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Networked Influence in Social Media: Introduction to the Special Issue

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Abstract

This special issue presents leading-edge work into how the characteristics of social media affect the nature of influence in networks. Our central thesis is that social influence has become networked influence. Influence is networked in two ways: by occurring in social networks and by propagating through online communication networks. We want to understand online social influence in its diversity: who is exercising influence, how it is done, how to measure influence, what its consequences are, and how online and offline influences intertwine in different contexts.

Keywords

social media, influence, Introduction to the Special Issue

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Research into social influence has roots in many disciplines including Social Psychology, Business, Economics, Neurosciences, Political Sciences, Sociology, Communication, and Computer and Information Sciences. Early work includes well-known studies by scholars such as Deutsch and Gerard (1955), Asch (1956), Freedman and Fraser (1966), and Milgram (1974). However, these foundational studies were built on explicit or implicit models of densely knit and tightly bounded villages. Such models assumed that information passed to and from outsiders, often through mass communication, and then spread through the village by word of mouth (Katz & Lazarsfeld, 1955; Merton, 1957). As solidary villages, rural and urban, have given way to complex networks—and as social media has extended the scope, speed, and complexity of communication models—social influence needs to take these changes into account.

The turn away from solidary villages towards social networks began well before the advent of the internet and mobile phones. Cars, trains, phones, and planes expanded the spatial reach of social connections well before the internet expanded people's capacity to influence and be influenced. Most people in the developed world—and probably elsewhere—participate in multiple social networks rather than one group. They move among these networks and sometimes carry information between them. If communication in one network becomes too vacuous or too onerous, they can shift their attention to others (Rainie & Wellman, 2012).

The Arrival and Development of Social Media

The advent of social media has introduced new challenges to the study of social influence, including the ability for people to interact anonymously and asynchronously. People now have access to a wide range of online communication and information: tools that can make it easier to spread their ideas and try to influence others independent of time and space. Yet networked individuals use the internet, mobile devices, and multiple social networks to get information at their fingertips and act on it, empowering their claims to expertise. Thus, in a networked society, it can be more challenging to convince others that your way is the right way when online participants have access to online resources (information or other people) that may offer alternative points of view.

It is easy to make your ideas available online for anyone to see. But will other people actually find these ideas among the sea of information available online and start to believe them? In a networked society, it is easy to claim influence, but not as easy to exercise influence.

As the articles in this issue show, social media has given researchers access to a treasure trove of recorded data about how people interact online. These data provide information that can help scholars to understand the behaviors and relationships of online network members and to see how online interactions and connections influence personal choices and actions. It is through these recorded interactions that researchers and others can study diffusion processes on a global scale, try to measure aspects of influence, use these data to see what factors might affect influence online, and better understand the impact of online influence on behavior.

A feature of this special issue is that it adopts a platform, domain, and context-specific approach to study influence in social media. The choice of this approach is because different social media platforms support different types of interactions (such as "likes" on Facebook vs. "retweets" on Twitter) and connections (friends on Facebook vs. asymmetric following relationships on Twitter). Social media comes in many flavors, with different ones encouraging two-way or one-way communication. Some social media platforms offer more entry points than others. Some, like Facebook, demand reciprocity in connections, whereas others like Twitter or newspaper comment sections are more asymmetrical. Furthermore, each social media platform is usually used in different domains such as politics, marketing, entertainment, and in a number of different contexts such as organizing collective actions, forming online communities, increasing awareness, or running fundraising campaigns. Thus, in addition to being aware of the characteristics of specific media, studies of influence need to be aware of the particular domain and context in which the influence is exercised.

Taking these matters into consideration, this special issue offers a wide range of studies and concepts that investigate influence in popular platforms such as Facebook, Twitter, blogs, online recommender systems, and online forums in a variety domains and contexts such as political engagement, social recommendations, news publishing, activist campaigns, and support groups. Our articles do not try to be comprehensive, but focus on three topics:

(1) Finding influential people
(2) Describing characteristics and behavior of influencers
(3) Examining factors that influence opinions

Finding Influential People on Twitter

The first two articles evaluate how to identify influential people on Twitter who engage in political discussions. Twitter has unique properties as a social medium; it is easy to use from both personal computers and mobile devices, because "tweets" are limited to only 140 characters. Yet these tweets often contain shortened hyperlinks to websites, allowing much more information to be contained within the small number of characters. Twitter is often asymmetric, so that people who "follow" someone else are not necessarily followed back. Twitter has multiple paths for influencing others including direct contact, using #hashtags to link communities of shared interest, and "retweeting" received messages to one's own followers. As Twitter is used by approximately 18% of American adults online (Duggan & Smith, 2013) and many millions elsewhere, the direct and indirect reach of its messages is extensive.

Spotting influence and influential people is important to marketers, politicos, and others who are trying to have their opinions heard. In "The Multiple Facets of Influence: Identifying Political Influentials and Opinion Leaders on Twitter," Elizabeth Dubois and Devin Gaffney show how different operationalizations of influence reveal different types of influencers within a Twitter network. Dubois and Gaffney's study of Canadian politics finds that the quantity of connections are more likely to identify

such political elites as news media and politicians, whereas the quality of messages and interactions are more likely to identify political commentators and bloggers. The authors go on to show that local clustering is an effective way to detect people who are important within a community—but not necessarily universally important.

In "Predicting Opinion Leaders in Twitter Activism Networks: The Case of the Wisconsin Recall Election," Weiai Wayne Xu, Yoonmo Sang, Stacy Blasiola, and Han Woo Park examine measures that could identify influential people on Twitter engaged in political discussions during a controversial election in Wisconsin, USA. They evaluate "social connectivity" as measured by betweenness centrality, "political involvement" as measured by the presence of political statements or symbols on their Twitter profiles, and "issue involvement" as measured by both the proportion of "engaging" messages and geographic proximity to a political event. They find that both social connectivity and issue involvement are good predictors of influential people. Like Dubois and Gaffney, they also see some impact of community clustering—in this case, geographical proximity.

The Characteristics and Behavior of Influencers

The next two articles take a different approach to study influence in social media. Instead of validating a series of measures, these articles focus on describing and studying the characteristics and behavior of influential people or sites.

"Virality is what make societies click at the pulse of the Internet," says Manuel Castells (on the back cover of Nahon & Helmsley, 2013). In "Homophily in the Guise of Cross-Linking: Political Blogs and Content," Karine Nahon and Jeff Hemsley examine this virality. They show how influential political blogs in the United States cross-link to each other as well as link to external content such as viral videos. They find that influential bloggers tend to reinforce partisan discourse and connections in the blogosphere, thus supporting the idea that mostly homophilic communication with like-minded individuals tends to support existing beliefs. Yet there is some spillover to different opinions.

Despite declining print circulations, newspapers are not passé. They have many readers online as well as on paper, some of whom contribute informatively or inanely to the newspapers' online comment sections. In "Frequent Contributors Within U.S. Newspaper Comment Forums: An Examination of Their Civility and Information Value," Robin Blom, Serena Carpenter, Brian Bowe, and Ryan Lange analyze the comments of influential commenters on 15 U.S.-based daily newspapers forums. The authors find that frequent commentators become a loosely knit community who tend to know each other's histories of comments. Yet familiarity does not breed civility, as such commentators are often coarse, rude, and uninformative. The authors urge news organizations to foster civil discourse on their forums, rather than wrongly assuming that such civility now exists.

Influencing Opinions

With the multitude of social media, each of which commands only partial attention and allegiance, it is more important than ever before to wonder under what circumstances influencers influence.

In "To Switch or Not To Switch: Understanding Social Influence in Online Choices," Haiyi Zhu and Bernardo Huberman's experiment tests if knowing others' choices in an online recommender system (such as Yelp) can sway one's own opinion. They find that people are most likely to change their original choice if they are faced with moderate—but not large—opposition. Their methods stand out from others in this issue in two ways: they use the Mechanical Turk online system of eliciting small amounts of paid work from others; and many of the Turkers are from India, unlike the North American samples of almost all studies in this issue.

In a quasi-experiment, Hazel Kwon, Michael Stefanone, and George Barnett examine what motivates people on Facebook to join a social activist or support group. Their "Social Network Influence on Online Behavioral Choices: Exploring Group Formation on Social Network Sites" finds multiple factors increasing people's likelihood to join a Facebook group. The strongest factor was the percentage of friends who had already joined the group. Additional important factors were being a woman and direct requests via Facebook to join the group.

In "Stylistic Accommodation on an Internet Forum as Bonding: Do Posters Adapt to the Style of Their Peers?" Kasper Welbers and Wouter de Nooy use sociolinguistic textual analysis to learn if posters to an online forum adopt the ideas, writing style, and identities of influential other posters. Their study of the Moroccan minority in the Netherlands finds that posters to the forum adopt the styles of previous posters and that the likelihood of adopting a posting style increases if that style has been used by influential posters. Thus, it is not just ideas that can be influenced, but also the ways people interact and produce content online.

The final article in this issue has a broad scope. In "Connecting Theory to Social Technology Platforms: A Framework for Measuring Influence in Context," Sean Goggins and Eva Petakovic propose a comparative theory-driven framework to studies of influence in social media. They compare three—Facebook, Twitter, and Github—to propose a platform-specific model to understand social interactions available through different platforms.

The State of Networked Influence Research

This special issue provides a common stage where we can assess best practices and theoretical frameworks related to the study of influence in social media. It provides useful indicators of current methods and lore for studying the influence and effectiveness of individuals, networks, and organizations on social media. It may also provide a multidisciplinary framework that other researchers and practitioners can build on in the future. Looking at the articles as a set, we are better able to assess their commonalities and uniquenesses. What the articles do not do is also interesting, providing additional pointers towards future research.

The articles show a transition from social influence to networked influence. Influence is no longer one person being influenced by mass communication or one person influencing another one-to-one. Rather, the articles show the impact of network size, strong ties, mutual awareness, socially similar (homophilous) network members,

geographical and social proximity, clusters of ties, bridges across clusters, and how people navigate among clusters in their complex networks.

The authors practice what they preach about networking. All articles are multiply authored, with the authors spatially dispersed. So, too, are the editors, with Gruzd in Halifax and Wellman in Toronto, 800 miles (and one time zone) apart.

In addition to their own research, the articles in this special issue judiciously review germane literature such as communities of practice. The authors have shifted from the pioneering social influence work of Asch (1956) and his cohorts to look at networked influence.[1]

Most articles focus on the United States, with one looking at Canadian politics and one looking at the Moroccan minority in the Netherlands. Even when the researchers do not single out the United States, the heavily American populations of Facebook and Twitter color their findings. Moreover, most analyses use an implicitly American lens, without taking cultural context into account.

With the exception of Goggins and Petakovic, the articles focus only on one form of social media, be it Facebook, Twitter, etc. Twitter and Facebook are popular analytically, perhaps because they can be studied through data mining.

Yet 42% of American adults use multiple social media sites (Duggan & Smith, 2013). We look forward to analyses that use large datasets for more thoroughgoing multivariate analyses across multiple social media platforms.

Several articles use a social network approach to develop longstanding thinking about the relationship between compliance and influence (e.g., Burger, Soroka, Gonzago, Murphy, & Somervell, 2001). They show that people are likely to be influenced by people they like, feel alike, are friends with, or even are strangers with whom they spent some time together.

Many of the articles show indirect influence but study it at only two path lengths: A>B>C. Yet we know that information can diffuse virally and over longer paths (Christakis & Fowler, 2007; Nahon & Helmsley, 2013). The data are there, but the analyses need to be done.

The articles concentrate on social network properties and interactions. There is little about psychological states and only implicit mention of normative behavior.

No article in the special issue does field observations (or in-depth interviews) of real people in real contexts. Some do statistical analysis, whereas others do experimental manipulations without explicitly taking into account the special nature of the participants—be they university students or presumably low-income Mechanical Turkers making some extra money in India.

What May Be To Come

We would welcome future studies of networked influence that examine networked work. Until now, research into influence at work has focused on authority in social hierarchies, separating compliance (influence driven by an expertise-based authority) from obedience: influence driven by a position-based authority (Cialdini &

Goldstein, 2004). Although this focus makes some sense on the shop floor, cube farm, or small office get-togethers, such work organization is being transformed. Much work is now organized into multiple teams that are often spatially dispersed. Workers have partial commitments to each team. They must deal with multiple lines of authority with different needs to communicate, share information, and guard information. Groupware is passé, with its assumption that small groups work all the time on single projects in a single social space. Better netware needs to be developed and studied.

We hope that as the study of networked influence develops, researchers will expand their scope to analyzing the use of intertwined multiple communication media. We look forward to researchers moving their analyses from being media-centric to being network-centric. Network-centric analyses would focus more on how people themselves communicate, and only within that focus consider how various media affect their influence. We also look forward to further research that includes analyses of how people's use of traditional means of communication—face-to-face, phone, email, and hanging out in cafes—combines with more newfangled digital media. Email, phone (including texting), and face-to-face remain common ways in which people communicate and influence each other.

Our final thought is context, context, context, and more context. Analysts need to better understand the social, cultural, and geographical context of where studies were done, how typical their samples were, and how people use the varying affordances of different social media. If there are similarities or differences, great: research can find universals in the particularities.

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Authors' Note

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Note

1. In addition to the articles we present here, some recent works that have also coupled large-size datasets of interactions with automated analysis of these data include Aral and Walker (2012), Cha, Haddadi, Benevenuto, and Gummadi (2010), and Romero, Galuba, Asur, and Huberman (2011). See also Cialdini and Goldstein (2004) for a more detailed review of social influence research.

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Barry Wellman directs NetLab at the iSchool, University of Toronto. The co-author of *Networked: The New Social Operating System*, Wellman has published more than 200 papers with more than 100 co-authors. Wellman founded the International Network for Social Network Analysis in 1976-1977. He is a member of the Royal Society of Canada, former President of the Sociological Research Association, and the winner of multiple career achivement awards.