information Transactions Act, is a proposed revision to the commercial code that would promote licensing over sale and has the potential to place all forms of information transfer under state contract law, meaning we stand to lose fair use, first sale, and other rights that we take for granted as well as many other rights as consumers. This would not only have the potential to remove all of this contract-protected information from library shelves, it would inhibit scholars from using and sharing the knowledge they produce. Fortunately even corporate lawyers find the law so flawed it has passed so far in only two states. But it's obvious that corporations have caught us all napping and if we keep doing things the way we have, we will not only be giving away our intellectual property, we may soon be giving it away under circumstances that will prevent our recovering it at all except on pay-per-use basis.

And here's another irony for you: publishing is largely owned by huge multinational corporations with global reach who also want to make consuming of their products local. Instead of worrying about whether a video is in a European or American format, we now have to cope with DVDs that have five

different regional versions. The DVD you buy in Denmark or Singapore is designed to be incompatible with your US-made DVD player. You are expected to buy a DVD with a different regional code each time you cross a border. And UCITA could take us from the ridiculous to the sublimely ridiculous, making it illegal to use the software you bought when living in Detroit after you've moved to Chicago. There must be a new slogan out there: Control globally, restrict locally.

Fortunately, a resistance movement has started among academics. SPARC (the Scholarly Publishing and Research Coalition) is pairing library advocates with scholarly societies to create new publications designed to compete with overpriced commercial publications. An online preprint archive in physics hosted at Los Alamos, now at Cornell, has provided a vigorous model for peer-to-peer sharing and review. The National Library of Medicine has started the PubMed Central project. A grassroots group of scholars through an organization called the Public Library of Science is signing on to an agreement to publish only in journals that allow free access to their contents six months after publication. This six-month window is intended to give publishers exclusive rights and the profits generated through subscriptions to the newest research before returning those rights to the scientific community. This seems a far more equitable balance of the private and public interests that the US constitution recognized as complementary if contradictory impulses than what we have now with the DMCA, the 5/5 rule, and the Copyright Extension Act.

All of this may seem distant from the topic which we are here to discuss today: the impact of computer culture on liberal arts education. But the impact of not only computers but the ways in which technology has facilitated the generation and transfer of information is a complex matter and these seemingly technical issues have far-reaching social implications. It has had an undeniable impact on your campus libraries. It also has an impact on what information our students can obtain, how they obtain it, and what they do with it.

This library of Babel is a more complicated place than when we were undergraduates. It appears to many of our students to be a much more disorganized and difficult place to find information than the Web where, after all, you just type some words in and something comes up instantly.

Some researchers at Cornell have reported, to no ones surprise, that the use of scholarly sources has declined in student research papers from 1995 to 1999, in particular in the use of scholarly books, while the use of newspaper articles and web sites has increased. (9) Students, able to mine small bits of information easily with a full-text search, are unused to handling longer texts, so are growing increasingly unable to skim for information or to figure out which books might contain the information they need. They don't have the knack of full-text retrieval we typically use while browsing at book shelves, flipping pages, reading contents, using indexes. (10) The Cornell study also found that nearly half of the Web sites cited in 1999 could not be found a few months later, either because the citation was incorrect or the site had disappeared. We probably all have anecdotal evidence of these problems. Just the other day I heard a first year student tell her professor during a library workshop, I don't trust books. That stopped the professor in his tracks. It seems her distrust comes not from having a Noam Chomsky-like critical antenna for bias in the media. It's because most books are old and all of them are

too long, So it seems that along with the growing number of information resources, we are seeing a concomitant drop in students desire to spend time reading them.

Technology offers solutions that carry hidden booby traps. Those who remember all too well the nuisance of typing papers and the agony of reaching the bottom of the page only to realize one hadn't left quite enough room for a footnote, word processing is a fantasy come true. One can revise without tears – and the machine automatically places footnotes. How brilliant. Surely student writing should improve when students are freed from such drudgery and when technology offers ease in revision. Yet anecdotal evidence suggests inexperienced writers persist in thinking of revision as tinkering with surface features of their writing. Further, the ease with which a student can produce lovely pages of what looks polished might exacerbate the problem. Much student writing seems to be stream-of-consciousness, unplanned, and disorganized, a sort of automatic writing delivered directly from the muse to the page with no second thoughts. With spellcheckers and dancing paperclips winking at them, they feel a misplaced confidence that their writing works.

And while were on software designed to make our lives better, there's PowerPoint. You will notice I am not using what I consider to be at best fancy colored chalk. Only chalk has an advantage: you can use it even when its broken. Last spring I was on a panel at a national conference with at least three hundred people in the audience and it was being taped to be Webcast to the world. I had to revise my remarks on the fly because most of my time had been used up as another panelist struggled to make her PowerPoint slides work. Some of our faculty, particularly those who deal with visual information, find PowerPoint a useful medium for student presentations. Others find it helpful for enlivening their large-enrollment lecture courses. I'm sure it has its place. Yet, as with any educational technology, there's a rub. The ease with which one can outline a complex issue makes it equally easy to over-simplify. Tara Brabazon, an Australian critic, describes the first day at an imaginary dystopian University course. Her instructor says, day one:

In keeping with our bullet-point culture, I will now dim the lights and attempt to activate my PowerPoint presentation. Hopefully the projector will work. As I have not prepared a lecture, I will talk to the slides, filling in the space between the headings with banal comments and self-evident nonsense. You will however see some attractively coloured graphs. (11)

Brabazon points out that PowerPoint slides are frequently used by students as a substitute for taking notes or even for attending lectures. And it encourages the passivity of the chalk and talk style of teaching while reducing the talk to bullets. A story in the *New York Times* reported on the growing use of PowerPoint in K12 classrooms, saying it substitutes presentation polish for thinking skills.

The software is not merely a word processor with large fonts: it can also serve as a silent guide on the art of persuasion. Step-by-step instructions are offered by what Microsoft calls the Autocontent Wizard, a tool that provides a template for building an argument. The wizard never fails to offer instructions. Click to add Topic No. 1. Insert real-life examples here.

The story goes on to report that more than 95 percent of public school districts in the United States are using or intend to purchase Microsoft Office this year.(12) I'm sure that in addition to knowing that the Web is the best place to do research, our future students will be able to bullet like nobody's business.

Technology is also proposed as a solution for packaging and delivering educational product efficiently. I am known around here for having a bad attitude about distance education. In part, this is due to my first real peek into the issue coming from one of the directors of the Western Governors Virtual University, then in its planning stages. It was obvious that the planners of this enterprise didn't understand the difference between corporate training and higher education. Clearly, the kind of learning they envisioned involved memorizing facts, practicing skills, and mastering a specific and static body of material. And just as clearly, though it wasn't expressed, the main goal was to save bundles of money. Both of these assumptions turned out to be false. And just as we have slipped up by letting corporate interests co-opt and resell our intellectual capital, we will have to be careful that we don't let equally ignorant entities do the same with our teaching. As David Nobles pointed out in a widely circulated and controversial paper, "Digital Diploma Mills," the commoditization of our intellectual property has already happened with our willing cooperation. The next struggle, he fears, will be between the boardroom and the classroom over ownership of course content and the curriculum. (13) And if the Oxford University Press, for heaven's sake, doesn't grasp how researchers read, I'm not at all sanguine that the Western Governors or any of the other reformers who see a newer, cheaper way to sell the higher education product electronically have much of a clue about how students learn.

Does all of this mean I think computers are a bad thing? Not at all. In fact, as I put together this talk I did most of my research on my living room couch, surrounded by full bookshelves, but using my laptop, a DSL connection and our library's proxy server to look up material in Lexis/Nexis, ERIC, the Web, and even to browse netLibrary e-books. I'm just as entranced as our students with the convenience of electronic research. However, I can find what I need rather more efficiently than most undergraduates because I know what I'm looking for and I can sort out my options efficiently. The majority of the items I looked for electronically were things I had already read in the course of my work (or, in the case of the *New York Times* stories, in the course of drinking my morning coffee). Students as novices have a much harder time deciding where to start, formulating a focused search and sorting through the results.

This is not the fault of technology. The problems students have are not with computers but with the same untrained reasoning skills and shallow knowledge base that causes problems when using traditional print resources. The wider availability of information, the lack of editorial control on the Web, and ability to conveniently grab small bits of information without context may have exacerbated the problem, but it's nothing new. Students can now cut and paste where previously they transcribed chunks of undigested text into their depressingly unoriginal papers. The real trick remains making them think, convincing them that research is not simply cobbling together a lot of quotes. As a colleague of mine pointed out during a discussion this fall on our campus about using technology in our teaching, a good teacher can use technology effectively in her teaching. A bad teacher cant. Thomas Russell has compiled an annotated bibliography on studies of the use of technology for distance education. Its title



is also its message: The No Significant Difference Phenomenon. (14) There isn't a lot of evidence that we should consider technology in and of itself the beginning or the end of teaching.

Technology won't make a bad teacher better any more than technology is a philosopher's stone that will transform information into knowledge. It won't save the liberal arts. It won't destroy them either. But computer technology has had a subtle and profound impact on what we do in many not-so-obvious ways. And while I think good teaching and meaningful learning are not dependent on the virtues or the evils of technology, it behooves us to think critically about the ways in which the benefits we might reap through technology can have unintended consequences for our students learning. Where is the wisdom we have lost in knowledge? Where is the knowledge we've lost in information? T. S. Eliot asks in *Choruses from The Rock*. Those questions are critical in this information-loaded age.

A grounding in the liberal arts, computer-enhanced or not, will help our students frame how they approach acquiring and processing knowledge in the future. It provides a foundational knowledge base, a sense of how things can be categorized and connected, and fluency with reading, writing, and critical analysis. A liberal arts education, to use a more contemporary reference, is a babelish like that described in *The Hitchhiker's Guide to the Galaxy*. Maybe the message I need to share with students who enter the virtual library of babel with great nervousness is the one on the cover of that guide: Don't panic. This is a complex and chaotic borderland we are living in where tradition and technology coexist in a sometimes baffling, sometimes excitingly creative mestizo culture. The library, as its commons, is a place where students can develop fluency in the multiple discourses that give rise to new knowledge and, with practice, find their own voice and join in the conversation.

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