Computers in Human Behavior 61 (2016) 136–145

Contents lists available at ScienceDirect

Computers in Human Behavior

journal homepage: www.elsevier.com/locate/comphumbeh

Full length article

Some like it lots: The influence of interactivity and reliance on credibility

Thomas J. Johnson [a, *], Barbara K. Kaye [b]

[a] University of Texas, Austin, TX 78712, USA
[b] University of Tennessee, Knoxville, TN 37996, USA

ARTICLE INFO

Article history:
Received 31 October 2015
Received in revised form
1 March 2016
Accepted 2 March 2016
Available online 14 March 2016

Keywords:
Credibility
Interactivity
Social media
Mobile news

ABSTRACT

This study has four primary purposes: to investigate the level of interactivity with 15 sources of political information, determine the degree of reliance on each of the sources, assess perceptions of credibility, and compare the strength of interactivity to the strength of reliance on judgments of credibility. This study includes sources that have received little attention in the credibility literature such as social network sites, Twitter, and mobile device applications. Respondents interact with and rely on the sources moderately. Credibility ratings range from moderate to highly credible. Reliance predicts credibility of 14 of 15 sources as compared to interactivity that predicts credibility of just 9 of 15 sources. Interactivity with sources that are inherently collaborative (e.g. Twitter, social media, talk radio) more strongly predicts credibility than interactivity with sources that are more source-to-user based (e.g. CNN, political websites).

1. Introduction

Interactivity is the hallmark of the Internet. It has transformed news delivery. Information consumers are no longer passive receivers but are also active providers of news. Interactive technology greatly expands the communication feedback loop from handwritten letters of support or complaint to an editor to the establishment of online conversation communities that include consumer-created websites and blogs (van Dijk, 1999). The interactive world is abuzz with trillions of bits of information gushing from digital devices and blurring the distinction between partisan and nonpartisan sources and between news and opinion, making it difficult to discern credible information from questionable statements.

Early Internet studies tied interactivity to perceptions of credibility (e.g. Fogg et al., 2001, 2003), but interactivity was later set apart from credibility. With the recent arrival of highly interactive social media, scholars are once again discussing the relationship between interactivity and credibility (Hilligoss & Rieh, 2008; Sundar, 2008).

This study furthers knowledge by exploring the effect of interactivity (a user-based measure of communication mediated by digital technology), on credibility (the degree to which users trust and believe online information). It also compares the influence of interactivity to the influence of reliance (importance of a medium to a user) on perceptions of credibility. This study examines 15 sources of informational, including traditional media, social media, nontraditional partisan sources and traditional partisan sources. The study also covers new ground by including mobile news apps. The findings are based on 1267 responses to a survey that was linked on Mechanical Turk (MTurk), Amazon's crowdsourcing site.

The 15 sources of political information examined in this study are categorized as follows:

Traditional media: newspapers, news magazines, broadcast television news, CNN, MSNBC, and news radio, and their online counterparts.

Social media: social network sites, Twitter, YouTube, mobile news apps.

Nontraditional partisan sources: political websites, political blogs, and candidate blogs.

Traditional partisan sources: Fox News and talk radio.

2. Literature review

2.1. Credibility and systematic and heuristic information processing

Assessments of media credibility are made through both

* Corresponding author.
E-mail addresses: Tom.johnson@austin.utexas.edu (T.J. Johnson), bkk@utk.edu (B.K. Kaye).

http://dx.doi.org/10.1016/j.chb.2016.03.012
0747-5632/

systematic and heuristic information processing (Hilligoss & Rieh, 2008; Metzger, 2007; Metzger & Flanagin, 2013, 2015; Metzger, Flanagin, & Medders, 2010; Sundar, 2008). Systematic information processing is the deliberate or rational act of verifying information, such as by contacting experts or comparing several sources, whereas heuristic processing is based on attitudinal or emotional cues such as feelings about a medium's appearance, how much a source is valued, or whether information accords with personal viewpoints. Whether judgments of credibility are made systematically or heuristically depends on experience with a medium, cognitive ability to evaluate media and media messages, and whether users are seeking factual information or opinion (Hilligoss & Rieh, 2008; Metzger & Flanagin, 2013). For example, when looking for accurate information online, such as about a medical condition, systematic processing dominates the assessment of credibility, whereas heuristics guide attitudinal or emotional assessments, such as how much credence to put in a blog post that critiques an art show. While some scholars criticize heuristics as surface determinants of credibility, others have noted that heuristic processing eases the cognitive burden of assessing credibility of large amounts of information, such as found on the Internet (Gigerenzer & Todd, 1999; Metzger & Flanagin, 2013).

Several sub-categories of heuristics explain why different types of information might be judged differently. The reputation heuristic, for example, could explain why some individuals might judge sources that they recognize or perceive as authoritative, such as the *New York Times*, as highly credible (Gigerenzer & Todd, 1999; Hilligoss & Rieh, 2008; Metzger & Flanagin, 2013). While news consumers are likely to rate sources they recognize as more credible than those they are less familiar with, familiarity itself does not lead to high credibility. For instance, though some liberals might watch Fox News, they still believe it is untrustworthy. The self-confirmation heuristic, the tendency to believe information that aligns with pre-existing beliefs and dismiss challenging information, could explain why traditional and nontraditional partisan sites might be judged as highly credible (Metzger et al., 2010; Metzger & Flanagin, 2013). Information that accords with personal beliefs is considered accurate (Fischer, Jonas, Frey, & Schulz-Hardt, 2005; Nimmo, 1990), and personally relevant (Donsbach, 1991; Lau, 1989), and therefore more credible than information that challenges beliefs. The endorsement heuristic boosts credibility because consumers are more likely to trust and believe sources that are recommended by friends, 'liked' on social media, or that are supported aggregated testimonials, reviews or ratings (Chaiken, 1987; Metzger et al., 2010; Metzger & Flanagin, 2013).

2.2. Genre credibility

Early studies of online credibility focused on the Internet as a whole (e.g., Flanagin & Metzger, 2000; Johnson & Kaye, 1998, 2000b, 2002; Kiousis, 2001), rather than on its separate components (e.g., web, email, blogs). As new components were created, researchers recognized the importance of studying the credibility of each as its own genre, rather than as an indistinct part of the Internet (Flanagin & Metzger, 2007; Johnson & Kaye, 2004, 2009, 2014, 2015; Westerman, Spence, & Van Der Heide, 2012). Internet components are different from one another in terms of interactivity, synchronicity, how information is retrieved, how they are used, and users' expectations, so each genre is judged differently and by different criteria (Flanagin & Metzger, 2008; Metzger, Flanagin, Eyal, Lemus, & McCann, 2003; Johnson & Kaye, 2009).

2.3. Perceptions of credibility

Traditional media sources and their online counterparts rate only moderately credible and scores have dropped considerably. In 2001, 58 percent of respondents judged most or all of online information reliable compared to 40 percent in 2011 (Center for the Digital Future, 2011).

There are several reasons for why credibility ratings of traditional news are in a free fall, but one factor is the increasing reliance on traditional and nontraditional partisan media like Fox News, and political party and candidate-hosted websites and blogs. These partisan sources are reputed to provide in-depth and multi-faceted discussions, run stories that are ignored or are unavailable on non-partisan media (Johnson & Kaye, 2006, 2009; Kaye & Johnson, 2004, 2011; Kushin & Yamamoto, 2010), and give authors freedom to venture from flat, unexciting, formulated prose (Center for the Digital Future, 2011; Rainie & Horrigan, 2007), all of which increase credibility of partisan information at the expense of non-partisan, traditional sources. For example, partisan websites and blogs are judged as more credible than non-partisan online newspapers (Johnson & Kaye, 2010) and online broadcast television news (Johnson & Kaye, 2004, 2006, 2009; Kaye & Johnson, 2011).

Even social media rate low on credibility (Go, You, Jung, & Shim, 2016; Johnson & Kaye, 2014, 2015; Westerman et al., 2012). Social media might not be considered very credible because users struggle with how to judge diverse and unfamiliar sources of dubious origin and strangers who are "friends" only in the social media sense (Hanson, Haridakis, Cunningham, Sharma, & Ponder, 2010; Kushin & Yamamoto, 2010).

Based on previous credibility research, this study asks the following question:

RQ1. How credible do Internet users judge each of the 15 sources of political information?

2.4. Interactivity

While scholars agree about the importance of interactivity, they have difficulty agreeing on what interactivity means (e.g. Atkinson, 2008; Heeter, 1989; Kiousis, 2002; Rafaeli, 1988). Interactivity is commonly defined as a characteristic inherent in the technology itself or in the process of communicating (Kiousis, 2002). This definition is problematic, however, because it needs to be redefined as technology changes, and because it ignores that users interact with both technology and with other users (Bucy & Tao, 2007). Scholars, therefore, are redefining interactivity from an audience perspective (e.g. Bucy, 2004; McMillan & Hwang, 2002), which is advantageous because it focuses on uses of the technology, rather than the technology itself. For instance, users might perceive a communication environment as highly interactive even if it has only a few mechanisms for interacting. In other words, they perceive that a component affords more interactivity than it actually does (Bucy, 2004; Bucy & Newhagen, 1999). By focusing on an audience-based measure, researchers can explore how much users interact with a medium rather than simply how many interactive elements the medium possesses (Bucy & Newhagen, 1999).

2.5. Interactivity and digital content

Interactivity has had a major role in bridging the gap between political news consumers, legislators, and reporters. The old top-down approach where traditional media produced and delivered news to a passive audience has been supplemented with a bottom-up approach where digital technologies empower the audience as active participants in content creation, distribution, and consumption of information (Atkinson, 2008; Bowman & Willis, 2003). Moreover, users are encouraged to interact with or customize stories, contact reporters, and express their opinions about political

events through discussion boards, blogs, and social media (Chung, 2008; Chung & Yoo, 2008; Pendry & Savatore, 2015). These interactive resources bring users closer together and create a new type of news community (Chung, 2008). Interactivity also provides psychological benefits, such as heightening users' sense of political self-efficacy, the belief they can influence the political system (Bucy, 2005).

This study furthers the investigation about audience-based interactivity by asking the following research question:

RQ2. How interactive are respondents on each of the 15 online sources of political information?

2.6. Interactivity and credibility

The level of interactivity with online content, along with either systematic or heuristic processing, often determines credibility. For instance, interactions and discussions with trusted friends and experts help determine if a site offers credible information (Metzger et al., 2010). Interactivity also gives users a sense of control over what information they access and how they access it, which in turn leads to positive assessment of a source (Bucy, 2004).

Traditionally delivered media offer few opportunities for interactivity beyond letters to the editor or calling a radio talk show host and many have been slow to create highly interactive websites, thus they rely on their offline brand reputation for credibility to extend to the online world (Chung, Nam, & Stefanone, 2012; Johnson & Kaye, 2009; Kim, 2012). Other less established or well-known sources, such as some blogs and political websites, build credibility by interacting with their users. These sources take a bottom-up approach by linking to information they perceive their users will judge as reputable and by encouraging users to interact with the producers and with each other (Bowman & Willis, 2003; Kim, 2012).

Although high interactivity often coincides with high credibility ratings, interactivity does not always influence credibility of some types of media such as blogs (Chung et al., 2012; Kim, 2012). Interactivity also failed to influence credibility of mainstream, independent, and aggregator news sites (Chung et al., 2012).

While in some cases interactivity influences judgments of credibility, results are mixed about its strength of influence and what media it influences. Therefore, this study asks the following question:

RQ3. How well does interactivity of online versions of each of the 15 sources predict credibility of these sources after controlling for demographic and political variables?

2.7. Reliance

While “media use” is a fundamental concept in mass communication research, scholars have yet to agree on the best way to measure it. This study gauges media reliance as an attitude, how much consumers psychologically depend on information to learn about their social, cultural, and political worlds (Becker & Whitney, 1980; Miller & Reese, 1982). The more important a medium is to consumers and the more heavily they rely on it, the more influential it becomes to them (Ball-Rokeach, 1985, 1998). Media reliance differs from media use (e.g. how often a certain medium is used), which is a behavior (Beaudoin & Thorson, 2004; Johnson & Kaye, 2002, 2010, 2015; Rimmer & Weaver, 1987). Further, media reliance is a stronger predictor of political attitudes than media use (Johnson & Kaye, 2000a, 2000b).

Reliance is strongly linked to credibility of traditional media (Carter & Greenberg, 1965; Greenberg, 1966; Wanta & Hu, 1994) and their online counterparts (Greer, 2003; Johnson & Kaye, 1998, 2000b), social media (Johnson & Kaye, 2014), as well as partisan sources such as blogs and political websites (Banning & Trammell, 2006; Johnson & Kaye, 2004, 2010). The relationship between reliance and credibility is circular. That is, the more people rely on a source, the more credible they judge it, and the more satisfaction they gain from a source, the more they rely on it (Johnson & Kaye, 2000b; Stavrositu & Sundar, 2008; Wanta & Hu, 1994). Reliance is an important predictor of credibility because the more experience users have with a medium the stronger their ability to judge its credibility (Johnson & Kaye, 2004, 2009).

When looking at specific sources, social media sites are rated as more credible by regular followers than less frequent users because they are better able to navigate through the thicket of status updates, wall posts, and group pages to find trustworthy information (Johnson & Kaye, 2014). Also, the more heavily users rely on political blogs and political sites the more credible they rate them (Banning & Trammell, 2006; Johnson & Kaye, 2004, 2006, 2009, 2010).

Further, partisan pundits on Fox News and talk radio preach to the true believers of their cause, so the partisan audience that relies heavily on these sources perceives them as highly credible. Reliance on partisan sources is such a strong predictor of credibility because experienced partisan news consumers are able to differentiate between sources that support and oppose their issues (Stroud & Lee, 2013).

Reliance has consistently predicted credibility of both traditional and partisan media. Although reliance does not always predict credibility of online *entertainment* sources it is a predictor of credibility of online *news* sources (Stavrositu & Sundar, 2008). Therefore, this study advances the following research questions and hypotheses:

RQ4. How heavily do Internet users rely on each of the 15 sources of political information?

H1. Reliance on traditional non-partisan media predicts credibility of these sources after controlling for demographic and political variables.

H2. Reliance on social media predicts credibility of these sources after controlling for demographic and political variables.

H3. Reliance on nontraditional partisan sources predicts credibility of these sources after controlling for demographic and political variables.

H4. Reliance on traditional partisan sources predicts credibility of these sources after controlling for demographic and political variables.

RQ5. Will interactivity or reliance be the strongest significant predictor of credibility of political news sources?

3. Method

A survey was posted online using Amazon's Mechanical Turk (MTurk)[1], an online crowdsourcing system. The survey was

[1] Mechanical Turk (MTurk) is an ideal way to collect survey data because it provides a large participant pool and efficient process of collecting data. Although some researchers may have doubts about the quality of data, several studies have found that data are reliable. For example, MTurk participants are demographically diverse, compensation does not affect data quality, and data are least as reliable at those collected by more traditional means (Buhrmester et al., 2011). Moreover, “the quality of data provided by MTurk met or exceeded the psychometric standards associate with published research” (Buhrmester et al., 2011, p. 5).

available for completion from October 30 to November 13, 2012 (the two-week period surrounding the presidential election day). MTurk respondents who opted to complete the survey were directed to an outside survey site. All respondents are anonymous and each was compensated $.50 per completed survey. The survey was accessed by 1937 individuals and yielded 1267 completions (65.4%).

3.1. Study variables

3.1.1. Credibility

Credibility is measured as a multidimensional construct consisting of believability, fairness, and accuracy. These three measures have consistently emerged as reliable variables that gauge media credibility (Gaziano & McGrath, 1986; Metzger et al., 2003; Newhagen & Nass, 1989). Respondents were asked their perceptions of credibility of political information found on 15 sources: traditional non-partisan media (traditionally delivered newspapers, news magazines, broadcast television news, CNN, MSNBC, news radio and their online counterparts), social media (social network sites, Twitter, YouTube, mobile news applications), nontraditional partisan media (political websites, political blogs, and candidate blogs), and traditional partisan sources (Fox News, talk radio and their online counterparts). Respondents indicated on a 1–5 point scale the believability, fairness and accuracy of each source, with 1 indicating not at all believable/fair/accurate to 5 indicating very believable/fair/accurate.

3.1.2. Reliance

Reliance on the 15 sources of political information was assessed using a five-point scale: 1) never rely, 2) rarely rely, 3) sometimes rely, 4) rely, 5) heavily rely.

3.1.3. Interactivity

Respondents were asked their level of interactivity with the online versions of each of the 15 sources. The options were; 1) Never interact (just read/listen/watch, never send in comments or links), 2) Low interaction (mostly read/listen/watch, rarely send in comments or links), 3) Sometimes interact (sometimes send in comments or links), 4) High interaction (often send in comments or links), 5) Very high interaction (very often send in comments or links).

3.1.4. Political attributes

Respondents marked their levels of political knowledge, political interest, and strength of political party ties on a 1–10 scale. Political ideology was measured on a five-point scale with the following options; 1) very liberal, 2) liberal, 3) moderate, 4) conservative, 5) very conservative.

Self-efficacy and trust were assessed using a five-point scale that ranged from 1) strongly disagree to 5) strongly agree. The measures were taken from the Craig, Niemi, and Silver (1990) study that examined the validity and reliability of efficacy and trust items used in the 1987 National Election Studies pilot study.

Self-efficacy is comprised of the following six statements: “I consider myself well qualified to participate in politics,” “I feel that I have a pretty good understanding of the important political issues facing our country,” “I feel I could do as good of a job in public office as most other people,” “I think that I am better informed about politics and government than most people,” “Other people seem to have an easier time understanding complicated issues than I do,” “I often don't feel sure of myself when talking with other people about politics and government.” The polarity was reversed on the last two statements.

Trust in the government was assessed by the following items: “Most government officials try to serve the public interest, even if it is against their personal interests; ” “When government leaders make statements to the American people on television or in the newspapers, they are usually telling the truth; ” “Those we elected to public office usually try to keep the promises they have made during the election; ” “Most of the people running our government are well-qualified to handle the problems that we are facing in this country; ” “It often seems like our government is run by a few big interests looking out for themselves rather than being run for the benefit of the people; ” “Unless we keep a close watch on them, many of our elected leaders will look out for special interests rather than for all the people; ” “Quite a few of the people running our government are not as honest as the voters have a right to expect.” The polarity was reversed on the last three statements. The trust and efficacy measures were combined into separate self-efficacy and trust indices. Reliability for the self-efficacy index is .82, for trust it is .88.

3.1.5. Demographics

Respondents were asked their gender, age as of their last birthday, and estimated income for 2012. They also selected their highest level of education from a list that ranged from “less than high school” to “terminal degree,” such as Ph.D., M.D., J.D.

3.2. Data analysis

Frequencies and means were run on all of the variables (credibility, reliance, interactivity, political attitudes, and demographics). Next, using principal components analysis with varimax rotation, the 15 sources were categorized into four factors based on credibility ratings.

Each source was assigned to a particular factor if the primary loading was greater than .40, as recommended for more than 400 responses (Stevens, 1986).

The factor analysis yielded the following categorizations: Factor 1 Credibility of Non-Partisan Traditional Media (newspapers, broadcast television news, news magazines, CNN, MSNBC, news radio; Eigenvalue 5.90, Variance Explained 39.3%), Factor 2 Credibility of Social Media (Twitter, SNS, YouTube, mobile applications; Eigenvalue 2.50 Variance Explained 16.7%), Factor 3 Credibility of Nontraditional Partisan Sources (political sites, political blogs, candidate blogs; Eigenvalue 1.34, Variance Explained 8.9%), and Factor 4 Credibility of Traditional Partisan Media (Fox News, talk radio; Eigenvalue 1.11, Variance Explained 7.4%). A summated index was created for each of the credibility factors by combining the individual variables for each factor. Reliability scores range from .558 to .890. Additionally, in Factor 4, Fox News and talk radio are significantly and moderately correlated ($r = .39$, $p < .05$). Cronbach's alpha for each factor can be found in Table 1.

A set of hierarchical regressions was run to ascertain whether interactivity and reliance predicts perceptions of credibility of each of the sources. One of the credibility factors was the dependent variable for each of the regressions. The independent variables were entered with demographics in the first block followed by the political variables (political knowledge, political interest, political ideology, strength of party ties, trust and efficacy) in the second block. Interactivity or reliance with each of the sources was entered in the third block.

4. Results

4.1. Respondent profile

The ratio of male to female respondents was 51.7%–48.3% ($n = 1267$). The vast majority (87.0%) of respondents attended

Table 1
Credibility factors.

(70.5% variance explained)	
F1 (**Credibility traditional media) eigenvalue 5.90 - variance explained 39.3%, reliability .890**	
Newspapers	.871
Broadcast television news	.842
News magazines	.843
CNN	.790
MSNBC	.742
News radio	.648
F2 **(Credibility social media) eigenvalue 2.50-variance explained 16.7%, reliability .841**	
Twitter	.898
Social network sites	.844
Youtube	.816
Applications	.585
F3 **(Credibility nontraditional partisan sources) eigenvalue 1.34 - variance explained 8.9%, reliability .871**	
Political websites	.867
Political blogs	.840
Candidate blogs	.726
F4 **(Credibility traditional partisan sources) eigenvalue 1.11 - variance explained 7.4%, reliability .558**	
Fox news	.777
Talk radio	.770

college or earned a bachelor's degree or higher. They earned on average $47,400 in 2012 and were about 34 years of age. These results are in line with a recent Pew Internet study that suggests that males are slightly more likely to engage in civic activities than females, as are those who are highly educated with moderate incomes (Smith, 2013).

Respondents are not very trusting of the government ($M = 19.5$, range = 8–40) but they are moderately self-efficacious ($M = 21.4$, range = 6–30). Just over one-third (35.6%) express little trust, 59.8% is moderately trusting and only 4.6% is highly trusting. In contrast, slightly more than one-half of those surveyed (52.2%) are highly self-efficacious, 43.1% moderate, and 4.7% feels powerless in the face of the government.

Just over one-half (55.1%) of the respondents consider themselves very knowledgeable about politics ($M = 6.38$, range 1–10), and almost the same percentage (57.1%) expressed a high interest in politics ($M = 6.53$, range 1–10). Slightly less than one-quarter (21.1%) of respondents are politically conservative/very conservative, 30.4% moderate, and 48.5% liberal/very liberal. Respondents are also moderately tied to their political party of choice ($M = 5.8$, range 1–10).

4.2. Hypotheses and research questions

The first research question asked how credible Internet users judge each of the 15 sources of political information. Newspapers (print and online) are the most credible source of political information ($M = 9.60$, range 3–15) followed by news magazines ($M = 9.06$), broadcast television ($M = 8.95$) and CNN ($M = 8.93$). Fox News ($M = 6.82$), Twitter ($M = 6.87$), and candidate blogs ($M = 7.05$) are rated the lowest in credibility. This study is one of the first to examine credibility of political information on mobile apps. Respondents perceive apps as moderately credible ($M = 7.42$).

The second research question asked, "How interactive are respondents on each of the 15 online sources of political information?" Respondents are somewhat interactive with all of the sources. Users are most interactive with social network sites ($M = 2.64$, range 1–5) and Twitter ($M = 2.02$), and least interactive with Fox News ($M = 1.66$), news magazines ($M = 1.66$), news radio ($M = 1.64$), and talk radio ($M = 1.63$). Interactivity on mobile apps is also somewhat low ($M = 1.75$).

The study next asks, "How well does interactivity of online versions of the 15 sources of information predict credibility of these sources after controlling for demographic and political variables?" The more users interact with CNN online the more highly they judge the credibility of Factor 1 traditional non-partisan sources ($\beta = .11$, $p < .05$). High levels of interactivity with social network sites ($\beta = .13$, $p < .01$), Twitter ($\beta = .23$, $p < .001$), YouTube ($\beta = .17$, $p < .001$), and mobile applications ($\beta = .19$, $p < .001$) predicts high credibility ratings of the Factor 2 social media sources. Interactivity on general political sites ($\beta = .14$, $p < .01$) and candidate blogs ($\beta = .17$, $p < .001$) also positively predict credibility as does interactivity with Fox News ($\beta = .24$, $p < .001$) and talk radio ($\beta = .17$, $p < .001$). Overall, interactivity is a moderately strong predictor of credibility of sources that are innately interactive such as social media, political websites, candidate blogs and talk radio (Table 2).

The study now turns attention to the relationship between source reliance and credibility by asking, "How heavily do Internet users rely on each of the 15 sources of political information?" The investigation begins with the research question that asks how heavily respondents rely on each of the 15 sources of political information. Broadcast television ($M = 2.86$), newspapers ($M = 2.74$), and social network sites ($M = 2.57$), are the most heavily relied on media for political information (range = 1–5). Conversely, smart phone apps ($M = 1.97$), Twitter ($M = 2.01$), candidate blogs ($M = 2.03$), and Fox News ($M = 2.03$) are the least relied on for political information.

The next set of hypotheses tests the relationship between reliance and credibility, after controlling for demographics and political attitudes. The first hypothesis claims that reliance on nonpartisan traditional sources (Factor 1) positively predicts credibility of those sources. The hypothesis is supported with all media except news radio. The more heavily users rely on CNN ($\beta = .19$, $p < .001$), broadcast television news ($\beta = .17$, $p < .001$), MSNBC ($\beta = .11$, $p < .001$), newspapers ($\beta = .12$, $p < .01$) and magazines ($\beta = .08$, $p < .05$), the more highly they judge the credibility of these sources (Table 3).

The study next hypothesizes that reliance on social media (Factor 2) predicts credibility of social media. H2 is supported for all social media. Strong reliance on SNS ($\beta = .23$, $p < .001$), YouTube ($\beta = .21$, $p < .001$), Twitter ($\beta = .19$, $p < .001$), and mobile applications ($\beta = .17$, $p < .001$) leads to high credibility of social media sources (Table 3).

The third hypothesis states that reliance on nontraditional partisan sources (Factor 3) predicts high credibility of those sources. H3 is supported in all cases. Reliance on candidate blogs ($\beta = .23$, $p < .001$), political blogs ($\beta = .19$, $p < .001$), and political sites ($\beta = .12$, $p < .001$) predicts high ratings of credibility (Table 3).

The last hypothesis asserts a positive connection between reliance on traditional partisan news sources (Factor 4) and perceptions of credibility. Specifically, H4 hypothesizes that "reliance on traditional partisan sources predicts credibility of these sources." H4 is supported with both reliance on Fox News ($\beta = .48$, $p < .001$) and talk radio ($\beta = .24$, $p < .001$) predicting high credibility of these two sources. Moreover, reliance on these two sources is the strongest predictor of credibility (Table 3).

Lastly, the fifth research question asks, "Will interactivity or reliance be the strongest significant predictor of credibility of political news sources?" Reliance is the strongest predictor with 14 of 15 sources predicting credibility. In contrast, interactivity predicts credibility of only 9 of 15 sources.

5. Discussion

Interactivity is a defining characteristic of the Internet.

Table 2
Hierarchical regression analysis of predictors of credibility factors of political sources.

	Traditional media cred. factor 1	Social media cred. factor 2	Non-traditional partisan cred. factor 3	Traditional partisan cred. factor 4
Predictor variables				
Gender	.13***	.08**	.16***	.12***
Age	−.00	−.02	−.15***	.01
Education	−.02	−.04	−.06	.01
Income	.07*	−.05	.02	.04
R2	**.021**	**.034**	**.042**	**.010**
Sig.	**.005**	**.000**	**.000**	**.086**
Political knowledge	−.09	.06	.13*	−.12*
Political interest	.10	−.07	.06	.05
Strength of party ties	−.01	−.04	−.02	.03
Political Ideology	−.21***	−.02	−.02	.38***
Efficacy	.13*	.03	.03	.01
Trust	.21***	.13***	.24***	.15***
R2	**.147**	**.090**	**.191**	**.241**
R2 change	**.126**	**.056**	**.149**	**.230**
Sig. of change	**.000**	**.000**	**.000**	**.000**
Interact newspapers online	.02			
Interact news mags online	.04			
Interact broadcast TV news online	.02			
Interact CNN online	.11*			
Interact MSNBC online	.05			
Interact news radio online	−.05			
Interact SNS		.13**		
Interact Twitter		.23***		
Interact YouTube		.17***		
Interact apps		.19***		
Interact political sites			.14**	
Interact political blogs			.03	
Interact candidate blogs			.17***	
Interact fox news online				.24***
Interact talk radio online				.17***
R2	**.179**	**.364**	**.275**	**.360**
R2 change	**.032**	**.274**	**.084**	**.119**
Adjusted R	**.160**	**.353**	**.263**	**.350**
Sig. of change	**.000**	**.000**	**.000**	**.000**

*p < .05, **p < .01, ***p < .001.

Interactive tools give information consumers the technological capability of becoming information producers and a way to communicate with information creators. Early Internet credibility studies included interactivity as a measure of credibility (e.g. Fogg et al., 2001, 2003) but with the arrival of online news sources attention shifted from interactivity and toward content as a determination of credibility. Interest in interactivity as an integral element of credibility has reemerged with the arrival of highly interactive sources such as social media. These new ways of communicating have also spurred the development of new models for explaining how perceptions of credibility are formed (Hilligoss & Rieh, 2008; Sundar, 2008).

This study has four primary purposes: 1) assess perceptions of credibility; 2 investigate levels of interactivity; 3) determine degree of reliance on each of the 15 sources of political information; 4) compare the strength of interactivity to the strength of reliance on judgments of credibility. The results are based on an online survey completed by 1267 respondents during the two-week period before and after the 2012 presidential election.

5.1. Credibility

Credibility is often thought of as the most important feature of any news medium. The more consumers trust and believe in a medium the more influence it has on their worldview and the more importance it has it their daily life. In the highly competitive media market of today in which traditional media are often thought of as out of touch and less trustworthy in comparison to their digital competitors, this study found the opposite. Traditional non-partisan media are judged the most credible genre, taking the top six spots. Newspapers are considered the most credible medium followed by news magazines, broadcast television news, CNN, news radio and MSNBC. These findings demonstrate that brand reputation is an important criterion in determining credibility (Flanagin & Metzger, 2008; Kim, 2012). Newspapers, broadcast television news and the longest established cable channel, CNN, have strong reputations for accurate and unbiased news coverage (Pew Research, 2011).

The three least credible sources are either new to the communication landscape (Twitter) or are reputed to present news from a partisan perspective (Fox News and candidate blogs). On the surface Twitter may appear to be a credible source, particularly because ordinary citizens use it to break big stories such as the dramatic emergency landing of the US Airways flight into the Hudson River and the terrorist attacks in Mumbai (Harlow & Johnson, 2011; Hermida, 2010), and to mobilize activists, such as during the Arab Spring (Eltantawy & Wiest, 2011). But Twitter's successes mask factors that keep it from emerging as a credible source of news. The 140-character count does not allow for in-depth exploration of political issues, only about 23 percent of online users regularly access it (Duggan, Ellison, Lampe, Lenhart, & Madden, 2015), and about 8 in 10 tweets are personal rather than news oriented. Television, film, sports, and music are the most common topics on Twitter, with little talk about politics

Table 3
Hierarchical regression analysis of predictors of credibility factors of political sources.

	Traditional media cred. factor 1	Social media cred. factor 2	Non-traditional partisan cred. factor 3	Traditional partisan cred. factor 4
Predictor variables				
Gender	.10**	.07*	.16***	.10***
Age	−.03	.02	−.12***	−.03
Education	.02	−.04	−.05	.03
Income	.02	−.04	.01	.01
R2	**.034**	**.031**	**.054**	**.012**
Sig.	**.000**	**.000**	**.000**	**.014**
Political knowledge	−.09	.02	.06	−.12**
Political interest	.02	−.02	.02	−.02
Strength of party ties	.00	−.03	−.02	.02
Political ideology	−.17***	−.03	.02	.17***
Efficacy	.05	.00	−.02	.02
Trust	.14***	.11***	.23***	.11***
R2	**.155**	**.069**	**.187**	**.245**
R2 change	**.121**	**.038**	**.133**	**.233**
Sig. of change	**.000**	**.000**	**.000**	**.000**
Rely newspapers	.12**			
Rely news magazines	.08*			
Rely broadcast TV news	.17***			
Rely CNN	.19***			
Rely MSNBC	.11***			
Rely news radio	.03			
Rely SNS		.23***		
Rely Twitter		.19***		
Rely YouTube		21***		
Rely apps		.17***		
Rely political sites			.12***	
Rely political blogs			.19***	
Rely candidate blogs			.23***	
Rely fox news				.48***
Rely talk radio				.24***
R2	**.348**	**.411**	**.348**	**.524**
R2 change	**.193**	**.342**	**.161**	**.278**
Adjusted R	**.337**	**.402**	**.340**	**.518**
Sig. of change	**.000**	**.000**	**.000**	**.000**

*p < .05, **p < .01, ***p < .001.

(Brandwatch, 2013).

Fox News and candidate blogs rate low in credibility presumably because they are known as one-sided sources that push a particular political agenda. Although other studies (Fischer et al., 2005; Nimmo, 1990) have found that news consumers generally judge sources that they believe reflect their own values and opinions as highly credible, perceptions of credibility also depend on perceptions of fairness and balance (Gaziano & McGrath, 1986; Metzger et al., 2003; Newhagen & Nass, 1989).

5.2. Interactivity

Interactivity demarcates 'old' media from 'new' media, and it is touted as a tool that empowers active participation in the political news cycle. Although interactivity creates bonds and communities and is generally regarded as a positive aspect of online news, this study's respondents do not take full advantage of interactive features. As would be expected, users are most interactive on social media. After all, a medium cannot be 'social' without interactivity. But even so, levels of interactivity are moderate at best, and a bit lower for the other media genres.

The low/moderate level of interactivity could be explained by the lack of enticing interactive features, preference for receiving rather than sending information, or by the lack of interest in interacting. It takes energy to interact and if users just want to be entertained or are seeking information they may not feel like interacting but instead just want receive political news (Sundar, 2008). These results parallel findings by Bucy (2004) that moderate interactivity may be the optimum level to encourage increased civic engagement, knowledge gain, user satisfaction and self-efficacy. High levels of interactivity might overwhelm the user and lead to irritation, frustration, and feelings of information overload.

5.3. Reliance

Media reliance is closely tied to perceptions of credibility. Users more strongly rely on media they deem the most credible. Indeed, this study found that not only are the traditional news media perceived as the most credible they are also relied on the most heavily for political information. Respondents rely moderately on each of the sources with broadcast television news the heaviest relied on and news apps as the least relied on source for political information. Divisions between the genres are not as sharp with reliance as with credibility. Although broadcast news and newspapers are most heavily relied on, social network sites are next in line, followed by CNN, and two nontraditional partisan sites (political websites and political blogs).

That social network sites are almost as strongly relied on as broadcast television news and newspapers for political information bolsters other studies that found users value the opinions of 'friends' almost as much, and often more highly, than political experts or journalists (Metzger et al., 2010; Metzger & Flanagin, 2013).

5.4. Interactivity and reliance as predictors of credibility

This study also examined how significantly interactivity and reliance influence judgments of credibility. Interactivity is a moderate predictor of credibility with 9 of 15 relationships statistically significant. This finding could be attributed to respondents interacting only moderately with each of the sources. Source-to-user media that are not inherently interactive (online versions of newspapers, news magazines, broadcast television news, radio news, and broadcast television news) are not predictive of credibility, whereas sources that are inherently interactive and collaborative (social media, political sites, candidate blogs, talk radio) are the ones that predict credibility. Political blogs, however, are an exception. Although political blogs usually represent a partisan ideology, those hosting these blogs might not be well known or perceived as having as high political cache', thus credibility is influenced less by interactivity than by other markers, such as brand reputation, as for example, established by blogs hosted by political candidates.

Interactivity with both CNN and Fox News websites predicts credibility but interactivity with MSNBC online is not a predictor. Cable news shows are well known for encouraging viewers to express their opinions via their website, blogs, and social media, and anchors often relate and discuss viewers' comments during the televised segments. It follows, then that interactivity on the news site would predict high credibility of cable news, but it is unclear as to why interactivity on MSNBC's website is not a predictor of credibility.

This is perhaps the first study that has examined how interactivity on mobile applications affects credibility. Most users will not download a mobile application unless they are familiar with the source, like the source, and feel it is worth paying for, if it is not free (Project for Excellence in Journalism, 2012). Because users are already positively predisposed to a source before they download it, it follows that interactivity with mobile applications would lead to perceptions of high credibility. Indeed, this study found that interactivity on mobile apps is a predictor of credibility of social media.

This study also investigated reliance is as a predictor of credibility. Reliance is a positive and significant predictor of credibility of 14 of 15 sources, all except news radio. The finding about news radio is inconsistent with the knowledge that reliance has long been a predictor of credibility (Carter & Greenberg, 1965; Greenberg, 1966; Wanta & Hu, 1994).

This also study offers an uncharted look at the relationship between reliance on mobile applications and credibility. Mobile apps are not very heavily relied on for political information.

This finding supports a study that discovered an “app gap” in which smartphones users are more likely to rely on other digital news sources (Mitchell & Rosenstiel, 2012). While that may be true, this study found that reliance on mobile applications is a positive predictor of credibility. Reliance on mobile apps leads to perceptions of high credibility presumably for the same reasons as interactivity - apps provide easy access to sources that people *already* perceive as credible.

Overall, this is one of the first studies to explore the influence of both reliance and interactivity on credibility at a time when users of digital information sources are increasingly becoming both producers and consumers of political news. Moreover, this is one of the first studies to investigate levels of interactivity of mobile news apps and to find that reliance and interactivity on mobile applications have a strong positive influence on credibility. This study also adds to the body of knowledge by demonstrating that reliance continues to be a very strong influence on perceptions of credibility. No matter how radically digital and interactive media have changed the consumer/provider relationship, reliance on a medium is still key when assessing credibility, but interactivity is poised to some day rival that influence.

6. Limitations and suggestions for future study

Data from this study were collected from Mechanical Turk. The profile MTurk users resembles the general online population and data are at least as reliable as those collected by more traditional means (Buhrmester, Kwang, & Gosling, 2011). Indeed, this study's demographic profile is similar to recent studies of online civic engagement in terms of gender, income and race, but not age or education (Smith, 2013)[2]. But while researchers increasingly put their faith in Mechanical Turk to create a representative sample of Internet users, it is still not a random sample thus generalization to the Internet population as a whole should be made with caution.

Additional research is needed for a fuller understanding of interactivity and how it affects credibility. Specifically, the measurement of interactivity needs more refinement. Some studies, including this one, consider interactivity as a perceptual variable and measures how people say they use the medium (Chung, 2008; Chung & Yoo, 2008; Kim, 2012). However, other studies explore characteristics of interactivity such as perceived control and responsiveness (Wu, 2005). Future studies might clarify where people access interactive information. People might have an easier time interacting on their computer than their small smartphone screen, which might affect interactivity scores. Moreover, more work is needed to determine whether interactivity is best measured as a predictor of credibility (as done in this study) or whether it is best understood as an element of credibility (e.g., Fogg et al., 2001, 2003). Future studies should examine interactive capabilities and motivations to interact as antecedents to credibility.

[2] A Comparison of our MTurk sample with a study of politically engaged Internet users.

	MTurk survey	Pew demographics (2013)*
Gender		
Male	51.7	49.1
Female	48.3	50.3
($\chi^2 = .04$ ($df = 1$), $p < .84$).		
Age		
18–29	44.8	14.1
30–49	41.3	34.7
50–64	11.6	33.1
65+	2.3	12.1
($\chi^2 = 33.55$ ($df = 3$), $p < .001$).		
Education		
No college	12.7	33.5
Some college	38.2	28.0
College grad+	48.8	33.9
($\chi^2 = 14.71$ ($df = 2$), $p < .001$).		
Income		
Less than $30,000	49.1	46.6
30,000–49.999	22.4	22.5
50.000–74,999	17.6	13.9
+ = 75,000+	10.9	13.4
($\chi^2 = .69$ ($df = 3$), $p < .87$).		
Race		
White	78.8	76.0
African/American	7.8	12.6
Hispanic	4.4	14.6
($\chi^2 = 6.78$ ($df = 2$), $p < .03$).		

*Pew Internet displaces the percentages of users in each category. The average for Internet use is 85%. The authors divided the 85% average into the actual use percentage of that category and then multiplied it by census amounts. For instance, Hispanics account for 16.3% of the U.S. population. However, according to Pew 76% of Hispanics use the Internet. Dividing .85 into .76 and then multiplying that by the Hispanic population shows that Hispanics make up 14.6% of the Internet population.

Finally, this study was conducted during the height of the presidential election. Future studies might examine the relationships during off-election times to see if they still hold true.

References

Atkinson, J. D. (2008). Towards a model of interactivity in alternative media: a multilevel analysis of audiences and producers in a new social movement network. *Mass Communication & Society, 11*(3), 227–247.

Ball-Rokeach, S. J. (1985). The origins of individual media-system dependency: a sociological framework. *Communication Research, 12*, 485–510.

Ball-Rokeach, S. J. (1998). A theory of media power and a theory of media use: different stories, questions, and ways of thinking. *Mass Communication & Society, 1*(1), 5–40.

Banning, S. A., & Trammell, K. D. (2006, August). Revisiting the issue of blog credibility: a national survey. In *Paper presented at the annual conference at the association for education in journalism & mass communication* (San Francisco, CA).

Beaudoin, C. E., & Thorson, E. (2004). Testing the cognitive mediation model: the roles of news reliance and three gratifications. *Communication Research, 31*, 446–471.

Becker, L. B., & Whitney, D. C. (1980). Effects of media dependencies: audience assessment of government. *Communication Research, 7*(1), 95–120.

Bowman, S., & Willis, C. (2003). *We media: How audiences are shaping the future of news and information*. Reston, VA: The Media Center at the American Press Institute.

Brandwatch. (2013). *The Twitter landscape*. Retrieved from http://www.brandwatch.com/twitter-landscape/.

Bucy, E. P. (2004). Interactivity in society: locating an elusive concept. *The Information Society, 20*(5), 373–383.

Bucy, E. P. (2005). The media participation hypothesis. In M. S. McKinney, L. L. Kaid, D. G. Bystrom, & D. B. Carlin (Eds.), *Communicating politics: Engaging the public in democratic life* (pp. 107–122). New York: Peter Lang Publishing.

Bucy, E. P., & Newhagen, J. E. (1999). The emotional appropriateness heuristic: processing televised presidential reactions to the news. *Journal of Communication, 49*(4), 59–79.

Bucy, E. P., & Tao, C. C. (2007). The mediated moderation model of interactivity. *Media Psychology, 9*(3), 647–672.

Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk: a new sources of inexpensive, yet high-quality, data? *Perspectives on Psychological Science, 6*(3), 3–5.

Carter, R. F., & Greenberg, B. S. (1965). Newspapers or television: which do you believe? *Journalism Quarterly, 42*(1), 29–34.

Center for the Digital Future. (2011). *Digital future project 2011: Surveying the digital future year ten*. Los Angeles, CA: The USC Annenberg School Center for the Digital Future.

Chaiken, S. (1987). The heuristic model of persuasion. In M. P. Zanna, J. M. Olson, & C. P. Herman (Eds.), *Social influence: The Ontario symposium* (Vol. 5, pp. 3–39). Hillsdale, NJ: Erlbaum.

Chung, D. S. (2008). Interactive features of online newspapers: identifying patterns and predicting use of engaged readers. *Journal of Computer-Mediated Communication, 13*(3), 658–679.

Chung, C. J., Nam, Y., & Stefanone, M. A. (2012). Exploring online news credibility: the relative influence of traditional and technological factors. *Journal of Computer-Mediated Communication, 17*(2), 171–186.

Chung, D. S., & Yoo, C. Y. (2008). Audience motivations fur using interactive features: distinguishing use of different types of interactivity on an online newspaper. *Mass Communication & Society, 11*(4), 375–397.

Craig, S. C., Niemi, R. G., & Silver, G. E. (1990). Political efficacy and trust: a report on the NES pilot study items. *Political Behavior, 12*, 289–314.

van Dijk, J. (1999). *The network society: Social aspects of new media*. London: Sage.

Donsbach, W. (1991). Exposure to political content in newspapers: the impact of cognitive dissonance on reader's selectivity. *European Journal of Communication, 6*(2), 155–186.

Duggan, M., Ellison, N. B., Lampe, C., Lenhart, A., & Madden, M. (2015). *Social media update*. Retrieved from http://www.pewinternet.org/files/2015/01/PI_SocialMediaUpdate20144.pdf.

Eltantawy, N., & Wiest, J. B. (2011). Social media in the Egyptian revolution: reconsidering resource mobilization theory. *International Journal of Communication, 5*, 1207–1224. feature.

Fischer, P., Jonas, E., Frey, D., & Schulz-Hardt, S. (2005). Selective exposure to information: the impact of information limits. *European Journal of Social Psychology, 35*(4), 469–492.

Flanagin, A. J., & Metzger, M. J. (2000). Perceptions of Internet information credibility. *Journalism & Mass Communication Quarterly, 77*(3), 515–540.

Flanagin, A. J., & Metzger, M. J. (2007). The role of site features, user attributes, and information verification behaviors on the perceived credibility of web-based information. *New Media & Society, 9*(2), 319–342.

Flanagin, A. J., & Metzger, M. J. (2008). Digital media and youth: unparalleled opportunity and unprecedented responsibility. In M. Metzger, & A. Flanagin (Eds.), *Digital media, youth, and credibility* (pp. 5–27). MacArthur Foundation Series on Digital Media and Learning.

Fogg, B. J., Marshall, J., Laraki, O., Osipovich, A., Varma, C., Fang, N., et al. (2001). What makes Web sites credible? A report on a large quantitative study. In *Proceedings of SIGCHI'01, March 31-April 4, 2001, Seattle, WA, Usa*.

Fogg, B. J., Soohoo, C., Danielson, D. R., Marable, L., Stanford, J., & Tauber, E. R. (2003). How do users evaluate the credibility of Web sites? A study with over 2,500 participants. In *Paper presented at the ACM conference on designing for user experiences, San Francisco, CA*.

Gaziano, C., & McGrath, K. (1986). Measuring the concept of credibility. *Journalism Quarterly, 63*(3), 451–462.

Gigerenzer, G., & Todd, P. M. (1999). *Simple heuristics that make us smart*. New York: Oxford University Press.

Go, E., You, K. H., Jung, E., & Shim, H. (2016). Why do we use different types of websites and assign them different levels of credibility? Structural relations among users; motives, types of websites, information credibility, and trust in the press. *Computers in Human Behavior, 54*, 231–239.

Greenberg, B. S. (1966). Media use and believability: some multiple correlates. *Journalism Quarterly, 43*(4), 665–670.

Greer, J. D. (2003). Evaluating the credibility of online information: a test of source and advertising influence. *Mass Communication & Society, 6*(1), 11–28.

Hanson, G., Haridakis, P. M., Cunningham, A. W., Sharma, R., & Ponder, J. D. (2010). The 2008 presidential campaign: political cynicism in the age of Facebook, MySpace and YouTube. *Mass Communication & Society, 13*(5), 584–607.

Harlow, S., & Johnson, T. J. (2011). Overthrowing the protest paradigm? how *the New York Times*, Global Voices and Twitter covered the Egyptian revolution. *International Journal of Communication, 5*, 1359–1374. feature.

Heeter, C. (1989). Implications of new interactive technologies for conceptualizing communication. In J. L. Salvaggio, & J. Bryant (Eds.), *Media use in the information age* (pp. 217–235). Hillsdale, NJ: Lawrence Erlbaum Associates.

Hermida, A. (2010). Twittering the news: the emergence of ambient journalism. *Journalism Practice, 4*(3), 297–308.

Hilligoss, B., & Rieh, S. Y. (2008). Developing a unifying framework of credibility assessment: construct, heuristics, and interaction in context. *Information Processing & Management, 44*(4), 1467–1484.

Johnson, T. J., & Kaye, B. K. (1998). Cruising is believing? Comparing media and traditional sources on media credibility measures. *Journalism & Mass Communication Quarterly, 75*(2), 325–340.

Johnson, T. J., & Kaye, B. K. (2000a). Democracy's rebirth or demise? the influence of the internet on political attitudes. In D. A. Schultz (Ed.), *It's show time! Media, politics, and popular culture* (pp. 209–228). New York, NY: Peter Lang.

Johnson, T. J., & Kaye, B. K. (2000b). Using is believing: the influence of reliance on the credibility of online political information among politically interested Internet users. *Journalism & Mass Communication Quarterly, 77*(4), 865–879.

Johnson, T. J., & Kaye, B. K. (2002). Webelievability: a path model examining how convenience and reliance predict online credibility. *Journalism & Mass Communication Quarterly, 79*(3), 619–642.

Johnson, T. J., & Kaye, B. K. (2004). Wag the blog: how reliance on traditional media and the Internet influence perceptions of credibility of Weblogs among blog users. *Journalism & Mass Communication Quarterly, 81*(3), 622–642.

Johnson, T. J., & Kaye, B. K. (2006). Blog day afternoon: are blogs stealing audiences away from traditional media sources? In R. Berenger (Ed.), *Cybermedia go to war* (pp. 316–333). Spokane, WA: Marquette Books.

Johnson, T. J., & Kaye, B. K. (2009). In blog we trust? Deciphering credibility of components of the Internet among politically interested internet users. *Computers in Human Behavior, 25*(1), 175–182.

Johnson, T. J., & Kaye, B. K. (2010). Still cruising and believing: an analysis of online credibility across three presidential campaigns. *American Behavioral Scientist, 54*(1), 57–77.

Johnson, T. J., & Kaye, B. K. (2014). Credibility of social network sites for political information among politically interested internet users. *Journal of Computer-Mediated Communication, 19*(4), 957–974.

Johnson, T. J., & Kaye, B. K. (2015). Reasons to believe: influence of credibility on motivations for using social networks. *Computers in Human Behavior, 50*, 544–555.

Kaye, B. K., & Johnson, T. J. (2004). Weblogs as a source of information about the 2003 Iraq War. In R. D. Berenger (Ed.), *Global media goes to war: Role of news and entertainment media during the 2003 Iraq War* (pp. 291–301). Spokane, WA: Marquette Books.

Kaye, B. K., & Johnson, T. J. (2011). Hot diggity blog: a cluster analysis examining motivations and other factors for why people judge different types of blogs as credible. *Mass Communication & Society, 14*(2), 236–263.

Kim, D. (2012). Interacting is believing? Examining bottom-up credibility of blogs among politically interested Internet users. *Journal of Computer-Mediated Communication, 17*(4), 422–435.

Kiousis, S. (2001). Public trust or mistrust? Perceptions of media credibility in the information age. *Mass Communication & Society, 4*(4), 381–403.

Kiousis, S. (2002). Interactivity: a concept explication. *New Media & Society, 4*(3), 355–383.

Kushin, M. J., & Yamamoto, M. (2010). Did social media really matter? College students' use of online media and political decision making in the 2008 election. *Mass Communication & Society, 13*(5), 608–630.

Lau, R. R. (1989). Construct accessibility and electoral choice. *Political Behavior, 11*(1), 5–32.

McMillan, S. J., & Hwang, J.-S. (2002). Measures of perceived interactivity: an exploration of the role of direction of communication, user control, and time in shaping perceptions of interactivity. *Journal of Advertising, 31*(3), 29–42.

Metzger, M. J. (2007). Making sense of credibility on the Web: models for evaluating online information and recommendations for future research. *Journal of the*

American Society for Information Science and Technology, 58(13), 2078–2209.
Metzger, M. J., & Flanagin, A. J. (2013). Credibility and trust of information in online environments: the use of cognitive heuristics. *Journal of Pragmatics, 59*(2), 210–220.
Metzger, M. J., & Flanagin, A. J. (2015). Psychological approaches to credibility assessment Online. In S. S. Sundar (Ed.), *The handbook of the psychology of communication technology* (pp. 445–466). Malden, MA: John Wiley & Sons.
Metzger, M. J., Flanagin, A. J., Eyal, K., Lemus, D. R., & McCann, R. (2003). Credibility in the 21st century: integrating perspectives on source, message, and media credibility in the contemporary media environment. In P. Kalbfleisch (Ed.), *Communication yearbook, 27* pp. 293–335). Mahwah, NJ: Lawrence Erlbaum.
Metzger, M. J., Flanagin, A. J., & Medders, R. B. (2010). Social and heuristic approaches to credibility evaluation online. *Journal of Communication, 60*(3), 413–439.
Miller, M., & Reese, S. (1982). Media dependency as interaction: the effects of exposure and reliance on political efficacy and activity. *Communication Research, 9*(1), 227–248.
Mitchell, A., & Rosenstiel, T. (2012). *State of News Media 2012*. Washington DC: Pew Research Center.
Newhagen, J. E., & Nass, C. (1989). Differential criteria for evaluating credibility of newspapers and TV news. *Journalism Quarterly, 66*(2), 277–284.
Nimmo, D. (1990). Principles of information seeking in information processing: a preliminary political analysis. In S. Kraus (Ed.), *Mass communication and political information processing* (pp. 3–17). Hillsdale, NJ: Lawrence Erlbaum Associates.
Pendry, L. F., & Savatore, J. (2015). Individual and social benefits of online discussion forums. *Computers in Human Behavior, 50*, 211–220.
Pew Research Center. (2011). *Beyond red vs. blue: Political typology*. Retrieved from http://people-press.org/files/legacy-pdf/Beyond-Red-vs-Blue-The-Political-Typology.pdf.
Project for Excellence in Journalism. (2012). *The future of mobile news*. Retrieved from http://www.journalism.org/analysis_report/future_mobile_news.
Rafaeli, S. (1988). Interactivity: from new media to communication. In R. Hawkins, J. Wiemann, & S. Pingree (Eds.), *Advancing communication science: Merging mass and Interpersonal processes* (pp. 110–134). Newbury Park, CA: Sage.
Rainie, L., & Horrigan, J. (2007). *Election 2006 online*. Retrieved from http://pewinternet.org/Reports/2007/Election-2006-Online.aspx.
Rimmer, T., & Weaver, D. (1987). Different questions, different answers? Media use and media credibility. *Journalism Quarterly, 64*(1), 28–36, 44.
Smith, A. (2013). *Civic engagement in the digital age*. Retrieved from http://www.pewinternet.org/Reports/2013/Civic-Engagement/Main-Report/Part-1.aspx.
Stavrositu, C., & Sundar, S. S. (2008). If Internet credibility is so iffy, why the heavy use? The relationship between medium use and credibility. *CyberPsychology & Behavior, 11*(1), 65–68.
Stevens, J. (1986). *Applied multivariate statistics for the social sciences*. Hillsdale, NJ: Lawrence Erlbaum.
Stroud, N. J., & Lee, J. K. (2013). Perceptions of cable news credibility. *Mass Communication & Society, 16*(1), 67–88.
Sundar, S. (2008). The MAIN model: a heuristic approach to understanding technology effect on credibility. In M. Metzger, & A. Flanagin (Eds.), *Digital media, youth, and credibility* (pp. 73–100). Cambridge, MA: MIT Press.
Wanta, W., & Hu, Y. (1994). The effects of credibility, reliance, and exposure on media agenda-setting: a path analysis model. *Journalism Quarterly, 71*(1), 90–98.
Westerman, D., Spence, P. R., & Van Der Heide, B. (2012). A social network as information: the effect of system generated reports of connectedness on credibility of Twitter. *Computers in Human Behavior, 28*(1), 199–206.
Wu, G. (2005). The mediating role of perceived interactivity in the effect of actual interactivity on attitude toward the website. *Journal of Interactive Advertising, 5*(2). Retrieved from http://jiad.org/article61.html.