
2-2021

Information Consumer or Product?: Algorithmic Literacy

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“Am I the consumer or the product?” asked a recent news article (Ashley, 2019). There is an expectation that the World Wide Web works to aid users find the “best” search results, like locating the nearest Thai restaurant, purchasing the perfect gift, or providing the latest news story on the British royal family. While an online searcher may get what they want out of a search engine query, data is being collected, stored, and sold about online and offline actions. This makes every user a product to be sold and manipulated for profit to digital marketers. It is an illusion to believe that search results or newsfeeds fairly and impartially provide content for consumption. The data collected from and about us is an inevitable reality. Through diligence and awareness, we can make informed decisions by acknowledging the tactics that are used and be equipped to navigate the online world.

The Web is a huge space filled with everything from informative and entertaining content to inappropriate, misleading, and dishonest sites. There is a challenge for any search engine or searchable platform to narrow down and deliver a handful of suggested websites based on limited search criteria. Studies show that users tend to accept search results as they are presented, with few users scrolling down the page or looking at the second page of search results (Kammerer & Gerjets, 2012, p. 257-58). Given what is known about user habits, navigating a limited number of search results requires knowledge on evaluating sources and knowing how the sources are selected. For this second point, we will explore algorithms, cookies, and their functions.

While seemingly complex, algorithms are part of our daily lives. An algorithm is any “computational method that takes input in the form of any value...[and] produces any value...as an output” (Flejoles, 2019, p. 2). More simply, they are a set of specific step-by-step instructions that creates a procedure that results in a final product. A real-life example includes the orderly

procedure of a recipe where the process concludes with a desired outcome, like a tasty treat. A query in a search engine runs an algorithm to look through the index of billions of web-crawled pages to retrieve search results in an ordered and ranked list. The algorithm search mimics human ability as it assesses importance and ranks results of available web content; this process does not consider quality or reliability in its evaluation. Factoring in topical relevance, the popularity of the site, and commercialized search engine optimization (SEO), results can be biased without the user ever noticing (Kammerer & Gerjets, 2012, p. 253).

Additionally, cookies are bits of data collected and stored from previously visited websites. Some cookies remember the user over time to learn about individual search habits, anonymous demographic data, and site preferences. These cookies are used by search engines to personalize search results based on what you likely want to see and provide users with targeted advertisements and results. This tailored content can potentially be helpful, but sometimes it prevents a user from viewing all sides of a potential topic or issue.

Often, tailored advertising content crosses platforms and apps and is geographically and demographically optimized. Users may search on Amazon for a phone case and later find advertisements for phone cases popping up when they log in to Facebook. This can be convenient or useful when a user is shopping for a particular product or by providing related suggestions for a hobby or interest. But, it can also contribute to a “filter bubble,” a term coined by Eli Pariser in his 2011 TEDtalk “Beware Online Filter Bubbles” (TED, 2011). Two individuals may do a Google search using the same search term but end up with different results. An example would be a search using the term BP. One searcher may get investment news about British Petroleum, while another person may get information about the Deepwater Horizon oil spill, based on their previous search history. This platform-determined algorithm guesses what

the user would be most interested in, which eliminates other content that may be relevant. This can create a bubble that can be isolating and may exclude conflicting viewpoints on a topic searched. The filter bubble can serve as an “echo chamber” where the user continues to hear the same perspective on a specific topic that match previous searches and “likes” on Facebook and other social media platforms.

To address the filter bubble effect, the user must firstly be aware that search content is influenced by previous online activity and consider five options to pop the bubble (Coulter, 2018).

- Clear browsing history often to force search engines/platforms to widen the search results.
- Try a different browser such as DuckDuckGo or StartPage which do not use third-party tracking and have unprofiled search results (the private mode will need to be turned on in the browser being used).
- Search more deliberately by starting with background information to become familiar with alternate or opposing viewpoints on a topic and use keywords that address all viewpoints.
- Double-check your sources and trace the information to its original source or find at least one more source that corroborates it.
- Use your library’s databases as they do not re-filter your results based on your search history and you can choose to limit the results as you wish (by additional subject areas, date, peer-reviewed etc.).

Additionally, it is helpful to use online news aggregators, such as Feedly or News360, which provide news from a cross-section of news agencies with diverse perspectives.

Closely connected to the phenomenon of filter bubbles is the awareness of cognitive biases, and in particular confirmation bias, which is a “tendency to process information by looking for, or interpreting information that is consistent with one’s existing beliefs. This biased approach to decision making is largely unintentional and often results in ignoring inconsistent information. Existing beliefs can include one’s expectations in a given situation and predictions about a particular outcome” (Casad, 2019). This tendency increases once people have an opinion about something or seek to protect their self-esteem by affirming that they are correct about

something. In a social media environment, when “likes” return similar opinions, confirmation bias can easily come into play. One must be aware and seek a breadth of perspectives on an issue.

Digital literacy expert Mike Caulfield gives suggestions to avoid confirmation bias in searches (2017). First, avoid asking questions that imply a certain answer. For example, entering the question “Are we eating too much protein?” into Google will slant the types of results since it presupposes the hypothesis is that we are eating too much protein and provides results such as “The Protein Myth” or a vegan site. Instead, an alternative search would be “How many grams of protein do you need per day?” which does not skew the results in a specific direction.

Although we do not have control of platform-determined algorithms and subsequent filter bubbles, echo chambers, and confirmation bias tendencies, we can be aware and take steps to pop the bubble to provide more of an “unfiltered” online experience.

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