

Personalization and Diversity in Recommendations on Google News

Efrat Nechushtai¹ and Seth C. Lewis²

¹Columbia University, ²University of Oregon

¹efrat.nechushtai@columbia.edu, ²sclewis@uoregon.edu

Abstract

Machines are increasingly aiding or replacing humans in journalistic work, primarily in news distribution. We examined whether news recommendation engines contribute to filter bubbles and fragmented news audiences by asking a diverse set of real-world participants (N=168) to search Google News for news about Hillary Clinton and Donald Trump during the 2016 U.S. presidential campaign, using their personal Google accounts, and report the first five stories they were recommended on each candidate. Users with different political leanings from different states were recommended very similar news, challenging the assumption that algorithms always encourage echo chambers. Yet we also found a very high degree of homogeneity and centralization in the news recommendations, with five news organizations accounting for 49% of the recommendations; in each separate search query, the most recommended five outlets comprised 69% of the recommendations on average. Of the organizations that dominated recommendations across the two experiments, only three were born-digital, indicating that the news agenda constructed on Google News replicates traditional industry structures more than disrupts them. We use these findings to explore the challenges of studying machine behavior in news from a normative perspective, given the lack of agreed-upon normative standards for humans as news gatekeepers.

Introduction

The paper proposed for the workshop is based on research that examined mechanisms for personalization on Google News, a prominent news recommendation engine and a key pipeline for news distribution and consumption generally. “Algorithmic gatekeepers” (Napoli 2015) have been a key feature of digital journalism at least since the 2002 introduction of Google News, which was the first to organize headlines without human intervention. By now, there is little debate about the efficiency and consistency of machine gatekeepers relative to human counterparts. Yet while there is broad recognition of what machines can do, there is growing unease about how they adjudicate matters of news and information in public life (Diakopoulos 2015).

A growing number of studies have focused on algorithmic news recommendations and their impact on individual news diets (e.g., Hannak et al. 2013; Schroeder and Kralemann 2005; Dick 2011, Fletcher and Nielsen 2017; Haim, Graefe,

and Borsigs 2017; Trielli, Mussenden and Diakopoulos 2015; Trill et al. 2016). This literature encourages greater awareness about how the use of search engines is changing patterns of news exposure. This study seeks both to measure the impact of recommendation engines on individual news diets empirically and address it normatively.

Research Methods: Two-Part Study

The first stage of data collection, conducted during the 2016 presidential campaign, focused on Google News. We examined whether Google News created fragmented news audiences by asking a diverse set of real-world participants (N=168) to use their personal Google account and search Google News for news about Hillary Clinton and Donald Trump. Participants, recruited through Amazon Mechanical Turk, were asked to report the top stories they were recommended on each candidate.

This simple and affordable method allowed us to gather data from news consumers using personalized platforms. This design could be useful to other media scholars seeking to understand how automated gatekeepers operate in real-world interactions and how different users are served by them. The goal is not to reverse-engineer algorithms, but to estimate their impact on public life by testing how they serve real users who seek information.

Contrary to the hypothesis that a high degree of personalization will be identified, participants with different political leanings from different states were recommended very similar news, challenging the assumption that algorithms encourage echo chambers. At the same time, we also found a very high degree of homogeneity and centralization in the news recommendations, with five news organizations accounting for 49% of the recommendations; in each separate search query, the most recommended five outlets comprised 69% of the recommendations on average.

In the second stage of the research, we build upon the findings of that empirical study to illuminate the particular challenges facing multiple stakeholders—algorithm designers, journalists, media scholars, and users alike—in determining what counts as “good” conduct by machines acting as news gatekeepers. Because journalism is already such

contested terrain, with no one set standard for human behavior, establishing the normative priorities for machines is especially fraught. We use this two-part examination to develop a research agenda for the study of machines and their normative role in the public information environment.

Discussion and Future Research

Overall, our findings indicate that despite the ability of algorithms to provide much more personalized headlines than human editors, they might actually produce, at least in some cases, highly centralized and unified news diets across diverse sets of users.

These findings correspond with those of Haim and colleagues (2017), who also examined personalization on Google News by constructing controlled accounts. Haim and his colleagues also found minuscule differences between the news stories suggested to different “profiles,” and found evidence for algorithmic prioritization of certain news outlets. Some of the potential explanations they suggest, such as Google potentially punishing outlets that use paywalls, do not seem relevant for our findings. Others, such as potential correlations between placement on Google News and organizational investment in search engine optimization (SEO), might well apply here.

These findings raise several questions to consider. While Google emphasizes that Google News is computer-generated and algorithmic (Google 2013; 2016), without human intervention, are algorithmic logics the sole driver behind these patterns of prioritization? Do Google News search results really offer “a wide variety of perspectives on any given story,” as Google (2013) assures? Do they reflect the range of the public conversation on central topics? Might search results be programmed to avoid too heavily mirroring individual users’ preferences and interests, so as to escape the appearance of overt bias?

Just as important, how should these findings be evaluated against a normative standard? Are these patterns of homogeneity “good,” or not—and why? How might the presentational patterns of machines as gatekeepers be evaluated for what they contribute, or not, to the quantity and quality of information about public affairs? Addressing this question is surprisingly difficult, as we show in our complete paper, largely because the normative standard for good journalism is itself quite contested.

Indeed, in illustrating what machines may be doing as news gatekeepers, our experiments gesture to the need for exploring larger questions about why they are operating as such—and, even more, what news producers and consumers should want from algorithmic editors. In popular imagination, there is persistent, if perhaps misplaced, hope that machines may perform as well, if not better, than humans in certain tasks, such as the objective presentation of news. But what exactly does it mean to perform “well” as a journalist, human or otherwise? This is where the discussion becomes

complex, making the evaluation of empirical findings on the conduct of algorithms in news as challenging as it is crucial.

The central role of machines in news production, distribution, and consumption makes normative evaluations of their conduct an essential topic of research. In news markets, as in many other domains of human activity, machines—and the cultural, political, and economic interests behind them—are reshaping the landscape faster than scholars and practitioners can assess their social impact, particularly in matters of quality, diversity, plurality, and so forth. Because these are formative times for the integration of machines into news production and circulation, reshaping how news is organized, prioritized, and made visible, empirical and normative investigations are especially needed. At the same time, our research suggests that, because there is no one agreed-upon standard for humans as news gatekeepers, assessing the performance of machines in that role is doubly complicated.

Moving forward, we are designing a follow-up experiment that will expand this methodology to employ a larger set of participants and examine additional platforms, such as search functions on Facebook and Twitter and regular Google search.

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