

Information literacy and Confirmation Bias: You can lead a person to information, but can you make him think?

by Mark A. Allan

Abstract

Many librarians teach information literacy skills including how to identify “fake news” without seemingly incorporating information about the confirmation bias. Suggestions for incorporating this topic into various credibility and information literacy models are addressed, along with techniques that librarians can utilize or teach to their patrons to overcome this bias.

Background

The recent elections have drawn attention to the amount of ‘fake news’ that is generated by information producers across the political spectrum. Much of this misleading content may be read in its entirety and subsequently passed on via social media. However, much is also merely glanced at and forwarded on to other individuals. Scholarship by Gabielkov, Ramachandan, Chaintreau, and Legout published in 2016 has shown that when using social media, 59% of people approvingly forward links to their friends without having read the linked article (as cited in DeMeyers, 2016, p. 1).

It’s possible that in these cases a rudimentary sort of information literacy assessment may be taking place. The forwarder may have done a cursory appraisal of the link’s title – was it from an authoritative source? Is the author an expert? If having read the content of the social media post, they may also have evaluated the content of the article according to a set of mental criteria. Despite any such analysis, there are indications that fake news informs and reinforces viewpoints (Silverman & Singer-Vine, 2016; Firozi, 2017). One explanation for this behavior could be that readers/forwarders of incorrect/biased/fake news are agreeing with the content’s title and/or content based upon existing bias.

Needless to say, librarians who perceive themselves as gatekeepers to information are concerned. Indeed, they have the opportunity to educate students and the public about evaluating information (Lenker, 2016, p. 511-512). When asked by the *Informed Librarian Online* if there was a topic that interests me and that I would like to write about, I responded I would be interested in writing about cognitive bias, in particular, confirmation bias. Given a personal interest in psychology, but without a degree in this or a related field, I wondered if confirmation bias might have something to do with the consumption and dissemination of ‘fake news.’ Therefore, I started to search the literature with an eye toward promoting a discussion of how to address confirmation bias in information literacy sessions. Any errors or biases in the following piece are my own. I welcome constructive feedback!

Confirmation bias (also known as congeniality or myside bias) is a cognitive bias in which individuals are biased to seek and favor information that confirms their existing beliefs (Reber, Allen, & Reber, 2009). When individuals are initially exposed to a particular viewpoint, they are likely to continue to hold that point of view when exposed to disconfirming information. (Reber et al., 2009). The bias has been seen to be extremely powerful. In one experiment published by Westen, Blagov, Harenski, Kilts, & Hamann in 2006, brain scans showed activation of an area of the brain associated with reward and pleasure when individuals resolved a quandary confirming their initial beliefs (as cited in Shermer, 2006, p. 1).

Much of confirmation bias and other cognitive biases may be due to the theory that the brain has two systems for processing information (Kahneman, 2011, p. 20). The first system encompasses the act of jumping to conclusions based upon past experiences or education, and the second system consists of critical thinking (Kahneman, 2011, pp. 20-22). While the first system is automatic, fast, and always working; the second system must be consciously engaged and is slow, lazy and easily distracted (Kahneman, 2011, pp 20-50).

We live in a world inundated in all kinds of information with varying degrees of quality, which support seemingly innumerable agendas. Circumstances, events, and the information available about these matters change. We also have individuals motivated to take advantage of people who make snap judgements. In order to make informed decisions, we need to use the second reasoning system. Given the power of confirmation bias in validating preexisting conclusions and informing individuals' information seeking behavior, one may assume that this topic is commonly addressed in information literacy sessions. However, an informal posting to the Information Literacy Instruction Discussion List (ILI-L) resulted in only a few responses from librarians who are teaching about confirmation bias or other cognitive biases. (Allan, 2016)

Credibility Tests, a Standard, and a Framework

Recent tests, standards, and frameworks provide varying opportunities for recognizing the importance of confirmation bias and other cognitive biases within their paradigms. It is noteworthy that the very prominent CRAP (Currency, Reliability, Authority and Purpose/Point of View) and CRAAP (Currency, Relevance, Authority, Accuracy, Purpose) tests, only go so far with bias assessment. While both call for examining the content, reputation of the author, and vested interests, these criteria may be subjective. How is a reader to know if their assessment is being prejudiced by internally held beliefs that have not been examined?

The Association of College & Research Libraries' (ACRL) Information Literacy Competency Standards for Higher Education (Standards) were approved in 2000 and stated that, "An information literate individual is able to... Incorporate selected information into one's knowledge base" (2000, p. 2-3). While Standard Three goes on to indicate that such a student "determines whether the new knowledge has an impact on the individual's value system," and will use "consciously selected criteria", it does not seem to address the importance of unconscious dispositions. (ACRL, 2000, p. 11, 12).

In 2016, the ACRL rescinded the Standards and adopted the Framework for Information Literacy for Higher Education (Framework) which supplanted the original Standards (ACRL, 2016). Although the Framework's six frames are not to be considered absolute, it appears to contain multiple frames wherein contemplation and discussion of confirmation bias can take place. The Authority is Constructed and Contextual frame seems to be the most likely frame to encompass this conversation. According to the frame, a disposition developed by learners is one that "develop(s) awareness of the importance of assessing content with a skeptical stance and with a self-awareness of their own biases and worldview" (ACRL, 2016, p.4).

Reducing Confirmation Bias

So what tools can librarians provide students and the public to make better decision making when confronted with inaccurate or deliberately misleading information? Multiple studies indicate that knowing that bias exists does not mean that one identifies it in one's self. (Pronin, Gilovich, & Ross, 2004. p. 785). Nor does knowledge about the subject (Taber & Lodge, 2006, as cited in Kahne & Bower, 2016, p. 7). However, it appears that instructing students in finding and evaluating content does have an impact on students' judgement. Research conducted by Kahne & Bower (2016) indicates that media literacy does indeed improve the judgement of students when encountering experimental social media 'posts'. ***Librarians, pat yourselves on the back!***

An "accuracy motivation" (Hart, Albarracín, Eagly, Brechan, Lindberg, & Merrill, 2009 p. 558) may result from librarians teaching information literacy when the result is perceived as an important personal outcome. Such a motivation may undermine a bias against disagreeable information content if it is perceived to be personally beneficial. (Hart et al., 2009 p. 577). However, this result did not always play out in the study. The confirmation bias was found to be larger when disagreeable information was "high or moderate in quality rather than low in quality," possibly due to personal defensive motivations. (Hart et al., 2009 p. 577). In the current social and political environment where distrust of media and arguably science and higher education is high, one might be tempted to point to this result as a possible explanation.

One common strategy already taught in information literacy sessions is to identify when a piece of information causes an emotional response to the researcher. This can be seen as a red flag that the information source is intentionally attempting to make the researcher angry by using inflammatory words and/or content. Even if an analysis results in no provocative words or content being found in the source, the reader should attempt to objectively examine his own reaction. This is known as self-regulation, to “self-consciously monitor one’s cognitive activities, the elements used in those activities, and the results educed... with a view toward questioning, confirming, validating, or correcting either one’s reasoning or one’s results” (Facione, 2013, p. 7). The information resource may be triggering an unconscious response that the researcher should examine and hesitate before making use of or sharing on social media. Librarians should encourage information seekers to monitor their own thought processes. In situations causing a personal reaction, additional information seeking and/or contemplation may need to occur.

The literature states that researchers need to “consider the opposite” and then read and critically evaluate information resources (Lord, Lepper, & Preston, 1984, p. 1231). In the Lord study, one group of students was directed to “Ask yourself at each step whether you would have made the same high or low evaluations had exactly the same study produced results on the other side of the issue,” whereas another was directed to be “as objective and impartial as possible” (1984, p. 1233). Students engaging in the former practice were shown to be less polarized in belief - less subject to their bias - following the assignment, whereas the other group was not (Lord, 1984, 1236). Additionally, multiple studies have shown that bias might be overcome by considering multiple plausible alternatives (Lilienfeld, Ammirati, & Landfield, 2009, p. 393).

In teaching information literacy, librarians should make clear that information sources need to be examined for the elements identified in the instruction that give the article credibility *within the context of keeping single or multiple opposing/different views in mind*. This is ideally done in an active learning environment where students or the public can practice the skill. Whether the information resource should be taken seriously could depend upon the outcome of this evaluation of the source’s evidence and analysis. If researchers cannot say that based upon their examination for credibility they would be willing to accept the opposing or a different conclusion, the content of the article is not enough to overcome personal bias. In this case, more information should be sought.

Indeed, the exposure of information seekers to opposing and/or different views through the search for information may assist in bringing their attention to other ideas which can then be thoroughly evaluated. In a librarian’s perfect world, there would always be enough time and motivation to seek other information sources. However, this is not always a priority while keeping up with current events. A test to consider the opposite and/or other conclusions before believing and passing on what one is reading makes a great deal of sense.

The impressions of others may also be useful in mitigating bias. Jonas states that “Impression motivation” by trying to achieve “favorable interpersonal consequences” might reduce confirmation bias (2005, p. 978). Therefore, requiring individuals to present research results in an audience setting where neutrality or an unbiased outlook is encouraged could curtail bias. (Hart, et al., 2009, p. 582). While this technique may not be possible in “one shot” instruction sessions, it may be workable in an information literacy course or other settings. Even so, it may be of limited value due to the need to establish a neutral social environment for every different topic a researcher encounters.

Conclusion

Recognizing and counteracting one’s own predispositions are useful while reacting to, analyzing, and utilizing information, whether using social media or undertaking an assignment. Doing so not only benefits the initial reader/evaluator(s), but could also be seen as a way to limit the spread of fake news and other inaccurate information.

While some popular models for evaluating the credibility of information do not currently include the element of confirmation bias, they can easily be tweaked. CRAP or CRAAP could be revised to SCRAP or SCRAAP, thereby indicating the importance of self-examination or self-awareness. The new tests would be indicative of the importance of initially recognizing one’s own cognitive biases, including confirmation bias, in the evaluation process. While an S could be added to the end of the original acronym(s), this could imply that a person’s own cognition is the least important factor in the test.

Given the importance of confirmation bias in subconsciously guiding the information gathering and decision making processes, I believe it is important that methods for minimizing confirmation bias be emphasized in information literacy sessions. If initially inserting the self into the evaluation process does not happen, one’s unconscious bias has already come home to roost.

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