

Rumor Has It: Examining the Effects of Facebook Addiction on Political Knowledge Gullibility

Cynthia Nichols, Lori Melton McKinnon,
& Anna Geary

Abstract

Political rumors, half-truths and unfortunate candid comments from candidates spread like wildfire across the social media spectrum, meaning social channels require constant care and maintenance. The purpose of this study is to examine how Facebook addiction can affect levels of gullibility to online political rumors. Prior to the 2012 elections, more than 500 respondents participated in a survey designed to measure gullibility to online political rumors. Respondents reported levels of addiction to Facebook and were asked to determine the validity of 20 statements regarding President

Cynthia Nichols, PhD, is an assistant professor, and Lori Melton McKinnon, PhD, is an associate professor, both in the School of Media and Strategic Communications at Oklahoma State University. Anna Geary, an OSU Honors graduate, works in communication for Passion City Church in Atlanta, GA. Correspondence can be directed to Dr. Nichols at Cynthia.Nichols@okstate.edu.

Barack Obama and Republican candidate Mitt Romney. The statements varied in their level of accuracy, some obviously rumor, others seemingly true, but all originated from Internet sources and were disseminated by various Facebook users. In separate survey sections, political knowledge and the political activity of the users Facebook “friends” were measured. Results indicated that both Facebook addiction and gullibility decreased with age and the two variables have a strong correlation between them.

During the 2012 presidential election, political campaigns dominated broadcasts, airwaves, print pages, websites, and social media—specifically, Facebook pages and news feeds. Although traditional media forms are still an integral part of political campaigns, social networking sites are being mined by candidates for their value in sending unfiltered messages to the public, particularly niche audiences and young voters (Price, 2012). In recent election cycles, successful candidates have been forced to conquer social media. When managed and monitored properly, social media channels can make a candidate appealing to young voters. But, when untamed and unwatched, social media can devastate a campaign. Political rumors, half-truths, and the occasional unfortunate candid commentary from candidates can spread like wildfire across the social media spectrum. Instead of discussing politics around the dinner table, Americans are taking to social media channels to air their political opinions in greater numbers than before. Thus, for modern political candidates, social channels require constant care and maintenance.

Social Media and Politics

The 21st century has been marked by rapid changes in technology and communication mediums. As technology has advanced, campaign platforms have followed. In 1996, the first major political figure to utilize social media was Howard Dean, who announced his campaign for the presidency in an Internet chat room. Subsequent campaigns took this emerging trend a step further, by building candidate websites, blogs, and email lists (Semiatin, 2012). Perhaps the most revolutionary change came with the advent of social networking sites such as Friendster in 2002, followed by MySpace in 2003, and Facebook in 2004 (Semiatin, 2012). Even during the emergence of these platforms, Facebook proved to be a valuable resource for political campaigns.

According to Kerbel and Bloom (2005), the Internet can serve as a "vehicle for enhanced civic involvement" (p. 3). In fact, online discussions and personal relationships in cyberspace may provide participants a sense of community. Facebook, a fertile environment for these public discussions, first came into the political arena in 2006, when the social network created profiles for all U.S. congressional and gubernatorial candidates (Williams & Gulati, 2007). These Facebook profiles allowed candidates to post photographs and biographical information, interact with supporters via "wall" posts and publicize their support of other candidates or political issues once the candidate took control of his/her page. Previous research examining the role of these Facebook profiles in the 2006 midterm elections suggested that the candidate who had more Facebook supporters would earn a related increased vote share,

an effect especially pronounced in open-seat races (Williams & Gulati, 2007).

During the 2006 election, one-third of candidates running for Senate and about one of every ten candidates running for House seats took advantage of this streamlined opportunity by updating their Election Pulse Facebook profiles. General Facebook users were able to show their support of a candidate by “liking” or interacting with the candidate’s page. Research looking at the 2010 and 2012 elections supported this trend. Social media were found to have a positive quantitative link between the amount and type of social media usage and real-world political behavior. In other words, the more a candidate was mentioned on social media, the more likely the candidate was to get elected (DiGrazia, McKelvey, Bollen, & Rojas, 2013). However, how the candidate is mentioned and the interpretation of that message is unknown; therefore, the importance and influence of social networks continues to increase. Termed “Web 2.0,” social networks became an increased forum for political debate and discussion in the 2008 elections (Smith & Rainie, 2008). With Facebook in particular, candidates—or rather their social media specialists—communicated campaign messages in a relatively non-invasive, personal, relatable, and targeted way (Zhang, Johnson, Seltzer, & Bichard, 2009). This effect only proved more pronounced in the 2008 presidential election, where the social media prowess of Barack Obama’s campaign was lauded as a key factor in his eventual election as President of the United States. He used social media platforms and mybarackobama.com to connect and make him more accessible in the eyes of voters.

One reason for this success was that social networking was only beginning to be embraced as a valuable forum for political news and discussion. Young voters—many of whom expressed skepticism to mass media news sources and political parties—turned to social networks to become “conduits” of news, instead of mere consumers. As such, social networking sites were used as a predictor of election for the first time and seen as valuable sources of political information; 40% of all social networking users indicated used Facebook and MySpace to seek political information (Zhang et al., 2009). For the first time, more than half of young voters used social networking sites to determine the political interests of their friends and to seek campaign information. Because of the active social media strategy of the Obama campaign, the president garnered 2.4 million Facebook “supporters” versus McCain’s 624,000. Facebook was credited with bringing in new voters, particularly those under the age of 30, which contributed to Obama’s margin of victory (Zhang et al., 2009). This trend continued into his presidency and even more so into his bid for reelection in 2012, in which his campaign conducted more online activity than any campaign before (Price, 2012).

Social media in the 2012 election. With an enormous influx of users and the hiring of social media “strategists” by campaigns, social networking sites were a fertile breeding ground for political campaigning and discussion for the 2012 election. During this most recent election cycle, the impact of social media rested first on its accessibility as a forum for political discourse and an outlet for opinions, and second as a communication channel through which campaigns could disseminate information.

In 2012, 36% of social network users reported that these sites were important or very important as a means of keeping up with political news (Rainie & Smith, 2012). About a quarter of these respondents have used their social networking profiles to recruit others to get involved in issues that matter to them (Rainie & Smith, 2012).

Data from the Pew Internet & American Life project indicated several factors in determining the profile and habits of the politically active social media user (Rainie et al., 2012). Younger social media users, ages 18-29, have been shown to use the networks for civic purposes more than their older counterparts—44% reported they had used social media to “like or promote political material,” compared to 24% of users over the age of 65 (Rainie et al., 2012). Additionally, research has shown that conversation is essential to political engagement, so it is no surprise that social media—places where political conversation can thrive—are even more important in influencing voters and effecting civic participation today than five years ago (Shirky, 2012). In an era of “personalized politics,” where a high premium is placed on the freedom of individual expression, social media present the ideal arena for individuals to express opinions and beliefs, apart from the influence or gatekeeping quality of mass media (Bennett, 2012). By removing government and political party spin, social media allow citizens an open forum to “challenge discourses, share alternative perspectives and publish their own opinions” (Loader & Mercea, 2011, p. 759). This was put in action in 2012, when 34% of all social media users used their sites to post their own thoughts and comments on political issues. The number was consid-

erably higher among younger users, at 42% (Rainie et al., 2012).

Facebook Habits & Usage

To better understand the effects of Facebook on the American public, it is important to understand how people use this billion-plus member site. In general, Facebook is valued by politicians and marketing experts for the insight it provides into the thoughts and preferences of others, shown through their status updates, pictures, postings, and profile settings (Carpenter, Green, & LaFlam, 2011). Four major categories of Facebook uses currently exist. As an “Interactive Tool,” individuals use their Facebook page to manage their social lives and directly communicate with friends they have met in-person, both old and new, over long and short distances. Likewise, individuals may use Facebook as a “Real-Life Supplement” by which they schedule or find out about social events or interactions with their real-life social groups (Carpenter et al., 2011). Individuals also use Facebook to develop “Facebook-only Relationships,” which, as the name implies, are relationships that stay online and do not extend to a face-to-face connection. Similarly, some individuals use Facebook as a “Romantic Tool” to meet and interact with potential romantic partners on the site before meeting in-person, if at all. Individuals who use Facebook for these two purposes tend to display defensiveness to other people’s perspectives, favoring Facebook as a means to isolate and distract from the deeper social interactions that would occur otherwise (Carpenter et al., 2011). Users of all four categories appreciated Facebook as a means to form a full impression

of other people's perspectives, whether these people were in-person friends, or merely online acquaintances.

Usage of Facebook also varies according to the age of the user. Younger users, ages 18-29, consistently use their profiles as a focused means of interacting online with friends and as a facilitators for real-life interaction (Brandtzaeg, Luders & Skjetne, 2010). Users in this age group are also increasingly aware of privacy concerns associated with the site and of the approval of their peer groups. This increases self-awareness and encourages young Facebook users to conform their profiles and posts to the standard they see as acceptable to their peer groups (Brandtzaeg et al., 2010). In comparison, older users tend with use Facebook in a less organized fashion, primarily as a means to sporadically engage in conversation with family and friends. Older users also showed less awareness and concern over the privacy of their profiles—possibly due to a lack of knowledge about it (Brandtzaeg et al., 2010).

The factors motivating Facebook usage have interested researchers as the network's pervasiveness has increased. Studies have shown people use Facebook to maintain social ties with various communities, to lower participation barriers where they may have previously been too shy to initiate communication, to experience new communication opportunities, to supplement real life and to actively seek out interaction with others (Ellison, Steinfield, & Lampe, 2007; Ross et al., 2009). Increased Facebook usage has been shown to increase self-awareness and encourage conformity, particularly among younger users (Brandtzaeg et al., 2010). In addition, Facebook provides an easily accessible forum for political debate. It fosters

civic engagement, mobilizes voters, increases political participation, and influences voter behavior (Bond et al., 2012; McClurg, 2006; Shirky, 2011; Zhang et al., 2010). But, these effects vary dramatically from user to user. Even more problematic, the political information posted on Facebook is not always accurate and is largely unmoderated.

Political Engagement on Facebook

Mass media cannot change political opinions on its own. Friends, family, and other social groups must echo the opinions and facts transmitted by mass media before the information can change a person's mind and influence behavior (Shirky, 2012). This is where social networking sites exert their greatest influence; they encourage the formation of political opinions by allowing people to disseminate the mass media information they agree with to their "followers" or "friends" (Shirky, 2012). In fact, 16% of social network users admit that they have changed their views on a certain political topic after reading posts or discussing it on their social sites (Rainie & Smith, 2012). Although this number is relatively small, it is important to consider the demographic makeup of social networking sites—they are particularly popular with younger voters and can reach millions of people. Additionally, the social media users with the loudest political "voices" tend to be social movement activists, politicians, party workers, and those committed to particular political causes (Loader & Mercea, 2011). This makeup carries the potential for overly-partisan messages that are heavy on rhetoric and opinion, but light on unbiased presentation of facts and complete truth.

Online Rumor & Gullibility. As social networks become more of a forum for political discussion and campaigning, potential for dishonesty, half-truth and exaggeration exists. Messages disseminated across social media are not fact-checked. In fact, 60% of Americans agree, “the Internet is full of misinformation and propaganda that too many voters believe is accurate” (Smith & Rainie, 2008). More than half of Americans do not trust information delivered through social media, according to a 2012 Heartland Monitor Poll (Price, 2012). But that does not stop 36% of social networking users from turning to social networking sites an “important” source for political news (Smith & Rainie, 2012). It also does not stop users of social media from sharing untrue or unverified political messages with other users.

Critics of social networking sites raise concern over their capacity to “undermine serious rational deliberation,” instead conditioning users to look for information in small, easy-to-understand tidbits of information (Loader & Mercea, 2011). Indeed, social networks are hotbeds for negative campaigning, sensational news, “celebrity politics,” extreme rhetoric, and rumor. As mass media and social networks converge, it becomes increasingly difficult to determine truth. In efforts to be the first to break news, mass media turn more and more to political blogs and citizen-created content to fill programming, sometimes at the cost of fact-checking (Loader & Mercea, 2011). One study, on the spread of online rumor, indicated the “news feed” feature on Facebook, promotes gossip among friends and fuels the unsubstantiated rumors (Debatin, Lovejoy, Horn, & Hughes, 2009). In a study on the consequences of online political rumoring, Garrett (2011) found that concern of

harmful political rumoring is merited. Not only were individuals exposed to more political rumors through the use of Internet and online sources of political information, but they were also more greatly influenced by these online rumors than those that appeared in traditional offline media sources. Data revealed that rumors, emailed to friends and family, are more likely to be believed and shared with others. Increased rumor circulation, which can occur rapidly through social networks, also translated to increased rumor belief, at a highly significant rate. In short, the more rumors an individual was exposed to, the more rumors that individual was likely to believe. Of concern, shared political emails often exhibit strong political biases. Garrett (2011) concluded that Internet use promotes exposure to both rumors and their rebuttals and that the network both accelerates and widens rumor circulation.

Social networks allow citizens and voters to rely on political recommendations from friends, networked discussions, tweets (messages on Twitter), posts, and/or direct interaction with political organizations. Despite the fact that this discourse may contribute to civic participation, it requires reliance on the accuracy of information disseminated by others and not fact-checked by any other source. Although previous research has not addressed the truthfulness of political postings on social networks, numerous studies have confirmed that public political knowledge is at a near all-time low (Herther, 2011). When an uninformed member of the public is consistently posting political opinions, it seems logical that not all of these posts will be truthful or accurate in any sense (Herther, 2011). It is also important to note that Facebook executives estimate about 87 million profiles are duplicate or false accounts—

many of which are imitations of celebrities or public figures (Orutay, 2012). Without any means to determine what account is a political figure's "real" account, Facebook users may be susceptible to believing they are getting accurate information from a false account.

Any person with Internet access possesses the capability to "post" their opinions, whether true or not, on a social networking site. In a society where the most sensational stories gain traction the fastest, a rumor or falsity posted on a social media channel has potential to spread quickly and be believed along the way before it is identified as incorrect. For example, during the 2012 campaign, email and social media went ablaze with a rumor that Republican candidate Mitt Romney said he "related to black people" because his ancestors were slave owners, in an Alabama campaign speech (Mikkleson & Mikkelson, 2012). It was later uncovered that the rumor originated from a post on Free Wood Post, a satirical news website. By the time the truth appeared, however, the news had already spread and the chances of those it touched seeking out proof of its validity were slim (Mikkleson & Mikkelson, 2012). Rumors on President Obama's citizenship, religious views, birth certificate, and plans if elected were just as vibrant in 2012 as they were during his 2008 campaign (Jackson, Kiely, & Gore, 2012).

Through repeated exposure and messages disseminated by a trusted friend group, social media messages have power to shape opinions and voting preferences even if they are not true. Political rumors have the power to destroy careers before they are proven true or false. In 2008, Australian newspaper *The Age* ran an article containing accusations and supposed evidence that the country's la-

bor minister, Theo Thanophanous, had raped a woman years before. The story contained quotes from the supposed victim, who was not named in the story (Bolt, 2010). The story quickly spread and the public and legislature demanded an investigation. The mere accusation of rape proved fatal to Thanophanous' career, and he announced his resignation prior to the ensuing police investigation. Although his formal charges and the investigation were dismissed two months later, Thanophanous remained entirely out of the political arena, stating "I do not wish to make this the center of my life but I think that unless we learn something from it, it is bound to be repeated to the detriment of other individuals and families" (Holmes, 2010). The smear from an accusation stemming from one dishonest individual with poor intentions was enough to permanently blot out his role in Australian politics (Bolt, 2010).

Cultivation

According to Bandura (2002), it is important to consider the role media play in society as symbolic communication influences thought and affects action. Not only are people reactive, but they also are "self-organizing," "proactive," and "self-reflective" (p. 121). Thus, it is important to consider how individuals act within social systems, such as online networking systems. One theory to explain the pervasiveness online political rumor is *cultivation theory*, developed by George Gerbner in the mid-1960s. Cultivation theory holds that heavy media users are more likely to see the "real world" in terms of the images, values, portrayals, and ideologies that emerge through the lens of media (Morgan, Shanahan, & Signorielli, 2009). Through this

process, mass media shapes the audience member's conceptions of social reality, making reality a mixture of all the stories and images the viewer has absorbed. The effect on a person's perception of reality is a consequence of the aggregate of messages presented by media outlets, not any one story or image in particular. Cultivation theory focuses on the consequences of long-term exposure to the consistent images, portrayals, and values embedded in the whole system of messages (Morgan et al., 2009). Although little research has been conducted to determine the cultivating effects of social media, it has a growing significance as a media outlet. It could reinforce the messages disseminated by traditional news outlets, enhancing the consequences of the long-term exposure to its messages.

To state it simply, cultivation theory is the belief that "media cultivates our social reality; what we watch influences how we see the world" (Roskos-Ewoldesen, Davies, & Roskos-Ewoldesen, 2004). This cultivating process is circular and mutually reinforcing: the media influence how the public perceives culture and culture influences what the media cover. The level of media usage is a chief indicator of how drastically the media will affect a person's perception of reality. Heavy media users have been shown to more readily adopt the worldviews presented consistently to them (Morgan et al., 2009). Consequently, heavy and light users in the same demographic groups many display significantly different conceptions of reality.

Social Media & Cultivation. Although cultivation theory originated with television, it is applicable to social media. The predominant themes and rumors that circulate on the Internet could have the same cultivating effect on political beliefs and attitudes, especially among heavy us-

ers (Morgan et al., 2009). Shrum (1997) argued that people don't consider the source of information when making reality judgments; instead, they use images heuristically to readily make mental judgments. Although few studies have been conducted to determine the cultivating effects of social media, the concise nature of the messages on social networks may prove effective in heuristic decision-making. It is reasonable to speculate that heavy social media users will eventually begin to adopt some of the political beliefs and leanings of the members of their social networks. North (2011) applied cultivation theory to social media and found that social media can cultivate brand effects, trust, and loyalty. Of note, North also found that age and time spent on social media channels had an positive effect on brand loyalty and trust. However, the relationship between brand trust and increased time spent on social media was found to be negative; a discrepancy that indicates mediated messages may have a saturation point on social media. Additionally, Xenos and Moy (2007) found Internet usage, age and education level to have direct effects on recall of basic political information as well as political engagement.

According to Slater (2007), the attitudinal or behavioral outcomes of media can be expected to influence selection of and attention to media content. This process can cultivate the maintenance of social identity, including political groups. Television may be the primary storyteller in American politics, but with the rapid expansion and presence of social media, its reign as such may be nearing an end. However, even if this is the case, the Internet may only serve as a means to expand the dominance of media corporations by encouraging individuals to visit their own

websites, further reinforcing the cultivation of worldviews that is taking place through the television screen (Morgan et al., 2009). Seeing the same information posted in different arenas by one's friends or family could serve to enhance and deepen the cultivating effects. During a normal timeframe, a user will see a variety of posts, images and messages on a variety of topics. However, during the political season, the many users not only post their own political opinions, but also share the posts of others. Many social media postings are simply information that was first gathered from a traditional media source, or from an Internet news outlet (Rainie & Smith, 2012). As people increase their time on and usage of Facebook, users can become inundated with these messages. This type of framework cultivates specific attitudes, dependent upon their own information seeking and their processing of the heuristic cues presented in their timelines (Morgan et al., 2009).

Facebook and Addiction. As individuals around the globe have adopted social media sites as a primary conduit for communication, the nature of Facebook has been likened to addiction. From a psychological perspective, heavy Facebook use not only cultivates perspectives, but it also can rewire brains. Research has indicated that heavy users of social media experience greater amounts of envy and dissatisfaction than lighter users (Buxmann & Krasnova, 2013), as well as have frontal cortexes that appear fundamentally different from light users of the site (Franceschi-Bicchierai, 2012; Walton, 2012). Additionally, studies have found that Internet addicts have a 10-20% smaller brain area responsible for speech, memory, motor control, emotion, sensory, and other information. The more times spent

online, the greater the atrophy in this area became (Yuan et al., 2011; Zhou et al., 2011). In fact, the addiction to the Internet is a recognized psychological disorder, and it has been estimated that as much as 30% of teens could be considered Internet-addicted (Walton, 2012). Since 2000, attention spans of American teens have decreased 40%, ADHD has increased 60%, screen time has increase 104%, and multitasking has increased 221% (Franceschi-Bicchierai, 2012; Woodard & Gridina, 2000).

Because of these alarming statistics, scholars have taken great interest in the level of interaction with and addiction to Facebook. In recent years, Andreasson, Torshiem, Brunborg, and Pallesen (2012) proposed a reliable Facebook addiction scale, an 18-question survey aimed at evaluating an individual's "addiction" to Facebook based on six factors: salience, mood modification, tolerance, withdrawal, conflict, and relapse.

Research Question

Previous research has shown that social networking sites, Facebook in particular, have the ability to foster civic engagement, mobilize voters, increase political participation and influence voter behavior (Bond et al., 2012; McClurg, 2006; Shirky, 2011; Zhang et al., 2010). However, these effects vary dramatically from user to user. In an age where political knowledge and information-seeking are low, it is vital for the information that the public sees regarding politics be truthful and informative. In order to understand the effectiveness of Facebook as a means of political communication, it must be determined what factors influence the processing of heuristic cues to cultivate an individual's political framework. Factors such as how a

person uses Facebook, the level of “addiction” a person exhibits (Andreasson et al., 2012), and their gullibility to information spread through social media (i.e. level of information seeking) correlate to cultivate the spread of political rumors prevalent on the social network (Debatin et al., 2009). Thus, the following research question and hypotheses were made:

RQ1: How do people use Facebook for political purposes?

RQ2: Do people with higher Facebook addiction make political posts more frequently than others?

RQ3: Do people with higher gullibility to online political rumor make political posts more frequently than others?

As Xenos and Moy (2007) found, age and Internet usage have direct effects on recall of basic political information as well as political engagement. In order to examine how social media influences a person’s processing of heuristic cues to cultivate specific frameworks, the following hypotheses were posited:

H1: As a person ages, they will be less addicted to Facebook.

H2: As a person ages, they will be less gullible to political rumor.

H3: Individuals who have high social media consumption will be more gullible to online political rumor.

Finally, the following were posited to examine the interaction of the main variables:

H4: Individuals with higher Facebook addition will be more gullible to online political rumor.

RQ4: Does age mediate the interaction effect of Facebook addiction on gullibility to online political rumor?

Methodology

To measure the influence of the Facebook usage and addiction on voters' gullibility to believing online rumors, the researchers created a web-based survey. After obtaining appropriate Institutional Review Board approvals from the researchers' university, the online survey was sent to 10% of usable faculty, staff, and student addresses at the researchers' university. Data gathering occurred exactly one month prior to the national election and continued through Election Day. Additionally, researchers posted the survey link on social media including Facebook, Twitter, LinkedIn, and Craigslist in order to have a more representative sample. Researchers encouraged participants to share the survey link with others in their social networks.

Upon receiving the email, recipients were directed to a website where they completed the questionnaire. Participants responded anonymously to closed and open-ended questions about a number of issues related to their traditional and general social media use, Facebook use and frequency, political knowledge, and basic demographic information. Additionally, participants were asked about their awareness of political rumors and their feelings toward the truthfulness of these rumors. Those who completed the questionnaire were offered the chance to win 1 of 15, \$20 Amazon gift cards in exchange for their participation. Gift card recipients were randomly selected from completed survey responses.

The survey instrument measured both political knowledge and social media use. One section of the survey focused on respondents' use of Facebook for general and political information. Participants also were asked about

their Facebook “friends” use of the social media site for political activity.

Respondent Profile

A total of 487 participants completed the survey. This represented a response rate of 19.5% in terms of the estimated number of original emails sent. However, this rate may be skewed as participants were encouraged to share the survey link within their social networks. Sixty percent of respondents were female, and 55.4% were currently in college. As for education, participants were asked to indicate the highest degree received, where 12.5% has a high school degree, 35.5% had completed some college, 11.2% had an associate or trade degree, 20.6% had a bachelor’s degree and 20.1% had a graduate degree. The majority of the participants were White, non-Hispanic (83.5%), 3.1% were African-American, 1.5% were Hispanic, 1.6% were Asian-American, 0.5% Pacific Islander, 3.4% Native American, and 5.5% indicated “other,” including mixed race or “multicultural.” Sixteen percent of participants were aged 18-20, 41.1% were ages 21-29, 12.8% were ages 30-39, 11.3% were ages 40-49, 11.8% were ages 50-59, and 7.1% were older than 60 years. (Political party affiliation of participants is discussed in the results section.)

Variable Definitions

Several variables were used to understand social media usage and gullibility to online rumor. A brief discussion of each variable follows.

Facebook Addiction. In order to determine a potential correlation of Facebook usage to rumor gullibility, researchers used Andreasson et al.’s (2012) scale to measure

the Facebook addiction level of survey respondents. The section required students to respond to directional statements dealing with participants' frequency of use and reliance on Facebook, as well as provided space for open-ended explanations and comments.

Gullibility to Online Political Rumor. After answering the 18 Facebook addiction questions, respondents were asked to evaluate the truthfulness of 20 statements, which ranged in truthfulness from being completely true to completely false. All statements were adapted from rumors and true statements that circulated across social networking sites during the 2012 presidential campaign. Selected rumors had been deemed true or false by the fact checking organization, PolitiFact✓.org. This online source uses a "Truth-O-Meter" to rate the accuracy of political statements, including comments that are mostly true, half true and mostly false. Rumors selected for this study also varied in their level of accuracy with some obviously rumor and others seemingly true. The included rumors were selected to give equal rumor representation to both candidates. First, respondents were asked about exposure to the 20 online rumors, 10 for each presidential nominee. Respondents were asked to evaluate the truthfulness of the 20 statements on a 5-point Likert scale, ranging in truthfulness from being "Completely True" (5 points) to "Completely False" (1 point). The responses were then rescored to create a 5-point gullibility scale, where the more gullible the participant was to the rumor (i.e. the further a participant was away from the correct answer), the higher the score they received.

Facebook Usage. In order to gauge the amount of time that participants were engaged with Facebook, the

Facebook Intensity Scale was used (Ellison et al., 2007). This scale, which has been found to interact with measuring psychological well-being consists of eight questions that examine the number of friends a person has online, the amount of time on Facebook per day, and how people feel when they interact with Facebook.

Political Engagement on Facebook. The authors also examined how people used Facebook for political purposes. Participants were asked how often they posted their political opinions, what types of post (for or against a candidate they liked and didn't like), whether they commented on political posts, and how many people they had unfriended because of political posts.

Candidate Preferred. The authors divided this variable into five categories: Romney, Obama, Other, None, and Undecided.

Political Party Affiliation. This variable was composed of five different groups: Democrat, Republican, Independent, Other, and None.

Political Ideology. Since many people do not strongly identify with any particular party, the authors examined participant's political ideologies. This variable was measured via a 7-point Likert-type scale. The value of "1" matched "strongly liberal"; "2" equaled "moderately liberal"; "3" was "slightly liberal"; "4" was "neutral"; "5" was "slightly conservative"; "6" matched "moderately conservative"; and "7" equaled "strongly conservative."

Results

When asked about politics, 30.3% of respondents reported the 2012 election was their first. Roughly a third (33.9%) of participants categorized themselves as Democ-

rats, 43.6% considered themselves Republicans, 15.5% considered themselves Independent, 3.7% did not select a political category, and 3.3% selected “other.” In terms of ideology, however, only 8.5% were very liberal, 20.9% were liberal, 32.2% of participants were moderate, 30.6% were conservative, and 7.9% were very conservative. When asked whom they were intending to vote for, the population—much like the country itself—was equally divided. Although 13.7% of people were unsure about whom they were voting for, choosing not to vote, or for someone else, 43.6% intended to vote for Romney, and 42.8% intended to vote for Obama.

When asked about social media usage, 12.3% of participants reported having less than 50 friends, 8.5% had 51-100 Facebook friends, 18.2% had 101-250 Facebook friends, 23.4% had 251-500 Facebook friends, 22.2% had 501-1,000 friends, and 15.5% had more than 1,000 Facebook friends. The majority of participants indicated that they spend less than 2 hours a day on Facebook—28.6% at <30 minutes, 26.5% at 31-60 minutes, and 21.5% at 1-2 hours—13.0% spent 3-4 hours per day on Facebook, and 10.4% indicated spending more than 5 hours per day on Facebook.

When asked about political engagement on Facebook, 48.4% of participants indicated they never posted their political opinions, 26.7% indicated they posted political opinions less than once a week, 5.6% indicated they posted their political opinions once a week, 9.1% indicated they posted every couple of days, 4.8% indicated once a day and 5.4% indicated they posted multiple times per day. In terms of their reaction to political posts, 66.0% in-

Table 1
Age differences in Facebook Addiction and Gullibility to Rumor

	<u>Addiction</u>			<u>Gullibility</u>		
	μ	SD	p	μ	SD	p
Age						
18-20	1.900	0.773	0.001	2.44	0.289	0.048
21-29	1.850	0.768		2.47	0.307	
30-39	1.840	0.834		2.33	0.361	
40-49	1.590	0.612		2.41	0.612	
50-59	1.410	0.397		2.31	0.295	
60+	1.380	0.574		2.43	0.345	

indicated they have never unfriended people because of a political post, 17.8% have unfriended 1-2 people, 7.7% have unfriended 3-4 people because of political posts, and 8.5% have unfriended more than seven people because of a political post, thus answering RQ1.

Additionally, when examining how Facebook addiction level plays in political posting patterns, an independent sample t-test indicated no significant difference ($t(444) = -.327, p > .241$) in those with low ($\mu = 2.09, SD = 1.45$) or high ($\mu = 2.14, SD = 1.51$) Facebook addiction on how often people posted their political opinions. Thus, the level of Facebook addiction does not affect how often people make political postings, answering RQ2.

When examining how the level of gullibility to

online political rumor plays into political posting patterns, an independent sample *t*-test indicated significant differences ($t(381) = 2.047, p < .041$) between those with high gullibility ($\mu = 2.25, SD = 1.53$) and low gullibility ($\mu = 1.95, SD = 1.40$). This indicated that those with high gullibility to online political rumors posted opinions about politics more often than those with low gullibility. Thus, answering RQ3.

Next, the authors tested H1, which expected that as people age, they become less addicted to Facebook. Levels of Facebook addiction were analyzed by running a one-way ANOVA. Results (see Table 1) indicate significant differences between groups ($F(5, 347) = 4.632, p < .001$). Those aged 18-20 had the highest level of addiction ($\mu = 1.90, SD = .773$), followed by ages 21-29 ($\mu = 1.85, SD = .768$), ages 30-39 ($\mu = 1.84, SD = .834$), ages 40-49 ($\mu = 1.59, SD = .612$), ages 50-59 ($\mu = 1.41, SD = .397$), and ages 60 and older ($\mu = 1.38, SD = .574$) with the lowest level of addiction. Specifically, Tukey's HSD indicated those aged 18-20 and 21-29 had a Facebook addiction level that was significantly greater than those ages 50-59 and 60 and older, thus supporting H1.

Next, the authors tested H2, which expected as people age, they become less gullible to online political rumor. Levels of gullibility were analyzed by running a one-way ANOVA. Results indicate significant differences between groups ($F(5, 304) = 2.264, p < .048$). Those aged 21-29 ($\mu = 2.47, SD = .307$) had the highest level of gullibility to online political rumor, followed by ages 18-20 ($\mu = 2.44, SD = .289$), ages 40-49 ($\mu = 2.41, SD = .612$), ages 30-39 ($\mu = 2.33, SD = .361$), ages 50-59 ($\mu = 2.31, SD = .295$), and ages

60 and older ($\mu = 2.43$, $SD = .345$). Younger age groups tended to have higher levels of gullibility, thus partially supporting H2. See Table 1 for a more detailed breakdown of ages and levels of gullibility to political rumor.

The authors then tested H3 to determine if high social media consumption cultivated gullibility to online political rumor. Social media usage of participants was categorized into either a low and high category. From there, a t-test examining the effect that social media consumption had on gullibility to online political rumor was run. Results indicated significant differences between groups ($t(381) = -2.197$, $p < .029$), where those with low social media usage ($\mu = 2.39$, $SD = .309$) had a significantly lower level of gullibility to online rumor than those who had high social media usage ($\mu = 2.46$, $SD = .313$). Thus, social media exposure is shown to be able to cultivate gullibility to online rumor—the more you see a rumor, the more you are likely to believe the rumor, and H3 is supported.

Next, a simple linear regression was conducted to examine the relationship between the Facebook addiction scale and the gullibility to online political rumor, as posited in H4. Participants Facebook addiction level significantly predicted the level of gullibility to online political rumor ($F(1,351) = 20.801$, $p < .001$), with an $R^2 = .056$, where as Facebook addiction rises, so does gullibility to online political rumor ($\beta = .104$). Upon further analysis (when Facebook addiction was re-categorized into low and high), an independent sample t-test found significant differences between the groups ($t(351) = -3.834$, $p < .001$), where those with low Facebook addiction ($\mu = 2.36$, $SD = .298$) had a lower gullibility to online political rumor

than those with high Facebook addiction ($\mu = 2.49$, $SD = .312$), supporting H4.

Finally, RQ4 examined whether age played a role in the interaction of Facebook addiction and gullibility to online rumor. General Linear Modeling (GLM) indicated that although age played a factor in both Facebook addiction and gullibility, when the two interacted, it did not ($F(5, 285) = .900$, $p < .482$), answering RQ4.

Discussion

By definition, social networks emerge when people carry on discussions and form personal relationships in cyberspace. Social networking sites encourage the formation of political opinions by allowing dissemination of political information with “followers” and “friends” (Shirky, 2012). Indeed, with over a billion members, Facebook provides a fertile environment for political discussion. In this study, researchers found that high Facebook addiction correlates with the gullibility of subjects to Internet rumors.

When asked about political engagement on Facebook, over half (51.6%) the participants indicated that they post political opinions online. Rates varied from less than one post per week (5.6%) to multiple posts per day (5.4%). Despite variation in posting frequencies, most participants indicated that they share their political views online with others in their social networks. Although there were no significant differences between Facebook addiction levels and posting patterns, researchers did find significant differences between gullibility levels and posting patterns. Subjects with high levels of gullibility to political rumor were significantly more likely to post political opinion and

information. This supports Garrett's (2011) findings that email rumors in the 2008 campaign functioned as a reinforcing spiral. The more political rumors an individual received, the more rumors they believed; and the more rumors they believed, the more rumors they shared. Thus, the posting and reposting of information by individuals most gullible to political rumor may help to spread the rumors themselves.

Although this study did not test the types of political information shared by participants, previous research indicates that the most vocal political voices are often those who are the most politically active (Loader & Mercea, 2011). Thus, the process of sharing political information with others online may promote political extremism and intensify political division (Garrett, 2011). Most of the participants in this study (66.0%) indicated that they have not "unfriended" someone because of political comments. However, it is interesting to note that 34.0% of respondents indicated "unfriending" one or more Facebook friends due to the content of their political posts. The act of "unfriending" those with opposing views may attribute to the tendency to expose oneself to only political information that supports one's beliefs. Thus, the individualistic nature of social networking sites is reinforced. Furthermore, some political discourse, especially if extreme, may risk turning voters off to the political process.

Although voters don't always trust social media sites, many indicate that they serve as an important source for political information. Moreover, previous research indicates that young voters often turn to social media for political information more than any other group (Rainie & Smith, 2012; Zhang et al., 2009). Unfortunately,

online political information is not always accurate. In the current study, findings revealed that younger voters were significantly more addicted to Facebook. Additionally, younger voters also were significantly more gullible to political rumor. Since young voters often turn to social networks to serve as “conduits” of political information versus mere “consumers,” the researchers find these results particularly troubling.

To determine if high social media consumption cultivated gullibility to online political rumor, researchers categorized social media use into high or low usage levels. Results indicated those with low social media use had significantly lower levels of gullibility and, conversely, those with high social media use had significantly higher levels of gullibility. This finding goes back to the concept of cultivation in that, the more people see media online that is supporting their own ideology—regardless if it is true or not—the more their belief in their own ideology is supported, and the more they are likely to share that ideology or belief system with others. To further explore this relationship, researchers also compared the Facebook addiction scale and gullibility to online political rumor. Findings revealed that as Facebook addiction rises, so does gullibility. Thus, the concepts of cultivation are once again supported—the more time one spends with Facebook, the more likely he or she is to believe online political rumors.

Findings may add to our understanding of the potential for social media to impact political discourse. Applying cultivation theory, researchers found that high media use correlated with rumor gullibility. However, the study is limited, as it did not explicitly measure cultivation effects. Future research may want to explore cultiva-

tion theory and its relationship to social media use. Additionally, it is possible that sensational political content may spread at a faster and greater rate. It is possible that some political rumors started before the general election period and/or persisted well beyond the election season. The reposting of political content may give the rumor longevity not measured by this study. Future research should investigate subjects' likelihood to repost and share political rumors. The study also was limited to the general election. Future researchers should follow political rumor content over time. Furthermore, this study was limited to online communication; interpersonal relationships with off-line family and friends likely impact political decision-making. Off-line conversations may reinforce or dispute online political rumors. Additionally, this study did not address Facebook users' ability to "hide" friends' posts or the concept that some may avoid the site altogether during the peak of the election season.

Despite limitations, the results of this study are of value. Although most voters do not share every political rumor they are exposed to on social media sites, they may share some political rumors. Without checking the accuracy of online political information, voters may share erroneous information. During political elections, the damage that erroneous information could cause once it goes viral could be significant. In fact, messages that political candidates make could also be misconstrued and misinterpreted in the process. Just in the childhood game of "telephone" the message may be altered each time it is passed. Candidates must be more aware of their messages and how they frame them, so that things are not taken out of context

and rumors spread. Moreover, individualistic political predispositions may be spread and political biases may be reinforced. As cultivation would suggest, heavy users are more likely see specific types of messages and reinforce them, especially if the messages are shared by people with the same ideology and networks. Individuals are often friends with like-minded people, and thus more likely to see messages that support their own belief system.

Results suggest that heavy Facebook users are more likely to believe the political rumors that are posed online. If this is the case, they may also be more likely to believe the message their friends post because it is coming from a source that is trusted and like-minded. When messages are not congruent with their own belief system, users will likely unfriend, unfollow, or block messages that cultivate another ideology without checking to see if the messages, posts, and media are true or not. Thus, perhaps this explains why heavy users after more gullible to online rumor—they are seeing more messages from people they trust, and likely seeing a consistent ideology in them. Not only can high social media use influence the way voters attend to political content, but it also may influence how they share political information. Indeed, voters with high social media use may experience a skewed political reality.

References

- Andreassen, C. S., Torshiem, T., Brunborg, G. S., & Pallesen, S. (2012). Development of a Facebook addiction scale. *Psychological Reports* 11(2), 501-17.

- Bandura, A. (2002). Social cognitive theory of mass communication. In J. Bryant and D. Zillmann, *Media Effects: Advances in Theory and Research*. Lawrence Erlbaum Associates: Mahwah, NJ, 121-154.
- Bennett, W. L. (2012). The personalization of politics: Political identity, social media, and changing patterns of participation." *The Annals of the American Academy of Political and Social Science*, 644, 20-39.
- Bolt, A. (2010). Story shame for The Age. *Herald Sun*. Retrieved February 26, 2013, from <http://www.heraldsun.com.au/opinion/story-shame-for-the-age/story-e6frfhqf-1225898683702>
- Bond, R. M., Fariss, C. J., Jones, J. J., Kramer, A., Marlow, C., Settle, J., & Fowler. J. (2012). A 61-million-person experiment in social influence and political mobilization. *Nature*, 489, 295-98.
- Brandtzaeg, P. B., Luders, M., & Skjetne, J. H. (2010). Too many Facebook "friends"? Content sharing and sociability versus the need for privacy in social network sites. *International Journal of Human-Computer Interaction*, 26(11-12), 1006-030.
- Buxmann, P., & Krasnova, H. (2013, January 21). *Facebook makes users envious and dissatisfied*. Retrieved from http://www.tu-darmstadt.de/vorbeischauen/aktuell/ni_63808.en.jsp
- Carpenter, J., Green, M., & LaFlam, J. (2011). People or profiles: individual differences in online social networking use. *Personality and Individual Differences*, 50, 538-541.
- DiGrazia, J., McKelvey, K., Bollen, J., & Rojas, F. (2013). More tweets, more votes: Social media as a quantitative indicator of political behavior. *PLoS ONE*, 8(11): e79449. Doi: 10.1371/journal.pone.0079449
- Debatin, B., Lovejoy, J., Horn, A., & Hughes, B. (2009). Facebook and online privacy: Attitudes, behaviors, and unin-

- tended consequences. *Journal of Computer-Mediated Communication*, 15, 83-108.
- Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends": Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication*, 12(4), 1143-168.
- Fitzgerald, B. (2012). Most popular sites 2012: Alexa ranks the 500 most-visited websites. *The Huffington Post*. Retrieved from http://www.huffingtonpost.com/2012/08/09/most-popular-sites-2012-alexa_n_1761365.html
- Franceschi-Bicchierai, L. (2012, November 03). How is facebook addiction affecting our minds?. Retrieved from <http://mashable.com/2012/11/03/facebook-addiction/>
- Garrett, R. K. (2011). Troubling consequences of online political rumoring. *Human Communication Research*, 37(2), 255-274.
- Herther, N. K. (2011). All the news that's fit to post. Or is it? *Searcher*, 19(5), 20-28.
- Holmes, J. (2010). Media watch: Accusations and reputations (02/08/2010). *ABC Media Watch*. Retrieved February 26, 2013, from <http://www.abc.net.au/mediawatch/transcripts/s2971299.htm>
- Jackson, B., Kiely, E., & Gore, D. (2012). Fact Check. *FactCheck.org*. Retrieved from <http://factcheck.org/ask-factcheck/>
- Kerbel, M. R., & Bloom, J. D. (2005). Blog for America and civic involvement, *The Harvard International Journal of Press/Politics*, 10(4), 3-27.
- Loader, B., & Mercea, D. (2011). Networking democracy?. *Information, Communication & Society*, 14(6), 757-769.
- McClurg, S. D. (2006). The electoral relevance of political talk: Examining disagreement and expertise effects in social networks on political participation. *American Journal of Political Science*, 50(3), 737-754.

- Mikkleson, B., & Mikkleson, D. (2012). Mitt Romney: I can relate to black people. *Snopes*. Retrieved from <http://www.snopes.com/politics/romney/blackcommunity.asp>
- Morgan, M., Shanahan, J., & Signorielli, N. (2009). Growing up with television: Cultivation processes. In J. Bryant & M.B. Oliver (Eds.) *Media effects: Advances in theory and research, 3rd ed.* (pp. 34-49). New York: Routledge.
- North, N. S. (2011). *Social media's role in branding: A study of social media use and the cultivation of brand affect, trust, and loyalty*. Master's Thesis: University of Texas, Austin, TX.
- Ortutay, B. (2012). Facebook tops 1 billion users. *Associated Press*. Retrieved from <http://www.usatoday.com/story/tech/2012/10/04/facebook-tops-1-billion-users/1612613/>
- Price, T. (2012). Social media and politics. *CQ Researcher*, 22 (36), 865-888.
- Rainie, L., & Smith, A. (2012). Politics on social networking sites. *Pew Internet & American Life Project*. Retrieved from <http://pewinternet.org/Reports/2012/Politics-on-SNS.aspx>
- Rainie, L., Smith, A., Schlozman, K. L., Brady, H., & Verba, S. (2012). Social media and political engagement. Retrieved from http://pewinternet.org/~media/Files/Reports/2012/PIP_SocialMediaAndPoliticalEngagement_PDF.pdf
- Roskos-Ewoldsen, B., Davies, J., & Roskos-Ewoldsen, D. R. (2004). Implications of the mental models approach for cultivation theory. *Communications*, 29, 345-363.
- Ross, C., Orr, E. S., Sisic, M., Arseneault, J. M., Simmering, M., & Orr, R. (2009). Personality and motivations associated with Facebook use. *Computers in Human Behavior*, 25 (2), 578-86.
- Semiatin, R. (2012). *Campaigns on the cutting edge*. (2nd ed.). Washington DC: Sage.
- Shirky, C. (2011). The political power of social media. *Foreign Affairs*, 90(1), 28-41.

- Shrum, L. (1997). The role of source confusion in cultivation effects may depend on procession strategy: A comment on Mares (1996). *Human Communication Research*, 24, 349-358.
- Slater, M. D. (2007). Reinforcing spirals: The mutual influence of media selectivity and media effects and their impact on individual and social identity. *Communication Theory*, 17(3), 281-303.
- Smith, A. & Rainie, L. (2008). The Internet and the 2008 election. *Pew Internet & American Life Project*. Retrieved from <http://www.pewinternet.org/Reports/2008/The-Internet-and-the-2008-Election/01-Summary-of-Findings.aspx>
- Walton, A. G. (2012). Internet addiction shows up in the brain. Retrieved from <http://www.forbes.com/sites/alicegwalton/2012/01/17/internet-addiction-shows-up-in-the-brain/>
- Walton, A. G. (2012). Internet addiction is the new mental disorder. Retrieved from <http://www.forbes.com/sites/alicegwalton/2012/10/02/the-new-mental-health-disorder-internet-addiction/>
- Williams, C. B. & Gulati, G.J. (2007). Social networks in political campaigns: Facebook and the 2006 midterm elections. *American Political Science Association*, 1-24.
- Wood, S. (1990). Television's first political spot ad campaign: Eisenhower answers America. *Presidential Studies Quarterly*, 20(2), 265-283.
- Woodard, E. H., & Gridina, N. (2000). Media in the home. Retrieved from http://www.annenbergpublicpolicycenter.org/Downloads/Media_and_Developing_Child/mediasurvey/survey7.pdf
- Xenos, M., & Moy, P. (2007). Direct and differential effects of the internet on political and civic engagement. *Journal of communication*, 57(4), 704-718.

- Yuan, K., Qin, W., Wang, G., Zeng, F., Zhao, L., Yang, X., ... Tian, J. (2011) Microstructure abnormalities in adolescents with Internet Addiction Disorder. *PLoS ONE* 6 (6): e20708. doi:10.1371/journal.pone.0020708
- Zhang, W., Johnson, T. J., Seltzer, T. & Bichard, S.L. (2010). The revolution will be networked: The influence of social networking sites on political attitudes and behavior. *Social Science Computer Review*, 28(1), 75-92.
- Zhou, Y., Lin, F., Du, Y. S., Qin, L. D., Zhao, Z. M., Xu, J. R., & Lei, H. (2011). Gray matter abnormalities in Internet addiction: A voxel-based morphometry study. *European Journal of Radiology*, 79(1), 92-95.