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Understanding Financial Conflict of Interest: Implications for Information Literacy Instruction

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Abstract

Libraries have long existed to assist users in accessing accurate information for their needs. Industry has long been motivated to spread disinformation to promote their industry's message to the public. Although corporate disinformation techniques perfected by the tobacco industry in the 1950's were exposed, instead of disappearing they have only grown more influential with the rise of the internet. Many industries from petroleum to pharmaceuticals use scientific research to promote their corporate message and have contributed to harming the public. Users need information literacy (IL) to provide them with the skills they need to critically evaluate information and reject the techniques of disinformation. This essay will argue that librarians should provide instruction about conflict of interest (COI) while instructing users in evaluation, and that the *Framework for Information Literacy* (2016) can provide a structure for this instruction. Libraries can help their patrons exercise critical skepticism when evaluating information to avoid becoming disinformed. It concludes with a call for librarians to be more cognizant of issues of money and power when evaluating information to assist users with making the choices that best meet their information needs.

Keywords: conflict of interest; money; power; funding effect; information literacy; Framework for Information Literacy; instruction

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Understanding Financial Conflict of Interest: Implications for Information Literacy Instruction

Introduction

The 2016 election brought concerns about the phenomena of “fake news” to the forefront; although the problem of financial conflict of interest (FCOI) is less well recognized but more pervasive. The issue of the influence of industry funding on the design, creation and dissemination of scientific research has received less attention. The issue of FCOI in scientific research has led to serious problems in wide ranging areas from environmental policy to social policy. Research finds that conflicts related to funding source threaten scientific integrity and the faith of the public in scientific findings (Krimsky, 2010). As we are increasingly reliant on science to make important decisions in life, our ability to find accurate evidence upon which we base our decisions is a cornerstone of a functioning society.

The issue of FCOI is rarely addressed in the LIS literature, yet is integral to the effective evaluation of research findings. While FCOI has been recognized in the medical and biomedical fields since the mid 1980's, (Field & Lo, 2009) and some journals have established protocols to improve transparency (Rennie & Gunsalus, 1993). Although disclosure policies are not evenly applied across journals or across disciplines (Bekelman, Li & Gross, 2003). Research shows that industry funded studies are more likely to reach conclusions that favor the sponsors products and present findings that highlight benefits and minimize harm (Washburn, 2007). As primary consumers of journals and databases, libraries should exercise their influence to encourage greater transparency.

Despite sciences' commitment to openness and objectivity, there has always been the potential for misinformation in scientific publication, sometimes simply because more accurate information was not yet known, other times due to fraud. The tobacco industry began to fund research in the 1950's to cast doubt on the body of evidence implicating tobacco in disease (Michaels, 2010). The techniques perfected by the tobacco industry are seen today in the pharmaceutical industry, chemical industry, and nutrition industry (Washburn, 2007). Research had demonstrated that disinformation can powerfully impact reader's beliefs and exert significant influence on public policy decisions (Nyhan & Reffler, 2012). Nyhan et al. (2012) found disinformation persisted even after correct information was provided, they also found that corrections could even have a backfire effect,

strengthening the original erroneous belief. Additionally, research finds that disinformation can have a negative impact on our brains (Ecker, Lewandowsky, Chang and Pillai, 2014).

Disinformation is a serious problem facing society, but we are not forced to accept its corrosive impact on the information ecosystem. Although libraries have long existed to provide access to information, simply providing access is no longer enough. Libraries can empower users to make effective use of the information they access. Providing information literacy (IL) instruction has been an important mission of the library profession. Thomas Jefferson (1789) explained the essential nature of a well-educated populace, saying: "Whenever the people are well-informed, they can be trusted with their own government;... whenever things get so far wrong as to attract their notice, they may be relied on to set them to rights." Librarians and information literacy instruction should provide an important role in creating a well-informed populace.

The library and information sciences literature has not explored the issue of FCOI. Librarians are not provided with any specific guidance on discussing disclosure statements with users. It is not known if users understand disclosure statements, or how disclosure statements influence the readers' perception of the research. The few studies that do examine this issue (Chaudhry, Schroter, Smith & Morris, 2002; Schroter, Morris, Chaudhry, Smith & Barratt, 2004; Kesselheim, Robertson, Myers, Rose, Gillet, Ross...& Avorn, 2012) were conducted with medical doctors. No studies have been done on the perception of disclosure statements on the average reader. As many readers use scientific information for decision making, the potential for bias is an important consideration when evaluating the information. It is not known, for example, if a patient seeking a medication prefers a study funded by a company manufacturing a drug, or a study done by a neutral party when making a choice. This paper examines the issue of financial conflict of interest and its effect on the body of literature. It argues for more explicit information literacy instruction for users so they are able to take in all relevant factors when making the best choice for their information needs.

Origins of Financial Conflicts of Interest

In the 1950's the tobacco industry mounted a campaign to fight the growing body of scientific evidence linking tobacco to health problems with a campaign of disinformation to cast doubt on findings and fight the call for regulations (Michaels, 2005). After the tobacco industry used science to misinform the public, some assume that such coordinated disinformation efforts could not succeed again. Unfortunately, this is not the case, as many

industries have used the same techniques that the tobacco industry perfected to misinform the public about issues in the sciences and social sciences. While the effects of tobacco are well recognized, tobacco consumption still persists. Similar techniques were used in the promotion of the drug Vioxx and the withholding of evidence of harm by its manufacturer Merck, resulting in thousands of deaths (Washburn, 2007). The promotion of the idea of pain being "the fifth vital sign" requiring aggressive treatment contributed to the rise of opioid prescriptions and the current opioid crisis (Helmore, 2018). When the sweetener industry was facing the evidence that sugar consumption caused cardiovascular events, the industry shifted the blame to fat, increasing the consumption of carbohydrates and increasing obesity and cardiovascular disease (O'Connor, 2016). Additionally, the fossil fuel industry hid the knowledge that their products contributed to climate change, and fought all attempts at regulation (Hall, 2015). Recently, the news reported of the collaboration between the alcohol industry and a National Institutes of Health study on the benefits of alcohol consumption (Rabin, 2018). These examples are only a few of the far-reaching effects of industry disinformation campaigns. For decades industry has made a concerted effort to craft scientific research to give it authority and credibility, yet some of the research has more in common with industry advertising than scientific research. The norms of science dictate that the researcher should follow the evidence in answering a question without a preconceived notion of the outcome; but in industry funded studies the study is often designed to demonstrate the efficacy of the product, or to put the product in the best light. Industry sponsored studies are often designed to speak to the desires of the public, and are often reported in the media. Krimsky (2010) defines the funding effect as "an outcome in which commercial sponsorship of research influences its findings" (p. 82). Users are not always aware that industry is behind the design and dissemination of the information. While FCOI is well recognized in the medical and biomedical fields (Lo & Field, 2009), it impacts many other fields in the physical, biological and social sciences. Vasconclos, Cessarino, Martins and Pallaccios (2013) argue that graduate students should learn about COI, but I would argue that all students should be instructed in the basic understanding of the effects of FCOI. Science is held in high esteem in our society, but this relies on a high level of trust in the integrity of individual investigators (Feldman, 2008).

This issue is so extensive that the LIS literature should explore the implications of this issue, and efforts to better educate users about critically evaluating information. Understanding the role of funding in the construction and dissemination of information can be an important consideration when evaluating the totality of evidence about a topic. For example, understanding more fully about the role of financing in the creation of doubt

around the issue of climate change provides a great deal of insight into the data and the strength of the evidence. Understanding the role and influence of industry funding of research provides librarians with another tool to assist users in evaluating information to best suit their needs.

Critical Skepticism

Understanding that funding source can affect the design, conduct and dissemination of research could be seen as a threshold concept. Once a reader sees the impact of funding source on research, for many it cannot be unseen. Recognizing FCOI enables the reader to view research in a new light with a critically skeptical stance. A critically skeptical reader recognizes that research funded by a company or industry front group needs to be examined critically in light of the potential influence of the funder, while focusing on the strength of the methodology and results. The formation of a critically skeptical approach to evaluating information aligns to the norms described by Merton (1973). The norm Merton described as organized skepticism requires a reader to examine all the available evidence before coming to a conclusion. Krimsky (2010) explains that the exercise of skepticism is an essential quality control feature to ensure the reliability of scientific results. While the lay reader may be unable to assemble all the facts, or perhaps understand all the evidence in the same way as a scientist in the discipline, the reader should approach the research critically and evaluate the information in light of their needs. The critically skeptical reader should recognize when they need more information to fully understand the information.

Information Literacy Instruction

Libraries and librarians traditionally approach information with neutrality. But as Archbishop Desmond Tutu is quoted as saying “If you are neutral in situations of injustice, you have chosen the side of the oppressor. If an elephant has its foot on the tail of a mouse and you say that you are neutral, the mouse will not appreciate your neutrality” (Brown, 1984 p. 19). If librarians providing information literacy instruction leave readers with the impression that all pieces of information are of equal value, they have done the user a great disservice. Without authority, quality and validity, people can easily be misled by disinformation. As information forms the basis of many choices” people need access to reliable, credible information on which to base their decisions and opinions” (Saunders, 2013).

While access to information is essential, information is not valuable to users if it is inaccurate. ALA recognized the importance of not only access but also accuracy with its resolution on accurate information. In 2017 The American Library Association addressed recent threats to accurate information. The Resolution on Access to Accurate Information (2017) reaffirmed “the resolution on Disinformation, Media Manipulation and the Destruction of Public Information approved in 2005” (ALA, 2017). It states:

Whereas inaccurate information, distortions of truth, deliberate deceptions, excessive limitations on access and the removal or destruction of information in the public domain are anathema to the ethics of librarianship and to the functioning of a healthy democracy;

Whereas some governments, organizations, and individuals use disinformation in pursuit of political or economic advantage to thwart the development of an informed citizenry;

Whereas the exponential growth in the use of disinformation and media manipulation constitutes a critical problem facing our society (ALA, 2017).

Users accessing research cannot make the best use of information if they do not have the skills to effectively evaluate it. Instruction on evaluation techniques often relies on proxies of authority to determine quality (Sullivan, 2018). Industry has the resources to craft research that looks authoritative. Disinformation can be true but created in a way to misinform. Industry funded studies often employ methodology designed to reach the conclusion sought and report conclusions unsupported by the results. Many users don't know what to look for when evaluating research and trust what they believe to be peer-reviewed science, yet their trust is not always warranted. Information literacy instruction is essential to help readers recognize FCOI; Sturges and Gastingier (2010) argue that IL is a human right, as IL is necessary for users to make the best use of the information they access.

Frameworks for Information Literacy

While the *Framework for Information Literacy* (2016) does not explicitly mention FCOI, each frame has elements that suggest recognizing characteristics of FCOI such as the role of power and money in the creation and dissemination of information. The flexibility of the frames enables librarians to help users move from the more basic skills of search to the development of critical thinking skills by providing more opportunities for active engagement with information. The frames can be read to encourage user understanding of

the influence of FCOI on information and give users and librarians tools to combat its impact.

The frame "Authority Is Constructed and Contextual" begins with "Information resources reflect their creators' expertise and credibility..." (ALA, 2016). This calls for the user to evaluate the information with a consideration to the creator's credibility, which needs to be examined in light of the potential for bias. The knowledge practices and dispositions of this frame also suggest a critically skeptical stance. They state that learners developing IL "use research tools and indicators of authority to determine the credibility of sources, understanding the elements that might temper this credibility" (ALA, 2016). This practice can be read to include FCOI, but an additional knowledge practice could be added to make it clear that one should consider the role of power, prestige and money in the construction of authority. The dispositions for this frame articulate the importance of a skeptical stance, and an awareness of personal biases (ALA, 2016). A more explicit disposition could encourage learners to avoid confirmation bias, and welcome information that challenges their preconceptions.

The frame "Information Creation as a Process" is highly relevant to the issue of FCOI, but it may not seem that clearly related initially. A quick read of the frame refers to formats and contexts, which may not seem to apply to science as scientific publication typically follows a standard template. However, a deeper understanding of how and why scientific studies are created is an essential issue for a full understanding of the process. Although the resulting scientific studies are published in a format that appears to be similar, the differences in the creation process are important. Additionally, understanding the ways in which information about scientific studies are disseminated using many different formats is relevant to the creation of understanding about the topic. Experts recognize that some studies are created to promote a product or thwart legislation or regulation, recognition of the purpose underlying the creation enables the expert to evaluate the research. One of the knowledge practices in this frame explains that learners "articulate the traditional and emerging processes of information creation and dissemination in a particular discipline" (ALA, 2016). Learners that understand FCOI, can not only articulate the process of scientific publication, but also understand how money and ideology can influence the creation of information and the ways it can be accessed and disseminated.

One reason that industry funds the creation of scientific research is because they recognize that "Information has Value". This frame makes it clear what an effective tool information is

as a means of education, influence, persuasion and action. Novice users may not recognize that powerful interests can promote their views and crush dissent; experts appreciate the value of information as a tool of influence. The knowledge practices of this frame could be more explicit to urge users to recognize that information is used to influence behavior and belief, and the creators can construct information for their purposes. Recognizing that information can have a direct financial benefit to its funders can be an important consideration for users evaluating information.

The frame "Research as Inquiry" is an important one for understanding COI because it requires the reader to ask challenging questions about the information they are reading and be willing to seek additional sources. Information created by industry may align with what readers want to hear, or confirm existing beliefs. Informed users need to be willing to seek additional information to see if this represents the consensus, or if there are conflicting ideas which need to be weighed by the quality and the preponderance of the evidence. As users develop IL skills, they acquire the competencies required to examine varied views and conflicting evidence. Understanding the influence of power and money in the creation and dissemination of information can inform the reader to the strengths and weaknesses of an argument. The informed user should also be willing to investigate funding source when disclosed on articles, or information about study authors. The dispositions for this frame, especially "maintain an open mind and a critical stance; value persistence, adaptability, and flexibility and recognize that ambiguity can benefit the research process; and seek multiple perspectives during information gathering and assessment" (ALA, 2016) are essential for users investigating COI.

The frame "Scholarship as Conversation" is essential for novice users to understand to fully appreciate how information is constructed in society. Industry understands that "scholars, researchers and professionals engage in sustained discourse" (ALA, 2016) and they use the methods of science to question the science that disagrees with their perspective and introduce doubt in existing findings. While science is an ongoing conversation in pursuit of increased knowledge on important issues, corporate funded information can muddy the evidence. Novice users may come to the understanding that information from "established power and authority structures...can privilege certain voices and information" (ALA, 2016), recognizing this privilege and challenging the veracity of the information can be important in advancing the conversation. Industry knows that certain authorities with prestigious affiliations are seen as more credible voices in a discussion and use this to influence the conversation. Becoming more knowledgeable in the field assists developing learners in evaluating information and participating in robust conversations. One of the dispositions of

this frame speaks to the norm of organized skepticism, explaining that developing learners "suspend judgment on the value of a particular piece of scholarship until the larger context for the scholarly conversation is better understood" (ALA, 2016). Fully participating in a scholarly conversation requires a user to develop competency in the frame searching as strategic exploration as well.

The frame "Searching as Strategic Exploration" is a novel concept to many novice users who can see searching as a more straightforward process. Learners need to develop their searching practice from gathering of items that satisfy the need, to an iterative process responding to increasing knowledge. Developing learners recognize that as they understand more about their search, they build on their knowledge and explore new questions as they arise. Learners developing competency in this frame need to exhibit many of the dispositions that will assist them in developing strong IL skills including mental flexibility, creativity and persistence.

While the framework was designed for higher education, understanding the role of power and money in the shaping and dissemination of information is something that all users should understand to make the best use of information. Public libraries are frequently called to assist users with accessing information for decision making. Critical skepticism and informed evaluation are information skills that can benefit all information users.

Librarians feel that objectivity, access, and neutrality are important hallmarks of the profession. However, these pillars of the profession can thrive alongside a highly educated and critically skeptical public. Understanding the role of power and money in the shaping of information extends the agency of the user empowering them to consume information with a richer more complex understanding of the information. It is in this robust understanding of information that the goals of the *Framework for Information Literacy* (2016) will be fully realized.

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