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## The affordance effect: Gatekeeping and (non)reciprocal journalism on Twitter

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## ABSTRACT

This study examines contemporary gatekeeping as it intersects with the evolving technological affordances of social media platforms and the ongoing negotiation of professionalized journalistic norms and routines in contentious politics. Beginning with a corpus of just over 4.2 million Tweets about the racially charged Ferguson, Missouri protests, a series of network analyses were applied to track shifts over time and to identify influential actors in this communicative space. These models informed further analyses that indicated legacy news organizations and affiliated journalists were least present and only marginally engaged in covering these events, and that other users on Twitter emerged as far more prominent gatekeepers. Methodological considerations and implications about the importance of dialogic and reciprocal activities for journalism are discussed.

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When the Grand Jury reached its decision on November 24, 2014 to acquit police officer Darren Wilson of all charges related to the murder of Michael Brown—an unarmed teenager Wilson shot while investigating a robbery—the area of Ferguson, Missouri again erupted into violent protests (Swain, Lewis, & Roberts, 2014). Brown's death three months earlier had sparked massive protests in Missouri and in other cities, highlighting deeply embedded racial tensions in the United States. Social media, particularly Twitter, were identified to have served as a catalyst for protestors and activists, catching, to some extent, the mainstream media by surprise (Desmond-Harris, 2015). When police officer Wilson was ultimately acquitted, protest erupted again (Davey & Bosman, 2014), and Twitter lit up with millions of posts.

With the earlier Ferguson protests still fresh in the national consciousness, the coverage of Wilson's acquittal and its aftermath fell within journalistic norms and routines: journalists and news organizations performed to the fullest of their capacities in reporting about the court decision (Tuchman, 1978). This organized coverage contrasts with the initial start of the Ferguson protests in August 2014, which seemed to have caught legacy media organizations off guard and unprepared in some respects (Desmond-

Harris, 2015). This underpreparation may explain why there might have been more opportunity for other actors to be influential in shaping the story on Twitter when it first broke. Similarly, news audiences, familiar with the incident that sparked the trial and the massive protests in Missouri and elsewhere, also followed the news closely, waiting for the court decision. Thus, Wilson's acquittal provided an opportunity to study the interaction between the news media and their audiences, particularly on Twitter. This news event allowed a re-examination of conventional gatekeeping models in an emergent, and potentially reciprocal, social media news environment (Lewis, Holton, & Coddington, 2013).

This current study examines Twitter's role as a communicative platform integral to the news coverage of Wilson's trial. It offers an explicit formalized test of legacy media gatekeeping writ broadly as it emerged on Twitter and in relation to a variety of stakeholders. Considering the legitimation and power relations of mainstream legacy media organizations (Groshek, 2008), the playing field directing the flow of information surrounding Ferguson on Twitter can be expected to favor journalists as influential actors over other users (Maireder et al., 2015). Audiences, however, are no longer passive receivers of news and have been successfully wrestling for power over information flow, challenging the gatekeeping control that used to be under the monopoly of journalists (Shoemaker & Vos, 2009). Understanding the extent to which non-journalists have established themselves as media gatekeepers and the

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sociotechnical process by which that has been achieved are pivotal points for both journalism and politics.

Indeed, when considering the role of gatekeeping and its function in democratic society, this study is positioned to explain not only the engagement of journalists with audiences on social media, but also how audiences may leverage affordances to engage with each other and journalists in making contributions to coverage and discourse more broadly. This study therefore takes on an important call to better understand the flow of information and the mix of actors shaping the contemporary news environment (Gil de Zúñiga, 2015). In so doing, it challenges assumptions around historical and digital gatekeeping, and explores the tension between dialogic affordances and (non) reciprocal journalism.

## 1. Literature review

The agents in the field of journalism have constantly engaged in boundary work, differentiating themselves from those who exist outside the field (Bishop, 1999; Bourdieu, 1998, 2005). This distinction is particularly important for journalism, where the claim to professionalization is at best shaky, so that patrolling the borders of legitimate practice and membership is paramount (Weaver & Wilhoit, 1996). That journalism exercises power also makes it susceptible to various influences, so that its autonomy is constantly under attack and must be constantly protected (Champagne, 2005). This boundary work is most pronounced in this period when journalism is evolving to keep up with changing technologies and audiences (Carlson & Lewis, 2015). The field is engaged in various struggles, and defining its boundaries is becoming increasingly pressing and yet simultaneously more challenging (Carlson, 2015). Given this set of circumstances, it is certainly problematic for the field of journalism to maintain not only its credibility but also its position as an influential source of credible information that guides public and political agendas (Tan & Weaver, 2007; Van Dalen & Van Aelst, 2013).

Because of their technological affordances (Halpern & Gibbs, 2013), social media have played a significant part in rendering the boundaries of journalism more porous – and this shift has represented a sea change to both the production and consumption of news and information that demands greater attention and analytical precision. Social media sites, such as Twitter, have allowed audiences to take part in the news construction process. Through such sites, audiences can publicize their opinions about issues in the news as well as criticize the news media (Craft, Vos, & Wolfgang, 2015). They can also break information, photos, and videos through social media about news events they happen to witness, jumping the gates of traditional journalists (Hermida, 2011; Jewitt, 2009). Gatekeeping, as a theory of news selection, describes the process of how bits of information about issues and events pass through a series of gates, get transformed in the process, and end up in the news (Shoemaker & Vos, 2009). It refers to “the process of selecting, writing, editing, positioning, scheduling, repeating, and otherwise massaging information to become news” (Shoemaker, Vos, & Reese, 2008, p. 73). But through social media, audiences now control another channel for information to flow from news events and sources to the public. “Therefore, we must conceptualize readers as having their own gate, and they send news items to others in the audience when the interaction between newsworthiness and personal relevance is strong enough” (Shoemaker & Vos, 2009, p. 124).

Gatekeeping theory locates audiences at two levels of influences on news content, and these now require additional empirical examination. First, the audience is an example of an extra-media influence, operating outside the news organization and exerting direct influence on news content through mechanisms such as

boycotting a newspaper (Shoemaker & Reese, 2014). Now, audiences exert a direct effect on news construction by controlling not only segments of news dissemination but also production. Second, the audience also operates at the routines level of influence, such as when journalists become oriented to providing what they think readers like to read, thereby influencing news content (Shoemaker & Reese, 2014). This routine-level influence has also become more salient in this age of web analytics and social media in the newsroom, as audience preferences are now communicated to journalists easily and rapidly (Tandoc, 2014). Thus, while initial studies on gatekeeping relegated the audience as a weaker influence on news content compared with politicians, organizational culture, or the individual journalists themselves (Gans, 1979; White, 1950), journalism scholars are now paying attention to the increasing direct and indirect influences of audiences on the news construction process (Bastos, 2015; Bruns, 2005; Lee, Lewis, & Powers, 2014; Tandoc, 2014; Thorson, 2008), which might be putting them within journalism's boundaries (Robinson, 2015).

## 2. Journalists and boundary work

The increasing influence of the audience on the news construction process intersects with the long-standing discourse on what the relationship between journalists and their audiences ought to be. This baseline has often been negotiated and renegotiated (cf. Nacos, Shapiro, & Isernia, 2000), but in the contemporary hybrid media system described by Chadwick (2013), it is absolutely necessary to specifically model the reconstruction of audience input and the reciprocity that can be observed between journalists and their audiences (Lewis, Holton, & Coddington, 2013).

To that point, previous studies have documented how journalists used to reject inputs from their audiences due to various reasons (Beam, 1995; Schlesinger, 1978) but mostly because such rejection of audience feedback was consistent with protecting journalists' editorial autonomy (Gans, 1979). This systematic rejection is consistent with the notion of boundary work. Normatively, journalists rejected audience influence to clearly distinguish audiences as outside the boundaries of journalism, thereby preserving their independence. This is partly why sensationalism in the news has been frowned upon, as it was viewed as a strategy to appeal to mass audiences, motivated by an economic, not a journalistic, goal (Esser, 1999; Sparks, 2000). Sensationalism has been mostly associated with tabloids, which is itself an example of mainstream journalism agents delineating boundaries to distinguish themselves from what is viewed as a problematic journalistic practice (Bishop, 1999).

This internal boundary work is also unfolding as legacy news organizations distinguish themselves from new players in the field, mostly emerging online in the form of news startups (Carlson & Usher, 2015). Online-only sites such as the hugely popular BuzzFeed are now competing with legacy news organizations for audience attention. So while normatively journalists rejected audience feedback in the past, in practice journalists—even those from legacy news organizations—have accommodated audience preferences in various ways.

Such accommodation of audience feedback has become easier with new communication technologies, such as web analytics and social media, which provide journalists access to quantified information about what audiences do with news content (Tandoc, 2014). These pieces of information from the audience now figure in different aspects of editorial decision-making, allowing audience preferences to influence news content, contributing to the changing of the power dynamics between journalists and their audiences (Tandoc & Thomas, 2014). Social media also have allowed mass self-

communication among audiences (Castells, 2007), thereby facilitating the evolution of audiences into *producers* who consume and produce news content interchangeably (Bruns, 2005). Bloggers have engaged in reporting and media critique (Vos, Craft, & Ashley, 2011) while social media users have outpaced traditional news organizations in breaking information and photos from events (Hermida, 2011; Jewitt, 2009).

Legacy news organizations have recognized these developments, that they have also provided spaces for user-generated content in their websites, although they still exercised gatekeeping over audience-contributed content, still asserting, to some extent, control over news construction and power over the audience (Singer & Ashman, 2009). But these developments, others argued, generally represent the “flattening of news hierarchies, where audiences and journalists are now co-producers of news” (Vos, 2015, p. 11). These developments, some argued, are placing audiences and their journalists in a relationship between equals, with news gates no longer under the sole control of journalists, thereby making journalism a multi-gated environment with contributions being advanced and publicly reacted upon by a wide range of audience participants. Therefore, we propose the following research question.

**RQ1.** In the intersection of professional news networks and social networks, where are legacy news organizations, editors, and journalists as once-exclusive gatekeepers now situated in contemporary multi-gated media environment?

### 3. Journalism of reciprocation?

This flattening of the power dynamics between audiences and their journalists is deeply embedded in what a group of scholars referred to as *reciprocal journalism* (Lewis, Holton, & Coddington, 2013). They argued that society operates in reciprocal exchanges between members who engage in a give-and-take relationship in different aspects of social life, and this should also apply to journalism (Lewis et al., 2013). The idea of reciprocal journalism is not new. Others have previously conceptualized journalism as a conversation between journalists and audiences (Marchionni, 2013); as guided by a social contract between journalists, audiences, and news sources (Sjøvaag, 2010); as well as a platform open for community participation (Domingo et al., 2008). These conceptualizations have, to some extent, considered assumptions that involved a give-and-take relationship between audiences and their journalists. They represent a departure from previous models that conceptualized a linear approach to gatekeeping originating from journalists and trickling down to audiences.

Those who proposed the idea of reciprocal journalism considered it as an “exploratory concept, devised more as a heuristic device for understanding the journalist–audience relationship in a community setting than as a prescription to solve journalism’s ills” (Lewis et al., 2013, p. 237). Based on this description, it is neither a descriptive concept that adequately describes how journalists relate to their audiences, nor a normative concept that prescribes how journalists ought to deal with their audiences. Still, reciprocal journalism as a concept recognizes the flattening of the hierarchy between audiences and their journalists, which also represents a blurring of the once seemingly clear-cut boundary between them.

This reciprocity in journalism can occur directly or indirectly either online or offline (Lewis et al., 2013). For example, interviews with participants to a participatory journalism project by a national broadcaster in the Netherlands found that the participants “were willing to provide input as sources and, in return, they expected an interactive exchange with journalists in which both their presence and contribution were acknowledged” (Borger, van Hoof, &

Sanders, 2014, p. 13). In short, the participants, who were non-journalists, expected forms of reciprocity in their participation. Others have studied reciprocity in an online context, specifically in how journalism intersects with social media (Holton, Coddington, Lewis, & Gil de Zúñiga, 2015). One study found that individuals who exhibited reciprocity on social media were more likely to consume news as well as create news-related content online (Holton et al., 2015).

Most journalists have embraced social media and have integrated it in their routines (Gulyas, 2013; Molyneux, 2015). However, they have adapted sites such as Twitter and Facebook to their existing journalistic routines instead of adjusting their practices to novel social media affordances (Halpern & Gibbs, 2013; Lasorsa, Lewis, & Holton, 2011). For example, many journalists have started using social media to look for story leads and track sources (Broersma & Graham, 2012; Paulussen & Harder, 2014). By contrast, in terms of their relationship with the audience, most journalists use social media mostly to promote their stories by sharing links to their websites (Gulyas, 2013). This link-sharing is still consistent with a top-down, we-tell-you-what-is-important approach to dealing with audiences, as journalists continue to assert control over gatekeeping (Tandoc, & Vos, 2015).

However, reciprocal journalism conceptualizes journalists as “community-builders who can forge connections with and among community members by establishing patterns of reciprocal exchange” (Lewis et al., 2013, p. 236). This community-building would entail “readily acknowledging and reciprocating the input of audiences” (Lewis et al., 2013, p. 236). For example, journalists can reply, retweet, or mention their readers on Twitter (Tandoc, & Vos, 2015). Still, a study of journalists’ Twitter activity during the US government shutdown in October 2013 found that online journalists mostly retweeted or mentioned traditional news sites (Russell, Hendricks, Choi, & Stephens, 2015). The study also found that “journalists rarely interacted with readers” (Russell et al., 2015, p. 935).

### 4. Gatekeeping on Twitter

This study focuses on interactions between journalists and audiences on the micro-blogging site Twitter, whose topological features make it “a privileged system when it comes to analyzing gatekeeping in digital networks, as it better resembles an information-sharing network than a social network” (Bastos, Raimundo, & Travitzki, 2013, p. 264). Twitter allows users to post a 140-character message for free. Users can choose to keep their messages, called tweets, either public or private. Users can follow other users and, depending on their privacy settings, other users can also follow them. Thus, Twitter is a platform that works on the idea of reciprocation. However, scholars have found that attention on Twitter is largely homophilous, with, for example, news organizations following other news organizations (Wu, Hofman, Mason, & Watts, 2011) instead of following non-journalist users to expand their network.

A Twitter user can retweet another user’s post, which is a form of further disseminating someone else’s message to one’s own network (Mascaro & Goggins, 2012). The number of retweets is considered a “good measurement of both influence in diffusion and value in market of a tweet” (Liu, Shi, Chen, Wu, & Qi, 2014, p. 792). The diffusion of messages on Twitter depends heavily on retweet activity (Bastos et al., 2013). Motivations for retweeting range from agreeing or endorsing a user’s point of view to curating interesting or relevant posts (Boyd, Golder, & Lotan, 2010). Users can also mention another user in their tweets by using the @mention function. Using this alerts the mentioned user of the interaction. Thus, using @mention can initiate a conversation and represents a

mode of engagement (Mascaro & Goggins, 2012).

Heinonen (2011) proposed three categories of self-perceptions among journalists in terms of how they related to the audience. A *conventional role* refers to “the need to safeguard the journalist’s professional status and the media brand” (Heinonen, 2011, p. 51). This role refers to journalists protecting their editorial autonomy from the influence of the audience. A *dialogical role* refers to considering the audience as “genuine co-workers” and journalists open the gates, so to speak, to audience feedback and contributions (Heinonen, 2011, p. 49). Finally, an *ambivalent role* refers to having both conventional and dialogic perceptions. Most journalists tend to be ambivalent in terms of how they see themselves in relation to the audience (Heinonen, 2011). Those from legacy news organizations also tend to embrace a conventional role, using social media in ways that did not deviate from traditional journalistic norms and practices, such as limiting their personal opinions in their tweets and mostly engaging in content promotion (Lasorsa et al., 2011). In contrast, online news sites tend to be more open to interacting with audiences on social media by, for example, retweeting and mentioning non-journalists in their tweets. Therefore, we also ask the following research questions:

**RQ2.** Do users affiliated with legacy news organizations have a greater amount of a) tweets, b) followers, and c) following than users without a legacy media affiliation?

**RQ3.** Do users affiliated with legacy news organizations have a greater amount of a) mentions, b) mentioning, and c) retweets than users without a legacy media affiliation?

## 5. Method

The data in this sample only comprised tweets that mentioned the keyword “Ferguson” from the overarching time period of November 23, 2014 through December 13, 2014. In order to best model exactly which user accounts were most vital during this period of news coverage, this study separated the coverage into three weekly periods. The first period ran during the week starting on November 23, or the day before the Grand Jury decision was announced, which was an event that fell within journalistic norms and routines insofar as journalists and news organizations were poised and awaiting this decision for a period of time beforehand and so had incorporated it into their work (Tuchman, 1978). The second week began with the following Sunday, November 30 and continued through December 6 to get a better sense of how the story tracked over time. The final week of data ran from Sunday, December 7 through December 13, when it was clear that the story of Wilson’s acquittal had more or less faded from prominence.

These three separate weeks of analyses provide a more granular and time-sensitive approach to analyzing gatekeeping and journalistic reciprocity on this issue. Altogether, there were 4,231,684 tweets collected from 1,432,681 users that were collected using the Boston University Twitter Content and Analysis Toolkit (BU-TCAT), which pulls content from the public Twitter application programming interface (API). While first developed as part of the Digital Methods Initiative at the University of Amsterdam (Borra & Rieder, 2014), the BU-TCAT is a local installation of open source software engaged to capture customizable samples of public tweets (Groshek, 2014) with a system that has been shown to produce generalizable samples of Twitter content (Gerlitz & Rieder, 2013).

In order to examine this study’s research questions, the BU-TCAT system generated network files (specifically .gdf files that correspond user nodes with the frequency of their interactions with other user nodes in numeric format), which were used to visualize and algorithmically sort Twitter users with Gephi, an open-source

program developed explicitly for network analysis. In addition to calculating metrics of betweenness centrality and modularity (as determined using the Louvain method), Gephi can also be used to model network structures using a range of layout algorithms. Based on these metrics, network graphs are developed that insights into network features visible in size, color, and spatialization of nodes and the linkages between them.

More specifically, the betweenness centrality algorithm was applied to each week-long period of time to measure the frequency each user node appeared on the shortest path between other nodes present in the network (Groshek & Al-Rawi, 2015). This algorithm thus determines the users who are acting most effectively as gatekeepers for each weekly corpus of tweets, and sorts them by node size in visual graphs. Larger nodes refer to users who were effectively sharing messages across diverse user communities. Smaller nodes refer to users who were less active in mentioning and being mentioned by others.

All nodes are clustered not only spatially though the OpenOrd layout algorithm, which was developed to distinguish more tightly-formed groupings (Groshek & Al-Rawi, 2015), but each node is further identified by differing colors that were determined by applying the modularity algorithm to each week-long dataset (Blondel et al., 2008). That is, modularity is a community detection algorithm that selects gradients of colors to nodes in order to illustrate user nodes that create ‘communities’ or subgroups based on the heightened frequency of their interactions within networks (Newman, 2006). These three features of node size, spatialization, and color provide a visual as well as statistical baseline from which to understand network structures but also to carry out additional analyses that are informed by these algorithmic sorting routines.

In this study, after sizing user nodes by betweenness centrality scores, these values were ranked-ordered and the 100 “most-between” users from each week were also coded in a separate dataset into one of three categories: non-journalists, non-legacy media journalists or organizations, and legacy media journalists or organizations. This categorization was operationalized by examining the Twitter profile of each user and making coding decisions based on how users self-identified.

*Non-journalists* were users that did not self-identify as being a journalist or serving a journalistic function, such as “sharing the news” or “keeping you informed.” While it might be imprudent to suggest all were so-called ordinary citizens because many, such as Antonio French, were government officials or important actors to the protests, that general framework applies insofar as such users did not explicitly identify themselves or their actions as journalistic nor were they employed or volunteering for a newsgathering organization. While it is possible that some users may consider themselves journalists without indicating so on their profile, this categorization rather conservatively under- rather than over-estimates citizen journalism so as to avoid biasing the analyses.

*Legacy media journalists* comprised those users that self-identified an affiliation with a mainstream media organization that originated in an offline platform. This coding was applied to national newspapers such as the *Washington Post* or *New York Times* (and their reporters), network and cable television channels such as NBC or CNN, and radio news outlets like National Public Radio or CBS News. In other words, legacy media existed in some physical format such as print or broadcast that predated the internet and online-only news organizations and as such, the institutional stance towards online and social media is one that came later as an adaptation rather than genesis.

*Non-legacy media journalists* included all other users that indicated being a journalist or fulfilling a journalistic role, even in an unpaid or citizen journalism capacity. This categorization was the most expansive, and included users that simply maintained and

updated a news and information blog as well as users such as Ryan Reilly, who is a professional journalist for *The Huffington Post*. The distinction here is on the basis that Reilly is not from a legacy media organization but one that launched, like BuzzFeed and others, solely in the internet era. These journalists and organizations are not adapting to the online or social media news environment so much as entering directly into it, and thus the behaviors and reporting of these users may be fundamentally different from legacy media journalists or organizations that have regularly struggled with technological shifts.

This simple categorization system does not differentiate on the basis of ideology but rather longevity, and to some extent, considers how technology has contributed to the socialization of journalists (or indeed, non-journalists) into differently oriented media spaces, such that activity with audiences in social media may indicate broader shifts in the practice of journalism. In short, this tripartite operationalization effectively makes it possible to compare the engagement of legacy media actors to other types of users, at least among the 300 most influential users active in speaking about Ferguson over the full course of this timeframe. A randomly selected 15.67% of the sample was coded independently by a second researcher and those coding decisions had an acceptable level of intercoder reliability that controlled for chance agreement with the researcher that coded the entire dataset (Cohen's  $\kappa = 0.87$ ).

Other indicators, such as the number of tweets, followers and following, mentions and mentioning, and retweets were input from the BU-TCAT directly to further examine the research questions. This approach incorporates features from network analysis, content analysis and human coding as well as significance testing to arrive at a better understanding of Ferguson as a specific event but also to inform gatekeeping practices as a theoretical and practical basis for future research and activity.

## 6. Findings

RQ1 asked about how legacy news organizations and journalists were situated in the social network environment. Specifically, the study is interested in comparing the influence of legacy gatekeepers with that of emerging players in the field and non-journalists who also disseminated information and opinions about the Ferguson decision. Initial analyses began with the application of several algorithmic sorting techniques in the open source software program Gephi to create visual representations of the relative influence of Twitter users who were active in discussing Ferguson on Twitter. The links connecting different users are not necessarily reciprocal because a given user account could mention another user account without receiving any response (in the form of a mention back to them). Thus, the graphs were directional because reciprocity was not required. For analytic purposes, each graph does not show every single user who tweeted about Ferguson into the dataset or that was mentioned. In order to be included in a given graph, a user needed to receive at least 500 mentions.

In examining the number of user @mentions in various stages of the overall sample, it was observed that there were 1,100,011 users who tweeted about Ferguson during the first week. These users (notably necessarily human actors) were summarized into 1500 nodes and 15,173 directed edges as shown in Fig. 1. Following extensive simulations and trial modeling, the OpenOrd algorithm—an available Gephi plugin designed to visually distinguish clusters (Groshek & Al-Rawi, 2015; Martin et al., 2011)—was used to spatialize all visualizations, which separated nodes into more tightly observable groupings and also formed a baseline of comparison that could be applied against future weeks.

The next analytic step was to calculate the size of user nodes with the betweenness centrality algorithm. This identifies which

users act as gatekeepers and key influencers within the network of users tweeting about Ferguson (Groshek & Al-Rawi, 2015; Tremayne, 2014). The size of each node represents its relative degree of importance in sharing and moving information through the network of users, so a large node indicates a user was able to connect other users across a diverse network of voices. For this study, the larger the user node, the greater the influence that user has shown in connecting other users across diverse user groups. In terms of modeling a visual representation of subsets of user communities within the larger network based on the intensity of interactions (namely @mention activity), nodes were colored on the basis of modularity, which has been shown to be highly efficient in detecting communities of Twitter users (Scott, Millard, & Leonard, 2015). Here, this algorithm was applied by coloring nodes in gradients (i.e., similar communities are similar in color) but without connecting those colors to outside criteria (e.g. blue does not equal Democrat and red does not equal Republican) or separate graphs.

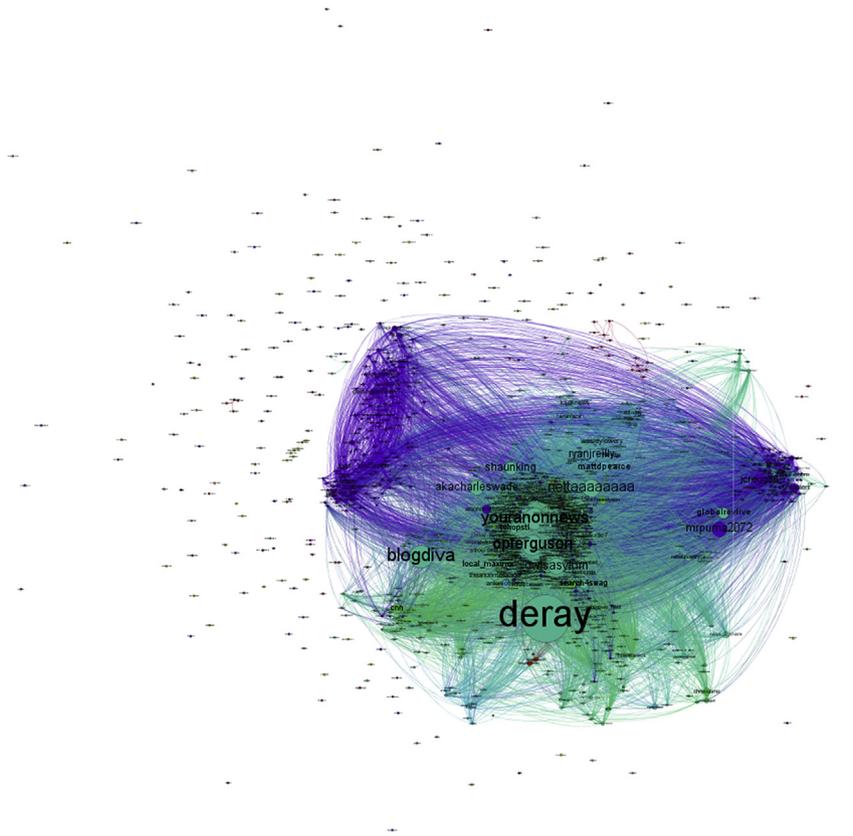
Overall, these graphs represent the “most between” users contributing to the discussion about the Ferguson decision and reveal a wide variety of people coming to the forefront as opinion leaders from a range of user communities. In beginning to report on these user networks, the 25 most influential users for the initial week of data collection (November 23–29) were (1) deray, (2) blogdiva, (3) youranonnews, (4) opferguson, (5) nettaaaaaaaa, (6) owlsasylum, (7) akacharleswade, (8) mrpuma2072, (9) ryanjreilly, (10) shaunking, (11) jcregg86 [later changed to factsoverfeels], (12) mattdpearce, (13) globalrevlive, (14) tchopstl, (15) cnn, (16) search4swag, (17) local\_maxima, (18) kharyp, (19) the-anonmessage, (20) wesleylowery, (21) rumpolert, (22) ksdknews, (23) anonmachtfrei, (24) antoniofrench, (25) lizzzbrown

These findings are visually represented in Fig. 1 as well as in an interactive online version that allows users to zoom and click on specific nodes for more detailed reports that include the nodes' linkages to other users in the network. That graph is available [here](#) in a dynamic format so that readers can explore how the influence of certain nodes is related to communication patterns and explicit linkages in greater detail.

For the second week following the acquittal, data collection and analyses found that there were 429,144 users in 1,030,013 tweets that could be summarized into 1500 nodes and 13,284 directed edges as shown in Fig. 2, which is also presented in interactive online format here.

In this specific week, as attention and interest began to wane, the 25 most influential accounts in terms of connecting diverse user accounts around the Ferguson topic were (1) deray, (2) sophialamar1, (3) trucker\_quotes, (4) rightnowio\_feed, (5) bassem\_masri, (6) youranonnews, (7) ryanjreilly, (8) nylefort, (9) opferguson, (10) mettawordlife83, (11) popspottsports, (12) wesleylowery, (13) rebelutionary\_z, (14) pdpj, (15) chuckjohnson, (16) foxnews, (17) michaelkolnik, (18) shaunking, (19) mikebrowncover, (20) news-revo, (21) deb\_saw\_boy, (22) 3chicspolitico, (23) romonaga\_, (24) hggolightly, (25) ladysandersfarm.

The final week of data collection yielded 202,763 users summarized into 1500 nodes and 9748 directed edges as shown in Fig. 3. This data is also presented in an accessible and dynamic online interface here. During this final week of data collection and analysis for this study, the top 25 influencers were (1) deray, (2) bassem\_masri, (3) nickmichaels12, (4) opferguson, (5) nettaaaaaaaa, (6) fergusonstream1, (7) anonmastaofmp3s, (8) freeandclear1, (9) crewof42, (10) possumandpintos, (11) romonaga\_, (12) rumpolert, (13) akacharleswade, (14) sophialamar1, (15) rebelutionary\_z, (16) chris\_1791, (17) nativekittens, (18) the-amazon1, (19) rightnowio\_feed, (20) globalrevlive, (21) 3chicspolitico, (22) tonymess, (23) veritasmass, (24) ladysandersfarm, (25) mettawordlife83.



NOTE: Spatialization: OpenOrd (w/Noverlap); Size: Betweenness Centrality; Color: Modularity.

**Fig. 1.** Network graph of 1,100,011 users in 2,760,607 tweets about Ferguson during week of 11/23 to 11/29/2014 summarized into 1500 nodes (users) and 15,173 directed edges (comments).

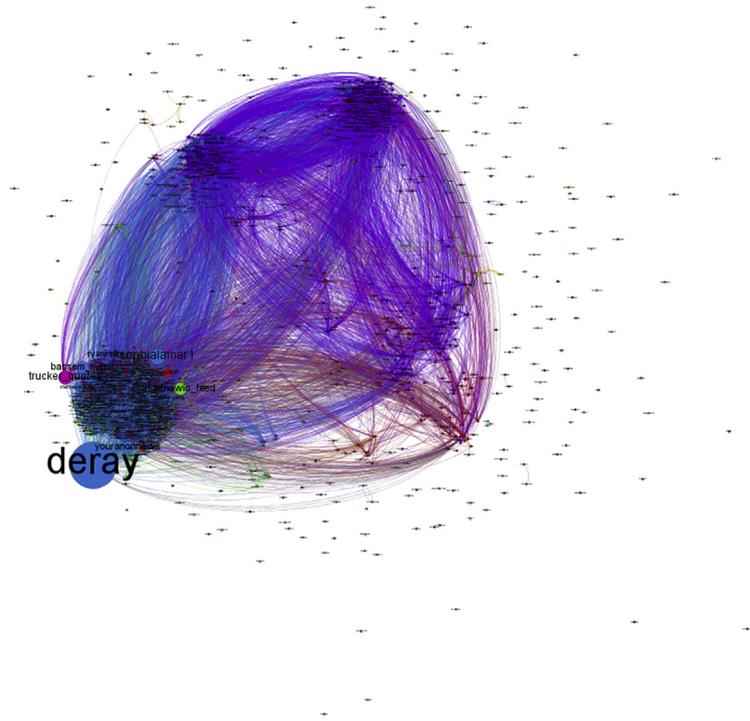
It is important to note that a large proportion of the rest of the most-mentioned users earned a betweenness centrality score greater than zero. For the three weeks of data collection in November, there were 829 users with a score greater than zero for the first week, 686 for the second, and 733 for the third. This suggests that the discussion of Ferguson on Twitter was not totally dominated by only a few voices; instead, it resulted in a highly interconnected network with many influential users that were communicating and connecting relatively diverse user groups that shifted over the three weeks analyzed here. Using QAP correlation—an analytic procedure that computes the difference between one (weekly) matrix of users from another matrix of interactions just as Pearson's correlation computes difference of bivariate frequencies (Vargo et al., 2014)—matrices were compared against permutations of chance to examine similarities between users and their interactions over the course of the timeframe studied here.

In comparing the week 1 user matrix to that of week 2 for differences in co-occurring user interactions, there was a very weak but positive and statistically significant outcome ( $r = 0.002$ ,  $p = 0.01$ ). Similarly negligible relationships were also found between the user matrices of week 2 and week 3 ( $r = 0.001$ ,  $p = 0.09$ ) as well as week 1 and week 3 ( $r = 0.004$ ,  $p = 0.005$ ). It can therefore be observed that in this communication space for the time considered, there was almost nothing in common in how users engaged and interacted with one another as this discussion continued over time. These findings are summarized visually in Fig. 1 through 3 and the QAP correlations statistically indicate just how substantially user activity shifted in a relatively short period of

time. While these analyses do not demonstrably identify what was being communicated or the tone of those messages, it does nonetheless indicate that users from across the spectrum of ideologies surrounding this issue were, at the very least, attempting to communicate or invoking the sensibilities of another @mentioned user to facilitate a framework of dialogic communication and referential material that was regularly being renegotiated.

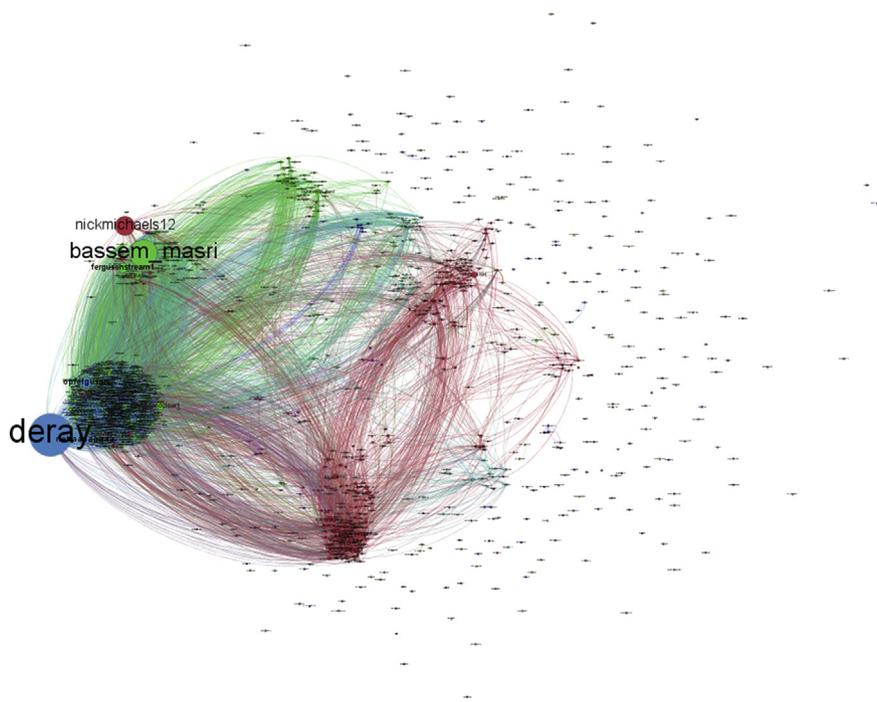
Altogether, in using these analyses further to answer RQ1, legacy news organizations, editors, and journalists are no longer situated as central gatekeepers in the contemporary multi-gated media environment. Indeed, those actors are virtually absent from the intersection of professional news networks and social networks, where they represented just 18.2% of the 300 most prominent weekly users as modeled across the three weeks studied. The presence of legacy media users also declined consistently over the three weeks, from 26.3% in Week 1, 20.4% in Week 2, to just 7.6% of the most prominent users tweeting about Ferguson by Week 3. Non-legacy media journalists showed a less pronounced decline, from 29.5% in Week 1—21.7% by Week 3. In contrast, non-journalists went from representing 44.2% of the most prominent users in Week 1—70.7% in Week 3. These differences were statistically significant ( $\chi^2$  (df: 4) = 16.45,  $p < 0.01$ ) and clearly signal that users with legacy media affiliations were the least engaged in discussing the Ferguson decision on Twitter and that their interest waned quickly.

RQ2 asked about the number of tweets, followers, and following characteristics for differing journalistic affiliations. These indicators represent another measure of influence, albeit a more passive one. In response to RQ2a, the analysis found that Twitter users affiliated



NOTE: Spatialization: OpenOrd (w/Noverlap); Size: Betweenness Centrality; Color: Modularity.

Fig. 2. Network graph of 429,144 users in 1,030,013 tweets about Ferguson during week of 11/30 to 12/06/2014 summarized into 1500 nodes (users) and 13,284 directed edges (comments).



NOTE: Spatialization: OpenOrd (w/Noverlap); Size: Betweenness Centrality; Color: Modularity.

Fig. 3. Network graph of 202,763 users in 441,064 tweets about Ferguson during week of 12/07 to 12/13/2014 summarized into 1500 nodes (users) and 9748 directed edges (comments).

with legacy news organizations had, on average, the least amount of tweets. Specifically, an analysis of variance (ANOVA) found a statistically significant ( $F(2, 128.44) = 44.43, p < 0.001$ , equal variances not assumed) difference between legacy journalists, non-legacy journalists, and non-journalists in terms of tweet activity. Non-legacy journalists tweeted most often, on average 191.46 tweets per user ( $SD = 335.60$ ) and they were followed by non-journalists with an average of 169.04 tweets ( $SD = 164.64$ ). In contrast, Twitter users with a legacy media affiliation averaged just 42.02 tweets about Ferguson ( $SD = 41.55$ ), which is shown in Table 1.

However, and somewhat interestingly, the opposite pattern emerged in terms of number of followers. In response to RQ2b, the analysis found that legacy media-affiliated users were far and away the most followed, with an average of 1,235,811.25 followers ( $SD = 3,612,310.05$ ). This was significantly greater compared with non-legacy journalists and non-journalists,  $F(2, 78.35) = 4.86, p \leq 0.01$ , (equal variances not assumed). Non-legacy journalists or organizations were the next most-followed, with an average of 91,252.87 ( $SD = 280,017.18$ ) followers. Non-journalists were the least followed, with an average of 22,455.86 followers ( $SD = 65,537.37$ ). Legacy media journalists commanded the largest audience numbers even though they were the least active in tweeting about the Ferguson decision.

RQ2c focused on the number of following, or how many users an account follows. The results were again the exact inverse of the previous pattern. There was a notable and statistically significant difference between legacy media journalists ( $M = 1572.67$ ;  $SD = 1685.30$ ) and all other groups,  $F(2, 144.26) = 11.01, p < 0.001$  (equal variances not assumed). Non-legacy journalists and non-journalists had comparable levels of the number of users they follow. Non-journalists followed an average of 4276.49 users ( $SD = 8650.45$ ), which closely matched the average for non-legacy journalists ( $M = 4345.65$ ;  $SD = 6992.33$ ). In short, despite having a vast following, on average more than a million followers, legacy media journalists and organizations reciprocated by following the least number of users, as summarized in Table 1.

RQ3 asked about legacy journalists' level of interaction with other Twitter uses based on mentions and retweets. RQ3a focused on number of mentions. However, the analysis found no significant differences between legacy journalists, non-legacy journalists, and non-journalists in terms of number of mentions,  $F(2, 279) = 0.29, p = 0.746$  (equal variances assumed). Legacy journalists averaged 2464.43 mentions ( $SD = 3750.18$ ), which was similar to the average number of mentions by non-journalists ( $M = 2141.31$ ;  $SD = 7719.33$ ) and non-legacy journalists ( $M = 2880.25$ ;  $SD = 5968.04$ ). This finding contrasts with that of mentioning activity in relation to RQ3b, which asked about the instances where accounts used Twitter's @mention function to mention or explicitly engage other users. Legacy journalists demonstrated the lowest

level of mentioning others, with a mean of just 36.69 ( $SD = 40.72$ ). Non-legacy journalists mentioned other users the most ( $M = 212.10$ ;  $SD = 385.72$ ), which was only relatively slightly more than non-journalists, who mentioned 179.44 ( $SD = 169.45$ ) other users on average. The difference between the three groups was statistically significant,  $F(2, 137.43) = 52.99, p < 0.001$  (equal variances not assumed; see also Table 1).

Finally, RQ3c measured how active users were in retweeting posts from other users about the Ferguson decision. Once again, legacy journalists were noticeably the least active in retweeting others, with only 18.31 retweets on average ( $SD = 24.59$ ). Non-journalists were the most active, retweeting 84.95 times on average ( $SD = 91.04$ ). Non-legacy journalists had an average of 48.74 retweets ( $SD = 54.50$ ). This difference is also statistically significant,  $F(2, 160.81) = 37.80, p < 0.001$  (equal variances not assumed) and summarized in Table 1.

## 7. Discussion and conclusion

This study analyzed Twitter activity around the Grand Jury decision in the death of teen Michael Brown in Ferguson, Missouri. The decision, a scheduled event, was not only anticipated by stakeholders and audiences, but it was also a media event that news organizations had prepared for. Therefore, Twitter activity around the decision provided a case to study how legacy journalists were situated in the social network environment relative to two groups challenging traditional journalism's boundaries: emerging, non-legacy journalists and news organizations, and non-journalists themselves (Carlson & Usher, 2015; Carlson, 2015; Robinson, 2015). The study found that while legacy journalists were among the most popular users in terms of number of followers, they were no longer the most influential in terms of generating discussions and gate-keeping information about the Ferguson decision. This is partly explained by their passive activity on Twitter: Legacy journalists were the least active in mentioning, retweeting, and following others.

These findings can be understood within the framework of boundary work in journalism. It appears that by restricting their interaction with other users—limiting the number of users they follow, mention, or retweet—traditional news organizations and journalists are protecting their boundaries. In doing so, they are privileging the crumbling status quo that sees legacy journalists controlling news construction processes. The functions of @mentions and retweets represent engagement and conversation on Twitter (Bastos et al., 2013; Boyd, Golder, & Lotan, 2010; Mascaro & Goggins, 2012). In conceptualizing journalistic roles, they represent actions that refer to a dialogic role in journalism (Heinonen, 2011). Such role is consistent with the idea of reciprocal journalism (Lewis et al., 2013). The results of this study demonstrates that, at least with how legacy journalists used Twitter in covering the Ferguson decision, traditional journalists do not, or least not yet, practice reciprocal journalism on social media. They do not see themselves as equal to other users. In contrast, non-legacy journalists and news organizations were more active in following, mentioning, and retweeting others.

But while the findings can be interpreted as non-legacy journalists being more willing to practice a dialogic role and to negotiate journalism's boundaries, it is also plausible that the findings in this study demonstrate a more pro-active stance among new players who find themselves having to play catch-up with legacy news organizations which, despite their economic troubles, still enjoy popularity and, to some extent, better journalistic reputation than emerging players. One way of catching up is doing what new players do best—chase clicks and grow audiences that legacy news organizations are losing (Tandoc, 2014), which has important

**Table 1**  
Average user profile characteristics and activities as differentiated by journalistic affiliation in tweets about Ferguson.

	Non-journalists	Non-legacy media	Legacy media
Tweets***	169.04	191.46	42.02
Followers*	22,455.86	91,252.87	1,235,811.25
Following***	4276.49	4345.65	1572.67
Mentions	2141.31	2880.25	2464.43
Mentioning***	179.44	212.10	36.69
Retweets***	84.95	48.74	18.31

NOTE: Means reported here are for the top 100 users for each weekly time period as sorted by betweenness centrality scores, aggregated for comparison over the entire timeframe (thus total possible  $N = 300$  for these analyses of variances); \* $p \leq 0.05$ , \*\* $p \leq 0.01$ , \*\*\* $p \leq 0.001$ .

repercussions for both the practice and quality of contemporary journalism.

This behavior by non-legacy news organizations is what we consider the affordance effect whereby individuals that otherwise may have been marginalized due to a lack of pre-existing influence and legitimation, such as activists like @deray, make greater advantage of the technological affordances of emerging media platforms to share information, develop a following, and take on a more central role in policy debates, which aligns with the existing work of Halpern and Gibbs (2013) as well as that of Laslow, Baram-Tsabari, and Lewenstein (2011). To illustrate this example further, @deray is the Twitter username of DeRay McKesson, a former Minneapolis school administrator who has risen to prominence precisely because of his use of @mentions on Twitter in the Ferguson case as well as other racially charged instances of police violence (Desmond-Harris, 2015). Notably, his influence has extended well beyond Twitter and he has been interviewed by the Washington Post, Reuters, The Atlantic, and CNN and he has held personal meetings with Presidential candidates Bernie Sanders and Hilary Clinton (Desmond-Harris, 2015; McKesson, 2015).

In our formulation of this affordance effect, legacy media actors at both an individual and organizational level fail to engage audiences and make almost no use of the technological affordances that have reoriented the production and consumption of news in the current era. While there are, of course, limitations to this study in that our collection of Twitter data is from the streaming API and thus only a generalizable sample of content (Gerlitz & Rieder, 2013) that is specific to the case of Ferguson and not all topics on Twitter, this finding is a crucial one and we feel journalism professionals must adapt more fully to the emergent media environment and cultivate best practices to realize the positive potential benefits of reciprocal journalism (Lewis et al., 2013) and dialogic engagement (Heinonen, 2011). Here, the implications for the practice of journalism are clear – namely that in order for journalists and news organizations to maintain their purchase as professional cullers of information and truth seekers that shape agendas and act as interlocutors between public actors and the public, they must deliberately and thoughtfully engage audiences through their social media coverage.

These findings ultimately relate back to legacy news organizations' gatekeeping functions and how those activities have been reshaped by social factors and technological affordances. The results observed here showed that legacy news organizations and journalists enjoy more followers than non-legacy journalists and non-journalists. Based on those numbers alone, it seems they still enjoy control over the gatekeeping process, as more users follow them for news updates. However, based on actual activities on Twitter, legacy news organizations and journalists seem to have lost their grip on gatekeeping, at least in terms of how information flowed on Twitter about the Ferguson decision in the case of the Wilson trial. Whether this weakening gatekeeping control is related to legacy journalists' social media practices that seem to be more conventional than dialogic, and more passive than reciprocal, is something that future studies and media professionals should explore.

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