

Social Epistemology in Library and information science

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Social Epistemology is a theory of knowledge that was born in library science and found a home in philosophy. This is an unusual event because typically fields are born in philosophy, grow into topics that are broad enough to become independent disciplines, then split from philosophy. This happened with chemistry, physics, psychology, and many others academic subject areas.

This paper seeks to explain the origin of social epistemology as a library and information science concept, its growth in philosophy, and some implication for this new social epistemology for traditional and emerging library applications. A theme throughout this paper is the need for a stronger theoretical grounding for library and information science in social epistemology.

Social Epistemology in Traditional LIS

Since Jesse Shera and Margaret Egan first used the term “social epistemology” in a 1952 *Library Quarterly* article, it has diverged to be more of a philosophical concept. It seems backwards to begin by discussing social epistemology within library and information science before addressing social epistemology as the discipline it is known as today. However, it is useful to understand the original context of the idea before considering it in its current philosophical state. This paper will speak to this newer version of social epistemology within a library and information science context, but before addressing that it is necessary to discuss the earliest interpretation of social epistemology, within our own field.

The traditional information landscape

Librarianship and the information professions have been part of the information environment since the beginning of the production of written works (Zandonade 2004). Though practicing similar professional roles, the field did not have a course of education for practitioners and did not professionalize until the middle of the nineteenth century when western librarians began to assume responsibility for sophisticated service and the information environment became more complex (Zandonade 2004). It was during the nineteenth century that librarianship developed standard practices, professional organizations, journals, and an academic curriculum (Zandonade 2004).

The traditional information environment focuses on evaluated, tangible works. Once an author completes a text, the writer submits it for publication. In order to be published, the works have to have some level of commercial value. Sometimes writers have ideas that they want to distribute that are not selected by publishers. Sometimes writers are not good. In cases like these, where the work does not have commercial value, authors may go through vanity presses or self-publish. However, libraries do not often purchase these works, as a trusted publisher has not vetted the content.

Once the work is published, it is available for purchase by individuals or organizations. Librarians collect these books, periodicals, and other monographs in order to create collections that support their communities. Library professionals select and purchase works, catalog them, and place them on shelves according to specified classification systems.

In the 1950s, when the phrase “social epistemology” was first used, libraries used card catalogs as finding aids for materials in their collections. As long as the patron knew

the author, title, or subject heading, the patron could look up the work, find the call number, and locate the item linearly on the shelves.

The beginnings of social epistemology

It was in this environment, in 1952, that Jesse Shera and Margaret Egan wrote “Foundations of a Theory of Bibliography” in which they described social epistemology. It is also worth noting that Jesse Shera was at the University of Chicago’s Graduate Library School at the time, an environment that encouraged theoretical research to create foundational works for the field of librarianship and information science (Zandonade 2004). Egan and Shera’s article described an information environment of increasing specialization and siloism among disciplines. They exhibited a genuine concern for the growth of the information environment to a scale where it was impossible for thinkers to have a generalist’s understanding of the “totality of that environment” (Egan 1952). The two felt that this was detrimental to the world of information and described, roughly, a method of combining communication, librarianship, and bibliography in order to study

1. The present and potential role of bibliography in the total social process of communication.
2. The specific functions of the emerging types of bibliography and the co-ordination of such types.
3. The bibliographic needs of each group for different types of bibliographies and methods of co-ordinating groups as well as services. (Egan 1952)

The pair shifted the focus of communication from the study of mass communication’s effect on a captive audience to the study of the audience’s seeking of mass communicated messages (Egan 1952). They acknowledged that librarians and bibliographers are focused on one specific type of communication, and argued that the whole of communication

needs to be studied to understand specific communication practices within it (Egan 1952).

In addition to discussing communication as a useful field for contributing to the understanding of information studies, Egan and Shera suggested attention to philosophy, psychology, and sociology (1952). They also described epistemology, a branch of philosophy that focuses on the nature of knowledge. However, they pointed out that this study had traditionally focused on the individual, and their concern was more social. Egan and Shera discussed psychology as a way to study epistemologists' ideas in the laboratory, but that the study still focuses on the individual. The pair considered sociology as a positive direction since the field focuses on the group behavior of people, but they felt the field had not paid enough attention to the “intellectual forces shaping social structure” (Egan 1952). The shortcomings in these fields were held up as evidence of the necessity for a new discipline, “social epistemology.” They described this discipline as “the study of those processes by which society *as a whole* [emphasis original] seeks to achieve a perceptive or understanding relation to the total environment—physical, psychological, and intellectual” (1952). Egan and Shera suggested four basic assumptions for their new discipline:

1. That it is possible for the individual to enter into a relationship of “knowing” with respect to his own immediate environment or that part of the entirety of his environment with which he has personal contact.
2. That the instruments of communication which mankind has developed enable the individual to come into approximately the same kind of relationship with that part of his total environment that is beyond his immediate personal experience but which he is able to comprehend because the symbols of communication relate this vicarious experience to his own immediate experience. In short, one must assume that man can achieve an intellectual synthesis with his environment and that that environment, through

- our present mediums of communication, includes remote and vicarious as well as immediate and direct experience.
3. That, by co-ordinating the differing knowledge of many individuals, the society as a whole may transcend the knowledge of the individual.
 4. That social action, reflecting integrated intellectual action, transcends individual action. (1952)

Egan and Shera concluded their article making the claim that library and information science professionals are in a perfect position to be the scholars to study social epistemology saying “[t]hus the focus of attention for the new area of study here described as social epistemology is the analysis of the production, distribution, and utilization of intellectual products in much the same fashion as that in which the production, distribution, and utilization of material products have long been investigated. Graphic communication provides objective evidence of the process [emphasis original]” (1952).

Shera continued discussing social epistemology throughout his career, and argued for an interdisciplinary study that combined library science, documentation, and information science (Zandonade 2004), though he spoke of social epistemology in general terms and never laid out a clear definition of the field and methodologies.

Social epistemology in library and information science

Egan and Shera’s idea was a radical shift in library and information science thought. Those who write about it today, from library studies to philosophy, acknowledge that it was an important new idea. However, it is worth noticing that the social epistemology that they described is more of a sociological idea than a philosophical one (Budd 2002). This foundation provided a broad structure on which other thinkers interested in the social nature of knowledge in libraries could build their scholarship.

Fritz Machlup should be noted as an early investigator of these sociological ideas, writing *The Production and Distribution of Knowledge in the United States* in 1962 and producing the three volume tome of *Knowledge: Its Creation, Distribution, and Economic Significance* in 1980-1984.

Understanding this social structure of libraries and information studies, it is easy to see why one would consider the social impact of knowledge in libraries as information distribution centers. Librarians, as people in a social system, make collection decisions, cataloging records, and reference recommendations. These are all social processes that impact the information environment present in the traditional library. Library and information science has traditionally focused on developing and implementing systems of classification, indexing, storage, retrieval, and reference for information which can impact the knowledge a patron is able to develop (Brier 2004). Though librarians might tend to focus on the backend that supports this knowledge creation, it should be noted that the ultimate goal is to help patrons create new knowledge, which meets “social, cultural, or existential needs” (Brier 2004). In this, library and information science could benefit from incorporating a philosophical epistemological understanding into the social epistemology as Egan and Shera described (Budd 2002).

Philosophical social epistemology

Social epistemology, in philosophy, is somewhat different from social epistemology as Margaret Egan and Jesse Shera described. Before focusing on the differences, it is worth understanding epistemology and social epistemology from a philosophical perspective.

Philosophers seek to create a systemic view of the world that explains the universe and humans' existence within it. There are many ways philosophers take these matters into account. These different methods have led to different branches of philosophy. Some examples are: ethics, which deals with how one ought to live, metaphysics, which considers the nature of reality, political philosophy, which questions with how a government ought to be run, and epistemology, which concerns itself with the nature of truth.

Epistemologists focus on the nature, the sources, and the limits of what can be known. Knowledge, in an epistemologist's understanding, is "true belief," which is actually true, rather than just what one truly believes. Epistemologists focus on what is required for knowledge.

Many contemporary epistemologists are interested in the social aspects in knowledge production, discovery, and creation. These philosophers fall into the camp of "social epistemology." This field is still new enough that there is not one general stance in which all social epistemologists work from. Generally, though, social epistemology is the study of the relevance to knowledge of social relations, interests, and institutions. These things are normally seen as secondary in philosophy, but social epistemologists give them attention as important in the understanding of knowledge.

A perspective that is closer to the social epistemology that Egan and Shera proposed is the sociology of knowledge. Sociologists studying knowledge seek to discover many different aspects of knowledge within a social context. They try to understand the ways in which people are educated, the way education is provided, the ways in which the knowable world stays stable, how changes are managed and settled,

the conditions of employment, and status and membership criteria for the allocation of assumed beliefs. These membership measurements can be something like professional and amateur, doctor and patient, etc. Sociologists of knowledge tend to use sociological methods to create studies in which to prove a point within a specific case.

In some ways both social epistemology and the sociology of knowledge have arisen from the critiques of knowledge in the postmodern movement. As postmodern critiques have emerged in literature, history, and art, they have also appeared in philosophy and epistemology. These assessments generally do not place the high authority on “objectivity” and “neutrality” that traditional epistemology has, as these new studies of epistemology question the achievability of such perspectives. Instead, these critiques of epistemology consider context and power to see through to the truth about knowledge.

The relationship of philosophical social epistemology to library and information science

Egan and Shera’s social epistemology had been around for over thirty years when philosophers began discussing the idea. The reason philosophers were slow to think about social epistemology is likely because Shera was a librarian, presenting and publishing in library venues, and the phrase “social epistemology” never appeared in the title of one of his works (Zandonade 2004).

In 1987, *Synthese, An International Journal for Epistemology, Methodology, and Philosophy of Science* came out with their first issue of the seventy-third volume. This issue focused on a new idea for philosophers: social epistemology (Zandonade 2004). Two of the primary thinkers in philosophical social epistemology published in this

groundbreaking work, Alvin Goldman and Steve Fuller. These two thinkers have taken social epistemology in different directions. Fuller's view of social epistemology is closer to Egan and Shera's, focusing on the sociological aspects of knowledge, while Goldman's perspective is more philosophical and focuses on claim and argumentation (Budd 2002).

In 1987 Fuller created his own journal for the field called *Social Epistemology*. This journal is devoted to the interdisciplinary study of the social nature of knowledge (Zandonade 2004). Goldman developed a journal focused on the analytic study of social epistemology called *Episteme* in 2004.

Goldman, in a way, has a final say for the meaning of social epistemology within philosophy, as the author of the entry on social epistemology for the well respected Stanford Encyclopedia of Philosophy. In this article he acknowledges Egan and Shera's work and quotes,

"[S]ocial epistemology," says Shera, "is the study of knowledge in society.... The focus of this discipline should be upon the production, flow, integration, and consumption of all forms of communicated thought throughout the entire social fabric" (1970: 86). Shera was particularly interested in the affinity between social epistemology and librarianship. He did not, however, construct a conception of social epistemology with very definite philosophical or social-scientific contours" (1999).

Goldman follows up this section asking, "[w]hat might such contours be?" (1999). His question is an interesting one from a philosopher for librarians and information scientists interested in the social nature of information. A developed systemic understanding of a philosophical social epistemology can help lay a theoretical groundwork to support library and information science (Budd 2002). A systemic philosophical social

epistemology could also help improve praxis as librarians attempt to help patrons create new knowledge from the information they find in the library (Brier 2004).

At this point this paper has covered the founding of the concept of social epistemology in library and information science by forward thinking scholars Shera and Egan as well as how philosophy has begun to think of social epistemology in slightly different ways. However, the information landscape has changed since the idea arose in the early 1950s and since philosophers began considering the idea in the late 1980s. We will explore these changes in the information environment in the next section of this paper.

Changing information landscape

External changes to the information environment

To illustrate the fundamental change in how users can seek and find information, it is useful to consider the library catalog. When Egan and Shera were discussing social epistemology, card catalogs were the primary way to search a library's collection. Even when the issue of *Synthese* came out introducing social epistemology to philosophers, many libraries were still using card catalogs, or just beginning to transition to an electronic catalog.

Beginning in the middle of the 1980s libraries began converting card catalogs to Online Public Access Catalogs, or OPACs. Some smaller libraries still continue to use card catalogs, but most larger libraries have fully transitioned to the use of OPACs. Records in both card catalogs and OPACs contain bibliographic information about each item in the collection and allow the user to precisely locate it. Typically the user had to know the title of a work, the author, or the subject heading to locate works in the card

catalog. OPACs changed this by allowing users to search entire bibliographic records for the use of specific terms or keywords. Information changed from being linearly organized by librarians to interconnected by any word in the searchable bibliographic record.

Similarly, the usability of print books for research depends on the quality of the index or other finding aids created by bibliographic professionals. As works become available electronically, the full text of the articles are searchable and the particular index or subject headings that bibliographic professionals assign becomes less critical to the ability to use the work for research. This ease of searching was not possible in a pre-electronic information environment and information professionals are still attempting to create better and easier methods to search electronic texts. Though searching for keywords removes some of the social impact of information worker's classification systems, there is a new social element of the computer scientist who writes programs to allow searching of these materials.

It is also less expensive to produce an electronic reference works than a print ones. Reference works take years to produce and are often costly to manufacture in multiple volumes. Online versions cost significantly less to produce, are quick and easy to update if something changes, and are easier to search. The Oxford English Dictionary publishes new words regularly online, but users have been waiting nearly twenty years for a new print edition. Britannica can update their homepage to show articles related to current events, but print users would have to use the index and locate these events on their own.

Online journals, which have ever-skyrocketing costs, are moving to electronic format, too. Academic libraries get pressure from administrators as well as students and

some faculty to move to electronic-only format when they can. Students feel more comfortable using electronic journals than print ones and the costs help justify this transition.

E-books, for leisure reading, have not caught on as much as one would think, but that may be poised to change. Sony just released a new e-book reader with “electronic ink” which is supposed to be easier to read. E-books for research are often available through libraries and are easy to search, note, and bookmark through their vendor websites. Though there are uses for e-books, such as quick and efficient searching, reading e-books is definitely a different type of reading. It is not the same as snuggling up on the couch with a book.

Correlated to the shift of print to electronic media is the availability of information online. Egan and Shera could not have guessed what the information environment would be today, and the writers of the social epistemology issue of *Synthese* probably did not either. The Internet was not easily used until the early nineties, and the technology did not become widespread until a few years after that.

Today users spend a lot of time online. Some people question the future of libraries as more and more information is available online and society relies less and less on books. Many websites are free to view, and easy for most people to personally publish on the web. The Internet has connected thousands of households to each other and allows users unprecedented access to social information. Some e-resources are pay only, where the user has to go through library to get access or pay big money themselves. However, many are free as well. For example, Stanford University offers an impressive

encyclopedia of philosophy to anyone online for free. Because of its impressiveness, many academic libraries have provided financial support in order to keep it free.

As searching gets better and better and people can often find a “good enough” answer quickly. Hyperlinking reduces the linear property of information and creates a genuine web where users can find related information even if it is in a different discipline. Online resources also increase the expectation of service twenty-four hours a day, seven days a week, as users do not have to wait for the library to open to get a resource.

As people become more comfortable with the online world, there is a general trend towards user generated content. User generated content includes information such as profiles, ratings, reviews, tagging, and commenting on existing content. Users might add a profile to a website so that their friends can read about them. Users might rate movies on Netflix or write review for books on Amazon. Many sites have added the ability to tag. Tagging is a way of identifying information on the web. Tags are essentially lay subject headings. A person might identify a website, photos, or even books with tags. As items in a collection, websites on the Internet, books in a library catalog, or pictures in an online album are tagged by users, an ontology of ideas arises. This is not a linear hierarchy, as Library of Congress classification is, but instead it is an interconnected web. These “folksonomies” arise from user generated tagging. The term “folksonomy” reflects that lay-users, rather than highly trained experts create the ontology. It should not be surprising, then, that many examples of folksonomy are on the web. These contributions of user generated content are adding unprecedented levels of social content to websites and the Internet as a whole.

In addition to adding information to websites, users also have the ability to personally broadcast. People do this through their websites, through blogs and online journals, through photo sharing websites, and through video sharing websites. Personal broadcasting is like personal publishing, but in many cases it is less expensive and it is easier to do. People can share any idea with anyone throughout the world using the Internet.

This ease of publishing means there is a plethora of information available online that would be harder to find in print. This creates a “long-tail” in which unpopular ideas can find their audience even if the audience members are diasporatically spread across the country or world (Anderson 2006). The long-tail is a powerful idea. It helps businesses like Netflix and Amazon prosper and can be a useful idea for libraries. Where once information providers had to focus on the interests of the majority, the minority can find information of interest through online vendors that have a larger base. The immediate interests of a local community might not be compatible with a few users, and though there was a time where these users might work with the library to help build the collection in their area, they can now go outside the library and get their materials without ever communicating their interests and needs to the library community. This changes the social information needs of a local group, and potentially impact the information that is available to the general community.

Using the long-tail principle, users can have recommendations pushed to them based on an analysis of what other, similar, users have liked. Netflix says eighty percent of their rentals are based on these recommendations (Anderson 2006). Both Amazon and Netflix say that they are able to stock things that traditional video and book stores would

be unable to stock since their audience is so broadly based (Anderson 2006). Using the postal system they are able to distribute their content geographically. The only way such recommendations are possible is through harvesting social user data and utilizing this to create custom recommendations for others.

The web allows users to find information along the long-tail, too. Interested readers can easily read documents produced at Rutgers University on their website without having to go to New Jersey to view them. Researchers can see special collections at Library of Congress without having to visit.

As people broadcast their messages with blogs, writings, pictures, and videos, there is also an emerging trend of “remix culture.” Laurence Lessig coined this term to describe what we are seeing in the online world (2004). Users often take multiple media sources, pull them apart, and put them together in different ways to make something new. The ease of doing this is something that is new and due to the widespread availability of technologies that are becoming more and more inexpensive. Users are able to slice scenes from movies, pull music tracks from video games, and use other technologies to produce original art, music, and text. Then, using software they can pull these together to create something new. There are copyright implications for this, as often the works that are being remixed are protected under copyright. If they are not, there is also the question of who owns the final product once it is finished. The “remixer” might not have added anything new to the mix, other than the combination, but they were the producers of the new work.

Another aspect of this online world is the emergence of globalization. Information is shared relatively easily around the world. When considering information produced in

another culture it is easy to see social factors that we might not see in our own culture because we are so accustomed to them. Nasser and Abouchedid explained publishing in the Arab world in 2001. They describe an environment in which social factors play a major role in information publishing. They explain that nepotism, poor financial resources, a small number of very general journal titles, the short life-span of Arab journals, and governmental censorship create an environment in which many academics have a hard time publishing. They see print as a slow medium that is very expensive, but see promise in online media as it is more inexpensive and quickly published, but they also describe bias that Arab scholars have against online journals.

Changes to the library and information science environment

With the information landscape changing so radically, there is a lot of discussion among library and information science professionals about the future of the profession. Some suggest focusing on the library brand of books, but some are arguing for a new directions.

One of these movements is the “library as place” group. People in this camp suggest that one of the more powerful ideas in the library is that there is a sense of place. The library provides a gathering space in the community, is a center point, and is a warm and welcoming area. People in this camp often talk about bringing others into the library. This might be a coffee shop for gathering, an auditorium for performances, and at an academic library this might include the university writing center or the faculty and teaching center. The idea is to create a feeling of importance of place for the library.

Another movement that is very new and widely discussed is the Library 2.0 movement. This idea is still being refined and discussed online, in published articles, and at conferences. The general focus seems to be, though, embracing technology that the community uses, and a focus on users, services, and community. The focus, in this sense, might still include the collection, but it is just one of several focuses.

Some libraries are beginning to focus on information literacy in addition to collection and services, too. This is in response to the wide variety—in terms of type and quality—of information available on the Internet. Users tend to think that they are better at discerning information than they are, and libraries are responding with a call to improve information literacy skills.

Libraries are also partnering with unusual colleagues. Google shook the library world in 2004 by announcing it had partnered with a number of prestigious libraries to digitize their collections. Google is putting the entire scanned version of public domain books online, and is allowing users to search the text of copyrighted book and showing only selections of the copyrighted work. This is a controversial move, particularly as Google said that they would put all books up without asking, and publishers and authors needed to ask to have their work removed if they did not want their work included. Though it had a shaky start, many in the community are beginning to use Google Books as a resource. More libraries have joined and it is becoming a useful tool for librarians in providing reference services.

Practical implications for library and information science

Library and information science is facing constant change as the field adapts to new and emerging information technologies. The online, postmodern world impacts all disciplines, but particularly those that deal in both issues of information and praxis. Librarianship is one of these disciplines. John Budd is a leading proponent for the application of social epistemology in libraries, particularly academic libraries at institutions of higher education (Budd 2004). This section of the paper will explore some possible implications of introducing social epistemic thought to library practice in traditional and emerging spheres.

“Traditional” library practices impacted by social epistemology

Collection management, as a professional area of librarianship, is perhaps the clearest example of the social nature of knowledge in libraries. Librarians responsible for managing the collection shape the information available to their patrons. This is one of the areas the Budd suggests we acknowledge as a potential site for the application of social epistemology (2004).

Librarians who have decided that their patrons would prefer electronic resources are faced with issues of access rather than purchase. Today libraries often provide access to materials rather than purchasing them. This is the case with some types of e-books and with online journals. Librarians negotiate with vendors to provide continuing access to electronic resources even if they discontinue their contract, but it is still a new area where there are few standard practices to follow.

Libraries are also exploring the idea of becoming an institutional repository of locally produced writing. In these cases, libraries would keep electronic copies of

everything written by individuals the institution. This practice could allow libraries to maintain some control of the body of knowledge created by the community at their institution.

Offsite storage is another aspect that impact access. In cases where a library has too many books for their shelves, they might turn to offsite storage. This might be because their collection really is too big for their building, but it can also happen because the library administration thinks it would be more useful to have the space for something other than book storage. Offsite storage can be a good way of dealing with this, but does inhibit research for some scholars. Offsite storage means that researchers have to find the resources through online catalogs. This does remove linear arrangement of books, forcing a more general keyword search that can be useful for interdisciplinary scholars, but it also removes the browsability of the collection.

As interdisciplinary subjects continue to emerge, collection development becomes a more complex process. Linear classification of books made sense when disciplines had firm boundaries and covered only specific areas. As subjects become more interconnected, researchers at the margins find themselves researching in a number of call number ranges and often find that their subjects fall through the cracks. Librarians struggle to adapt to an interdisciplinary model. Online catalogs are a help to these researchers as resources that would traditionally be classified in one discipline might have keywords that allow them to be found by researchers in other areas.

Reference might also be impacted by social epistemology as Budd recommends that interactions with faculty and staff can be taken as practice in critically evaluating information (2004). Every reference interaction could be used to show the social nature

of the information the researcher is seeking. Reference librarians could discuss the publishing process, the nature of the publisher, or the way the work is classified in the library system.

Information literacy may also be impacted by social epistemological concerns. Budd suggests that the Association of College and Research Libraries could adapt their standards for information literacy to a social epistemological framework so that students would understand some philosophical concepts such as testimony, expertise, evidence, and corroboration (2004). Students today have grown up in an information rich environment and many have had access to the Internet for most of their life. Students tend to think of themselves as proficient in finding information, but often lack the skills to critically evaluate what they find. Information literacy classes can be used to teach students how to do this type of social epistemic evaluation.

Finally, Budd recommends that the administration of libraries consider social epistemology. He suggests the administration advocate socially epistemic goals and encourage librarians to learn and share these principles (2004).

Emerging library practices impacted by social epistemology

As librarians and information scientists explore the new information environment, they are developing new roles and practices within the system. Several of these emerging roles have potential for socially epistemic thought as well.

In “Making More Mean More: Can It Be Done?” Mark Holland discusses the power of the Internet in breaking away from traditional hierarchy and organization of information. He discusses the ability to connect library resources to online references,

making materials richer (2005). Hyperlinking, by its nature, removes hierarchy and creates an environment in which it is easy to navigate between related sources without disciplinary barriers.

New kinds of information are emerging online. Social writing, social software, and remixed media have led to an explosion of new information on the web. A lot of this material is of questionable content, but some is of value, particularly as primary source material. As there is a continued increase in digital content through blogs, wikis, podcasting, and other new technologies, there will be a growing need for ways to aggregate and dig down into areas of specialty (Arnold, 2003). Scholars in a field may need to sift through the blogs and wikis of their field to see what is being said. Librarians and information professionals are in a position to understand the social nature of this information and still make it epistemically useful with value-added tools.

In today's political world, library professionals also need to have an understanding of epistemic trust in the social information environment. Ashley McDowell explains the difference between social trust and epistemic trust. She describes a situation in which a library professional might be epistemically trustworthy, but socially untrustworthy. In this case, government officials ask for names of patrons looking at suspicious information. Epistemically trustworthy librarians would provide the names because they tell the truth. However, this would be socially untrustworthy and could have negative epistemic outcomes for the library as patrons might be scared to look at some information or might stop using the library entirely (2002).

As library patrons spend more time online, librarians are experimenting with interacting with patrons online. Instant messaging reference, participating in videogames

like Second Life, and social-networking websites are ways libraries do this. Instant messaging chat allows librarians to have text based reference conversations over the computer. Users type in their question, and a librarian can walk them through their research problem. This is growing in popularity as many of the current young generation likes instant messaging. Social Networking is when libraries decide to participate in websites that allow users to post their profiles. Libraries have accounts with Facebook and MySpace in order to reach their users in their online social spaces. Some libraries have even begun working in a partnership to provide service in the videogame Second Life. The librarians create versions of themselves in the video game and man “virtual” reference desks. People from all over the world can come and ask these librarians for help in their research.

Librarians are developing other kinds of online presences, too. Many librarians create website portals to online vetted sources. Some libraries allow users to download audio books. Libraries employ webmasters, and often this person is a qualified librarian, too. Webmasters combine technical expertise in coding with user-interface testing and librarian methodology. They make it easy to find information on the library website. As the web continues to grow as a resource for users, there are a few guerrilla librarians who spend time on popular sites to share their information seeking expertise. Librarians are on Wikipedia cleaning up articles, they are on Ask Metafilter answering questions, and they are reading blogs and student webpages to give research advice. These librarians are taking their expertise out to the web to make sure the Internet is as good as it can be for the users that will inevitably be looking for information there.

Theoretical implications for library and information science

Though library and information science has been a discipline for over a century, it still lacks a theoretical framework from which to build theory, guide research, create methodology for research, and provide a way to interpret findings in the field (Brier, 2004).

Søren Brier in the 2004 article “Cybersemiotics and the Problems of the Information-Processing Paradigm as a Candidate for a Unified Science of Information Behind Library Information Science” charges

We need a deeper theory of both computation and interpretation. In summary, here are seven basic steps to move in that direction:

1. Information is differences and patterns and is therefore only potential knowledge until somebody interprets it as a sign. To develop Bateson's definition that "information is a difference that makes a difference," then it first happens when it becomes a sign.
2. The objective carriers of potential knowledge are signs.
3. Signs need interpretation to release knowledge in the form of Interpretants.
4. Interpretation is based on the total semantic network, horizons, worldviews, and experience of the person including the emotional and social aspects.
5. The realm of meaning is rooted in social-historical as well as embodied evolutionary processes that go beyond computational algorithmically logic.
6. The semantic network derives a decisive aspect of signification from a person's embodied cultural worldview, which in turn derives from, develops, and has its roots in undefined tacit knowledge.
7. To theoretically encompass both the computational and the semantic aspects of document classification and retrieval, we need to combine the cybernetic functionalistic approach with the semiotic pragmatic understanding of meaning as social and embodied (2004).

Ian Cornelius took a different approach in his 2004 “Information and Its Philosophy” article, acknowledging that library and information science has two aims: to support that academy and the running of libraries, but argues for a difference between librarianship and information studies (2004). He says, “Librarianship is a social practice, and any social epistemology must account for this individual behavior within the social practice, and any philosophy of LIS must account for it too. The close relationship between the way people construct their own individual identity and individual information seeking must be reflected in the concept of information that LIS embraces” (2004). Cornelius uses this as an argument that we need a study of information that considers purpose, practice, and social context for information (2004).

As the information environment continues to change, social behavior towards the information environment will change, too (Zandonade 2004). Old foundations of librarianship are being questioned, and people often ask why a library is necessary as we have so much available online. A strong theoretical foundation in social epistemology could create a foundation that would serve the field well through whatever changes lay ahead (Zandonade 2004).

John Budd argues that “the times is ripe, given the evolving nature of higher education in curricula and in access, for us in librarianship to place the library into the social context within which knowledge is possible” (2004). He suggests that a foundation of social epistemology could make the mission of the library align more with education through collection management, instruction, and services (2004).

Conclusion

This paper serves as a brief introduction to social epistemology as born in library and information science and developed in philosophy. The paper also seeks explain the traditional and emerging information environments and discuss the social nature of knowledge within these systems. Shera and Egan provided a great service for library and information science. By introducing the idea of social epistemology, they created a new lens through which to view library services and information practices.

Tarcisio Zandonade in “Social Epistemology from Jesse Shera to Steve Fuller” says

- Fuller's program of social epistemology...can be split into four statements and a final question:
- Many human beings pursue knowledge.
 - Each human being works in a more or less well defined body of knowledge.
 - Each human being is equipped with roughly the same imperfect cognitive capacities.
 - Human beings have varying degrees of access to one another's epistemic activities.
 - Given these propositions, how should the pursuit of knowledge be organized? (2004)

This is a question that is worth consideration and further exploration. How should the pursuit of knowledge be organized, particularly in light of the emerging information environment? What is the role that librarians and information scientists should have this a quickly changing information environment? This is a subject that will undoubtedly continue to be researched and will be an interesting one to follow.

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