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Why librarians can't fight fake news

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Abstract

In the wake of the panic over fake news that followed the 2016 US presidential election, librarians and other information professionals are being urged to “take leadership in the current crisis” (Jacobson, 2017: 24). The response from the profession has been to reaffirm the core values of librarianship and to hold up traditional services as a means for combating misinformation. The problem is that these solutions are offered in the absence of a full understanding of the real danger of misinformation, which is “not just [that] misinformation is ‘out there,’” but “what misinformation does to our mind” (Ecker, 2015: 22). Misinformation research in other fields directly challenges the solutions proposed by library professionals and casts doubts on their underlying assumptions. This article provides an overview of the library and information science approach to misinformation in the United States, discusses the shortcomings of that approach, and points to possible next steps for remedying the problem.

Keywords

Disinformation, fake news, information literacy, library ethics, library values, misinformation

Introduction

One of the major concerns to emerge from all the head scratching and hair pulling that followed the 2016 US presidential election is fake news. In the days before and after the election, we learned that fake news articles on Facebook outperformed articles from major news outlets during the previous months (Silverman, 2016); that individuals, both at home and abroad, were creating fake news articles to cash in on the divisive US political landscape (Silverman and Alexander, 2016; Sydell, 2016); and, more recently, that Russian actors may have attempted to influence the election by creating not just fake news, but fake users and organizations as well (Sydell, 2017).

Just as we were beginning to realize how dangerous fake news was, President Trump weaponized it, firing it first at a major news outlet in February, and then frequently enough after to make the list of his top Twitter words during his first 100 days (Daileida, 2017). Fake news thus joins a growing list of phrases inciting moral or epistemological panic, which already includes *post-truth*, the Oxford English Dictionary's 2016 word of the year, and *misinformation*, which the 2013 World Economic Forum predicted would be among the top 10 concerns for 2014 (Vis, 2014). Taken together, the concern is that inaccurate information of all sorts may pollute democratic discourse or undermine the ability of citizens to cast informed votes (Nyhan and Reifler, 2012) or “effectively share

information with one another” (Fallis, 2015: 402). As awareness of and concern for the problem spreads into the current elections in Europe and beyond, many pundits, journalists, academics, and ordinary citizens are wondering what might come next—and what might be done about it.

Among those groups taking a look at what role they might play in combating the problem of misinformation in the United States are librarians and related information professionals. The past year has seen conferences devoted to “Libraries in a Post-Truth World” (Phillips Academy, Andover, MA) and “Developing a Metadata Community Response in the Post-Truth Information Age” (DCMI), along with webinars on “Post-Truth: Fake News and a New Era of Information Literacy” (ALA), “Don't Get Faked Out by the News” (AASL), and “Confronting Misinformation: How Librarians Can Assist Patrons in the Digital Information Age” (FDLP), among others. Fake news has also come up at conferences not solely devoted to the subject, such as Barclay's (2017) presentation at

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CNI, or the “Alt-Facts, Fake News, and Misinformation” panel at the Charleston Library Conference.

Accompanying these events has been a handful of editorials and opinion pieces. In his *Library Journal* column, Berry (2016) describes the challenges posed by the misinformation age as “possibly the most difficult and vital challenge in library history. It reinforces the very reason we created public libraries in the first place.” Kenney (2017), writing in *Publishers Weekly*, describes fake news and “our post-truth politics” as an affront to librarianship and asserts that librarians should lead conversations about reliable sources. Jacobson (2017: 24) argues that in view of the unprecedented challenge of discerning fact from fiction online, “[l]ibrarians have an opportunity to take leadership in the current crisis,” and urges them to “step up to the plate.”

Such professional self-promotion is to be expected, of course, but others have affirmed the role that libraries might play in combating misinformation. Articles in *Christian Science Monitor* (Hoover, 2017), *Seattle Times* (Large, 2017), and *VICE* (Dollinger, 2017), among others, describe librarians as entering the fray, if not already on the front lines. This coverage surely comes as a relief to some, particularly since discussions about the challenges of online information frequently mention libraries only with respect to the role they *used* to play, but have now abrogated (e.g. Vedder, 2005).

Adding to these individual voices is the weight of ALA. In January, the organization published its *Resolution on Access to Accurate Information* (ALA, 2017), in which it states its opposition to “the use of disinformation, media manipulation, and other tactics that undermine access to accurate information,” urges librarians to raise awareness and to provide accurate information to users that counters disinformation, and connects these efforts not just to the mission of the ALA, but to the larger role of librarianship “in informing and educating the general public on critical problems facing society.” The core of this resolution comprises an earlier one, the *Resolution on Disinformation, Media Manipulation & the Destruction of Public Information* (ALA, 2005), but there have been numerous changes. The most glaring concerns the political contexts in which they were written. Whereas the 2005 resolution refers to “the fabrication and deliberate distortion of information used to justify the US invasion of Iraq,” the 2017 version alludes to “propaganda campaigns and cyberwarfare operations conducted by governments and non-state actors to influence or disrupt the domestic affairs of adversaries.”

One important aspect of the 2017 ALA resolution is how it places fake news in the larger context of misinformation. Although the 2005 resolution does not use the term *fake news*, it is clear that the problem did not emerge in 2017. In fact, a near-universal feature of discussions of misinformation is the acknowledgement that while the

problem is not entirely new, there is something new about it. As Ehrenberg (2012: 22) writes, “Though the strategic spread of misinformation is as old as elections themselves, the Internet Age has changed the game.” The problem now is not just the sheer volume of online information but also the ease with which people can “create and disseminate inaccurate and misleading information” (Fallis, 2015: 402).

There is thus a strong sentiment that librarians have an opportunity, if not duty, to join, if not lead, the fight against fake news, misinformation, disinformation, and the like. On reflection, however, there are a number of problems—not only with the solutions proposed, but with the understanding of the problem itself. In brief, library and information science (LIS) professionals do not appear to understand the real danger of misinformation—or at best only understand half of it. This is true not just of the current coverage but of the broader LIS literature on mis- and dis-information published over the past few decades. The scope of these problems suggests that instead of a reaffirmation of the role librarians can play in combating misinformation, what is needed now is a reassessment of the core assumptions and values that underlie that potential role.

The problem

The primary concern about misinformation among LIS authors has been the fact that it is out there. Early work focused on the inherent instability of online information and the threat posed by “electronic bandits and other hazards” (Heron, 1995: 134). Another significant concern has been the lack of control or authority on the Internet, where anyone can be a writer, editor, or publisher, with few consequences (Drobnicki and Asaro, 2001). Those less wary of the Internet full stop have focused on its unique, evolving challenges, including the need for new skills to navigate the overwhelming amount of information and to deal with new information-consuming habits, such as skimming, browsing, or “hypertext-hopping” (Fitzgerald, 1997). In brief, the problem has been characterized as a loss of control, context, and capacity. With too many choices and not enough skills, users resort to satisficing, which supposedly “contributes to the spread and tenaciousness of mis/dis[information] and fake news by allowing low-quality information to remain in rotation” (Cooke, 2017: 215).

As adverse as librarians are to all types of inaccurate information (misinformation), two are of enduring concern: *disinformation*, or deliberately deceptive or misleading information, and *censorship*, or the redaction, restriction, relocation, or removal of essential information (Knox, 2017). Both “are anathema to the ethics of librarianship and to the functioning of a healthy democracy” (ALA, 2017). In each case, librarians have been wary of

government activities, as when Morehead (1988: 28) detailed the “large-scale and largely successful effort [under President Reagan] to manage, control, and abridge federal government information.” The ALA resolutions also reflect these concerns. Whereas the 2005 version references “the fabrication and deliberate distortion of information used” and “heightened assaults on constitutional rights under the guise of ‘national security,’” the 2017 resolution alludes to “propaganda campaigns and cyberwarfare operations” and adds “the unreasonable delay or denial of public records and Freedom of Information Acts (FOIA) requests.” Further, both resolutions refer to the possibility of censoring scientific data, specifically with respect to climate change. Recent political events have unfortunately borne out this concern—sending librarians, researchers, and other activists scrambling to back up and preserve key research data for fear that it will be removed.

The solutions

Given that the problem of misinformation is largely constructed in opposition to traditional library values and services, it comes as no surprise that the proposed solutions entail reaffirming those values and doubling-down on those services. Recall Berry’s (2016) claim that the problem of misinformation “reinforces the very reason we created public libraries in the first place.” Reveling in a renewed sense of relevance, some librarians have even displayed a somewhat perverse optimism that the current crisis might benefit libraries (Banks, 2016; Hoover, 2017), as when the president of the ALA states that fake news, while sad, could provide “‘an incredible opportunity’ for libraries to remind the community of one of their primary functions” (in Dollinger, 2017).

One of the most fundamental of those functions, and thus the first proposed solution to misinformation, is providing unfettered access to information (ALA, 2004). As Fallis (2015: 402) writes in his discussion of disinformation, “Libraries and other information services are at the forefront of the efforts to ensure that people have access to *quality information*.” Accordingly, the 2017 ALA resolution declares that “access to accurate information, not censorship, is the best way to counter disinformation and media manipulation.” This belief is firmly rooted in what may be called the “library faith.” According to Wiegand (1999), this is the term Melvil Dewey used to describe the ideology behind librarianship at the end of the 19th century. He writes, “In 1893, librarians were convinced that by inducing the public to read quality literature and consult reliable information about contemporary issues, the library would inevitably contribute to the nation’s progress and social order” (Wiegand, 1999: 4). The presumed link between libraries, progress, and democracy holds strong for many today.

The second proposed solution is information literacy of one kind or another. Discussing Floridi’s (1996) suggestions

for combatting what was then the *potential* for disinformation on the Internet, Calvert (1998) argued that information literacy had the greatest consensus among librarians and was the least controversial. Consequently, most published literature over the past decades, along with recent calls to action, presume information literacy to be a (if not the) primary weapon with which to combat misinformation. Hence Cooke’s (2017: 217) confidence that “the bulk of disinformation on the Internet could be combated with basic evaluation skills.” And who better to impart those skills than librarians? Alvarez (2016: 26) affirms, “Because of their unique positions as partners, educators, and community champions, librarians have an opportunity to teach information and media literacy.”

The problem with the solutions

There are numerous problems with the proposed solutions. One of the more superficial, though by no means insignificant, is the fact that many information literacy approaches have been slow to adapt to evolving online information environments. For instance, librarians still recommend evaluating superficial aspects of websites, such as “sloppy or unprofessional design and ... ALL CAPS” (Harvard Library, 2017), as indicators of reliability. This outdated strategy overlooks one of the most serious problems of contemporary fake news, namely the ability of sites to mimic reputable sources and appear authoritative, in which case “consumers cannot distinguish them from higher-quality outlets” (Allcott and Gentzkow, 2017: 219). It is also undermined by the degree to which formatting in news feeds “break[s] down the relationship between good design and credibility” (Chayka, 2016). To the extent that individuals genuinely use surface characteristics as a mental shortcut for assessing credibility, such recommendations only perpetuate the problem.

Even where library guides are more up to date, they sometimes give the lie to the claim that librarians have an essential role to play in the fight against misinformation. Many of the guides that have sprung up recently are carbon copies of one another, content to redirect users to fact-checking organizations like Snopes.com. Even the popular IFLA (2017) guide *How to Spot Fake News* derives from a 2016 FactCheck.org article. There is little in the way of original contribution, and seemingly less awareness of the ways in which fact-checking is neither unproblematic nor apolitical. For an important debate on this matter, see Uscinski and Butler (2013) and responses by Amazeen (2015) and Uscinski (2015), along with the perspective of Graves (2016).

Whereas these initial problems demonstrate ways in which librarians are not effectively combatting misinformation in reality, others highlight reasons why they might be unable to do so in principle. Conspicuously absent from much LIS discussion of misinformation are concrete

solutions to the problem of what Floridi (1996) has called *quality certification*. Given the gap between the amount of information online and what individuals can examine, there is need for “services that can test and certify the integrity and quality of the information in question, and promote its plurality” (p. 512). Vedder (2001) has proposed creating or pointing to indicators of reliability, such as the background of the source of information, and creating Internet analogs of “the institutionally embedded credibility conferring backgrounds” (p. 130) on which we have traditionally relied.

As concerned as information professionals are about the lack of control or certification online, there has been some skepticism about the feasibility of such projects. Around the turn of the millennium, academics in focus groups thought that online certification “was neither possible nor fully desirable,” and most likely “futile” (Calvert, 1998: 85; see also Calvert, 2001). Looking at the contemporary problem of combating misinformation, Berry (2016) questions the effectiveness of directing a trickle of truth against the tide of misinformation, while Barclay (2017) asks whether such efforts would amount to fighting a wildfire with a water pistol. The unwieldiness of the project has even led to some rather wishful thinking about how “[i]f librarians had been in control of the net from the beginning they could have developed methods for classifying information as it was posted on the net” (Walsh, 2010: 501).

Whatever solutions there might be at this global level, it is clear that they will be primarily technological. This is true both for creating lasting quality-certification indicators and for more immediate efforts to identify and “stomp out fake news” (Waddell, 2016). The latter include a small but growing body of research into how misinformation spreads online, and how to create effective means for identifying it. For instance, researchers have gathered a full corpus of tweets about a specific rumor to create a general framework that, for a given tweet, can predict whether it is a rumor-related statement and, if so, whether the user believes that rumor (Qazvinian et al., 2011). Attempting to detect misinformation in real time, Jain et al. (2016) use sentiment and semantic analysis to compare groups of tweets about a topic from either the public or verified news agencies. Using a mismatch ratio, or degree of discrepancy between the two groups, the authors conclude that they are able to identify a large number of topics as rumors, or at least suspicious.

While there have been important first steps in discussing such technological solutions within LIS, such as Chen Y et al.’s (2015) call for “automatic crap detector,” the predominant response from the field has been less than encouraging. The fear has been that efforts to certify information might lead to an inappropriate degree of control or, worse, censorship. This is unsurprising given the degree to which the threat of government censorship has overshadowed LIS

discussions of mis- and dis-information. Some authors, however, have stretched their understanding of censorship to include the act of sorting or labeling, insofar as it prejudices users’ evaluations. As Fitzgerald (1997) writes, “Adherence to the First Amendment prevents librarians or information service providers from separating information from misinformation for the patron.” Similarly, Levine (2005) argues that banning or regulating misinformation is not just impractical, but violates rights to free speech as well. Consequently, those viewing any type of filtering or labeling misinformation as an infringement of basic rights and “anathema” to the profession have little choice but to fall back on traditional values and services, such as access and literacy, when combating misinformation.

This opposition to filtering or labeling introduces a final problem: unresolved tensions between the core library values underlying the solutions to the problem of misinformation, on the one hand, and the opposition to more global, technological solutions, on the other. The tension is implicit in recent coverage of libraries and fake news, where one librarian stated: “The things that we stand up for as librarians are intellectual freedom, and good, verified sources of information ... This is our bread and butter” (in Hoover, 2017). On one side, there is intellectual freedom and unrestricted access to information; on the other, the primary library service of selecting, verifying, and controlling collections on behalf of users. Often, this tension goes overlooked. Thus, Walsh (2010: 508) sees no difficulty claiming, “We teach our users how to acquire knowledge not decide what knowledge they should acquire,” when much of the work he idealizes concerns making decisions about what the legitimate building blocks of that knowledge are. Can librarians speak of “providing epistemological protection” (p. 498) while extolling intellectual freedom and excoriating any form of censorship, including labeling?

Discussing the ethical issues surrounding online misinformation, legal scholar Vedder (2001: 130) points to “the obvious possibilities of normative conflicts between the realization of reliability-enhancing measures on the one hand, and ... individual autonomy, the freedom to provide and to gather information, and privacy norms, on the other.” This echoes the concerns that librarians have been raising. However, he goes further: “Something similar will be the case with teaching people and enabling them to take a critical distance from information on the Internet. The point where the empowerment of individuals turns into paternalistic meddling is all too easily attained” (p. 131). If this is true, then some of the solutions proposed by librarians are no less problematic than the potential solutions they have opposed. Rather than reaffirming core library values in the face of fake news, perhaps it is time to revisit and reassess those values. At the very least, there is room for clarifying how they are understood, communicated, and accomplished, as Buschman (2017) has recently argued.

The problem with the problem

The foregoing problems with LIS solutions to misinformation are significant, and deserve further consideration. However, the most deep-seated problem with the LIS approach has to do not with the solutions, but with the understanding of the problem itself. As previously discussed, the problem as librarians and other information professionals have understood it has been the fact that there is inaccurate information out there, or that otherwise good information could be manipulated in some way. These are enduring concerns, of course, but to paraphrase a leading researcher in misinformation, the real problem is “not just [that] misinformation is ‘out there,’” but “what misinformation does to our mind” (Ecker, 2015: 22). It is this second, crucial aspect of misinformation that is almost entirely absent from LIS discussions.

The persistence of misinformation

Some of the most important insights into the problem of misinformation emerge from the decades-long research program into the misinformation effect. Hundreds of studies have shown the ways in which people can be made to recall nonexistent objects, be misled to “remember” events, and have false memories planted. For instance, people can be made to believe they saw Bugs Bunny at Disneyland or recall a hot air balloon ride that never happened (Clifasefi et al., 2007). But just as the real problem of misinformation is not the simple fact that it is “out there,” the real concern in this literature is not the fact that people can be misled or made to misremember, but the degree to which false information “sticks” in the face of corrections. As Lewandowsky et al. (2012: 114) write:

The wealth of studies on this phenomenon have documented its pervasive effects, showing that it is extremely difficult to return to beliefs of people who have been exposed to misinformation to a baseline similar to those of people who were never exposed to it.

In other words, “You can’t just take it back” (Ecker, 2015).

Supporting this claim is an even more extensive body of literature, primarily in psychology and political science, on goal-directed information processing and directional biases (Nyhan and Reifler, 2010). The overwhelming consensus from this work is that “corrective information often fails to change the false or unsupported belief in question” (Flynn et al., 2017: 130). Decades of research on the continued influence effect, for instance, “has consistently found that retractions rarely, if ever, have the intended effect of eliminating reliance on misinformation, even when people believe, understand, and later remember the retraction” (Lewandowsky et al., 2012: 114; emphasis added).

Even when corrections “work,” they do not really work. At best, reliance on incorrect information is thought to be

reducible by half (Ecker, 2015), and some belief change has been shown to be fleeting, with participants soon returning to their pre-correction (false) beliefs (Swire et al., 2017). And even if false information is corrected immediately, which is the ideal in fact-checking standards, it can continue to affect an individual’s inferences—what Thorson (2016) refers to as *belief echoes*. Research has shown that people rely on inaccurate information even when it comes from fictional materials or they “possess relevant prior knowledge” that should clue them in (Rapp, 2016). In some cases, people report having possessed the false information prior to being exposed to it.

The problem is magnified “when the targeted misperception is highly salient” (Flynn et al., 2017: 130), when it conforms to an individual’s pre-existing beliefs (Swire et al., 2017), or when it pertains “to people’s self-concept or worldview” (Nyhan and Reifler, 2012). In such cases, not only do corrections fail for the most committed partisans, but they can also strengthen misperceptions among ideological subgroups (Nyhan and Reifler, 2010). This phenomenon, known as the *backfire effect*, has been found in numerous studies of various subjects. One study even found that such polarization was most extreme when participants read balanced pro/con arguments (Taber et al., 2009), which is often assumed to be an ideal way to present conflicting viewpoints. This relates to another well-documented phenomenon, the hostile media effect, whereby both sides of a dispute view news reports as biased against them (Nyhan and Reifler, 2012). The implications of these findings on political life are tremendous.

The resistance of misinformation

Having glimpsed the deeper problem of misinformation, the question then becomes, what can be done about it? How can the effects of misinformation be minimized, if not avoided altogether? Despite the rather dismal results of research into corrections, it is important to note that not all corrections are created—or studied—equally, and research into different interventions is ongoing. At present, there are a handful of strategies or factors that may enhance corrections following exposure to misinformation.

Pre-exposure warning. This strategy has had inconsistent results, with some studies showing little to no reduction (Rapp, 2016). To be successful, the warning has to specifically explain the ongoing effects of misinformation rather than just mentioning its presence (Lewandowsky et al., 2012).

Repeating or strengthening retractions. This can alleviate but does not eliminate the effects. In fact, it can paradoxically increase the strength of the misinformation by re-encoding it in memory. This has been shown even when individuals are exposed to misinformation *by means of a correction*,

such as a fact check (Thorson, 2016). The problem here may be one of source monitoring, which is one of the main explanations offered for the failure of corrections (Cann and Katz 2005). Individuals remember the incorrect information, but *not that it is incorrect*, and so recall it as valid information. This is particularly true when individuals are more familiar with the misinformation than the correction, and thus recall the former more fluidly (Ecker et al., 2014), in which case it may be misremembered as true over time. Corrections also tend to fail when received in the form of a negation, as is common in fact checking. Somehow the “negation tag” is lost, or weakened, in memory (Lewandowsky et al., 2012).

Embedding corrections in alternative narratives. This strategy relates to another explanation for failure of corrections, namely the coherence gap left in the wake of a correction. The idea is that people build mental models of an unfolding event using the information available, regardless of its veracity. Research on false memories shows that people may fill gaps in episodic memory with inaccurate but congruent information if it is readily available (Lewandowsky et al., 2012). Memory, it seems, abhors a vacuum. Unfortunately, alternative narratives are not always available as events are unfolding, or the alternative is far more nuanced and complex, which could undermine its effectiveness.

Adjusting motivation. Another strategy involves de-emphasizing *directional motivation*, or the tendency to seek out information that confirms our biases, to resist disconfirming information, and to find the former more convincing than the latter (Flynn et al., 2017); and emphasizing *accuracy motivation*, which, occurs when individuals expend more effort on issue-related reasoning, attend to relevant information more carefully, and process it more deeply (Kahne and Bowyer, 2017). There is some evidence that under certain conditions, fostering accuracy motivation can weaken directionally motivated reasoning (Redlawsk, Civettini, and Emmerson, 2010), but the former tends to be less effective in controversial and affect-laden contexts like politics (Flynn et al., 2017).

Debiasing. One final strategy may be found in research focusing not on correcting misinformation but on addressing the various biases that underlie resistance to corrections in the first place. People are generally unaware of the extent to which they are biased, and so have difficulty “debiasing.” The goal, then, is to develop strategies to improve decision making at all levels. According to Morewedge et al. (2015), there are three general approaches: (1) providing incentives, which does not work in all instances and can backfire; (2) optimizing choice architecture, or creating “nudges”; and (3) developing training. Clearly, the latter is the most promising for information professionals, and the results of the authors’ own study are

encouraging. In general, however, results have been inconclusive, and it is unclear whether successful training in one domain carries over effectively into others.

The problem with the solutions (again)

Having addressed the full danger of misinformation, and thus the shortcomings of the LIS understanding of the problem, it is worth revisiting the primary solutions that librarians have proposed for redressing that problem. Each of these has direct parallels with two additional strategies for guarding against misinformation that have been discussed in the foregoing literature. To the extent that these strategies have proved insufficient or in need of revision, LIS professionals may need to reconsider their own solutions.

The first LIS solution is rooted in the core value of providing unfettered access to information. This value, and the “library faith” in which it is rooted, assumes that providing (or pointing to) quality information will lead to a more and better-informed public. This “faith” is similar to the *information deficit* approach in political science, the premise of which is that low political knowledge in the population is due to a lack of factual information. The problem, as Nyhan and Reifler (2012: 8) point out, is that “this approach assume[s] people are uninformed rather than misinformed.” In other words, researchers assume that there is an information gap that can be easily filled with quality information, when in fact such “gaps” are filled with misinformation or misperceptions about the issue. Those least informed are sometimes the most confident, and thus providing corrective information does little to change opinions. Worse still, those most confident in their beliefs tend to be most susceptible to the backfire effect and increased polarization (Kahne and Bowyer, 2017; Nyhan and Reifler, 2010).

To this literature can be added a variety of research from social and political psychology suggesting that we cannot separate our evaluations of evidence from whether or not we agree with that evidence. The same goes for our evaluations of expert opinion (Kahan et al. 2011). Reviewing this literature, Taber et al. (2009: 139) conclude, “Such findings raise serious questions about the descriptive accuracy of normative models of belief updating that assume people are fully responsive to new information.” Altogether, these findings call into question key assumptions about politics (Flynn et al., 2017; Nyhan and Reifler, 2012), education (Kahne and Bowyer, 2017), and, arguably, librarianship.

The research on misinformation and misperceptions also mounts a challenge to the second strategy with which librarians hope to combat misinformation: information literacy. The assumption here is that by imparting some degree of literacy or basic evaluation skills, patrons will be

equipped to combat fake news and disinformation (Cooke, 2017). As might be expected at this point, research suggests that high levels of education do not protect against the effects of misinformation (Lewandowsky et al., 2012). While those with more education tend to have more accurate beliefs about, say, politics, this is not always the case (Nyhan and Reifler, 2012), and the relationship between education and receptiveness to factual or corrective information is less clear than is often assumed.

Sticking with the example of politics, one recent study found that directional motivation was highest among those with the most political knowledge, and that greater knowledge did not increase the likelihood of rating as inaccurate posts containing misinformation (Kahne and Bowyer, 2017). Kahne and Bowyer conclude, “Contrary to conventional wisdom ... political knowledge is an insufficient support for accuracy judgments of partisan claims” (p. 26). Similarly, other studies have found that those with greater or more sophisticated political knowledge are more likely to seek out information that is consistent with their beliefs and reject conflicting claims—that is, they are more susceptible to confirmation and disconfirmation biases (Nyhan and Reifler, 2012; Taber et al., 2009). For instance, scientific literacy is not a strong predictor of believing that climate change poses a threat; in fact, “respondents who were more scientifically literate and numerate were more polarized based on their cultural value than those with lower levels” (Nyhan and Reifler, 2012: 8).

The implications of these findings for librarianship are clearer when considering their significance for education. Kahne and Bowyer (2017: 5) point to “a growing body of research [that] demonstrates the limited value of knowledge and analytic abilities when it comes to making evidence-based judgments in highly partisan contexts.” In other words, political knowledge alone is not enough to prepare students for political deliberation—and so falls short as an educational goal. Of particular interest are the authors’ findings concerning media literacy instruction. Although the amount of instruction an individual received did not neutralize the effects of motivated reasoning, they found that students with more media literacy exposure were considerably more likely to rate as accurate evidence-based posts than posts with misinformation—regardless of whether the posts aligned with the students’ prior beliefs. Unfortunately, the measure of media literacy was based on self-reporting, and the authors were unable to gather information about the type or depth of instruction.

Limitations notwithstanding, Kahne and Bowyer’s (2017) findings are encouraging for educators and LIS professionals. The challenge is to determine “which contextual and individual-level factors influence the tug-of-war between accuracy and directional motivations” (Flynn et al., 2017: 134). It is possible that traditional library services can contribute to the fight against fake news and otherwise false information, but LIS researchers first need to

understand what the full problem of misinformation is, and why it is we are so susceptible. As Rapp (2016: 284) writes, “Understanding when and how people are influenced by intentional and unintentional inaccuracies can inform the design of training experiences and materials-based interventions intended to enhance critical thinking”—but the latter depends on the former. In the same way, successful debiasing techniques must follow an understanding of what the biases in question are, and how they tend to operate.

Without such an understanding, LIS researchers can only frame the problem in terms of a lack of education or critical literacy skills, in the absence of which information consumers satisfice due to “intellectual laziness,” among other things (Cooke, 2017: 215). Judgments of this sort are not only unfair, but passed in total absence of the requisite information for adequately “understand[ing] why consumers are especially susceptible to fake news” (pp. 215–216). We are not susceptible to misinformation because we are lazy, but because of how our minds process information in general. Research shows that we tend to treat sources as credible by default, and we engage in everyday conversations on the assumption that speakers try to be truthful, relevant, and clear—unless there is evidence to the contrary (Rapp, 2016). There is even research suggesting that to comprehend a statement, we must temporarily accept it as true, in which case “belief is an inevitable consequence of—or, indeed, precursor to—comprehension” (Lewandowsky et al., 2012: 112). Since misinformation “rarely comes with a warning label” (p. 111), we often do not know that the information is incorrect until later, by which point the damage may be done.

It is possible to suspend this sort of default belief and trust, as is presupposed in most information literacy approaches, but this requires “a high degree of attention, considerable implausibility of the message, or high levels of distrust at the time the message is received” (Lewandowsky et al., 2012: 112). Recall that people rely on misinformation even when exposure to it comes from fictional materials and contradicts common knowledge—in other words, when they should know better. Thus, the deck is stacked against this type of default disbelief: “Going beyond this default of acceptance requires additional motivation and cognitive resources: If the topic is not very important to you, or you have other things on your mind, misinformation will likely slip in” (p. 112).

Just as this inherent vulnerability does not make us lazy, it does not make us irrational. It makes us human. The ways in which we process misinformation, use it to fill coherence gaps, acquire it from familiar or trusted sources, respond to it less critically if it aligns with our prior beliefs, and so on—are precisely the ways in which we interact with information in general. Motivated reasoning may be part of the problem, but ultimately, “all reasoning is motivated” (Taber et al., 2009: 154). The danger arises when

our beliefs and biases “were not generated through a normatively acceptable process”—that is, are based on misinformation or misperceptions—and subsequently “militate against any normatively acceptable process for creating and updating attitudes”—that is, resist corrections. And that’s the problem.

Conclusion

In the wake of the post-US election panic over fake news, librarians and other information professionals are being urged to “step up to the plate” and “take leadership in the current crisis” (Jacobson, 2017: 24). So far, the response from individuals and the ALA has been to reaffirm the core values of librarianship and to hold up traditional services as an effective means for combating misinformation. The problem is that these solutions are offered in the absence of a full understanding of the real danger of misinformation, which is “not just [that] misinformation is ‘out there,’” but “what misinformation does to our mind” (Ecker, 2015: 22). Research into misinformation in a number of other fields directly challenges the solutions proposed by library professionals and the larger professional literature, and casts doubts on their underlying assumptions. It is ironic, then, that the context in which librarians now hope to address misinformation—namely, politics—is the one in which efforts to correct misinformation or debias are most disheartening.

Looking ahead, there are three needs that ought to be addressed in lockstep, within LIS and beyond. The greatest and most immediate need is a deeper understanding of the problem of misinformation. Of course, LIS is not alone in this respect. Some of the solutions for identifying mis- or dis-information currently being developed in fields like computer science are based on questionable assumptions. This is particularly the case when those solutions are developed on the basis of epidemiological modeling (Jin et al., 2014; Tambuscio et al., 2015). Even if hoaxes are like viruses, inasmuch as people become “infected” when coming in contact with them, they do not respond like viruses—and thus people do not “recover”—simply by coming in contact with corrective information.

Within LIS, there is some evidence that relevant findings from other disciplines have begun to slip in. For instance, Alvarez (2016) seems to be aware—possibly through a 2016 Pew Research Center study—of research showing how misinformation spreads in spite of corrections. More direct links to the relevant psychological work can be found in Shenton (2013), who discusses briefly a BBC Radio 4 broadcast featuring a prominent researcher, although without looking further to related literature; and Saunders (2013), whose work reveals a deeper and more promising engagement with that literature. Recently, there have even been references to confirmation bias (ALA, 2017; Cooke, 2017), although in each

case this is linked to the concept of filter bubbles, suggesting it is understood only as a tendency to consciously seek out or avoid information based on prior beliefs, rather than a larger unconscious process whereby we also understand, interpret, favor, and remember information. For a better discussion of motivated reasoning in the LIS context, see Lenker (2016).

Another example of where misinformation research has begun to seep into LIS can be found in Bossaller’s (2014) analysis of the information needs of parents deciding whether to vaccinate their children—an information landscape littered with misinformation. Drawing on non-LIS research about vaccination compliance among disparate communities, Bossaller’s article profits from without pointing to misinformation research when, for instance, questioning the link between education or socioeconomic status and compliance, and when noting the danger of repeating misinformation. However, in her analysis of online comments, she argues that what is lacking there is a variety of sources that would enable questioners to make informed decisions, believing that putting all of the relevant evidence together will enable people to see where the weight of evidence falls. This overlooks the extent to which providing information about the safety of vaccinations bolsters the beliefs of those in favor of vaccination, while pushing opponents even further away. Such backfiring occurs even in the context of balanced pro/con arguments (Taber et al., 2009). And even when corrections do not backfire, they may not take. In one particularly alarming study involving handouts with vaccination myths and facts, participants correctly distinguished between the two soon after reading the handout, but after only a short delay, participants on average identified more myths as facts than those who had never received handouts (in Lewandowsky et al., 2012). The implications of such findings for librarianship are severe, and fortunately Bossaller does an admirable job addressing some of the problems with neutrality and “balance” in view of such potentially life-or-death decisions.

The second need is for investigations of library strategies and what impact they may have on guarding against or correcting misinformation, as well as debiasing in general. This is by no means a repeat of the familiar call for LIS researchers to improve the scientific or even theoretical status of the discipline, or to bridge the theory-practice gap, but rather to determine whether traditional services work, and what to do if they do not. Nor is this call driven by disciplinary envy or a desire to colonize another discipline, but rather by recognition of how decades of misinformation research in other fields can inform how LIS researchers conduct and interpret their work. For instance, one recent LIS study of the motivations for sharing misinformation online relies on self-reporting (Chen X et al., 2015), which can be problematic. This is particularly the case concerning misinformation and the biases

contributing to its persistence, since people are generally unaware of those biases (Morewedge et al., 2015) and tend to view themselves as less susceptible than others (e.g. see participant responses in Calvert, 1998). Further, one recent study of fake news in the 2016 election found that respondents recalled seeing “placebo” fake news stories—that is, *fake* fake news—just as often as actual fake news headlines (Allcott and Gentzkow, 2017) which calls into question the reliability of self-reporting in this context.

Finally, there is an urgent need for LIS professionals to engage with and contribute to technological solutions that can assist in identifying unverified or outright false information. Work in identifying rumors, hoaxes, disinformation, and so on, is still in the early stages of development, but research into how these technological interventions relate to the spread and “stickiness” of misinformation has hardly begun. To contribute to this work, librarians will need to reengage, rather than simply reaffirm, some of their core values—specifically the tension between providing unrestricted access to information and “providing epistemological protection” (Walsh, 2010: 498). Although participants in Calvert’s 1998 focus group were wary of certification efforts if “done with a heavy hand” (p. 86), those in his 2001 study wanted some “middle road” “between the absence of control and the total anarchy which prevails (with its high amounts of trash)” (p. 236).

There may be an apt analogy between technological solutions to misinformation and the same approaches to the problem of e-mail spam. In an interview, Filippo Menczer, a professor of informatics, states:

At the beginning, when everybody started using email, there were a lot of people who were victimized by spam. Then we started having spam filters and then spammers became more smart, and there was an arms race. Still, today, there are people who are victimized by spam and fraud online. Phishing attacks and so on. People are more aware of it. Part of it is people are a little bit more careful. Then, the other part of it is that a lot of the spam that is generated, it never even reaches your inbox because the email system that you use is good enough that it can filter, maybe not 100 percent of it, but certainly 95 percent of it. (in Bergado, 2016)

On this view, even if we concede to Fitzgerald (1997) that “[m]issing information is misinformation,” it still leaves open the question of whether missing *misinformation* amounts to misinformation.

Given the role that social media has played recently in the spread of mis- and dis-information (Allcott and Gentzkow, 2017), a more pressing ethical concern may be whether the problem of combating misinformation ought to be left to for-profit companies and their proprietary algorithms. Even if those companies ostensibly join the fight and seek “to serve as a more reliable platform for disseminating critical information,” they will still require “tools that limit or help in combating the effect of

misinformation” (Safieddine et al., 2016: 128). And even if librarians are intent to keep the “library faith,” it is difficult to imagine that they would disagree with the statement justifying one recent attempt to develop a real-time misinformation detector: “People have a right to know whether the information they are seeing is trustworthy or not” (Jain et al., 2016: 2015).

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