

Media landscape in Twitter: A world of new conventions and political diversity

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ABSTRACT

We present a preliminary but groundbreaking study of the media landscape of Twitter. We use public data on whom follows who to uncover common behavior in media consumption, the relationship between various classes of media, and the diversity of media content which social links may bring. Our analysis shows that there is a non-negligible amount of indirect media exposure, either through friends who follow particular media sources, or via retweeted messages. We show that the indirect media exposure expands the political diversity of news to which users are exposed to a surprising extent, increasing the range by between 60-98%. These results are valuable because they have not been readily available to traditional media, and they can help predict how we will read news, and how publishers will interact with us in the future.

EXECUTIVE SUMMARY

In the era of realtime web, people are shifting from scanning traditional media such as newspapers and television to using the Internet and social media sites like Twitter to find news. Social media has often scooped traditional media in reporting current events, for instance, in the recent turmoil in Egypt. While most original reporting comes from traditional journalists, social publishing and syndication platforms make it increasingly possible for an attentive audience to tap into breaking news. It has even been said that news no longer breaks, it tweets (Solis 2010).

The paradigm shift in media journalism, also known as micro journalism, has received much attention in recent years. Newspapers and magazines have begun publishing on social networking sites like Facebook and Twitter. Once passive, users now filter news and discuss what media publish. Moreover, they propagate interesting stories further into the social network at unprecedented scale and frequency. With the evolution of these new technologies, some experts predict traditional print journalism will ultimately disappear, to be replaced by new complex socially-mediated channels.

This great excitement has led to a number of studies that seek to understand the new social media. Studies have provided insights into the patterns of user participation in social media, such as propagation of news, extraction of urgent updates, and evaluation of news comments (Diakopoulos and Naaman 2011; Yardi and danah boyd 2010). Others have looked into the patterns of new journalistic conventions and how they affect the newsroom (Matheson 2004).

Building upon these studies, our paper characterizes micro journalism in one of the most popular social media, Twitter. Using publicly visible data on media sources, their followers, and interactions among them, we conducted a detailed analysis of the media landscape in Twitter: from the evolving practices in media publishing and consumption, to the shared readership between different types of media, and to the diversity of opinion social contacts bring. Conducting a similar study on the traditional media would have been difficult, as it would have required extensive surveys to gather the required data. By contrast, since all interactions in social media are recorded online and are often made publicly accessible, gathering and aggregating data—processes that are largely automated—can yield a view of the media landscape.

For our study, we used information on the follow links and tweets of 80 popular media sources and their 14 million audience members in late 2009. The 80 media sources comprise a diverse group: news and television networks, magazines, and journalists. Since Twitter is a young platform founded in 2006 and has not had enough time to evolve and consolidate, our dataset exhibits demographic biases like the over-representation of technology-savvy and liberal users. Despite these limitations, analyses in this paper provide a valuable snapshot of the social media landscape at an early stage of micro journalism.

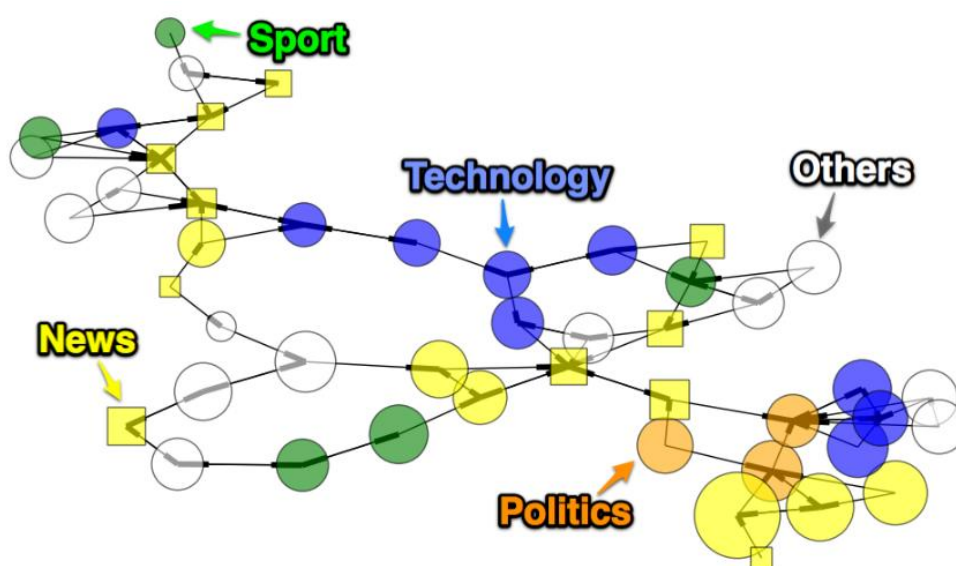


Figure 1. Pictorial map of the media landscape in Twitter

We make several key observations. First, there is much about the media landscape in Twitter that is ‘old media’. Established media outlets retain the role of publishing news and stories without much interaction with readers. However, the features of the ‘new media’ age are reflected in the way journalists and audience engage in new communication patterns, communicating with each other directly, and tapping into breaking news.

Second, users show a strong tendency to receive information from multiple media sources, especially on similar topics. Users are more likely to subscribe to multiple media sources within a given topic (e.g., political or technology news) than to media sources across different topics, (The average co-subscription probability within a topic was 1.4 times higher than that across different topics.) We also observe that certain media sources, especially journalists,

excel in connecting media from different topics, indicating that Twitter users who follow journalists tend to seek more diverse types of information. These findings can clearly be observed by visualization of a map of media landscape based on the mathematical directional distance measure below, where A represents the media of interest and B_i represents the set of other media sources for which we would like to measure the distance from A . Then, the closeness value of A from B_i is defined as the probability that a random follower of media outlet B_i also follows media outlet A :

$$\text{closeness}(A|B_i) = \frac{|A \cap B_i|}{|B_i|}$$

Third, compared to their audience through direct subscription, media organizations reach a considerably larger audience through indirect exposure via social links, for instance, through a friend who follows a particular media source, or via a retweet from a friend. The exact benefits from indirect exposure vary from one source to another. Indirect exposure also increases the diversity of media sources from which an audience gets its information; we found that with indirect exposure, users receive information from six to ten times more media sources than from direct exposure alone.

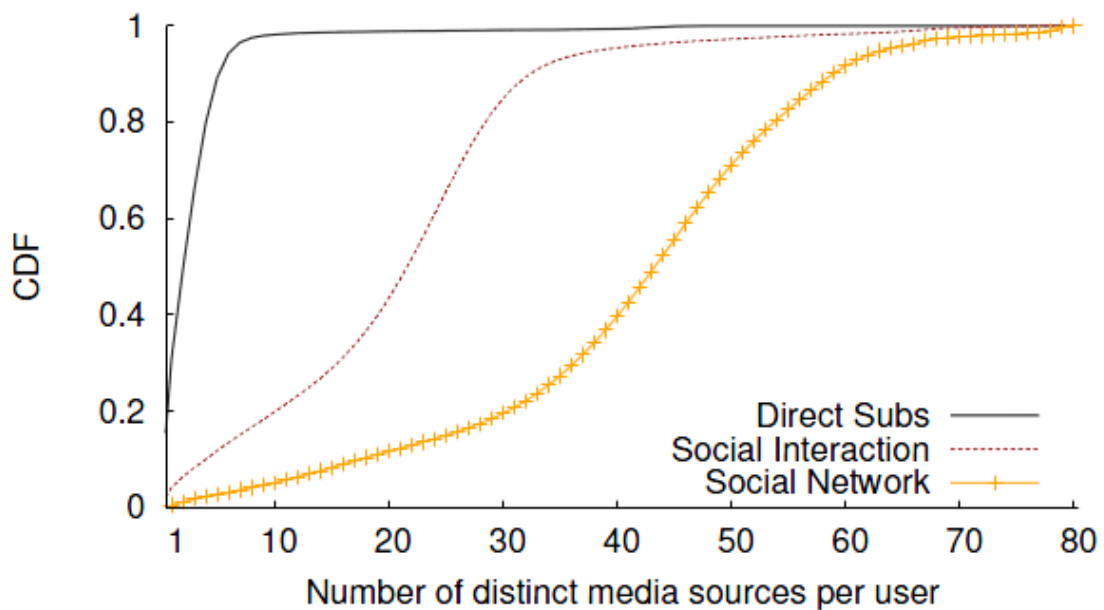


Figure 2. Diversity of the number of media sources per user

Lastly, indirect media exposure increases the diversity of political opinions seen by users: between 60-98% of the users who directly followed media sources with only a single political leaning (left, right, or center) are indirectly exposed to media sources with a different political leaning. In order to reach this conclusion, we use public classification of news sources and infer the political preference of every audience member. One can only speculate about the effect of political diversity, because users do not necessarily read the complete Twitter timeline nor do they always prefer receiving diverse political opinions (Munson and Resnick 2010). Nonetheless our results show the power of social media, in that users are exposed to information they did not know they were interested in, serendipitously.

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