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The Ultimate Irony: An Information Age Without Librarians

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The Ultimate Irony: an Information Age without Librarians

by

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DEDICATION

This thesis is dedicated to my daughter,

Sarah Michelle Keller.

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ABSTRACT

In this thesis, the continuing relevance of the profession of librarianship in the digital age is explored and assessed. After defining the library as information itself, the thesis establishes that electronic formats replacing printed matter is not an indication of libraries becoming extinct. Further, various aspects of the profession of librarianship—including library ethics, information extraction skills, and information literacy instruction—are discussed. Additionally, the potential for librarians to play an important role in a largely “jobless” society (as forecast by some experts and scholars as well as in a recent Oxford University study) is evaluated. Finally, a proposal is made for librarians to actively contribute to a more participatory and deliberative democracy by using the Internet to facilitate information access in the public sphere.

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INTRODUCTION

A great age of librarians is possible, but not guaranteed. [They] are at the very beginning of the development of a digital culture that parallels the print culture that has been dominant for five hundred years. Innovative and creative librarians have the potential to shape the development of that culture in ways that will truly serve the needs of their communities.¹

Library facilities are shrinking in size because modern technology has enabled more information to be stored electronically. Information can also be stored and accessed remotely, reducing or eliminating the need for the local storage of books, periodicals, and digital media. As a result of these and other advancements in computer technology, there is some speculation that libraries are (or ought to be) approaching extinction. While I agree that the demise of the library in its *conventional* form is near, it is my position that, virtually, libraries will continue to function and librarians will continue to practice librarianship well into the 21st century information age (henceforth, digital age) for reasons which I present herein.

In my thesis, I explore and assess the continuing relevance of the profession of librarianship in the digital age, and I defend two claims. The first claim addresses libraries and establishes the following premise for this essay: a library *is* its own intellectual contents and is no more a building or a book than it is a computer. Therefore, as long as information exists, libraries cannot become extinct. My second claim involves librarians, and how—regardless of changes in the library format—they can continue to serve a vital function in the digital age. The claim is that librarians can make a substantial contribution to a more participatory democracy, using social

¹Scott Pluchak, "Breaking the Barriers of Time and Space: the dawning of the great age of librarians," *Journal of the Medical Library Association* 100, no. 1 (2012): 10-19, Accessed October 15, 2015, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3257492>.

media as a platform for supporting informed political conversations among a vastly diverse population of individuals.²

Information access—the focus of a librarian’s work—is essential to the success of democratic governance. And, librarians can play a role in the democratic process in two ways. First by continuing to facilitate access to information, *virtually*, utilizing the infrastructure of the Internet. The second way librarians can facilitate a more participatory and deliberative democracy is in a formalized educational capacity. Specifically, by teaching “information literacy” skills in schools, virtually and in a face-to-face setting, librarians can help build a solid foundation for a promising future of public sphere deliberations.

The essay is divided into three parts. The first two sections are comprised of background information in order to provide readers with a contextual foundation for the issues and arguments herein. In the first chapter, I address the meaning and purpose of a library in historical context and as an integral part of an evolving democratic society. In the second chapter, I address the profession of librarianship in historical and cultural context in order to illustrate some issues which librarians continue to face, even today. In the third and final chapter of my thesis, I show how the democratic principles, at the core of librarianship as a profession, make librarians and libraries particularly valuable in the digital age.

CHAPTER I: LIBRARY FOUNDATIONS

The point of departure for my thesis is a rough timeline of library history. I have chosen three library examples as milestones along a path toward the development of the free, public library system that exists within the United States to date. The timeline includes: the Royal

² Craig J. Calhoun, “Introduction,” *Habermas and the Public Sphere*, (Cambridge: MIT Press, 1992), 1–48.

Library and Museum of Alexandria of classical antiquity, henceforth, the Great Library; the Library Company, founded in Colonial America by Benjamin Franklin in 1731; and the Carnegie libraries which were built between 1883 and 1929.³

The Great Library

I have chosen to begin the timeline with the Great Library because it is commonly considered the first significant library in Western history.⁴ The library and museum were part of an expansive complex which accommodated over 100 scholars and scribes. It was a spectacular scene which included gardens, fountains, and a zoo. Serving as the “cultural and intellectual hub”⁵ of ancient Alexandrian society, the compound also included gardens, fountains, and a zoo.⁶

The library was comprised of an estimated 700,000 papyrus scrolls and held the richest and most comprehensive collection of recorded ideas in its day. Extravagant expenditures of human labor, time, and space were necessary to build and maintain the library. The collection originated from Assyria, Greece, Persia, Egypt, India, and many other nations, and its primary acquisition system involved searching ships in port for books, borrowing, and copying them. The copies were brought to the library where they were processed using a classification system

³ Other libraries existed between the Great Library and the Carnegie libraries were not included on the timeline because they were exclusive or otherwise unavailable to the general public.

⁴ Preston Chesser, “The Burning of the Great Library of Alexandria,” accessed October 11, 2015, <https://ehistory.osu.edu/articles/burning-library-alexandria>.

⁵ Heather Phillips, “The Great Library of Alexandria?” *Library Philosophy and Practice* (2010), accessed November 17, 2015, <http://unllib.unl.edu/LPP/phillips.htm>.

⁶ Ibid.

comprised of a dangling tag attached to each scroll, which listed an author, title, and subject.⁷

The scrolls could then be organized consistently, and readers did not have to unroll each scroll to determine its contents.⁸ The scheme was a pre-cursor to the familiar “Dewey Decimal” and “Library of Congress” classification systems. The library was managed by a librarian, who was typically an accomplished and well respected scholar.⁹

Today, an exquisite library facility stands upon what is believed to be the original location, but no physical evidence of the original complex has been unearthed. However, the spreading of the information of which the Great Library was composed was not stopped by the physical destruction of its medium. The intellectual contents of the library became part of the minds of those who read them, which is evident in a legacy of formative ideas which have been, and continue to be, essential to the development of Western civilization and the world.

The Library Company

Second on the timeline is the Library Company, established by Benjamin Franklin in 1731, and is generally considered the first *public* American library.¹⁰ The Library Company was created for the use of a discussion group which called itself the “Junto.”¹¹ Due to the fact that

⁷ Ibid.

⁸ Ibid, “Zenodot, the Great Library's first librarian, introduced a rudimentary organization system whereby texts were assigned to different rooms based on their subject matter.... [He] first inventoried the Library's holdings... which he then organized into three major categories. The first category included history books, edited and standardized literary works, and new works of Ptolemaic literature. The second included holdings ed for comparison and in the creation of the standardized works mentioned above. Included in this category were also letters and maps. The third group comprised original writings in foreign languages, many of which had been translated into Greek, and which, in translation were included in the first group.”

⁹ Ibid.

¹⁰ Ibid.

¹¹ *Oxford English Dictionary Online*, accessed September 21, 2015, Junto (pronounced “Yunto”). Definition: a political grouping or faction, especially in 17th- and 18th-century Britain.

books at the time were rare and expensive, Junto members pooled their resources and began building a collection for reference and verification purposes during their discourse and debates.

Initially, the group designated a member to keep the library at his home and was considered to be the “librarian” of the group. The collection of books grew, and antique coins, fossils, unusual geological specimens, and other oddities were added over time. Additionally, contemporaneous with the Enlightenment culture of the day, inventions (such as Franklin’s original “electrical machine”) were kept on sight where scientific experiments were also conducted.¹² In reverse of today, the library needed more space and eventually become so large that it required its own space, and was eventually located on Locust Street in Philadelphia.¹³

Unlike the university and theological libraries already in existence, the Library Company provided a public space for the free expression of ideas through intellectual discourse. Which is evident in Franklin’s statement: “these libraries have improved the general conversation of Americans, made the common tradesman and farmers as intelligent as most gentlemen from other countries, and perhaps have contributed in some degree to the stand so generally made throughout the colonies in defence [sic] of their privileges.”¹⁴ Common men were welcome to participate, but the Library Company was not entirely free—it was subscription based.

¹² “The Library Company Founded by Benjamin Franklin in 1731,” Library Company of Philadelphia, 2006, accessed April 15, 2016, <http://www.librarycompany.org/artifacts/curiosities.htm>. The library was originally subscription based, but today it is completely free and accessible to all of the public and located on, 1314 Locust Street, Philadelphia, PA.

¹³ Ibid.

¹⁴ Franklin. US history.org. July 4, 1995. <http://www.ushistory.org/franklin/philadelphia/library.htm>.

The Carnegie Libraries

Third, in the decades surrounding the turn of the 19th century, the establishment of the Carnegie libraries completed the development of the modern library stereotype in form and function. More than 2000 libraries were built (in the United States alone)¹⁵ as a result of the Carnegie's philanthropy; their familiar image came to represent the library as portrayed in literature, movies, and television ever since. But the most important contribution the Carnegie library project makes, according to my thesis, is the establishment of the *free* public library system across the United States. Once establishments "just for the wealthy elite landowners and planters [libraries became] a service for the entire county that everybody has access to."¹⁶ Additionally, as early as 1903 the Carnegie library in Washington D.C. was open to everyone regardless of race, sex, age, or economic status.¹⁷ Libraries became true democratic institutions.

I shall now conclude the first section of my essay with a brief summary. In preparation for forthcoming arguments, I have thus far established a timeline comprised of three milestones in library history. These libraries share in common a thread of democratic ideals leading toward the establishment of a free public library system in the United States. I began with the Great Library because it is generally considered to be the first and most spectacular library, arguably holding the richest collection of intellectual contents of all time. Second, the Library Company

¹⁵ "How Andrew Carnegie Turned His Fortune into a Library Legacy," Renee Montagne, Morning Edition, aired August 1, 2013 on NPR.

¹⁶ Ibid.

¹⁷ Ibid.

appears on the timeline because it was the first library (in United States library history) to serve as a center for intellectual discourse among both the intellectual elite and common men. Third, being free and open to all members of society, the Carnegie libraries represented the democratic principles upon which future public libraries would be based. The following section concentrates on librarians and how they and their work are perceived relative to their true capabilities and the actual nature of their work.

CHAPTER II: PRACTICES OF LIBRARIANSHIP

Librarians have a history of not being recognized or taken seriously, and it may be surprising that this is an issue at all (which would in itself be demonstrative of the actual problem). It is my position that there are three main components of a longstanding perception problem for librarians, and they are comprised of sexism, anti-intellectualism, and technical difficulties. I shall now elaborate upon each of the three elements.

First, Columbia University's "School of Library Economy" was created by the "father of librarianship," Melvil Dewey, in 1887.¹⁸ The discipline and occupation was designed especially for women, according to the ideals of the day.¹⁹ Women were not selected for the field of librarianship because they were considered scholars, but for what Dewey considered to be a penchant for being "detail orientated" and "submissive" (and, apparently, he also just especially liked being around women).²⁰

¹⁸ Wayne Weigand, *Irrepressible Reformer: A Biography of Melvil Dewey*, (Chicago: ALA, 1996): 3-70.

¹⁹ Marie L and Gary P. Radford, "Power Knowledge and Fear: Feminism, Foucault and the stereotype of the Female Librarian," *The Library Quarterly*, 1997: 250-266.

²⁰ Ashley McAllister, "The Library: Outing the Father of Librarianship," *Bitch Media*, July 3, 2010, accessed October 17, 2015, http://lisnews.org/melvil_dewey_the_weirdo_father_of_librarianship.

In addition to the sexist origins of librarianship as an occupation, a culture of anti-intellectualism plays a part in society's laconic attitude toward the profession. Regarding anti-intellectualism, I am referring to Richard Hofstadter's assessment of American culture in his 1963 book, *Anti-intellectualism in American life*. To best illustrate the precise relevance of this concept to my thesis, is a quote from the article, "The Tea Party is Timeless: Richard Hofstadter's Anti-Intellectualism in American Life reviewed," by Nicholas Lemann: "To Hofstadter, intellectualism is not at all the same as intelligence. It is a distinctive habit of mind and thought that actually forbids the kind of complete self-assurance we often associate with very smart people."²¹ Further, Lemann quotes Hofstadter:

It [intellectualism] accepts conflict as a central and enduring reality and understands human society as a form of equipoise based upon the continuing process of compromise. It shuns ultimate showdowns and looks upon the ideal of total partisan victory as unattainable, as merely another variety of threat to the kind of balance with which it is familiar. It is sensitive to nuances and sees things in degrees. It is essentially relativist and skeptical, but at the same time circumspect and humane.²²

The above quotation precisely describes some of the main principles of librarianship (revisited in forthcoming "ethics" discussion). Additionally, Hofstadter seems to be illustrating the appearance of intellectualism as unassuming, which resembles the stereotypical description of a librarian (of course not all librarians are unassuming—but this is part of the librarian stereotype). Regardless of how intellectual any particular librarian happens to be, few would

²¹ Nicholas Lemann, "The Tea Party is Timeless: Richard Hofstadter's Anti-Intellectualism," *Columbia Journalism Review*, September/October 2014, accessed March 21, 2016, http://www.cjr.org/second_read/richard_hofstadter_tea_party.php.

²² *Ibid.*

argue that in quintessential United States culture, an air of humility (being shy, introverted, demure, etc.) lends itself to invisibility.

Furthermore, most anyone who voluntarily spends time or money on an education, without prospects of earning more money, is generally viewed as impractical and even unintelligent. This notion is well described by Lemann, “Education, the main institutional countervailing force to anti-intellectualism, has been continually invaded by anti-intellectual ideas, especially the idea that practical training should take precedence over book-learning...”²³ Therefore, being a librarian and having a lot of education but not typically earning high wages, would not be very impressive to most people in the anti-intellectual culture assessed by Hofstadter, according to Lemann.

Finally, though librarians have indeed been heavily engaged in the use of information technology throughout the entire computer age, it is not widely known that they are a particularly technologically savvy group. Perhaps the fact that computer technology is not unique to libraries (while the 19th century card catalog was) is part of the reason information technology is not associated with the expertise of librarians. Nevertheless, librarians are quite familiar with the frustrating trial and error nature of developing technologies, and making systems work in less than ideal circumstances often does not project an image of any particularly outstanding capabilities. A librarian, just as any tradesman, craftsman, or any other type of worker, can only perform as effectively as available tools allow. And finally, the tools of librarians are finally approaching adequacy in the digital age.

²³ Ibid.

Having shown how and why perception and collective professional identity issues have been problematic for librarians, I shall now move forward to the unique experience of the school librarian (or media specialist). It is my position that a natural dissolution of misconceptions (or lack of conceptions) is possible in the near future, beginning within this very important subset of the field of librarianship.

School Librarians and Libraries

Of all specializations in librarianship, school librarians,²⁴ or librarians who work in K-12 schools, are likely to have the most significant influence upon a more enlightened society in the future. In order to see a need for a solution, it is important to understand that a problem exists, and why. Therefore, I shall illustrate the unique vicissitudes of school librarians with some examples.

Particularly in the latter half of the 20th century, a trend in K-12 education has been to reduce the research aspect of school media center/library programs and replace it with non-library tasks. For instance, the media specialist's time became consumed by preparing for book fairs, filming athletic events, facilitating morning school news broadcasts, and providing a supervised space for students during free periods. Many school media centers/libraries came to resemble what might be more appropriately named "miscellaneous buildings," and the media specialists' role as information extraction experts and teachers of research skills was displaced by a myriad of non-library functions.

²⁴ A teacher-librarian (TL), school librarian, or school library media specialist (SLMS), is a certified librarian who also has training in teaching. According to the American Association of School Librarians (AASL), a division of the American Library Association (ALA), the official title for a certified librarian who works in a school in the United States is school librarian.

By the early 21st century, media specialists and media centers (in many schools) were often deemed so non-essential to schools that even though there were qualified librarians seeking media specialist positions, positions were filled by teachers of other disciplines—without preference for candidates who were actual librarians. Furthermore, particularly throughout the years surrounding the Great Recession 2008, some school districts completely eliminated school media programs altogether.²⁵ In some cases, media centers were converted into testing sites for which they could charge fees.²⁶ Many media specialists either found themselves unemployed or serving in a roving capacity, filling in where needed throughout school districts.²⁷

The unique experiences of the school librarian/media specialist are pertinent to a major claim in this essay because an information literate citizenry is an essential component of democracy and begins with the youth of society. Therefore, school librarians may very well play the most important role in the digital age, building a solid foundation for learning elementary school, is a crucial element in a basic education.

As with many occupations, school library/media programs thinned out in the late 2000s due to the economic circumstances of the Great Recession. However, rather than drastic downsizing being an indication of an occupational end for school librarians, perhaps an opportunity for a new beginning is being revealed. The future for librarianship is information literacy, for which a foundation is built in childhood—just as with other elements of a basic education. I shall now discuss this concept in the following section.

²⁵ Cyd Hoskinson, "Anger Grows over Lack of Librarians in Duval County Schools," Jacksonville: WJCT News, October 10, 2013, accessed September 21, 2015, <http://news.wjct.org/post/anger-grows-over-lack-librarians-duval-county-schools>.

²⁶ Ibid.

²⁷ Ibid.

Information Literacy

Information literacy involves critical thinking skills as they apply to library research. In the digital age, to become information literate is to be able to recognize and select the most reliable sources of information on-line, according to a standard set of objective criteria. Librarians created the concept of information literacy, which is defined as “a set of abilities requiring individuals to ‘recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information.’”²⁸ In other words, an important part of being an effective librarian is the possession of excellent communication skills, in written, verbal, and non-verbal face to face interactions.

Being intuitive and able to interpret nuances in order to provide effective assistance to library clients (patrons or students), is essential for a skillfully conducted “reference interview.”²⁹ For instance, in both message a face-to-face environment (including skype or face-time interactions) it is important for a librarian to remain neutral (neutrality is revisited later in “ethics” sections) when working with clients. Ideally, an effective librarian can communicate with a client even when there are language boundaries by demonstrating tolerance and patience and a genuine attempt at understanding, as well as finding any way to facilitate the interaction, which perhaps might entail locating an interpreter.

²⁸Kathleen W. Craver, "The Changing Instructional Role of the High School Library Media Specialist, 1950–84: A Survey of Professional Literature, Standards, and Research Studies," *School Media Library Quarterly*, 14, no. 1 (Summer 1986): 18, accessed September 5, 2015, http://www.ala.org/aasl/sites/ala.org.aasl/files/content/aaslpubsandjournals/slr/edchoice/SLMQ_ChangingInstructionalRole_InfoPower.pdf.

²⁹ "Infopeople Workshop - Reference Interview Skills," Infopeople, accessed August 28, 2015, <http://www.infopeople.org/training/past/2004/reference>.

There are different levels of information literacy, beginning in elementary school and continuing through college age and beyond. It is, or ought to be, an ongoing process for everyone in the digital age. For the purpose of defining it generally, I am providing as an example the American Association of College and Research Libraries, “Information Literacy Standards,” as follows: determine the extent of information needed; access the needed information effectively and efficiently; evaluate information and its sources critically; incorporate selected information into one’s knowledge base; use information effectively to accomplish a specific purpose; understand the economic, legal, and social issues surrounding the use of information; and access and use information ethically and legally.³⁰

I shall use a conspiracy theory, of considerable publicity, to illustrate a case when information literacy skills would be valuable. The theory followed the terrorist attacks upon the United States on September 11, 2001 and makes the following claim: In order to involve the United States in a war in the Middle East, the George W. Bush Administration plotted all of the 9/11 terrorist attacks, beginning with the destruction of the World Trade Center; the Pentagon was hit by a missile and not a commercial plane; and an Air Force jet shot down United Flight 93 after passengers stormed the cockpit.

According to *Debunking 9/11 Myths: Why Conspiracies Can’t Stand Up to the Facts*, by *Popular Mechanics* writers, David Dunbar and Brad Reagan, each part of the conspiracy was debunked when *Popular Mechanics* magazine researched and then reported the factual evidence

³⁰ACRL, *Information Literacy Competency Standards for Higher Education*, (ALA: Chicago. 2000), <http://www.ala.org/acrl/sites/ala.org.acrl/files/content/standards/standards.pdf>.

of the tragic events of that day.³¹ Certainly, one could stumble upon the *Popular Mechanics* article if looking for information on the topic of 9/11. But this rumor was begun nearly 15 years ago, and though the vast majority of people do not give it a thought today, perhaps the idea remains in a collective cultural semi-consciousness. Seeds planted by innuendo here and there over time, are one of the most effective means of spreading misinformation—intentionally or not—and this would be a very valuable example which could be used during information literacy instruction.

Another case for the importance of information literacy instruction in the digital age is the website, martinlutherking.org. The implication of a “martinlutherking” URL with an .org domain is that the site belongs to an organization of experts on Dr. King. However, once perusing the pages on the site, it becomes clear that it is not a legitimate biographical or historical website for Dr. King or the Civil Rights movement. The specious nature of the site may be clear to an educated adult, especially when discovering that its owner, stormfront.org, is a white supremacy group. Of course, it is a constitutional right to form organizations and express opinions, regardless of how offensive they may be to others. In fact librarians are supposed to protect free-speech, regardless of how offensive it is. But what if a child were performing research for a term paper and came upon this resource which is full of provocative sensationalism and propaganda? Believing in conspiracy theories and other untruths is a person’s prerogative. But at least an information-literate person has the tools—which a librarians are the experts at providing—in order to make an informed choice. It stands to reason that there ought to

³¹ David Dunbar and Brad Reagan, *Debunking 9/11 Myths: Why Conspiracy Theories Can't Stand Up to the Facts: Includes New Findings on World Trade Center Building*, (San Francisco: Hearst, 2011),70.

be standard information literacy instruction beginning elementary school and continuing through high school and into college.

However, even acknowledging that being information literate is indeed important, one might question the necessity of *librarians* teaching it. Perhaps it could be taught by instructors of other disciplines, and it could then be efficiently incorporated into different disciplines throughout the standard educational process. Academic administrations in schools, colleges, and universities could simply instruct faculty to work in some research skills, according to standards such as those already developed by librarians. Moreover, historical facts and outcomes of scientific studies are already discussed in history, science, social science, etc. My essential claim, however, is that the depth, breadth, and complexity of teaching research skills, especially in the age of the Internet, requires academic treatment as its own discipline. To further illustrate this point, I shall discuss some overarching principles according to which librarians are supposed to operate. But more specifically, I shall point out some tacit standards of practice which facilitate adherence to these principles.

For instance, foundational to practicing librarianship is—as Socrates taught—knowing how little one knows. It is essential to maintain an awareness that the most accurate and timely answers to a questions are not memorized. The key to enlightenment is knowing the most appropriate resources to consult as a reference point for locating and verifying the answers to any given questions.

Especially important in the age of the Internet is the habit of maintaining a mental state of a reasonable doubt when looking for answers to any given question that comes up in conversation, reading, overhearing, etc. Knowing where to verify information is an essential

component in the practice of librarianship. Perhaps many people within a variety of disciplines realize this on some level, but to deliberately practice it is a librarian's professional duty. Of course verifying facts could be taught in other disciplines, but instructors are subject specialists, concentrating on teaching their own disciplines. Teaching research skills is a subject in and of itself, requiring a specialized academic focus. For instance, "According to the National Research Council report, only 28% of high school science teachers consistently follow the National Research Council guidelines on teaching evolution ..."³²

Librarians operate under a principle of neutrality, which ethically binds them to refraining from allowing personal or religious beliefs to interfere with their work. In the case of evolution—librarians are indeed supposed to provide fair and balanced access to differing sides of a controversy, but scientific and factual evidence cannot be provided for beliefs; therefore presenting religious beliefs in science class (in non-parochial public school) would not be consistent with library ethics. Information literacy, taught by a librarian according to library principles, would provide the neutrality and balance necessary for a quality education in the public school system in a democratic society.

The Purpose of Librarianship

Tools of all trades develop, but the essence of human basic tendencies or desires does not change. For example, the mechanisms of farming have advanced from the days of the scythe and sickle, but food is still being produced so that people can eat. Likewise, a basic curiosity and desire to know and create are also innate human characteristics, and tools have been created to facilitate the need for information, including books and computers.

³² Williams, *Ibid.*

Technology has indeed replaced human beings and rendered many occupations obsolete. But, in a number of occupations, innovation has also provided relief. When mundane, time and energy consuming are automated, human beings are free to focus on more cerebral, creative, and intuitive aspects of work. This is how technology fosters the process by which innovation and progress can be made so that civilization can advance.

A librarian's role in the digital age remains one of providing access to libraries of information in order to release their intellectual contents so that it may be perceived, contributing to the growth of human knowledge and advancements in all disciplines. For librarians, the organizational and storage aspect of their practice has been supplanted by technology, but this is not going to make the practices of librarians obsolete; it creates more freedom for them to assist and instruct people in the location and vetting of information.

Developments in Web technology have created—what ought to be—a temporary problem for librarians. Meeting demands of library users for an uncomplicated experience when looking up information on-line is imperative for the librarian in the digital age. The focus of information literacy instruction and guidance ought to include the best experience that information technology has to offer. Specifically free Web search engine resources, such as Google, provide the most streamlined on-line searching experience from an end-user perspective.

The digital age had created two problems for library users. First, if something is too difficult, most people will choose another, easier available option; therefore, most users will choose the simplest option when searching on-line. Second, the easier path may not produce the best results—or may not lead to the most information-rich parts of the Internet. The ideal digital age librarian is prepared to teach users how to navigate and use any on-line resource of value, so

that they can reach potential library users in meaningful way. It is not necessary for digital age librarians to be so “high tech” savvy that they cannot relate to users who may lack—what IT experts might consider to be—very basic computer skills. However, being up-to-date with rapidly changing Web technology, is crucial to being an effective digital age librarian.

Also, there is no time for bureaucratic hold-ups so that information literacy instruction can be standardized. Web searching technologies change so rapidly that, ideally, the digital age librarian ought to operate with academic freedom because he or she is highly qualified to do so. Anything that interferes with the purpose of the librarians work is superfluous, and the only way to remain relevant in a rapidly changing environment is to never lose sight of ones purpose—this is as important collectively as it is individually. At the heart of librarianship is information, without facilitating its access, there is no purpose in the existence of the occupation.

My above claim brings about another likely question, which is—yes, information is the core of the purpose of a library and librarian, but what if someone or something else can manage the free flow of “information” as well or better than librarians? One might argue that other disciplines can incorporate information literacy, eliminating the need for librarians to do so. Indeed, there are many occupations which require keen research skills, such as Law, or many other fields requiring a graduate degree. Also, there are Information Technology experts, might they be better to teach all aspects within their field?

My answer to these claims is illustrated by a comparison. Just as a college level math tutor reasonably assumes pupils know how to perform basic arithmetic, or a composition instructor assumes that college students can read and write, it is reasonable for experts in most disciplines to assume that everyone knows how to look up information on the Internet.

Assumptions such as these, natural and reasonable as they are, can allow students to “slip through the cracks” in an educational system.

Furthermore, instructors of other disciplines ought to be able to focus on their own subject specialties. Teaching information literacy is much too complex, and the knowledge of librarianship principles required for sufficient teaching research skills is too extensive, not to treat it as its own discipline. Therefore, it is just as important for credentialed instructors of mathematics, history, sociology, or literature to teach in their respective disciplines as it is for librarians to teach information literacy. I am suggesting that research courses be added to the curriculum beginning at around 6th grade and continuing through the freshman year of college (in fact, colleges have already been offering these courses for many years, typically as electives). These courses can be kept current and interesting, as they must if they are to be successful. The following section on librarianship ethics further explains the special capacities in which librarians provide guidance and educate pupils in the art of discernment when performing on-line research at the various levels.

Library Ethics & Intellectual Freedom

In library science graduate studies, there is standard coursework in “the foundations” of librarianship. The principles of “Intellectual freedom” are covered in a book called *The Intellectual Freedom Manual* which includes the “Library Code of Ethics” along with the “Library Bill of Rights.”³³

³³ American Library Association, "Introduction," In *An Interpretation of the Library Bill of Rights*. Chicago: ALA, 2014, accessed October 6, 2015, <http://www.ala.org/advocacy/intfreedom/librarybill/interpretations>.

It is not generally known that librarians have a “code of ethics” and a “bill of rights” as well as a professional organization which has developed an entire philosophy surrounding the field of librarianship (the American Library Association, or “ALA”). In regard to ethics, just as lawyers and priests are not supposed to go to authorities with information given to them by clients in confidence—even if it is that they murdered someone—librarians are also supposed to keep confidences and protect the privacy of their clients (students or library patrons).

Adopted by ALA in 1939, with its latest amendment in 2008, *The American Library Association Code of Ethics*³⁴ contains eight rules, some of which receive national public attention on occasion. For example, *Copyright and Fair-use* laws, *censorship*, and *privacy* have raised significant ethical issues for librarians in recent history, which I shall briefly describe—in addition to *neutrality*—over the next few paragraphs.

Copyright and Fair use

First, libraries periodically come into conflict with copyright owners—the “Fair Use” legal doctrine permits limited use of copyrighted material without acquiring permission from the rights holders. The law regarding duplicating and selling media or print material is clear, but when it comes to replication for educational purposes, Fair Use is the only limitation and exception to the exclusive rights copyright law grants to the author of a creative work. At times, a fine line between fair use and copyright infringement comes into question, leading to litigation and court interpretation.

For example, in a decade long battle, Google recently prevailed against the Author’s Guild and has been granted the right to scan all the books in all of the libraries in the world. The

³⁴ Ibid, "Code of Ethics." ALA. June 30, 2008, accessed March 6, 2016, <http://www.ala.org/advocacy/proethics/codeofethics/codeethics>.

court ultimately decided that Google’s project qualifies as “Fair Use,” which is a very positive outcome for libraries. All libraries ultimately want to preserve their collections, and Google is taking care of this—normally expensive and time consuming project—for free.³⁵

Censorship

Another library controversy frequently involves groups or individuals attempting to have libraries remove materials from their collections. The ethic states: “We uphold the principles of intellectual freedom and resist all efforts to censor library resources.”³⁶ It is not common knowledge that a librarian cannot ethically support any individual or group trying to censor information (no matter how distasteful or contrary to his or her personal beliefs and values). This principle is illustrated in the following statement from the American Library Association’s website:

We significantly influence or control the selection, organization, preservation, and dissemination of information. In a political system grounded in an informed citizenry, we are members of a profession explicitly committed to intellectual freedom and the freedom of access to information... We have a special obligation to ensure the free flow of information and ideas to present and future generations.³⁷

Censorship can include altering intellectual contents (deleting, removing, or covering up text or images), withdrawing materials from a collection, or even deciding not to include a title in a library collection. Specifically, the ethic curtails exclusion of intellectual content from library collections based on a person or group’s moral objections. The titles which commonly receive

³⁵ Lisa Peet, “U.S. Appeals Court Rules Google Book Scanning Is Fair.” *Library Journal* (October 19, 2015), accessed October 25, 2015, <http://lj.libraryjournal.com/2015/10/copyright/u-s-appeals-court-rules-google-book-scanning-is-fair-e>.

³⁶ *Ibid.*

³⁷ Jole Seroff, “Developing a Curriculum in Intellectual Freedom,” *Knowledge Quest* (Education Source, EBSCOhost) 44, no. 1 (September 2015), accessed October 25, 2015, <http://connection.ebscohost.com/c/articles/109276620/developing-curriculum-intellectual-freedom>.

ensorship requests can be surprising. Many are classics as well as contemporary writings dealing with traumatic issues; for example, *Huckleberry Finn*; *The Grapes of Wrath*; and, *A Stolen Life* (by Jaycee Dugard),³⁸ have all received a significant amount of censorship requests. Reasons given by groups and individuals to censor materials can be offensive language, explicit content, and bigotry.

Technically, librarians are supposed to fight against all attempts to censor anything, regardless of their own opinions, and even if they personally find the content offensive. They sometimes are compelled to take a stand on issues which may not be popular. The only other organization which stands up against censorship to the extent which librarians are supposed to is the American Civil Liberties Union (which is infamous for defending the constitutional rights groups which the majority of citizens find appalling, such as the Ku Klux Klan and North American Man/Boy Love Association).

For example, in order to be ethical, a librarian could not mark through the listings of organizations within a directory located in the library collection that he or she finds personally offensive, or even if the entire community finds it so. Another example is the following scenario: a librarian discovers a book in a library collection and he or she feels personally offended by the book—or even anticipates that others might be; it would be unethical to withdraw the book from the collection. However, it would be perfectly acceptable in a children’s library to block certain websites which have been determined by a school system or library administration to be inappropriate.

³⁸ Jaycee Dugard was abducted at the age of 11 and rescued over ten years later after being held captive and bearing two children by her captor.

Privacy and Confidentiality

Outside the field of librarianship, it is little known that librarians play a significant role in protecting our constitutional rights of U.S. citizens to privacy. The following quote comes directly from the ALA website and sums up the issue librarians periodically have with compromises of privacy and confidentiality:

In a library (physical or virtual), the right to privacy is the right to open inquiry without having the subject of one's interest examined or scrutinized by others. Confidentiality exists when a library is in possession of personally identifiable information about users and keeps that information private on their behalf. Confidentiality extends to 'information sought or received and resources consulted, borrowed, acquired or transmitted' (ALA Code of Ethics), including, but not limited to: database search records, reference questions and interviews, circulation records, interlibrary loan records, information about materials downloaded or placed on 'hold' or 'reserve,' and other personally identifiable information about uses of library materials, programs, facilities, or services.³⁹

The extent to which some librarians have stood up for library ethics may be surprising—particularly in regard to privacy rights. For example, in 1972, a librarian was arrested and jailed when she refused to testify against persons she knew (in her capacity as librarian) to have protested the war in Vietnam.⁴⁰

Another example is in the 1980s, when the FBI implemented a "Library Awareness Program," which was designed as a counterintelligence effort that would provide information to the FBI including the names and reading habits of users of many different libraries. The FBI was particularly interested in obtaining this type of information about foreign diplomats or their agents, resulting in widespread outrage within the field of librarianship. In October 1987 the

³⁹ Zoe Carpenter, "Librarians vs. the NSA (cover story)." In *Nation* (EBSCOhost) 300, no. 21 (May 2015): 15, accessed Aug 28, 2015, <http://www.thenation.com/article/librarians-vers-nsa>.

⁴⁰ Ibid.

ALA's Intellectual Freedom Committee released a statement that explained the threat of this program, and urged libraries not to violate their ethical obligation to protect patron's rights by providing information to the FBI (which would be problematic if presented with a warrant and a librarian does not want to be in contempt of court and possibly go to jail).⁴¹

Another example begins with a 2002 op-ed published in the *Baltimore Sun*. A retired librarian having had personal experience with the 1980's "Library Awareness Program"⁴² wrote, "The FBI is poised to intrude once more on library confidentiality, this time with an arsenal of surveillance that even our library confidentiality laws may not be able to prevent."⁴³ A survey was subsequently conducted by the University of Illinois, the findings of which showed that 85 libraries had been questioned by law enforcement about patron information related to September 11. The government's attempts to involve libraries in counter-terrorism programs were due to the fact that some of the planning and coordinating of the 9/11 attacks occurred in Florida libraries.

In all fairness, in the wake of the 9/11 terrorist attacks, it may have seemed perfectly understandable to many patriotic U.S. citizens for the government to take measures for reasons of national security. However, the Patriot Act came into direct conflict with library ethics: "We protect each library user's right to privacy and confidentiality with respect to information sought

⁴¹ Carpenter, *Ibid*, 15. The "Library Awareness Program" was designed as a counterintelligence effort that would provide information to the FBI including the names and reading habits of users of many different libraries. The FBI was particularly interested in learning this type of information about foreign diplomats or their agents, resulting in widespread outrage within the field. In October 1987 the ALA's Intellectual Freedom Committee released a statement that explained the threat of this program, and urged libraries not to violate their ethical obligation to protect patron's rights by providing information to the FBI.

⁴² *Ibid*.

⁴³ *Ibid*.

or received and resources consulted, borrowed, acquired or transmitted.”⁴⁴ Under the Patriot Act, a librarian would have to turn over patron records to government authorities *only* by court order, but such orders could easily be obtained by law enforcement without probable cause that the information is related to a suspected terrorist plot.⁴⁵ It also required librarians’ compliance with a gag order if approached by authorities with such a request. Further, the term ‘records’ includes books checked out, search histories, and hard drives from library computers. Ethically, librarians are supposed to resist such efforts, and only comply with authorities if there is a warrant. Also, exceptions are allowed as long as they are written into library policy, which allows some reasonable and necessary flexibility in interpreting library principles under extenuating circumstances.⁴⁶

Neutrality

On one hand, when assisting users with research or when selecting or de-selecting materials for a collection, librarians are to supposed to employ impartiality on either side of a given controversy. Purposefully remaining sensitive to the comfort of others in a diverse environment is also part of being a professional librarian. On the other hand, advocating “Intellectual Freedom Rights” is completely acceptable and encouraged for librarians. Clearly, managing a balance between advocating for constitutional and civil rights falling under the umbrella of library ethics, while maintaining disposition of neutrality in dealing with library patrons, requires skills in the art of diplomacy as well as knowledge of library principles.

⁴⁴ ALA, *Ibid.*

⁴⁵ Carpenter, *Ibid.*

⁴⁶ ALA, *Ibid.*

Particularly in the digital age, a librarian's mission is to facilitate the dissemination of information for society's benefit. Defending "intellectual freedom" is a balancing act, especially in terms of remaining neutral in dealing with reference queries and research assistance while taking political stands against censorship and the Patriot Act. Reconciling seemingly contradictory ethical norms can be difficult and requires an ability to keep all potential issues sorted out. The librarian must sometimes act as a judge when discerning the best course of action in a given scenario. An example of such might be a person telling a librarian that he wants to know how to access Tor (an interface to the "dark net," so far, invisible to authorities), in order to locate snuff films and child pornography. Subsequently, authorities (police, or FBI) come in and ask about the research habits of this particular individual, the identity of whom is familiar to the librarian due to the recent interaction.

Technically, it would be unethical to divulge this information. Another scenario might be the authorities coming in and demanding the search histories of all of the patrons having accessed the library on a given day. To comply in either case would be an ethical violation, technically, but a reasonable person would comply with authorities without hesitation in the former case. In the latter case, knowing the ethics regarding privacy, a librarian would most likely not provide the information without a warrant, and even then, he or she would refer the request to someone in higher authority. Essentially, extreme cases are treated differently than mild cases, and an ethical librarian is one that possesses good judgement and wisdom in order to discern in which cases to comply with authorities, at the risk of technically violating ethics.

Current State of Librarianship

Having established a foundation for readers of my thesis based on library history and principles, I now address the current state of librarianship (as it stands in the year 2016). Conventional libraries have experienced diminishing financial support, particularly in the last two decades; however, this is not for the reasons one might naturally think. I argue that the tools of technology have not yet become so advanced as to put libraries and librarians out of business. Rather, there is a tendency for libraries to experience more usage when unemployment is high, while they receive the least amount of funding due to most being state funded institutions supported by taxes.⁴⁷ There is term for this conundrum which is the “Librarian’s Axiom.”⁴⁸ Two significant examples of this are the increased demand for library services during Great Depression of the 1930s, as well as, the Great Recession in the late 2000s.⁴⁹ Libraries were closed and staff positions were lost in the years surrounding the Great Recession, the worst of which occurred from 2007 through 2009 and during the slow recovery which followed.⁵⁰

However, after experiencing such dramatic decreases in operating expenditures due to staff reductions and library closures, the field is apparently stabilizing. The United States Bureau of Labor Statistics projects a 2 percent increase in the employment for librarians through 2024.⁵¹

⁴⁷ Mary Jo Lynch, "Economic Hard Times and Public Library e Revisited." *American Libraries*, (Augt 2002): 62, accessed October 1, 2015, <http://www.ala.org/research/librystats/economichard>.

⁴⁸ Ibid.

⁴⁹ Ibid.

⁵⁰ US Bureau of Labor Statistics, *Spotlight on Statistics: the Recession of 2007-2009*, (February 1, 2012), accessed December 2, 2105, http://www.bls.gov/spotlight/2012/recession/pdf/recession_bls_spotlight.pdf.

⁵¹ Ibid.

Moreover, libraries apparently remain a desired community services. According to a recent Pew research study, Americans still want public library services in their communities. The majority of those surveyed indicated the loss of libraries would have a negative impact on their lives.⁵² The study further shows Americans wanting libraries to support local education; serve special constituents such as veterans, active-duty military personnel and immigrants; help local businesses, job seekers and those upgrading their work skills; and assist patrons with new technologies and gadgetry, and provide 3D printers for public access.⁵³

Having established a foundation for an understanding of the definition and purpose of a librarianship, I shall move forward to the digital age and defend my claim that—more than any other time in library history—librarians are position to play a vital role as educators in 21st century society.

CHAPTER III: THE FUTURE FOR LIBRARIANS IN THE DIGITAL AGE

Few would argue that the organizing of information in libraries has not been crucial to the advancement of civilization. Without a means of preservation and organization, knowledge could not have been shared; therefore, intellectual, social, technological, and economic progress would have been stifled. After all, human reflection upon ideas and sharing of knowledge requires an organized and accessible, tangible record of these ideas; however, librarians' work is becoming less focused on behind-the-scenes organization of information as it shifts toward user access and information literacy instruction.

⁵² Ibid

⁵³ John B Horrigan, "Libraries at the Crossroads: The public is interested in new services and thinks libraries are important to communities," (Pew Research Center), accessed, September 15, 2015, <http://www.pewinternet.org/2015/09/15/libraries-at-the-crossroads>.

In other words, a digital age librarian's primary purpose is searching for, vetting, retrieving, and purveying already organized and retrievable information, so that it may ultimately be perceived by a human being. Once perceived, the information is assimilated into the mind of a person who may then augment and disseminate the information (and so on). The discipline of librarianship is not disappearing. It is undergoing a shift in focus from information storage and organization to access and dissemination.

In fact, rather than rendering the practice of librarianship obsolete, library automation has made it possible for librarians to break away from the more tedious, manual aspects of library work—often requiring deep focus and concentration, performed in isolation. Library users who will continue to access information on-line in the digital age, but the assistance and guidance of librarians will also continue to be desired, requested, and required. I now present some common-sense arguments for the redundancy of libraries or librarians, followed by my counter-arguments.

The End of Print

In the article, "The Rise and Fall of the Library Empire," Steven Coffman points out that everything that used to be only available in a print library reference collection is now on-line: "[the] aggregation of information on the web far exceeds that of any library reference collection."⁵⁴ I acknowledge that there is truth in this statement—nearly all reference materials are now on-line. However, I also argue that on-line reference material, searchable by more people, actually creates a greater (not lesser) demand for expert assistance, guidance, and instruction.

⁵⁴ Steve Coffman, "The Decline and Fall of the Library Empire," *Searcher*, 20, no. 3. (2012), accessed October 27, 2015, <http://www.infotoday.com:80/searcher/apr12/Coffman>.

For instance, experts in various fields know about seminal works and reference materials—such as citation style manuals—within individual disciplines. However, as shown in the part two discussion regarding “information literacy,” it is a librarian’s job to stay abreast of a wide range of interdisciplinary materials regardless of format. The initial step of knowing where to begin one’s research can determine success or failure in retrieving appropriate and substantial information at any academic level. A digital age librarian specializes in maintaining a broad view of on-line reference materials and guiding students or other library users in the use of these information resources.

Googling

Another argument for a diminishing role of librarians in the digital age is also presented by Steve Coffman in his statement, “[W]hen you have a question, you don’t ask a librarian, you type a few words into the Google search box and get back thousands of results, all within a few nanoseconds.”⁵⁵ I concede that the Coffman’s statement is not technically incorrect. In fact, Google’s “Rank Page” algorithm shows an 80 percent accuracy rate compared to 70 percent for human search engineers when “guessing” synonymous and related search terms.⁵⁶ But, an artificially intelligent Web is in its infancy and nowhere near approaching sentience—a great deal of which would be required to compete with human librarians, according to the claim that I am making for the communication capacities of librarians needing to be on the level of educators and psychologists.

⁵⁵ Ibid.

⁵⁶ Jack Clark, “Google Turning Its Lucrative Web Search Over to AI Machines,” *Bloomberg Technology*, October 26, 2015, accessed October 30, 2015, <http://www.bloomberg.com/news/articles/2015-10-26/google-turning-its-lucrative-web-search-over-to-ai-machines>.

Incidentally, I refer to Google throughout this essay, not to be dismissive of search engines designs of other companies, but because the colloquial term for on-line searching is “Googling.” Also, Google happens to be the leader in algorithm design at the time which I am completing this essay, in the year of 2016.

Truthfully, users would not avoid library databases if they were as easy to use as Google. It is a reality that algorithmic platforms developed by companies such as Google, are far easier to use than library catalogs and databases, which are comprised of intricately designed databases of coded “bibliographic” records and specific, pre-assigned index terms assigned by the Library of Congress.

Google’s search engine, on the other hand, uses “algorithms” (the current one being “Rank Page”) to search the Web.⁵⁷ Search engines search metadata, which is a form of indexing for web pages nested in the under-workings of webpages.⁵⁸ The new Web 3.0, also called the “semantic web” accommodates “semantic” searching, which is described by Joydeep Bhattacharya as “...pages which do not have keywords in them were returned by Google. This was the move from “keyword based search” to “concept based search”.”⁵⁹ An ability to determine the searcher’s intent behind a query and returning results based on “pattern” instead of “keyword” matching. The differences between the experiences of search library databases and

⁵⁷ There is controversy over whether or not the Web has yet reached 3.0. or are still at 2.0 (which is 1.0 pl social media) <https://ahrefs.com/blog/google-processes-queries-semantic-web-environment/>

⁵⁸A very general description, they are specific to individual disciplines and industry types, and there are numerous metadata schemes.

⁵⁹ Joydeep Bhattacharya, “How Google Processes Queries in a Semantic Web Environment,” January 7, 2014, accessed November 30, 2015, <https://ahrefs.com/blog/google-processes-queries-semantic-web-environment/>

the Web via search engine products such as Google's is due to the capacities of differing platforms.

Search engine technology is presently in the hands of IT search engineers,⁶⁰ but librarians have been the masters of indexing, classifying, and database organization for centuries. Incidentally, there is no reason why Google-type algorithms could not become the standard of access for the "deep web" enabling user-friendly access to library databases—whether Google buys or merges with the database owning companies or sells algorithm building services to them.

Furthermore, Google Scholar, is already a service in place that is just as scholarly as any subscription database.⁶¹ Google Scholar, which also offers a wealth of free and academically sound, pre-vetted, information. Easily accessible outside of the "deep web"⁶² meaning there is no need for taking extra steps to log into and navigate library websites to access subscription databases. Furthermore, in response of concerns previously held by many librarians regarding Google Scholar, a study was conducted which evaluated the scholarliness of resources discovered using Google Scholar compared to those found in library databases. On analysis, the evidence "showed that Google Scholar yielded more scholarly content than library databases, with no statistically significant difference in scholarliness across disciplines...the enhanced

⁶⁰ Hannah Devlin, "Rise of the robots: how long do we have until they take our jobs?" *The Guardian*, (February 4, 2015), accessed January 1, 2016, <http://www.theguardian.com/technology/2015/feb/04/rise-robots-artificial-intelligence-computing-jobs>.

⁶¹Jared Howland, Thomas Wright, Rebecca Boughan, and Brian Roberts, "How Scholarly Is Google Scholar? A Comparison to Library Databases" (originally presented June 30, 2008, at the American Library Association's Annual Conference in Anaheim, California. May 2009), accessed February 13, 2016, <http://www.jaredhowland.com/publications/google-scholar-ala>.

⁶² Michael Bergman. "The Deep Web: Surfacing Hidden Value." The "Deep Web," sometimes called the "Hidden Internet," or the "Invisible Web," has been estimated to be 500 times larger than the "indexable" [sic] Web.

discoverability of information in Google Scholar makes it a great tool for librarians as well as library users.”⁶³

Librarians ought to incorporate free resources into information literacy instruction; some libraries are still discouraging using free databases (which they should not do). Rather, all of the on-line full-text databases combined provide a deep well of pre-vetted information, much of which overlaps but much does not. Also, these databases do not work or look alike, and it seems unlikely that they will all merge together into one smoothly functioning machine anytime soon. At this point in time, and for the foreseeable future, it is librarians who have a unique overarching expertise of the many databases of information on the Web, and they can work with library users to navigate and overcome idiosyncratic difficulties, while extracting value from each.

I make a similar argument the use of Wikipedia, which is an important resource to consider because its articles often appear in one of the first few pages of Googled items. Though technically—and as students are frequently forewarned by both instructors and librarians—in Wikipedia, “anyone can write anything they want,” it has its own checks and balances built in, which flag unverified or contested claims. The very fact that there is some “controversy” regarding validity of articles found in Wikipedia and other free Web resources—and there is some validity to concerns—indicates a demand for information literacy expertise and assistance.

I shall use a very basic example of an instance where guidance in using Wikipedia would be valuable. The most valuable use of Wikipedia is not for the articles themselves, but for the access to bibliographies at the ends of articles—this feature may appear obvious to persons

⁶³ Howland, *Ibid.*

accustomed to doing academic research, but it is not obvious to most Internet users. It may seem simple enough to point out, but it is merely one of the features of basic information literacy instruction which ideally begins in childhood (and can, and ought to, be taught by school librarians).

Just as with any article retrieved by “Googling” keywords into a search or address bar, once located, references from bibliographies in Wikipedia articles can be copied and pasted into academic (subscription) library databases and verified. Librarians would undeniably be appropriate for the role of informing users about this method, and admonish them of the need to verify references located on-line outside of subscription databases located in the “deep web.” At least as of 2016, the relatively cumbersome platform of subscription databases does not render them useless

Ultimately, the problem with on-line sources such *Wikipedia* and *Google Scholar*, is not they threaten to replace human educators, including librarians; it is the fact that they are free, easy and ubiquitous and “unregulated” by the established (but not free) publishing industry—products of which are paid for by libraries and academic institutions and indirectly by students and citizens—and they will be used. Therefore, the guidance of information extraction experts is needed in the use of such resources, and information literacy skills are necessary to extract the most valuable information they can access

Self-education and Virtual Schooling

It may be true, as one might reasonably argue, that there is enough information on the Web to find out anything necessary for a complete education. It is theoretically possible for a person to achieve any level of education without ever setting foot in classroom, let alone a

library. Prior to compulsory education, some of the most brilliant and innovative minds have been products of self-education (Benjamin Franklin and Abraham Lincoln are examples). Imagine the possibilities for today's youth (and for people of all ages) with all of the information on the Web at their disposal.

There are plenty of parents who do not have time, the ability, or even the desire to supervise the education of their children. Additionally, it is inconceivable that all or even most children would learn to read, write, and do mathematics without an adult to guide them or make them do the necessary work; therefore public school buildings are not likely to disappear completely, and—as I have argued—information literacy is as essential as other elements of a basic education in a world of unlimited access to a nearly infinite amount of information. One could argue that children can learn how to research information on the Internet on their own. However, it is unlikely that all students would choose to spend his or her leisure time working hard to learn anything challenging and not fun, without being made to do so—whether or not they are learning math, language arts, science, or research skills. I argue that, in the digital age schools, human librarians are as necessary as human teachers in other disciplines. Just as K-12 with teachers in a variety of subject areas, librarians will likely have many opportunities to teach information literacy in person as well as through virtual schooling, well into the future.

Are Libraries Bad For the Economy?

In an interview with *The Guardian Weekly*, best-selling author Terry Deary declared, “libraries are no longer relevant,” “have had their day,” and “have been around too long.”⁶⁴

⁶⁴ Alison Flood. "Libraries 'have had their day', says Horrible Histories author." *The Guardian*, February 13, 2013.

According to Deary, citizens are no longer entitled to read books for free, and public libraries cause authors and the entire book industry to lose money and are a drain on the economy.⁶⁵

Indeed, some aspects of the digitization of print and media have strained the relations between libraries and the publishing industry. Publishers (especially the “Big 5” or 6 major publishing houses)⁶⁶ have experimented with ways to avoid losses in profits while selling e-books to libraries. Charging higher prices and placing restrictions that publishers place on e-books has been one option; however, libraries contend that in the long run it is better for all parties concerned to increase access to reading materials, not limit it.⁶⁷

For instance, in a 2013 interview broadcast on NPR’s morning edition, Caroline Reidy, Simon & Schuster CEO, states that it is “very easy for [libraries] to share their books with other libraries within their own system, or even around the country. And do we really want to have one, huge database available across the whole country - of all of our books - that consumers can read for free?”⁶⁸

In opposition, there are other factors that pose a greater risk to the business end of books because of the capacities of the Internet. State Librarian of Kansas, Jo Budler, points out that, “[at] this moment in history, with this explosion of self-publishing and independent publishing,

⁶⁵ Ibid.

⁶⁶ Jane Ciabattari, “Now There are 5,” *Library Journal*. (September 3, 2013)
<http://lj.libraryjournal.com/2013/09/publishing/now-there-are-5>.

⁶⁷ Ibid.

⁶⁸ Lynn Neary, “E-Books Strain Relations Between Libraries, Publishing Houses,” (August 5, 2013)
<http://www.npr.org/2013/08/05/209114978/e-books-strain-relations-between-libraries-publishing-houses>.

suddenly the big five⁶⁹ aren't the only game in town ... [Are] they shooting themselves in the foot? It's my greatest fear for them. But I also think that our readers, they're going to find things to read...if it's not the best-sellers, they may turn somebody into a best-seller because the best-seller wasn't available at the library.”⁷⁰

In regard to librarians, an un-regulated information explosion of books and articles on the Web is another reason librarians can provide an invaluable service. Maintaining an overarching perspective of available information, as well as the ability to discern quality of information, remains a desirable skill with or without the established publishing industry.

If it is correct that libraries are a threat to authors, the publishing industry, and the economy at large, imagine the power of the giants of the information industry to disrupt the status quo. Incidentally, as discussed in the previous section on “library ethics,” Google has begun the process of digitizing all the books in all of the libraries all over the world.⁷¹ As far as librarians are concerned, they need not be dependent upon any particular group of publishers or booksellers in order to practice their trade.

Librarians do not (or ought not) care what controls the information universe as long as it allows free and unencumbered access to information. If, for example, Google or the Gates Foundation, or some combination of the ilk, endeavored to build an information empire, librarians would just have different bosses or act as free agents in the new, digital, economy.

⁶⁹The five major publishers in the US and UK are Penguin Random Hoe, Hachette, Macmillan, HarperCollins, and Simon & Schuster

⁷⁰ Neary, *Ibid.*

⁷¹ *Ibid.*

The End of Work as We Know It

Some of the most brilliant thinkers and innovators alive today foretell a not too far off future of robots and computers, not only displacing workers in a variety of occupations, but also superseding the mental capabilities of all human beings. In fact, Stephen Hawking forecasts that in roughly 100 years, "the development of full artificial intelligence could spell the end of the human race."⁷² Additionally, Elon Musk of Tesla Motors and SpaceX, forewarns to be careful with AI because it "poses a definite threat to humanity."⁷³ And, beyond visions of artificially intelligent robots and computers, Ray Kurzweil, futurist writer and Google's Director of Engineering, predicts that *human beings* will be artificially intelligent by 2030 in when we reach the point "technological singularity."⁷⁴

A very rough description of artificial intelligence in web technology is described as follows:

Google's learning software is based on simulating groups of connected brain cells that communicate and influence one another. When such a neural network, as it's called, is exposed to data, the relationships between different neurons can change. That causes the network to develop the ability to react in certain ways to incoming data of a particular kind—and the network is said to have learned something.⁷⁵

In today's reality, however, the extent of AI capabilities are in GPS, gaming, and digital personal assistant (Google now, Apple's Siri, Microsoft's Cortana, Amazon Echo) technologies.

⁷² Sharon Gaudin. "Famed Physicist Talks--again--about Machine Learning and His Robot Fears." *Computerworld*, May 4, 2014.

⁷³ *Ibid.*

⁷⁴ *Ibid.*

⁷⁵ Tom Simonite, "Google puts its virtual brain technology to work." *MIT technology review* (October 5, 2012), accessed February 10, 2016, <https://www.technologyreview.com/s/429442/google-puts-its-virtual-brain-technology-to-work/>

Regardless of expert opinions as to when and what extent human beings are to be replaced by AI, a trend toward gross unemployment in industrialized civilization is based on actual data. According to a 2013 Oxford University study by Carl Osborne and Michael Frey, the digital age will be marked by an “end of employment” as we’ve known it:

Almost 47 percent of US jobs could be computerized within one or two decades according to a recent study that attempts to gauge the growing impact of computers on the job market. It isn't only manual labor jobs that could be affected: The study reveals a trend of computers taking over many cognitive tasks thanks to the availability of big data. It suggests two waves of computerization, with the first substituting computers for people in logistics, transportation, administrative and office support and the second affecting jobs depending on how well engineers crack computing problems associated with human perception, creative and social intelligence.⁷⁶

In light of the forecasts based on the findings of the Osborne/Frey survey, a near future as illustrated in the following passage from Derek Thompson’s article, “The End of Work,” do not appear so very far-fetched:

Futurists and science-fiction writers have at times looked forward to machines’ workplace takeover with a kind of giddy excitement, imagining the banishment of drudgery and its replacement by expansive leisure and almost limitless personal freedom. And make no mistake: if the capabilities of computers continue to multiply while the price of computing continues to decline, that will mean a great many of life’s necessities and luxuries will become even cheaper, and it will mean great wealth—at least when aggregated up to the level of the national economy. But even leaving aside questions of how to distribute that wealth the widespread disappearance of work would usher in a social transformation unlike any we’ve seen.⁷⁷

In his article, Thompson describes his observations during a visit to a once thriving community, in which jobs were lost due to factory closures. As the entire town went bankrupt, suicide and crime rates increased, buildings fell into disrepair, and a general malaise overcame

⁷⁶ Osborne, Carl Benedikt and Michael A Frey. *The Future of Employment: How Susceptible Are Jobs to Computerisation?* Study, Oxford University, Oxford: Oxford University, 2013.

⁷⁷ Thompson, Derek. "A World Without Work." *The Atlantic*, July 2015.

the entire town.⁷⁸ If Thompson's observations in Youngstown could be applied on larger scale to include an entire nation (or nations), life would indeed be very difficult and unpleasant for many people in the digital age.

Projecting what we have known previously—though normally considered wise—may not be applicable in the digital age. In fact, not all experts and innovators have a dark view of the future economy and way of life. For example, according to Google Co-founder, Larry Page, computers taking over jobs ought not to be feared or wished away. He states, "You're going to have some very amazing capabilities in the economy. When we have computers that can do more and more jobs, it's going to change how we think about work."⁷⁹ Further, Page questions the very legitimacy of 20th century notion of "the work ethic" in a *Financial Times* interview: "the idea that everyone should slavishly work so they do something inefficiently so they keep their job—that just doesn't make any sense to me."⁸⁰

If Page's view is shared by his peers, might this indicate (at least theoretically) the possibility of a philanthropic endeavor to redistribute the wealth? After all, Andrew Carnegie donated his fortune to the cause of free public education (including libraries, incidentally). Another example is the Bill and Melinda Gates Foundation, giving millions to libraries around the world since the 1990s.⁸¹

⁷⁸ Ibid.

⁷⁹ Lisa Eadicicco, "Google CEO: Computers Are Going To Take Our Jobs, And 'There's No Way Around That'." *Business Insider*, (October 31, 2014), accessed, November 1, 2015, <http://www.businessinsider.com/google-ceo-larry-page-computers-taking-jobs-2014-10>.

⁸⁰ Ibid.

⁸¹ Ian Chant, "Gates Foundation Prepares To Exit Library Ecosystem," *Library Journal*, (May 22, 2014), accessed January 5, 2016, <http://lj.libraryjournal.com/2014/05/budgets-funding/gates-foundation-prepares-to-exit-library-ecosystem>.

All of the opinions I have used as examples above regarding the digital age seem to share one common element, and that is each paint a picture of industrialized society having run its course and making the way for a new and perhaps unimagined economic and social reality. The actual transition will most likely be both good and bad; it is how society manages its educational and social institutions (which include libraries) as the transition occurs, which will determine the extent of society suffers or flourishes.

It may be hard to believe the conclusions in the Osborne/Frey study that nearly half of the population being out of work (in the way we are accustomed to working) in the near future. But consider the time before the Industrial Revolution of the 1800s—would those people have imagined the world today? Farmers, plowmen, and chimney sweeps would not have foreseen a world without horses or soot. Likewise, everyday Life in the 21st century will be paperless and simplified (once all of the technology works the way it is supposed to).

Machines have already replaced humans, in other ages and revolutions, in many ways throughout history. There are a myriad of occupations no longer in existence because of technological advances. For example, in the 1850s there were jobs for spinners and stove makers, but these occupations are completely extinct.⁸² 21st century jobs that are most rapidly disappearing are those of mail carriers, travel agents, lumberjacks, flight attendants, drill press operators, tax examiners/collectors, meter readers, farmers, and printing workers, based on data from the Bureau of Labor Statistics, but librarians are not included on the list for disappearing

⁸² Chester Levine, Laurie Salmon, and Daniel H. Weinberg. "Appendix A," *Revising the Standard Occupational Classification System* (Washington, DC: GPO, 1999), accessed October 1, 2015, <http://www.bls.gov/mlr/1999/05/art4full.pdf>.

jobs.⁸³ Moreover library usage tends to increase when unemployment is high (which some writers, such as Derek Thompson claim will occur as a result of the computerization of jobs as forecast in the Osborne/Frey study).⁸⁴ Finally, in order to facilitate information literacy, a librarian must possess the intuitive and emotionally intelligent communication skills of a human being, nuanced in ways that a machine cannot possibly emulate outside of science fiction.

Furthermore, and I have argued previously, a library is a library whether located in a building or in the palm of one's hand. The Internet, or the Web, is a giant library after all. Granted smart phones and computers are used for many purposes, but looking up information is one of them.

Information Haves and Have-Nots

In *The Digital Economy: Promise and Peril in the Age of Networked Intelligence*, Don Tapscott describes the digital age in revolutionary terms, “as tectonic shifts in most aspects of human existence clash with old cultures, significant social conflict will tear at the fabric of structures and institutions.”⁸⁵ The conflict to which Tapscott refers is between “information haves and have-nots.”⁸⁶ Clearly, in an information age, particularly of a digital manifestation, information *illiteracy* would be problematic. If, as Derek Thompson and other authors infer from the Osborne/Frey study proves correct—the digital age economy and work force are dismantled

⁸³ Emmie Martin, "10 Popular Jobs that Are Quickly Disappearing," *Business Insider*, (July 2014), accessed, October 17, 2015, <http://www.businessinsider.com/jobs-that-are-quickly-disappearing-2014-7>.

⁸⁴ Osborne, *Ibid.*

⁸⁵ Don Tapscott. *The Digital Economy: Promise and Peril in the Age of Networked Intelligence*, (New York: McGraw Hill, 1996), 342.

⁸⁶ *Ibid.*

and restructured and US society experiences widespread unemployment in next couple of decades—those workers having the best prospects of remaining employed would be those who are better educated (at least in the first “wave” of mass computerization).⁸⁷

As I have argued, librarians are uniquely qualified to serve in a pedagogical capacity in order to facilitate an information literate society, which is immeasurably valuable in an age of too-much information. It is my position that librarians are well suited for helping bring the information have-nots up to information literacy standards. On-line research skills in the digital age may even be more critical to a basic education than spelling or calculating—which machines are rapidly taking over because these are the types of things computers can do better than humans.

The epic reduction in employment shown in the Osborne/Frey study⁸⁸ indicates that the more tasks become automated, the less human labor will be required. However, the authors project the shift in two phases. The first has already begun: “substituting computers for people in logistics, transportation, administrative and office support.”⁸⁹ The second entails the intangible aspects of being human: “depending on how well engineers crack computing problems associated with human perception, creative and social intelligence human interactions.”⁹⁰ Librarians, as I have established by correcting any misconceptions otherwise throughout this essay, fall into the latter category; therefore, according to the conclusions of the study, the nature

⁸⁷ Thompson, *Ibid.*

⁸⁸ Osborne, *Ibid.*

⁸⁹ *Ibid.*

⁹⁰ *Ibid.*

of librarians' work will not become superfluous in the foreseeable future. And, the second phase is still science fiction at this point in time.

Virtual Librarianship

In regard to speculation that librarianship will be replaced by technology, librarian and writer, Steven Coffman, raises the questions: "...where does all of this leave the real libraries — with real buildings, real collections of paper books, real librarians and staff, and the millions of real people who use them?" Addressing the former half of the question, the release of the Web in early 1990s appears to have been the beginning of the end of the library—but only in the conventional sense. The Internet, after all, is nothing but one giant digital library of libraries. However one might ask the question, if the Internet is a library, where are the librarians? The answer is that the librarians are located outside of the virtual library, just as are the Internet library users. The librarian is a real human being as are the library users. It is a matter of virtual communication.

In order to illustrate where a librarian fits into a virtual library environment, I shall compare brick and mortar and virtual library experiences. Imagine a typical library patron—one who is used to and comfortable with using a library—enters the library building and walks past the circulation counter and reference desk (where the librarian is supposed to be sitting). If a library patron knows what to do, he or she casually or purposefully heads to a library section and browses the materials or accesses a computer, either to Google some information or to access library databases for more specific or in depth information. The patron finds no need to approach the staff unless one needs to borrow a book or ask where the photocopier or restroom is. This is no different today than it was 20 or 50 years ago.

The experience is essentially the same digital library. A human librarian is virtually nearby—an invisible presence—and the patron virtually locates what he or she needs, and that is perfectly okay. The difference in a virtual setting is that a patron enters a library through a computer interface and virtually “steps” into a comfortable small (metaphorical) foyer area with about 10 books (translates to first page of search engine hits), each appearing to have exactly what the patron is searching for. Perhaps, to the patron it seems that there ought to be more than ten books on the topic, and in fact some of the books are not exactly what the patron needs, upon closer examination. Looking around, the patron notices a lot of doors, which he attempts to open, but they are locked. He could keep trying until locating one that is open, and then venture down a hallway—with even more doors, some locked and some not. The patron decides to get out of the maze before wasting anymore time getting lost in it, and exits the library. He leaves, somewhat dissatisfied, and rather exhausted, with whatever information he located in the foyer that is adequate.

If the patron had known that there was someone who had the keys to the locked doors, and knew exactly which door to unlock in order to find what the patron was looking for, perhaps he might have gotten asked that person for guidance, and received more precise and relevant information. Moreover, there are (presumably) millions of other potential library users who do not even know how—or even think about—to enter the metaphorical foyer.

Furthermore, there are three problems that exist in a virtual library environment but did not exist in a conventional one. First, a user is separated by a few keystrokes and mouse clicks from an immeasurable amount of information and ideas, but he or she most likely does not know this. The second problem is that millions of users or potential users of virtual libraries could

benefit from guidance in regard to the scope of information they access on the Web (and they may or may not realize this). Granted, many people are capable of figuring out how to navigate the Web to the extent they find necessary, but information experts can save time by narrowing or broadening the scope of possible resources.

A human being is able to communicate on an intuitive and emotionally intelligent level through a dialogue, which can change directions or deviate or regress to something already discussed, yet forgotten. A machine cannot communicate on a human level, and this is likely to be the case well into the digital age.

Before the Web, the extent of what was instantly accessible was limited to the tangible contents of a physical library. Searching library resources was extremely limited and infinitely simpler than today. In 1970, if a library user wanted to know how to find an article about the Korean War in a periodical, he or she very likely asked for assistance with using the cumbersome bound and paper indices, which was a valuable skill taught by librarians. But the actual article may or may not be in the library building. Therefore, retrieving sought after information was very inconvenient at best.

A conventional library experience, as described in the above scenario, is fundamentally no different from a librarian showing a library patron how to access the articles in databases online. The appearance of convenience of a digital library is not reality. And, many library users have difficulty articulating, or perhaps they have not yet developed, ideas when beginning a research project (or at any point when they realize they need assistance). Effective communication requires intuition and emotional intelligence; these are key elements in being

able interpret nuances of verbal and non-verbal communication, and they are capacities which humans possess but machines do not.

In the public sphere, just as in academia, virtual libraries provide access to facts and the ideas of experts and scholars from antiquity to the present day. Potentially, social media could serve as a platform for a participatory and deliberative democracy, within which librarians, due to library ethics—in particular the neutrality principle—are perfectly suited to serve as facilitators. The platform is already available and is already functioning as a forum for discussion of issues impacting the society, and the entire world. And, I make the following suggestion for utilizing the Internet as an infrastructure already in place, by adding the presence of librarians by imbedding a “Virtual Reference Library Service” link and icon into every type of public social media forum available on the Net. For example, Facebook, Google, Twitter, Myspace, Bing, Yahoo, etc., as well as blogs associated with on-line journals and magazines and websites of educational value (ranging from local to international news media) could all potentially support political participation in the public sphere.

Of course this would not be accomplished by forcing these entities to cooperate—that would be undemocratic and unethical for librarians—but by seeking their cooperation, while reserving the right to remain neutral and to operate under the principles of Intellectual Freedom, the Library Bill of Rights and Code of Ethics. Already, “Ask a Librarian” functions in this capacity on library websites, but in order to be freely accessible to the general public, it must enter into the public realm. Of course, many general questions could be answered by “personal assistant” technology, similar to Siri (for example). A routing system could be built in for vetting

purposes. More complex queries requiring human interactions would be handled by a live librarian.

There is really no other platform like the Internet for facilitating a more participatory and deliberative democracy in the US. It is free, and it does not discriminate. In fact it is already serving as a forum for political discourse, “Social networking sites have become an important additional arena for politics. They are a resource for political news, information, finding likeminded issue-oriented people.”⁹¹ The Internet has the capacity to do more than just engage likeminded individuals in political conversations—the network provided by Facebook, for example, can facilitate diversity in political conversations. “Friending” people one works or attends school with can bring together persons different races, genders, ages, political affiliations, economic statuses, etc. Controversial topics *are* discussed on such forums, and members could be made aware that libraries of information are readily accessible (through an “Ask a Librarian” icon placed on each webpage having offering the potential for public debate). Where would the process of implementing such a suggestion begin? One suggestion might be with a library association “think tank” (they do exist).

One might argue that, more often than not, people do not engage in respectful discourse, but some do and become enriched and enlightened by exposure to new ideas and different perspectives. For example, the following quote from Ray Williams’ *Psychology Today* article⁹²

⁹¹ Andrian Kreye, "Salon Culture: Network of Ideas," *The Feuilleton (Arts & Essays) (Süddeutsche Zeitung)* 11, no. 14 (Oct 2014), accessed October 1, 2015, https://www.edge.org/conversation/andrian_kreye-salon-culture-network-of-ideas.

⁹² Williams, Ray, "Anti-Intellectualism and the "Dumbing Down" of America." *Ray Williams Wired for Success* (blog), *Psychology Today*, July 7, 2014, accessed October 15, 2016, <https://www.psychologytoday.com/blog/wired-success/201407/anti-intellectualism-and-the-dumbing-down-america>.

illustrates a social media culture, not of intellectual discourse involving facts and reason, but of a lot of bullying and ad hominem attacks:

Bill Keller, writing in the New York Times, argues that the anti-intellectual elitism is not an elitism of wisdom, education, experience or knowledge. The new elite are the angry social media posters, those who can shout loudest and more often, a clique of bullies and malcontents baying together like dogs cornering a fox. Too often it's a combined elite of the anti-intellectuals and the conspiracy followers – not those who can voice the most cogent, most coherent response. Together they foment a rabid culture of anti-rationalism where every fact is suspect; every shadow holds a secret conspiracy. Rational thought is the enemy. Critical thinking is the devil's tool.⁹³

But my response to such an argument would be: as much as political discussions from different ideologies creates discord, they can also build tolerance over time.

There are also other avenues for virtual librarianship in the digital age besides social media. If brick and mortar libraries, in the conventional sense, indeed disappear in the coming years, there still may be a demand for some similar service offered to members of communities. For example, before e-books and the Web, even though materials could be checked out of libraries, many people still enjoyed visiting a library, perhaps to use a public computer or even sitting in a quiet corner—reading a book or magazine. Today, library users enjoy reading with smart phones and tablets, as well as (and many people still prefer) print material.

Furthermore, there are still many people who do not have computer. Low income is not likely to completely disappear in any age. Therefore, in light of continued public service needs and the movement away from print and hard media, perhaps former library facilities might serve as “community centers.” Even though there may one day be no more print copies of books, other services conventionally provided by libraries might remain available, as long as the public

⁹³ Ibid.

demands them and someone is willing to pay operational expenses (which ought to be significantly lower due to dramatic reductions in staff).

Another way in which libraries will continue to be used in the future is remotely through personal computers, within a variety of venues. Modern day gatherings occur in bars, restaurants, in homes, on the streets, etc. One can socialize in a real or virtual environment, in the company of others, alone, or alone in a crowd. The communication opportunities, as well as access to information the ideas, provided by libraries such as Great Library or the Library Company was previously only available to an Elite few, but the Internet does not discriminate, and it brings people together virtually as well as in person.

According to Andrian Kreye, in “Salon Culture: Network of Ideas,” modern versions of the French salon and English coffee house are apparently making a comeback,⁹⁴

The Salon was the engine of enlightenment. Now it's coming back. In the digital era the question might be different from the ones in the European cities of the 17th century. The rules are the same. Why is there such a great desire to spend some hours with likeminded peers in this age of the internet?” The seventeenth and eighteenth century “London coffeehouse and the Parisian salon functioned as what Jürgen Habermas has identified as the public sphere: a place for social interaction outside the private sphere (the home) and the sphere of public authority (the state/court).”⁹⁵

One might argue that coffee houses and salons are not libraries. But, as I have argued throughout the essay, libraries are accessible from everywhere. And, librarians can potentially be just as ubiquitous, virtually. Smart phones and tablets are interfaces to libraries, and can be accessed within all sorts of private and public establishments. While only accessible to a privileged few in centuries past, libraries can be accessed by anyone today (as long as one has

⁹⁴ Kreye, Ibid.

⁹⁵ Ibid.

access to a computer and network). Having access to social media, one can engage in political conversations and consult libraries for reference and verification purposes—just as the Junto could do in Colonial America.

There are many futuristic possibilities which could easily become more than science fiction in the very near future. As I have stated, librarians in the digital age can be everywhere and anywhere, virtually. They could be present on-line or utilize some form of Skype-like service. In addition to smartphones and tablets (or whatever form personal computing takes in the future), some creative imaginable scenarios for virtual librarian services might be holographic hands-free public kiosks with advanced with speech recognition capabilities in “community centers” (which, as I suggested earlier, may be a desired community service when conventional libraries are gone). Librarians are not limited to working within a particular physical structure and will work with available technologies as they always have.

As far as how these services are supported, they could be funded the same way local, state, and federal libraries have always been funded, by taxes. Libraries are political institutions; they are connected to many other industries, and therefore entrenched in an established industrial complex.⁹⁶ The details of a digital age library system concept—as I mentioned previously—would begin in a “think tank” environment. A suggestion for the implementation of digital age library systems (in education and the public sphere), would be the involvement of various regional, state, national, and international library organizations and consortia, such as: the American Library Association (and all of its sub-associations), Florida Virtual Library Consortium, Northeast Florida Library Network Consortium, Lyrisis (national consortium

⁹⁶ Marc Bodnick, "Will Public Libraries Become Extinct?" *Forbes: Tech*, (October 2, 2012), accessed September 1, 2015, <http://www.forbes.com/sites/quora/2012/10/02/will-public-libraries-become-extinct>.

formerly, Solinet), or the International Coalition of Libraries Consortium; established libraries and systems such as the Library of Congress and various state libraries; and, even industry leaders, such Gates Foundation, Alphabet (Google), or Facebook.

CONCLUSION

The first two chapters of this essay provided background information for an understanding of the nature of libraries and practices of librarianship, in historical and cultural context. I outlined the history of libraries in the context of the social, economic, and technological conditions in which they operated. First, I discussed the Great Library (the Royal Library and Museum of Alexandria, circa 300 BC to 300 AD), and how essential it was to a society which valued culture, intellect, and the pursuit of knowledge for its own sake. Second, I moved forward to Colonial America to discuss the Library Company—founded by Benjamin Franklin in 1731—as it is considered the first “public” library of (what would become) United States library history. A subscription library, the Library Company was not free, nor was it open to all persons, but it laid the foundation for future libraries as institutions of democracy. Third, the Carnegie libraries and their proliferation between 1883 and 1929, marked a pivotal turning point in United States’ library history because they were free and open to everyone.

In chapter two, I described the difficulties librarians have had with being recognized and valued in society. I argued that a perception and identity problem for librarians has existed due to 19th century (sexist) roots, in a culture of anti-intellectualism, and—until very recently—underdeveloped information technology. I discussed the actual work librarians perform, correcting misconceptions which contribute to an idea that the entire library field is disappearing

in the digital age. I also discussed the principles of librarianship by describing and providing examples of library ethics in practice.

In chapter three, I discussed libraries and librarians in the digital age, and how they can potentially make an important contribution to society by facilitating political conversations in a more participatory and deliberative democracy. and how especially in the digital age, they are suited to serve as information extraction experts and information literacy instructors, not only in brick and mortar settings (as long as these last), but also in virtual settings in the public sphere.

Finally, I will suggest that perhaps by 2024 (the end-date for forecasts of the current Bureau of Labor Statistics),⁹⁷ when streets filled with driverless cars transporting those who can afford it to restaurants and bars—no worries about drinking and driving, so these types of business will likely thrive. Only a few brick and mortar stores may remain—the majority of goods being bought on-line and delivered by drone. And, school buildings will stand, probably in lower income neighborhoods, for the masses of children in need of a public education outside of the home. Perhaps some conventional library facilities, though bookless, will also remain open as “community centers.” There is great potential for a thriving participatory and deliberative democracy in the public sphere which the Internet could support, and librarians could potentially make a significant contribution to such an endeavor. But, as Scott Pluchak forewarns, “A great age of librarians is possible, but it is not guaranteed.”⁹⁸ As I have shown throughout this essay, librarians are well-suited to serve as information literacy teachers and mentors, virtually or in

⁹⁷ “Librarians,” *Occupational Outlook Handbook*, (Washington, DC: GPO, January 8, 2014), accessed November 13, 2015, <http://www.bls.gov/ooh/education-training-and-library/librarians.htm>.

⁹⁸ Pluchak, *Ibid.*

person, as long as the human race exists; however, the future for the profession of librarianship depends upon how librarians continue to define their role in the digital age.

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