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언론정보학석사학위논문

The Networks of Celebrity Politics:  
Political Implications of Celebrity Following on SNS

유명 인사의 정치 네트워크

: SNS 에서 유명 인사를 팔로잉하는 행위의 정치적 함의에 관한 연구

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## Abstract

With the rise of networked media such as Twitter, celebrity presence on civic affairs has become highly amplified. In order to investigate the political implications and democratic legitimacy of celebrity activism on Twitter, we estimated the political ideology of 34 South Korean news outlets and 14 celebrities based on the co-following patterns among 1,868,587 Twitter users. We also had a rare opportunity to match their following behavior with individual level attributes by relying on supplementary survey data on 11,953 members of an online survey panel. Our results reveal that celebrity following on Twitter is ideologically skewed; a vast majority of Twitter users following politically influential celebrities are liberal. Additionally, survey results show that political celebrities are more likely to attract those lacking the ability to process one-sided information in a balanced manner. Accordingly, celebrity politics on Twitter is likely to reinforce political polarization.

Key words: Polarization, Celebrity, Celebrity politics, Twitter, SNS(Social networking sites), Political communication

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## **Introduction**

We live in an age in which the press plays closer attention to celebrities speaking out on complicated policy matters than experts with in-depth knowledge. Arguably, not only the popularity but also political influence of comedian Jon Stewart, an icon of ‘fake journalism,’ possibly surpasses that of any serious political journalists. As noted by Kurtz (2004), “night after night, Jon Stewart lampooned President Bush as a tongue-tied bumbler, the war in Iraq as a giant “Mess O’ Potamia.” Although Stewart keeps insisting that he is just a comedian, it is difficult to deny his political influence. To illustrate this point, John Kerry was happy to appear on his show because Stewart had a huge following on college campuses. Other entertainers such as Howard Stern and Bruce Springsteen have also used their entertainment platforms to rip various public figures. In sum, the lines between politics and entertainment have become blurred.

Such incidents can be seen to mark the rise of a phenomenon that has been dubbed ‘celebrity politics’ (Street, 2004; West & Orman, 2003). Although ‘celebrity politics’ is not a new phenomenon, this celebrity culture has become far more pronounced and politically significant than in earlier epochs (Brownstein, 1990). Emergence of new media landscape is one of

the contributing factors to this enhanced celebrity politics. With the rise of networked media such as Twitter, celebrity presence on civic affairs is becoming more amplified. An increasing number of celebrities have become engaged in political discussion in the online space; they speak with a greater voice over various political issues such as candidate support, political policies or social issues, enjoying diverse opportunities to reach large audiences.

This paper aims to contribute to our understanding of celebrity politics and its political implications. Albeit intuitively appealing, most of the previous studies on celebrity politics are rather superficial and anecdotal (Marsh, t Hart, & Tindall, 2010) in that they focus upon delineating different types of celebrity politicians without empirical evidence. Considering the recent expansion of celebrity engagement particularly upon the social media platform, however, a more accurate depiction of celebrity politics emerges when the networked public sphere is probed. Accordingly, this study is designed to expand its focus beyond individual celebrities. More specifically, examining the networks of celebrities and their followers on Twitter, we attempt to investigate whether the celebrities are encouraged to embrace the strategy to represent distinctively partisan ideas in the fragmented information landscape on online. To this end, we identified political

ideology of celebrities based on the structure of co-following patterns drawn from the non-metric multidimensional scaling (MDS) method. Furthermore, by integrating Twitter followers' individual level characteristics with their actual behavioral data, we explored driving forces behind circulating information in a biased way on social media as well as political ramifications of celebrity engagement in the context of a changing news environment.

## **Literature review**

### **Celebrity Politics and Social Media**

Despite the growing attention and concerns on celebrity politics, academic literature on its definition is rarely systematic (Marsh et al., 2010). Thus, here we define celebrity politics as a general political engagement of celebrities from various origins who seek to speak for popular opinion and exercise political influence by the way of their fame and status. As described by Marsh et al. (2010), often raising profound concerns about what is happening to the democratic process, these celebrities 'advocate' or 'endorse' a policy. Although many celebrities attach themselves to a charity or a cause, 'political celebrities' tend to be more active and more committed policy



seekers. They specifically endorse a particular issue position, political party, or an electoral candidate.

The development of social networking sites (SNS), such as Facebook and Twitter, has encouraged celebrities' political engagement in the online sphere. Particularly notable examples come from civic involvement on Twitter. Unlike other user-declared social media, Twitter is apparently devoted to disseminating news on civic affairs. In addition to the unique 'retweet' feature, there is "neither a technical requirement nor social expectation of reciprocity" for subscribers on the micro-blogging platform Twitter (Marwick, 2011). Given this network characteristic, many studies argue that Twitter functions as a news channel rather than a social networking tool (Kwak et al., 2010), where many voters obtain relevant information (Pew Research Center's Internet & American Life Project, 2012).

As highly visible public figures, celebrities have also become increasingly engaged in political discussion on the Twitter sphere. Many celebrities have utilized upon the social media as a platform for mass dissemination of their political messages. For these political celebrities, social media have become a particularly useful platform. A body of research has revealed that political celebrities on social networks serve as one of the significant information sources in the dynamics of news flow (Lotan et al.,

2011). For example, in the case of Osama Bin Laden's death, Hu and her colleagues (2012) investigated how the news spread from a few sources to the public through identifying key players at different stages of the news flow. Their findings show that attention on Twitter is strikingly concentrated on a small number of "opinion leaders" including celebrities who play crucial roles in disseminating the news.

In addition to the unusual and unexpected event such as the case of Osama Bin Laden's death, celebrities are also actively involved in information sharing in ordinary circumstances. Wu et al. (2011) explored normal traffic on Twitter and indicated that celebrities played a pivotal role in the classical "two-step flow" of communication (Katz & Lazarsfeld, 1970). Their results demonstrate that "elite users" (e.g., celebrities, bloggers, and representatives of media outlets and other formal organizations) generate most of the information and promote its dissemination among "ordinary users". Bakshy and his colleagues (2011) echoed this claim. They examined the attributes and relative influence of 1,600,000 Twitter users by tracking 74 million diffusion events in 2009 and concluded that the largest cascades tended to be generated by influential users. In sum, celebrities exert significant influence on information transmission on the Twitter sphere. Although the relationship between ordinary people and celebrities is

parasocial on SNS, the perception of direct contact to a normal or famous person is attractive for users (Lee & Oh, 2012). Thus, political celebrities can serve as an influential informant, considerably impacting public opinion online.

The emergence of celebrity politics on the Twitter sphere is becoming prominent in Korea as well (Nho, 2012; Lee, Lee, & Qing, 2012). A growing number of celebrities express political opinions over various civic affairs such as social issues (e.g., college students' rally for tuition fee cuts), political policies (e.g., Seoul city's free school lunch policy, four major rivers restoration project) or candidate endorsement. Perhaps the most conspicuous recent example is an actress Kim Yeo-jin. Well-known for her progressive views and active political participation, Kim has extensively resorted to Twitter to mobilize a group in support of labor movement. Another good example is Kim Je-dong who is a very popular comedian. Famous as an outspoken liberal, Kim has actively utilized Twitter to encourage voting. Although his attempt to promote voting on the Election Day led him to get accused of breaking the election law, he has continued to communicate his liberal political stance on this new medium.

Recognizing enhanced celebrity politics and its potential on social networks, a related stream of research in Korea has also started to pay

attention to the roles of celebrities in information flow. The recent analysis of network features in Korea has produced corresponding findings to those in the U.S. Lee and his colleagues (Lee et al., 2012), for example, conducted a network analysis of celebrities and their followers. Their findings demonstrate that most of celebrity activism in Korea produces various kinds of gatekeeping processes in the information dissemination process. In other words, political celebrities in Korea also act as “news outlets” or “information spreaders” in various sociopolitical affairs in a similar fashion to those in the States. Unlike ordinary citizens, celebrities have large groups of followers who are also connected to their own followers. Accordingly, the reach of political celebrities can be comparable to major broadcasters (Hu et al., 2012; Bakshy et al., 2011).

To recapitulate, many studies have demonstrated that celebrities on the social media platform are serving as “influential” opinion leaders or “one-person media”; they can set an agenda by focusing public attention on a few selected issues and provide relevant information. Given that news audience exercises greater selectivity in their news choices in today’s fragmented media environment (Iyengar & Hahn, 2009), celebrities have become increasingly involved in functioning as one of the accessible information sources that voters can easily resort to. Hence, celebrity-led political

engagement can subsequently shape, reinforce, and alter public opinion on civic matters (West, 2007).

### **Partisanship of Celebrity Engagement and It's Political Implications**

Given the political leverage of celebrity engagement in a transforming media environment, much academic attention has focused upon its influences on voters in the political process (Jackson, 2007; Pease & Brewer, 2008). From a normative point of view, the democratic implications of celebrity politics have been hotly debated. From a more benign perspective, some scholars optimistically expected that this celebrity regime would be beneficial to our political system. For example, West and Orman (2003) showed that celebrity endorsement and activism frequently reinvigorated democratic politics by stimulating public involvement and demanding greater transparency from policy makers. Similarly, Austin and her colleagues (2008) concluded that celebrity endorsements enhanced the propensity of young people to vote and to engage with politics.

Moreover, in the case of politically inattentive citizens, celebrity politics can plausibly help raising political competence, educating parts of society on public issues about which they would otherwise remain ignorant.

Although many criticize the proliferation of entertainment-oriented “soft news” for failing to provide sufficient information to function as competent democratic citizens, Baum and Jamison (2006) argued that “soft news” exposure indeed contributed to forming informed vote choices. Using the 2000 National Election Study, they found that politically inattentive individuals who consumed daytime talk shows were more likely than their non-consuming, inattentive counterparts to vote for the candidate who best represented their self-described preferences.

Despite such optimism, other researchers have raised concerns over the growing influence of political celebrities. One of the most frequently evoked concerns is whether celebrity politics allows ordinary citizens to gain a balanced diet of information. This issue lies in the effects of slanted information upon voter decision-making. Exposure to biased news information can indicate some significant implications (An et al., 2012). It may intensify intolerance of dissent and expedite ideological polarization in sociopolitical issues (Glynn et al., 1999). Furthermore, it can have a sizable effect on voters’ political beliefs and ultimately alter their voting behavior (Vigna & Kaplan, 2007). Therefore, encountering the rise of celebrities’ roles as an influential information provider on social networks, a group of scholars have started to pay attention to whether people can receive balanced

information from their recently gained information sources.

More directly germane to such concern is the partisan bias embedded in network sphere. Although new communication media have potential to empower voters with diverse opinions beyond the previous geographical constraints (Brundidge, 2010) or political affiliations (Mutz, 2002), there is growing evidence that news audiences on the social media are increasingly fragmented along the partisan line. As a matter of fact in today's media environment, audiences selectively attend the agreeable views while avoiding the disagreeable counterparts (Stroud, 2011). For example, new media users selectively attend news contents based on their partisan attributes, thereby leading to segregated "enclaves" of like-minded individuals (Sunstein, 2007). Considering that information providers cannot ignore the demand-side (Hamilton, 2003), such audience fragmentation and polarization can lead to the corresponding ideological slant of celebrities' expressive outputs. In other words, political celebrities are expected to provide information or opinions that cater to their partisan audience (Stroud, 2011). Therefore, fragmented market demand in the Twitter sphere can lead celebrities to circulate the type of news contents consonant with their audience's increased preference for extremism.

Behavioral evidence from communication research has lent support

for the audience fragmentation and polarization in the online sphere (Adamic & Glance, 2005; Johnson, Bichard, & Zhang, 2009). For example, work by Conover and his colleagues (2011) showed that the network of retweets was politically segregated with extremely limited connectivity between partisans of both sides (Conover, Ratkiewicz, Francisco, Goncalves, Flammini, & Menczer, 2011). The partisan division on Twitter has been seriously considered in Korea as well. For instance, content analysis of tweets during the 2010 local election revealed that social media users have few opportunities to encounter “crosscutting” views about major sociopolitical issues (Shin & Woo, 2010). Overall, these evidences suggest that news audience in the online space is fragmented and stratified along their partisan lines. Such polarized distribution of social media users’ preferences guided by partisan leanings can induce celebrities to accommodate to their followers’ political preferences. As a result, celebrity politics may contribute to creating “echo chambers” where only the partisan information congenial to their followers’ political ideology is being communicated.

Besides the demand-side explanation of partisan bias in celebrity engagement, another line of research has also focused on the supply side of it, i.e. the underlying incentives as informants. From the celebrities’ point of view, there are important incentives for taking an ideologically polarizing



stance on social media. To remain prominent in the world of celebrityhood, having a charitable or political cause is a way to maintain a public presence. While many celebrities prefer non-controversial causes such as more money for children or breast cancer research, increasingly entertainment figures are taking stances on controversial subjects, such as the Iraq war and election campaigns. Accordingly, celebrity engagement on public affairs has become more pronounced.

Theoretically celebrities have a greater potential to deliver diverse perspectives “unmediated” by mainstream news media or career politicians since they are not limited to mainstream coalitions based on Left or Right. As described in the preceding section, however, celebrities on the Twitter sphere are serving as an information provider, who presumably falls under the constraints of news market pressure. Thus, competitive pressures in news environment online can translate into strategic behaviors of informants.

More specifically, the arrival of new media has created a more fragmented information environment in which numerous news outlets compete for attention. The fierce competition among multiple information suppliers generates for such news sources to face sufficient economic incentive to tailor their products to audience’s political preferences (Mullainathan & Schleifer, 2005). Consequently, confronted with the market

pressure, political celebrities are expected to adopt a strategy of appealing to niche market demands by publishing distinctively partisan information (Vigna & Kaplan, 2007). Animated by a motive of maximizing their voice, celebrities are likely to represent overtly ideological viewpoints. Presumably, the promotion of extreme perspectives would be rewarded by increased network capital, i.e. the maximized number of Twitter followers.

Previous research on public opinion has provided useful insights into the supply side explanation of partisan bias in celebrity engagement. Most notably, Posner (2001) has proposed a concept of a public intellectual as a person who “writes for the general public ... on “public matters” –on *political* matters ... viewed under the aspect of ideology, ethics, or politics (p.23)”. Posner argues that public intellectuals desire publicity both for its own sake and as advertising for their expressive outputs. This illustrates the underlying incentives that drive tactical behaviors of celebrities as informants. More specifically, we can assume that public intellectuals have financial and social incentives to satisfy the public preferences in their attempts to earn coverage from the media and to elicit much public attention. If the notion of public intellectuals can be applied to our discussion since political celebrities are also actively involved in delivering ideas toward the general public on civic affairs, we may expect that celebrities as well tend to

adopt a strategy of customizing their expressive outputs as a way of maximizing public attention. For political celebrities, there are important incentives for taking an ideologically polarizing standpoint.

The recent empirical studies about media bias also illustrate “strategic extremism” of information providers (Glaeser, Ponzetto, & Shapiro, 2005). Recent work by Mullainathan and Schleifer (2005), for example, mathematically demonstrated that intense competition in News markets generated incentives for newspapers to create or reinforce divergence of opinions. Contrary to a traditional Downsian median voter theorem, which posits convergence to the median voter (e.g., Becker, 1958; Downs, 1957; Hotelling, 1990), there will be no convergence in reporting to the median reader in the competitive news market (Mullainathan & Schleifer, 2005, p.1043). This is because information sellers in face of strong competition are likely to reap higher benefits by appealing to market niches. Therefore, news sellers tend to strive for eliciting maximum attention from their target audience through market segmentation rather than mass marketing with homogenous contents toward general audience. Given the vehement competition among various information providers in online sphere as described above, we can anticipate that political celebrities in the online information market are likely to take similar strategies to newspapers in the

traditional news market. If this occurs in politics and digital media domains, celebrities could move centripetally from a relatively moderate political stance for strategic, i.e., follower-maximizing, reasons.

In short, celebrities have motives as an information seller for slanting political information in favor of their audiences' polarized preferences. Vying for heavy media coverage and audience's attention, celebrities tend to hold strategic extremism. Accordingly, political celebrities are likely to attempt to differentiate competitively by moving toward extreme positions (Mullainathan & Schleifer, 2005). Since exposure to diverse information is one of the prerequisites for representative democracy (Baum, 2003), the ascendancy of celebrity politics can raise important issues about its contributing roles in democracy.

Finally, social and political milieu surrounding network sphere in South Korea suggests another driving force for celebrities to represent extreme partisan bias. As many studies on media indicate, young voters in South Korea are extremely dissatisfied with the mainstream news institutions (Ban, 2005). Accordingly, they are much more willing to embrace alternative news outlets online (Park, 2004). Although many scholars argue that relatively liberal, young individuals usually tend to gravitate toward new media (Johnson & Kaye, 2002; Levinson, 2009), the extent of ideological

polarization upon social networks can be quite different from country to country.

In the context of South Korea, the argument regarding publicity-seeking celebrity raises a concern that social media is likely to breed an ideologically skewed celebrity network, making it difficult for their followers to be exposed to cross-cutting views. It is worth noting that the extent of polarization in political preference distribution of online users can be more pronounced in South Korea than in the U.S. Indeed, a cross-national study (Hahn, Lee, Park, & Lee, 2012) has proved that the South Korean Twitter users reveal a stronger liberal bias compared to the general users of the U.S. Twitter space. Many researchers suspect that such disproportionate distribution of liberal bias on social media is partly attributed to severe generational friction in Korea. Much literature on political science points out that one of the major sources of political polarization in South Korea is generational conflict (Kim, 2006; Yoon, 2009). To illustrate the severity of generational conflict in South Korea, when measured in a 10-point scale ranging between 1 (most liberal) and 10 (most conservative), South Koreans in their 20s describe their ideology as 4.82 on average and those in their 60s as 7.94. On the other hand, the equivalent groups score 5.30 and 5.96 in the U.S. (Lee, 2011). This deep ideological

chasm between generations possibly indicates another demand-side source of celebrities' partisan extremity in Korea. Moreover, Lee et al. (2012) showed that average extent of communication reciprocity between celebrities and their followers in Korea (around 48.2%) was much higher than that in the global network (around 11%), suggesting another supply-side source of celebrities' extremism. Overall, the polarizing political environment implies that politically engaged celebrities in Korea are particularly likely to resonate with their partisan audiences.

Based on this rationale, we raise some concerns over the representativeness of celebrity politics. Abundant evidence from the demand- and supply-side explanations to surrounding social environment aspects has proposed contributing factors to celebrities circulating biased information. If particular accounts of representation were privileged over others, it would undermine representative democracy. To address this concern, we propose the following research question and a hypothesis.

- **Research Question 1: Do celebrities possess particular political orientations on social media platform?**
- **Hypothesis: Political celebrities on Twitter are more likely to represent extreme partisanship.**

A system relying on celebrityhood, however, can raise a host of problems. Ordinary citizens' excessive fascination with celebrities induces the risk that there will be more superficiality and less substance in political elites' discourse of policy matters. This danger is amplified with journalists interested in celebrity quotes and scarce news bytes, experts with substantive knowledge about public policy become increasingly marginalized. As Meyer and Gamson (1995) argued, celebrities shift the nature of media coverage towards a focus on a more personalized and dramatic style. Accordingly, in-depth analysis and careful deliberation are at risk of being replaced by star power, marketing, rock concerts, stylists and cleverly made, but ultimately shallow, facebook profiles, twitters, blogs and 'pseudo events' (Marsh et al., 2010). As a result, politics becomes public performance, giving birth to a system where star power is weighted more heavily than traditional political skills, such as bargaining, compromise, and experience. Politics will be drained of substance, and serious deliberation and discourse will be replaced by impressionistic decision making largely influenced by an entertainment show based on performance skills. In short, as Postman (1987) put it, 'our politics, religion, news, athletics, education and commerce have been transformed into congenial adjuncts of show business'.

No less importantly, as argued by Posner (2001), there is an absence of quality controls; celebrities often do sloppy work, that it is often ‘little better than kibitzing,’ reflecting “only a superficial engagement with the facts (p. 2).” In a similar vein, critics of celebrity politics point out that celebrities lack the required knowledge of, or expertise in, public policy (Street, 2004). Street (2004) reframes this circumstance, observing: “the celebrity boasts irrelevant qualities and superficial knowledge that do not justify their claims to represent (p. 439).” The problem arising out of ignorance can be exacerbated when voters heavily rely on celebrity as a major information source in the absence of alternative information. This is because dominance of celebrity politics implies that “serious political issues become trivialized in the attempt to elevate celebrities to philosopher-celebrities” (West & Orman, 2003).

Additionally, considering that voters cannot make informed choices without sufficient quality information (Palfrey & Poole, 1987), the ascendancy of celebrity politics raises important issues about its contributing roles in democracy. This problem can be particularly problematic if followers of celebrity politics abandon other sources of ideologically balanced and substantive information. In the absence of alternative sources, the followers can be especially vulnerable to misleading



information. This is particularly true since celebrity endorsement can significantly shape public perception of views. For example, Garthwaite & Moore (2008) find that reading about Oprah's endorsement lead participants to see Obama as more likely to win the nomination and to say that they would be more likely to vote for him. These findings suggest that research on celebrity endorsements should consider not only effects on candidate support but also subtler effects, such as those on viability assessments. When combined with skewed, biased information this can be a serious problem. Jackson and Darrow(2005; Jackson, 2007) working with Canadian and US students, explored whether celebrity endorsements made a difference to the willingness of participants to support a particular political cause or attitude, and how the character of the celebrity is itself a factor in this process. The results reveal just such a differential effect, with some stars having a much greater impact than others. Jackson & Darrow (2005) show that there is no deliberation process to follow celebrity's position.

The effects of biased information can pose tangible threats to informed political judgment when the audiences lack substantive and diverse information from other news sources (e.g., television news program, newspaper). Consequently, we suspect that the prevalence of political

celebrities can be a problem to making an informed political judgment by providing skewed information to the audiences lacking access to effective information from alternative news sources.

- **Research Question 2: Do the followers of political celebrities acquire information via alternative news channels?**

Admittedly, the adverse effects from unrepresentative information can be qualified in the case of those with adequate political knowledge since they have intellectual resources to detect the bias and compare it to other sources of information (Bray & Kreps, 1987). Many researchers, however, suggest that typical audiences for celebrity politics are less interested or less knowledgeable in political affairs than those for traditional news outlets. For instance, Baum (2003) showed that the audiences of soft news media tended to have comparatively little education or interest in politics (see also Hamilton, 2003). Work by Couldry and Markham (2007) has also provided supporting evidence that celebrity effects are most pronounced on the least politically engaged. This can be harmful because the lack of political knowledge can be threats to handling information substantially. According to Zaller (1992), there is a basic process of attitude change which may be understood as a two-step process. Zaller (1992) explained this process by

“first, reception of persuasive communications and, second, acceptance or non-acceptance of their contents (p.148)”. In the first process, the level of individual’s political knowledge is the key point. The politically more knowledgeable are more likely to receive information from others. The second step is more intricate however the important idea is that those who are more likely to know about politics can easily resist persuasive messages that are inconsistent with their existing stand points. Goldthwaite Young (2004) also claimed that soft news viewers who are less politically knowledgeable than traditional news consumers, may receive political information without resisting. Consequently, they can show stronger effects of exposure.

Considering there are researches that less political knowledgeable can be vulnerable to persuasion (Zaller, 1992; Goldthwaite Young, 2004), celebrity followers can easily change their attitude by one-sided information. Thus, we can anticipate that voters with relatively low level of political sophistication are more susceptible to the influences of celebrity politics.

- **Research Question 3: Do the consumers of celebrity politics have less political knowledge?**

## Methods

### A Bipartite Network Representation of Twitter Followership

The Twitter following of political celebrities can be represented as a network where there exists a link between a particular celebrity and a follower. More specifically, as in our case, when a celebrity and the followers constitute two distinct sets, the data can be viewed as a “bipartite network” (Wasserman & Faust, 1994) in which only the connections between nodes in different sets are considered (see Figure 1). More specifically, in Figure 1, A, B, C, and D would represent the set of news celebrities maintaining Twitter accounts whereas circles 1, 2, 3, ..., 8 would represent individual Twitter users. The two sets of nodes are connected when a Twitter user “follows” the particular celebrity. It is worth noting that, similar approaches are commonly employed to identify groups of representatives who vote in a similar fashion based on their roll call voting records (e.g., Clinton, Jackman & Rivers, 2004; Poole & Rosenthal, 1984). Likewise, as will be described later, our method groups together individual Twitter users following a similar set of celebrities.

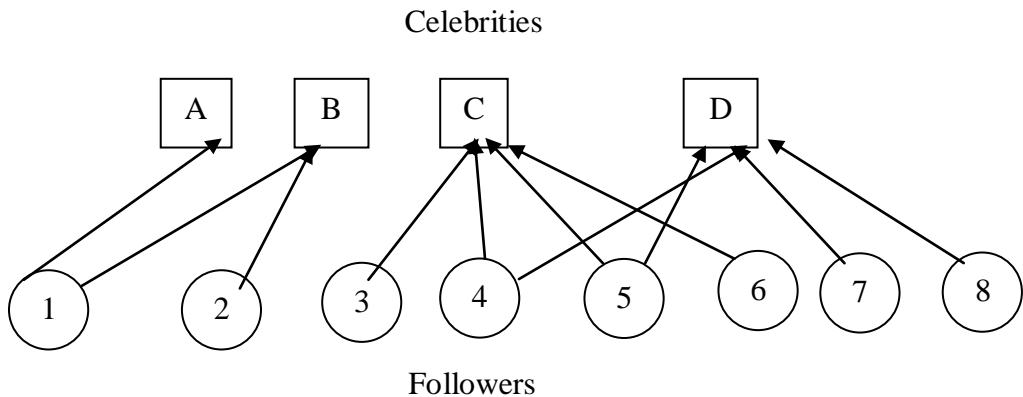


Figure 1. Twitter Following as a Bipartite Network

In the current analysis, we compare the ideological positions of celebrity followers with those of various news outlets. Since the ideological leanings of news outlets are well-known, they can serve as useful reference points. We attempted to include all the major Korean news media outlets and ended up with a sample of 34 Korean news media outlets (see Table 1). Our sample encompasses twelve top daily newspapers currently sending out Twitter newsfeeds, all three networks, all four so-called comprehensive programming channels (newly founded by conservative newspapers), and two cable news channels. For the Internet news sources, no comprehensive list was available; accordingly we did our best to include all the major sources and confirmed our list by external experts. We also added a few other specific TV programs and other news sources that had captured public attention in the past. Additionally, we added ten television channels or

programs, eleven Internet news outlets, one news magazine and one newswire service.

On the celebrity side, resorting to twtkr, a company providing an online ranking service based on its own influence index, we attempted to include the celebrities with a significant political influence. We first considered top 100 Twitter influencers (as of April 2012) (who were not professional politicians). Subsequently, five graduate students assessed whether each of the 100 Twitter influencers fit the description of a political celebrity. Only those influencers receiving all five coders' votes were included in our sample, and 14 celebrities eventually qualified (see Table 2). It turned out that the 14 celebrities could be classified into three groups: (1) "politainers" (e.g., comedians, actors, etc.), (2) "writers" (e.g., novelists and cartoonists, etc.), (3) "public intellectuals" (e.g., college professors, columnists, and journalists).

Table 1. The Sample of News Outlets in South Korea

Name (n=34)	N of Followers	Type
Ddanji Ilbo	225,952	Internet
Doksul.com	179,660	Internet
Sisain	169,665	Magazine
Ohmynews	124,136	Internet
Wikitree	118,714	Internet
Kyunghyang Shinmoon	105,703	Newspaper
Hankyoreh Shinmoon	103,936	Newspaper
Media Mongu	95,117	Internet
KBS	87,561	TV
PD Note	80,994	TV
Sonbadak News	80,487	Internet
Yonhap News	73,088	News Agency
YTN	63,852	TV
SBS	61,849	TV
MBC	61,067	TV
Hankook Ilbo	54,343	Newspaper
Pressian	52,143	Internet
Maeil Economic Daily	51,930	Newspaper
MBN	28,586	TV
Media Daum	23,268	Internet
Chosun Ilbo	23,188	Newspaper
Donga Ilbo	19,139	Newspaper
Seoul Shinmoon	18,257	Newspaper
Jtbc	13,637	TV
Segye Ilbo	8,816	Newspaper
Joongang Ilbo	8,111	Newspaper
Channel A	7,106	TV
New Daily	5,516	Internet
Media Today	3,608	Newspaper
Hankook Economic Daily	3,503	Newspaper
Dailian	1,985	Internet
News Y	1,686	TV
Kookmin Ilbo	879	Newspaper
TV Chosun	375	TV

For each of all 34 news outlets and 14 celebrities included in our sample, using Twitter provided Application Programming Interfaces (API) and a custom written Python code, we collected a complete list of all of its followers. As shown in Table 1 and Table 2, at the time of our data collection in April of 2012, the total number of Twitter users following at least one of the 34 news media outlets, and 14 celebrities was 1,868,587.

Table 2. The Sample of Political Celebrities in South Korea

Name (n=14)	N of Followers	Type
Jaedong Kim	806,673	Entertainer
Kyungchul Park	555,033	Medical Doctor
Pool Kang	423,594	Cartoonist
Jiyoung Kong	394,797	Writer
Jooha Kim	382,314	Journalist
Jinwoo Joo	304,024	Journalist
Kook Jo	289,511	Professor
Miwha Kim	284,003	Entertainer
Joongkwon Jin	221,981	Professor
Yejin Kim	192,489	Entertainer
Daein Sun	138,305	Researcher
Haemin	128,277	Buddhist Monk
Pari Kwang	81,387	IT Journalist
Kapjae Jo	12,700	Columnist

+The total number of Twitter users following at least one of the 34 news media outlets and 14 celebrities is 1,868,587.



## **Survey Data**

In order to give a rigorous test of what determines selective followership of news outlets and celebrities on Twitter, we supplement our following data with survey data. For testing our hypothesis concerning selective following and examining what makes celebrities represent extreme partisanship on Twitter, the novelty of our approach stems from our ability to match the same Twitter users' following behavior with their individual level attributes. Despite the obvious utility of this approach, to our knowledge, this is one of the first such attempts. In addressing various questions associated with SNS, most communication scholars have relied solely on survey data (e.g., Johnson, Bichard & Zhang, 2009) whereas computer scientists have primarily looked at the behavioral (or structural) data gathered by crawling a particular SNS (e.g., Kwak et al., 2010).

Our survey data came from an online panel maintained by a major polling firm contracted by Korea Broadcasting Systems (KBS). The online panel currently consists of 101,697 Korean members with a sampling weight computed based on the known characteristics of the Korean population. At the time of initial registration as panel members, panelists fill out a comprehensive profile questionnaire, and the collected data are used later for

computing individual panelists' sampling weights. As part of this profile survey, panelists were asked to provide their Twitter screen names. The current panel includes 11,953 members with Twitter accounts, of whom we had identified that 3,298 were also part of our following data. With these 3,298 panel members, we had a chance to identify their following behavior. We also had a rare opportunity to figure out the characteristics of celebrity consumer with the profile survey. For finding people who consume the leverage of celebrity, we use responses for survey questions from 11,953 panel members who declared that they use Twitter. Table 3 presents the demographic characteristics of the 11,953 panelists included in our analysis.

For clarification, of course our sample is not representative of the Korean population. On the other hand, our target population is the 1,868,587 Twitter users included in our following data, not the entire Korean population. Unfortunately, however, little is known about the characteristics of this target population, making it impossible to obtain a truly representative sample. Nevertheless, Table 3 shows that our current sample is sufficiently large and diverse. Previous research has shown that in general, liberals are heavily overrepresented on Twitter in Korea (Hahn et al., 2012; Chang & Ghim, 2011). However, fortunately our sample is composed of almost same proportion for liberal and conservative party identity. For this reason we can

anticipate that appropriate results about political behavior can appear from our data.

Table 3. Characteristics of Survey Panelists who use Twitter (n = 11,953)

	Sample	General
<b>Age</b>		
Less than 19	26.6%	1.3%
20-29	31.2%	16.2%
30-39	21.1%	19.7%
40-49	13.1%	21.7%
50-59	5.8%	17.5%
Over 60	2.1%	23.6%
<b>Gender</b>		
Male	39.4%	50.9%
Female	60.6%	49.1%
<b>Area of Residence</b>		
Seoul and Neighboring Areas	54.8%	46.5%
Other Areas	45.2%	53.5%
<b>Education</b>		
Less than High School	35.7%	58.4%
Some College	30.2%	15.6%
College Graduate	34.1%	26.0%
<b>PID</b>		
Liberal Parties	18.2%	19.6%
Independent	67.6%	57.6%
Conservative Parties	14.3%	22.8%

## Analysis and Results

### Classification of News Media Outlets and Political Celebrities

We define the similarity  $\delta_i(i, j)$  between two celebrities (or news outlets)  $i$  and  $j$  based on the number of common followers, so that celebrities (or media organizations) followed by a similar set of “followers” are closely located:

$$\delta_i(i, j) = \left( \frac{|F_i \cap F_j|}{|F_i|} + \frac{|F_i \cap F_j|}{|F_j|} \right),$$

where  $F_x$  denotes the set of Twitter users following the outlet  $x$  and  $|F_x|$  denotes the size of the set (Hausdorf & Hennig, 2003).

Based on this measure of similarity, we constructed the so-called co-follower adjacency matrix. Note that the above measure adjusts the values in a co-follower adjacency matrix purely based on the number of co-followers. Since the number of followers varies greatly across 34 news outlets and 14 celebrities, it is possible to underestimate (or overestimate) the proximity of a pair of outlets when either of them has a relatively large (or small) number of followers (Chang, 2011). Subsequently, therefore, we computed

dissimilarities among rows of the adjusted matrix using the Euclidean distance (Burt, 1978).

After obtaining a dissimilarity matrix, we adopted the non-metric multidimensional scaling (MDS) method to examine what political orientations celebrities possess on social media platform. Multidimensional scaling (MDS) is a family of methods developed for finding coordinates of objects when their dissimilarities are given and widely used by network analysts (e.g., Kruskal & Wish, 1978; Schiffman, Reynolds & Young, 1981). MDS is also used for various other applications ranging from analyzing roll call voting records (e.g., Porter et al., 2005) to audience classification (e.g., Damásio & Poupa, 2008). In the current analysis, because the number of followers varies significantly across 34 media outlets and 14 celebrities, non-metric (rather than metric) MDS is applied where coordinates satisfying only ranks of the given dissimilarities are obtained. We examined the stress values from both metric- and non-metric MDS, and it confirmed the superiority of non-metric MDS for our data.

This analysis yields a  $k$ -dimensional solutions to the classification problem, where we ignore negative eigenvalues and corresponding eigenvectors. Although low dimensional solutions are usually not exact, they are regarded as the best solutions in their own dimensions

(Bartholomew et al., 2008). In practice, for convenient visual examination and interpretation, usually the lowest one or two dimensional solutions are examined.

### **The Ideal Points of Political Celebrities**

We first examine the distribution of celebrity followers in relation to those of news outlets. This analysis can provide useful insights to the skewedness of information attainment through celebrity following on Twitter. Figure 2 juxtaposes the MDS scores of 34 news outlets and 14 celebrities.

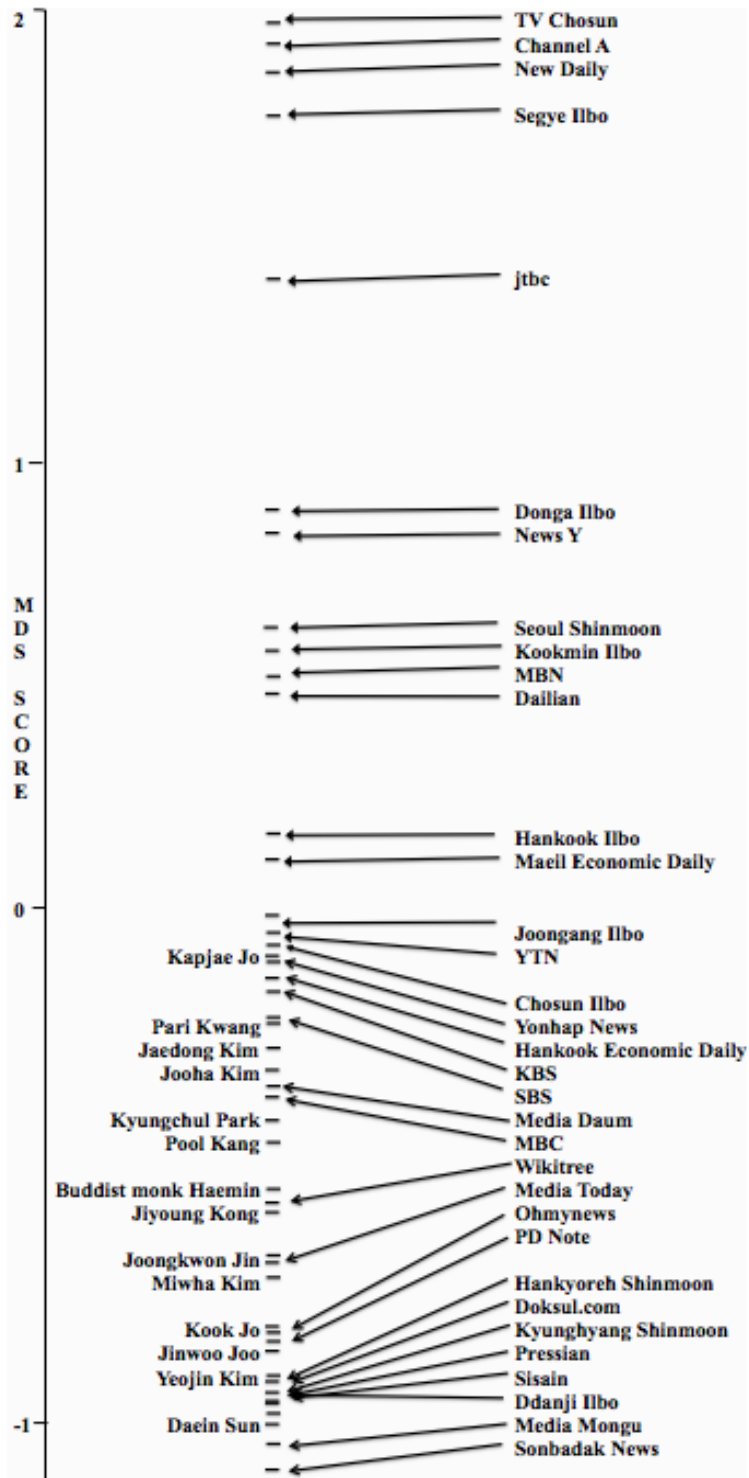


Figure 2. Classifications of News Media Outlets and Celebrities

First, an examination of MDS scores shows that all news outlets are neatly classified from left to right in accordance with their known political leanings from the progressive online news outlets (i.e., the Sonbadak News, Media Mongu, and Ddanji Ilbo) to the liberal print media outlets (i.e., *the Hankyoreh Shinmoon* and *Kyunghyang Shinmoon*) to the three networks (KBS, MBC, and SBS) to the conservative newspapers (*the Chosun Ilbo*, *Joongang Ilbo*, and *Donga Ilbo*) to the conservative online outlets and the conservative television channels newly founded by three conservative newspapers (the New Daily, TV Chosun, and Channel A). These results clearly suggest that the first dimension captures the ideological position of news outlet and celebrity followers.

When compared against the news outlets, the distribution of celebrity followers was heavily skewed to the left. To illustrate this point, all but one (Kapje Jo) celebrities were positioned on the right-hand side of KBS, the Korean equivalent of BBC. The celebrities' median position (Jiyoung Kong or Haemin) was close to that of Ohmynews or Media Today, the liberal online news outlets. On the other hand, Daein Sun, a progressive economic columnist, was identified as the celebrity with the most liberal followers, and his followers were similar to those of *the Ddanji Ilbo*.





When assessing the distribution of celebrity followers weighted by the number of their followers, the seriousness of ideological skewedness becomes even more obvious. As shown in Figure 3, using KBS as a reference point, the average numbers of followers for the liberal and conservative news outlets were 99,087 and 21,333 respectively. Furthermore, for the 13 liberal political celebrities, the number of followers ranged between 81,387 and 806,673 where the average was approximately 323,261. In contrast, the number of followers for the one conservative celebrity (i.e., Kapje Jo) was only 12,700.

When examining the ideal points by three celebrity types (i.e., politainers, writers, and public intellectuals), politainers had the most liberal followers. The median position of politainer followers corresponded to the 11th (out of 34) most liberal news outlet. The median position of public intellectuals and writer group followers corresponded to the 12<sup>th</sup> (out of 34) most liberal news outlets.

## Determinants of Celebrity Following on Twitter

Next, using the profile questionnaire filled out by survey panelists, we assess what determines the consumption of celebrity politics on Twitter. In this analysis, our data set contained 11,953 survey panelists who had provided their Twitter screen names. Our task is to model the likelihood of following 34 news outlets and 14 celebrities as a function of various individual level covariates. In doing so, we compiled a panel data set, consisting of one observation for every panelist (indexed by  $i$ ) for each outlet (indexed by  $j$ ). Accordingly, our dependent variable  $Y_{ij}$  is a binary variable denoting whether the  $i$ th panelist is following the  $j$ th news outlet, where  $i$  ranges from 1 to 11,953, and  $j$  can range from 1 to 48.

Since our dependent variable is binary, the conventional panel methods for modeling normally distributed dependent variables are inappropriate. Given the nature of our data, we adopt the method of generalized estimating equations (GEE), because it offers significant advantages for modeling correlated data where the outcome variable is not normally distributed (Zorn, 2001). The GEE is an extension of the GLM (Liang & Zeger, 1986) to panel or cross-sectional time series data. With cross-sectional data, the generalized linear models (GLM) approach provides

a convenient framework for modeling the relation between dependent variables from the exponential distribution family (e.g., binomial or Poisson, among others) and relevant covariates (Gill, 2000; McCullagh & Nelder, 1989). As in GLM, binary variables are typically modeled as a binomial distribution with a logit link in GEE (Zorn, 2001).

GEE adjusts for repeated observations by estimating the within-subject correlation separately (i.e., the working correlations structure) from the regression parameters, yielding consistent estimates of the regression coefficients without stringent assumptions about the actual correlation among the subject's observations (Liang & Zeger, 1986). GEE allows for flexible dependence across repeated measures of the same object and provides robust parameter estimates despite possible misspecification of the time dependence (Zorn, 2001). Since the current data are not time ordered, the most plausible yet parsimonious form of within-subject correlation is an "exchangeable" process (see Zorn, 2001; Liang & Zeger, 1986). Additionally, we obtained robust standard errors proposed by Liang and Zeger (1986) for our parameter estimates to further guard against making

false inferences stemming from a potentially mis-specified working correlation matrix.<sup>1</sup>

In testing for our proposed hypotheses concerning partisan selectivity and peculiarity of celebrity consumer, we first controlled for a few key demographic variables such as the panelist's gender, age, and education.<sup>2</sup> Additionally, we controlled for panelists' the frequency of watching TV news, preference for entertainment content, party identity, and political knowledge.<sup>3</sup> As our data's baseline is people who are the Twitter user

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<sup>1</sup> This approach allowed us to estimate standard errors for our coefficients that are consistent even in the presence of a mis-specified working correlations matrix. GEE yields consistent parameter estimates of covariate parameters even if the chosen working correlation structure is incorrect, and this robustness is one of the primary advantages of the GEE. On the other hand, the consistency of the variance estimate for parameters does depend on the intra-correlation matrix.

<sup>2</sup> Gender is coded as "Female"=1 and "Male"=0. Age is coded "less than 20"=1, "20-29"=2, "30-39"=3, "40-49"=4, "50-59"=5, "more than 60"=6. Finally, Education is trichotomized to range from 0 ("Less than High School"), 1 ("Some College or Less"), and 2 ("College Graduate").

<sup>3</sup> The watching TV news index was constructed based on the question which asked how often the panelist watched TV news for a week: (1) rarely, (2) once a week, (3) twice or three times a week, (4) four times or five times a week, (5) almost every day. The profile survey asked how often the respondent watched seven types of entertainment programs on television: (1) animations, (2) soap operas, (3) variety shows, (4) music shows, (5) movies, (6) comedy shows, and (7) sports events. Responses to each question were measured in a five point scale ranging from "hardly ever" to "very frequently". For entertainment preference, we added panelists' responses to relevant questions and rescaled them to range between 0 and 1. We collapsed those who identified themselves as supporters of the Grand National Party (GNP), the Liberal Forward Party (LFP), and the Pro-Park

however they do not follow 34 news outlets and 14 celebrities, we created three dummy variables to clarify people's feature which could be differ from following media group. By capturing supporters of different types of celebrities since their characteristics are dissimilar from each other, we made three celebrity group dummy variables by focusing on their origins. By collapsing those who were identified as politainers (Jaedong Kim, Miwha Kim, and Yeojin Kim), we created politainers group. Then we also clustered writers (Jiyoung Kong and Pool Kang) to produce writer group. Finally, we organized public intellectuals group by the other celebrities (Kyungchul Park, Jooha Kim, Jinwoo Joo, Kook Jo, Joongkwon Jin, Daein Sun, Buddhist monk Haemin, Pari Kwang, and Kapjae Jo) considered as public intellectuals on Twitter. Subsequently, we interacted three group dummies with age, education, the frequency of TV news viewership, preference for TV entertainment programs, party identity, and political knowledge. GEE estimates and their standard errors are shown in Table 4.

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Coalition and considered them as supporters of the conservative parties. Similarly, those who identified themselves as supporters of the Democratic Party (DP) and the Labor Democratic Party (LDP) were coded as supporters of the liberal parties. Therefore we coded party identity: "liberal party"=-1, "independent"=0, "conservative"=1. Three questions measured the respondent's political knowledge: (1) "Who is the chairman of the National Assembly? (2) Which party is the majority party in the National Assembly? and (3) What is the name of the current Prime Minister?"

Table 4. Characteristics of people who consume the influence of celebrity on Twitter

	B	(s.e.)
Constant	-4.932	(.191)**
Female	-.157	(.046)**
Age	.180	(.030)**
Education	.322	(.047)**
Viewership of TV News	.128	(.030)**
Viewership of TV Entertainment Program	-.226	(.061)**
Party Identity	-.260	(.050)**
Political Knowledge	.170	(.028)**
Politainers	1.418	(.154)**
Writer Group	1.506	(.176)**
Public Intellectuals	.968	(.122)**
Politainers x Age	-.006	(.025)
Politainers x Education	.125	(.039)**
Politainers x Watching TV News	-.131	(.025)**
Politainers x TV Entertainment Preference	.183	(.051)**
Politainers x Party Identity	-.160	(.041)**
Politainers x Political Knowledge	-.038	(.023)
Writer Group x Age	-.048	(.029)
Writer Group x Education	.100	(.045)*
Writer Group x Watching TV News	-.122	(.029)**
Writer Group x TV Entertainment Preference	.150	(.058)**
Writer Group x Party Identity	-.020	(.048)
Writer Group x Political Knowledge	-.087	(.026)**
Public Intellectuals x Age	.019	(.019)
Public Intellectuals x Education	.163	(.031)**
Public Intellectuals x Watching TV News	-.110	(.020)**
Public Intellectuals x TV Entertainment Preference	-.095	(.040)*
Public Intellectuals x Party Identity	-.037	(.032)
Public Intellectuals x Political Knowledge	.050	(.018)*
Wald $\chi^2_{28}$	5298.73	
N	11,686	

Note. \* $p < .05$ ; \*\* $p < .01$

As shown in Table 4, the coefficient estimates of the three dummy variables capturing celebrity groups turned out positive and statistically significant. This suggests that on average celebrity figures attracted more followers than news outlets. This is consistent with our earlier finding based on the aggregate level analysis.

Our results also suggest that, even after controlling for age and other relevant demographic variables, liberals were more likely to follow all types of political celebrities. The presence of this ideological tilt was most severe among the followers of politainers ( $b=-.160$ ,  $p < .01$ ) and relatively less severe among the followers of public intellectuals ( $b=-.037$ , n.s.). These findings suggest that celebrity following on Twitter is likely to be another source of exposure to one-sided information in the changed media environment.

Our findings suggest that the effects of biased information acquisition are likely to be further reinforced as the consumers of celebrity politics consist of those who are likely to be swayed by such one-sided information.



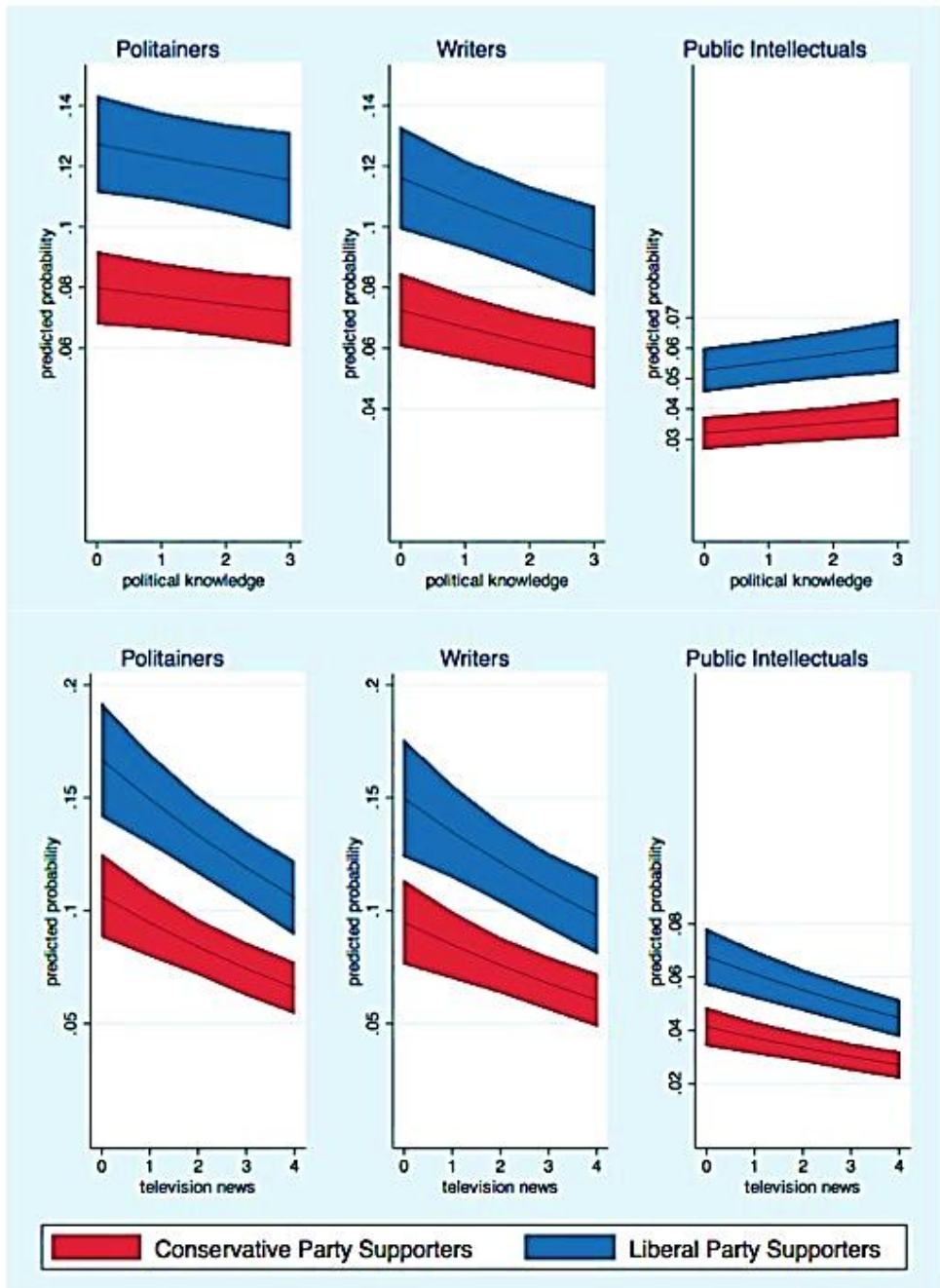


Figure 4. Predicted Probabilities of Following Politically Influential Celebrities

The upper part in Figure 4 presents the predicted probabilities that individuals, depending on their political knowledge levels, would have followed three types of popular figures on Twitter; politainers, writers and public intellectuals. For clarity, a solid regression line and a 95% confidence band are shown in red for the conservatives, whereas in blue for the liberals.

Overall, it appears that the liberals were more likely to engage in following figures on Twitter than the conservatives. It provides supporting evidence for liberal bias in a way that the liberal users would be more active in utilizing this new medium for an information source. More interestingly, highly knowledgeable partisans were less likely to follow politainers group (upper, left). The same pattern was discovered for writers' followers (upper, middle). In contrast, it was more likely that both the conservatives and the liberals with high knowledge levels followed public intellectuals' Twitter accounts when compared to those with low levels (upper, right). Figure 4 also shows that heavy consumers of TV news program were less likely to follow politainers group (lower, left). The same pattern was discovered for writers' and public intellectuals' followers (lower, middle and right).

More specifically in Figure 4, the followers of politainers ( $b=-.038$ ,  $p< .10$ ) and writers ( $b=-.087$ ,  $p< .01$ ) consisted of the less knowledgeable. Accordingly, they are less likely to hold a knowledge base to critically evaluate the validity of celebrities' political stance (Iyengar et al., 1984;

Valentino, Hutchings & Williams, 2004). To illustrate this point, among Twitter users at the bottom of the knowledge scale, approximately 10.36% followed an average politainer. In contrast, among Twitter users at the top of the knowledge scale, only 9.36% followed an average politainer. Likewise, among Twitter users belonging to the top and the bottom of the knowledge scale, approximately 7.44% and 9.43% followed an average writer respectively. The only exception was the followers of public intellectuals ( $b=.050, p< .01$ ).

In a similar vein, the followers of political celebrities were unlikely to acquire information via alternative news channels. The followers of politainers ( $b=-.131, p< .01$ ) were least likely to regularly watch television news. Likewise, even the followers of public intellectuals paid little attention to television news ( $b=-.110, p< .01$ ). As shown in Figure 4, among Twitter users with the lowest level of TV news viewership, approximately 13.65%, 12.22%, and 5.46% followed any given politainer, writer, and public intellectual respectively. In contrast, among Twitter users with the highest level of TV news viewership, the equivalent probabilities were only 8.58%, 7.91%, and 3.59% respectively.

Finally, the followers of political celebrities had a strong preference for entertainment content. Naturally, the followers of politainers ( $b=.183, p< .01$ )

had the strongest preference for entertainment content. Likewise, the followers of writers ( $b=.150$ ,  $p < .01$ ) had a strong preference for entertainment content. On the other hand, the followers of public intellectuals were less likely to view entertainment content when compared with other Twitter users ( $b=-.095$ ,  $p < .05$ ).

## **Conclusion**

Social media (e.g., Facebook, MySpace, Digg, and Twitter) has exploded as a category of online discourse where people network at an unprecedented rate. Because of its ease of use, speed and reach, social media is rapidly changing the public discourse and setting agendas in topics ranging from politics to technology to entertainment. Taking advantage of this new technological invention, many celebrities express their stance on various public affairs matters via Twitter.

Although most scholars agree that celebrities can have a significant political influence, its democratic implications are being hotly debated. We examined the network of celebrity following by modeling it as a bipartite network. When juxtaposing the ideological position of 34 news organizations and 14 celebrities, it seemed clear that news outlets lined up

neatly from left to right in accordance with their political leanings. Using the news outlets as reference points, our results clearly suggest that the followers of politically influential celebrities were predominantly liberal. As we already present a lot of evidence that from the demand- and supply-side explanations to surrounding media circumstances aspects has proposed contributing factors to celebrities circulating biased information. By the data presented in this article, we can find that politically celebrities on Twitter seriously skewed to the left. Consequently, we can argue that our hypothesis was right. This result suggests that social media is likely to reinforce political polarization.

The true novelty of our current work stems from our ability to match aggregate network data with individual level survey data. Aside from reconfirming that the followers of political celebrities consisted primarily of liberals, our results show that those who are less capable of processing the incoming information in a balanced manner are more likely to be attracted to politically influential celebrities. They are unlikely to have access to alternative information via other news channels while holding little prior political knowledge. Even the followers of public intellectuals are less likely to be regular viewers of television news when compared with other Twitter users.

In short, our findings strongly suggest that celebrity politics on Twitter is likely to facilitate political polarization by providing one-sided information to people who are lacking a balanced diet of information.

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## 국문초록

### 유명 인사의 정치 네트워크

: SNS 에서 유명 인사를 팔로잉하는 행위의 정치적 함의에 관한 연구

사회적 네트워크 형성을 지향하는 트위터와 같은 미디어의 출현으로 유명인사들은 이전보다 손쉽게 사회의 각종 이슈에 대해 영향력을 행사할 수 있게 됐다. 유명인사들은 자신의 영향력을 증폭시키는 도구로 트위터와 같은 새로운 미디어를 적극적으로 활용하고 있다. 트위터라는 공간 안에서 이뤄지는 유명인사들의 활동이 지니는 정치적 함의를 살펴봤다. 이를 위해 이 논문은 먼저 34 개의 뉴스 미디어와 14 명의 유명인사들을 팔로우하는 트위터 이용자 1,868,587 명의 상호 팔로잉 관계를 분석해 34 개의 뉴스 미디어와 14 명의 유명인사들의 정치적 지향성을 살펴봤다. 단순히 이들을 배열하는 것에 그치지 않았다. 48 개의 미디어 창구를 팔로잉하는 개별 트위터 이용자들에 대한 온라인 설문 데이터를 함께 살펴봤다. 트위터 이용자 집단의 특성과 함께 개별 이용자들의 특징을 살펴볼 수 있었다. 48 개의 미디어 창구를 팔로잉하는 1,868,587 명 중 11,953 명이 설문에 응답했다. 연구결과는 다음과 같다. 먼저 유명인사를 팔로잉하는 트위터 이용자들이 이념적으로 치우쳐져 있음을 발견했다. 대다수 트위터 이용자들이 정치적으로 진보적인 유명인사들을 팔로잉했다. 또 설문 데이터를 통해 정보를 균형적으로 처리할 수 없는 사람들일수록 유명인사들을 팔로잉할 확률이 높다는 것을 알 수 있었다. 따라서 이 논문은 트위터를 이용한 유명인사들의 정치 행위가 결국 정치적 양극화를 강화시킨다는 것을 보여준다.

주요어: 양극화, 유명인사, 유명인사의 정치, 트위터, 소셜네트워크서비스(SNS), 소셜미디어, 정치커뮤니케이션

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