EFFECTIVE SPOKESPERSONS ON TWITTER:
EXPERIMENTING WITH HOW PROFILE GENDER & NETWORK SIZE IMPACT USER PERCEPTIONS OF CREDIBILITY AND SOCIAL ATTRACTION

A thesis presented to
the Faculty of the Graduate School
at the University of Missouri – Columbia

In Partial Fulfillment
of Requirement for the Degree

Master of Arts

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by

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MAY 2010

The undersigned, appointed by the dean of the Graduate School, have examined the thesis entitled

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presented by Katerina M. Stam,

a candidate for the degree of Master of Arts,

and hereby certify that, in their opinion, it is worthy of acceptance.

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Professor Glen T. Cameron

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Professor Glenn Leshner

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Professor Lisa Sattenspiel

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Professor Kevin Wise

DEDICATION

Of course my parents, Antonie and Tamara Stam, and my brother Elliott deserve acknowledgement for being kind and helpful in keeping a steady supply of sweets within reach, not to mention all the listening and editing and assistance.

Kathy Sharp, Martha Pickens and Ginny Cowell—you ladies really are the best.

Here is a nod to Ernest Hemingway, who may or may not have shown the world that stories *can* be brief and bold and less than 140 characters, regardless of what one thinks of Twitter:

For sale: baby shoes, never used.

- Ernest Hemingway
(In only six words and 33 characters.)

ACKNOWLEDGMENTS

What makes the Missouri School of Journalism so special is its culture. It is a collaborative place, where students are offered the opportunity to not just observe but work alongside talented, experienced researchers in the field. I consider myself lucky to count Drs. Glen Cameron, Glenn Leshner, and Kevin Wise as committee members. I am also grateful to Dr. Lisa Sattenspiel of the Department of Anthropology, for complementing the committee with her valuable perspective. These four committee members were easy picks as knowledgeable, experienced and thorough mentors to their students.

Dr. Cameron – You first introduced me to research when I was a freshman in college, looking for a job. I could muse how funny it is that things turned out this way, with you as my committee chair and advisor, but I do not think it is coincidence at all. You propelled me along, offering plenty of advice, humor and opportunity for development. I am absolutely thrilled with your tutelage!

Dr. Leshner – With your honest and no-nonsense approach, I knew I wanted you on my committee. I knew it all through the Quantitative Research Methods course, and after speaking with other students you had mentored—you had rave reviews. Thank you for signing on.

Dr. Sattenspiel – I admire your sense of adventure as a globetrotting anthropologist. You are involved in some fascinating research, and I think your quantitative slant fit perfectly with the committee dynamics while adding an interesting flavor to the thesis. I enjoyed our conversations and your stories of Newfoundland and the Caribbean.

Dr. Wise – You have had a major influence on my interest in the master's program. My first surreal venture into the PRIME lab, where I was hooked up to sensors, fulfilled credit for a class of yours, and I found myself intrigued to know more about that strange but interesting nook beyond 176 Gannett. Thanks for everything.

I must also thank Dr. Paul Bolls and a fabulous group of girls—Ming-Yi Chao, Rachael Keck, and Ngoc Vo—for Media Lab assistance. We worked together to pull off *three* experiments simultaneously, which would have been impossible without Dr. Bolls' support. He was there every step of the way, training us in the Media Lab programming, recruiting participants, and providing an incredible amount of encouragement.

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EFFECTIVE SPOKESPERSONS ON TWITTER: EXPERIMENTING WITH HOW PROFILE GENDER & NETWORK SIZE IMPACT USER PERCEPTIONS OF CREDIBILITY AND SOCIAL ATTRACTION

Katerina M. Stam

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ABSTRACT

In addition to pulling in millions of everyday users, Twitter attracts strategic communicators aiming to forge personal bonds with users. Strategic communicators face a dilemma in creating Twitter profiles online, as the features of an effective profile are not well-researched, particularly for spokespersons representing a brand or organization. Using a 2 (network size) x 2 (gender) mixed design experiment, this study investigates how a profile's social network size and gender influence social judgments of that profile's social attractiveness and credibility. Despite significant findings of similar experiments exploring other social media, this experiment had few significant results. Likely this is explained by the participants' lack of experience with Twitter, which might have prevented them from judging and understanding profile cues as Twitter users would. However, there was a significant interaction found on Competence (a factor of credibility) for profile gender and participants' prior Twitter use—namely, that prior users found the male profiles more competent, while nonusers found female profiles more competent. This does perhaps indicate that Twitter users learn to judge certain profile cues differently from nonusers, and that gender plays a role in those cues.

SOCIAL NETWORK SIZE ON TWITTER: AN INTRODUCTION

Twitter is a new media phenomenon. Developed and launched in 2006, the networking site has recently been catapulted to prominence as "Twitterers" keep friends, acquaintances and strangers updated on their daily thoughts and activities, 140 characters at a time. These status updates are referred to as "tweets." The site entered popular lexicon in late 2008, and reports suggest record numbers of Twitterers in 2009, with 9.3 million U.S. visitors alone to the site in March (Abbell, 2009). As it grows rapidly, Twitter has attracted much attention as a new and popular form of social networking, although many people do not yet understand exactly how or why it is used. Still, public figures, companies and news organizations worldwide create Twitter accounts alongside millions of everyday citizens.

Academic knowledge of Twitter is limited, likely because the medium has only recently become a popular communication tool. Seeking to address that gap in knowledge, this paper begins by describing real-world Twitter activity, before branching into an academic review of the available research and applying concepts studied in the context of other online and social media to Twitter. It borrows from sociological and anthropological concepts in an attempt to ground Twitter in theory. Particularly, Twitter's potential use as a platform for spokespersons in public relations and other forms of strategic communication is examined. Strategic communicators generally engage in goal-oriented communication, and in order to persuade the target audience,

it is important to package a desirable message. When strategic communicators create profiles on Twitter on behalf of an organization or brand, it is also important that these profiles are similarly credible and appeal –or are socially attractive—to the target market. A 2x2 experimental design was be used to investigate how a spokesperson's disclosed social network size and gender, both readily visible on Twitter profiles, might affect the spokesperson's perceived credibility and social attractiveness.

Twitter in Journalism and Strategic Communication: A New Playground

Twitter's reception is mixed. Some consider Twitter a useful tool for communication, for individuals and organizations alike. Others view the short bursts of personal detail aired publicly as uninteresting, trivial and superficial, symptomatic of an "Age of Oversharing" (Daum, 2009). CBS news anchor Katie Couric voiced the opinion of many Twitter skeptics when asked to comment on social media by a crowd of students at a University of San Francisco Q&A session (Johnson, 2009), saying,

> I twitter and blog very selectively. I don't think anybody gives a rat's ass whether I am about to eat a tuna sandwich. I don't even care. Some of it is so inane and narcissistic and bizarre I don't quite get it. I don't know why anyone would want to read it, much less why I would want to write it.

Other journalists, like ABC host George Stephanopoulos, maintain Twitter is a good source for story ideas (Johnson, 2009), as users can easily view what other Twitterers write in their public tweets. Nevertheless, the interview Stephanopoulos conducted with Arizona senator John McCain via Twitter in March of 2009 was deemed a failure, suggesting the technology might not be appropriate for one-on-one communication (Kafka, 2009).

Still, many journalists consider Twitter an ideal venue for breaking news, which often consists of short, simple updates lacking much elaboration. Early reports of a celebrity's death, for example, or an announcement of road closures due to traffic accidents are examples of prime Twitter material for some newsrooms. The Orlando Sentinel engaged users with a Twitter countdown to the launch of NASA space shuttles (Tenore, 2007).

Twitter can be helpful in crisis situations, when swift communication is needed. In the spring of 2008, University of California-Berkeley graduate student James Buck was arrested in Egypt for covering a protest. Buck managed to tweet the dilemma using his cell phone. The tweets immediately alerted his network of Twitter friends in the U.S. of the situation, leading to its quick diffusion when Buck's lawyer was contacted (Simon, 2008). Twitter buzzes with real-time reports in response to many other crises. The New York Hudson River plane crash is an example. The first photo of the crash surfaced on Twitter (Gallaga, 2009). Other disasters, like wildfires and earthquakes, have also been covered first through Twitter.

Those seeking to broadcast a message to many people simultaneously credit Twitter for its ability to do so effectively. Politicians, including Senator McCain, President Barack Obama and Missouri senator Claire McCaskill, one of the most prolific Twitterers in Congress, use the microblog to communicate with constituents. McCaskill in particular is admired for including a balance of politics and daily life in her Twitter updates. Different from simple promotion, Twitter has enabled McCaskill to build an

image of herself as a regular, honest and relatable member of Congress, available to interact with her constituents (The Economist, 2009).

Twitter has proven helpful in other business communication scenarios. Many companies, organizations and public figures—politicians, newspapers, TV stations, and so on—are maintaining Twitter accounts for three major purposes: (1) marketing and promotions; (2) marketing research and analysis; and (3) dialogue with business partners and suppliers (All, 2008). The Seattle Times reported that real estate agents in California were successfully using tweets to tip off new property for sale in their community, and to advertise open house events (Veiga, 2009). After receiving recognition at Twitter's 2008 Shorty Awards Ceremony, which honors producers of the year's best tweets, public relations veteran Carri Bugbee announced the formation of her new Twitter-based advertising agency for entertainment clients. Her Twitter promotion of the AMC "Mad Men" series, for which she tweeted as several characters from the show, was so successful, Bugbee believes she can bring interactive social media campaign techniques to other entertainment companies using Twitter exclusively (Levins, 2009).

Additionally, many companies are advocating the use of Twitter by all employees for better internal communication purposes. An example is an IT consulting company that uses Twitter to keep its field technicians and office managers in contact throughout the day, with tweets taking the place of phone calls (Gorog, 2008). Twitter is also a

suggested strategy for “humanizing” CEOs to the rest of the company. Blogger Mike Murray (2008) says,

> One of the most painful and difficult things about the corporate world is the façade that most senior managers put up—there’s so little humanity that trickles out of the CEO’s office in most companies. Technologies like [Twitter] would enable (and I might dare go as far as to say force) management to be more human to their teams.

Because social media like Twitter provide possible platforms for mass communication, journalists and strategic communication practitioners alike may have a great opportunity to use it to their advantage. Already several news organizations and journalists have made Twitter accounts, as have corporations and public relations practitioners. But before creating public accounts visible to potentially millions of users, it is important to understand more about Twitter and how it works. Little scholarly research on that subject exists. How can journalists and organizations successfully use this medium to communicate?

LINKING TWITTER TO THEORY

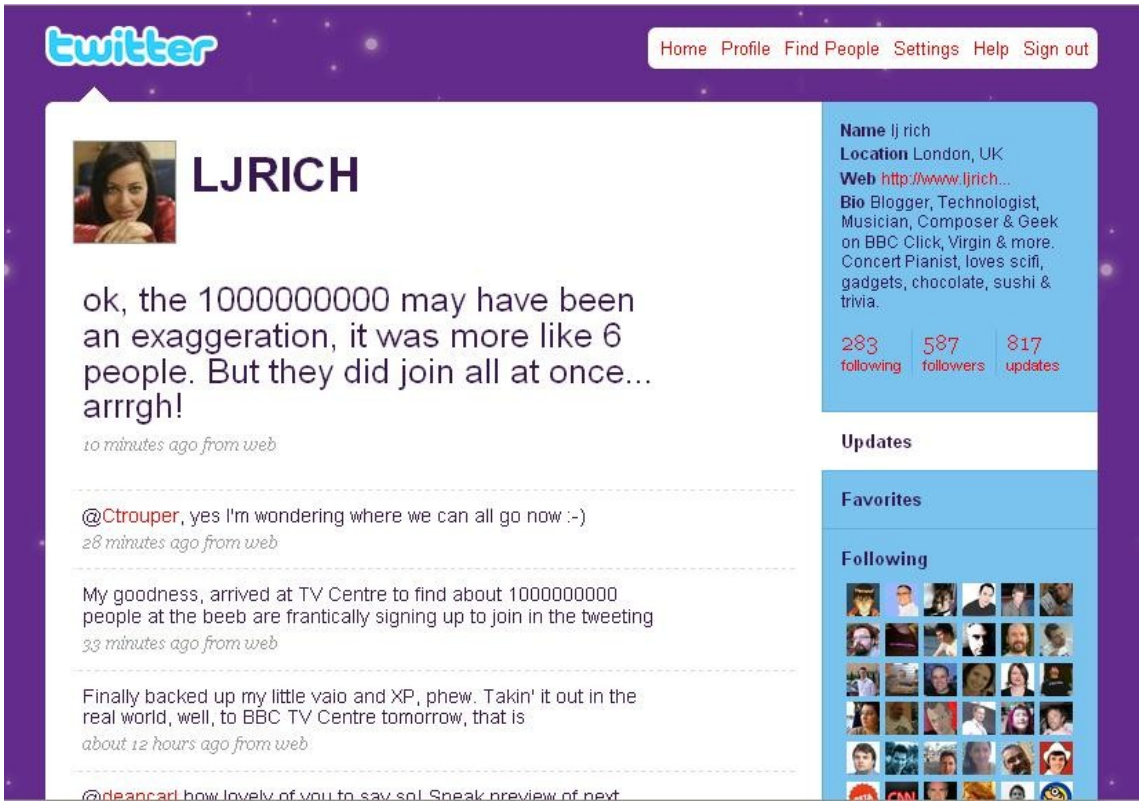
The first step in utilizing Twitter for communication is to create a profile—but the features of an effective profile are unclear. Most prior Twitter research involves defining social network sites and describing Twitter's basic functions and purpose. Research investigating other social media, such as Facebook, Friendster and MySpace, however, exists and can be expanded to Twitter. Previous social media studies suggest that social network size is an influential feature of social media profiles, and may also apply to Twitter.

A Closer Look at Twitter

Twitter is commonly described as a mix between Instant Messaging (IM) and text messages (Mischaud, 2007; Java, Song, Finin, & Tseng, 2007). Its platform is web-based, but users can update their profiles via the Twitter web site itself, mobile phones, or IM services, making the social networking site easily accessible through a variety of technologies. To see what a typical Twitter profile looks like, see Figure 1 below. Account settings can be either public (open network) or private (closed network), but most users' tweets are public (Hazelwood, Makice, & Ryan, 2008). Like other SNS, Twitterers can forge community connections. When interested in monitoring another users' activity, Twitterers can subscribe to that user's tweets, an action called "following." Each Twitter profile publicly displays the number of users the Twitterer follows, as well as how many other users follow that Twitterer. Additionally, users can

disclose a name, location, web site link and 160-character biography on their profile page. A user's updates can be linked to by RSS feed on other web sites, a feature many bloggers seem to take advantage of. Twitterers are also able to search for information. A search field returns recent tweets relevant to search terms. It is common practice for Twitterers to mark tweets with "hash tags," if the tweet pertains to a popular topic of discussion, so that the tweet is easily identifiable as part of that discussion (DuVander, 2009).

FIGURE 1. Twitter Profile. Screenshot of blogger L.J. Rich's (2009) Twitter profile, as seen by other users. Note: Image is courtesy of L.J. Rich, who granted permission for use (see Appendix 7).

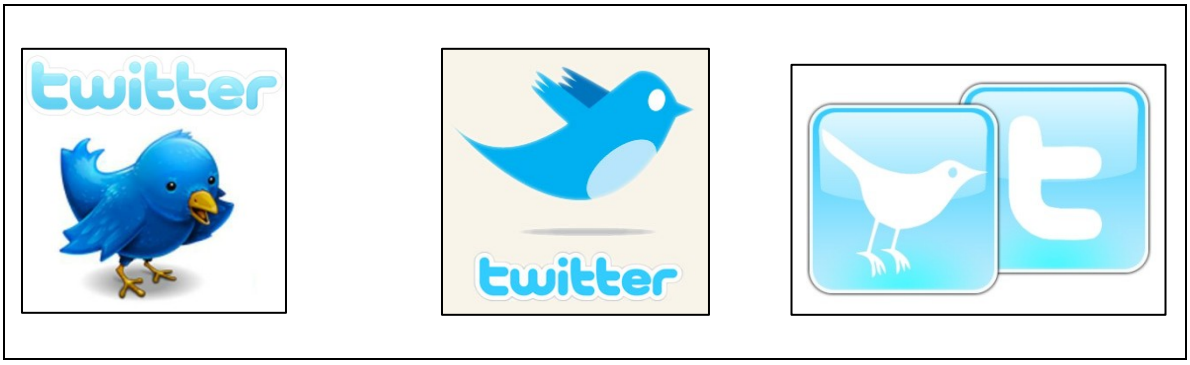


Until recently, all users were prompted to succinctly answer the question, "What are you doing?" as a status update. The extent to which users responded to that question is debatable, and seemed to evolve. A content analysis of Twitter posts by Mischaud (2007) concluded that most users ventured beyond the status update question, finding that 58.7% of examined tweets addressed alternative topics, such as replies to other Twitterers, circulation of news items, and personal thoughts and views. Hazelwood et al. (2008) also observed the discussion of alternative topics, citing an increase in community awareness as Twitterers conversed with other users and even remembered personal details, such as each other's birthdays. In fact, Twitterers would commonly "retweet," or repeat verbatim, other users' particularly interesting or noteworthy tweets. Retweets are usually identified by typing "RT" before the tweet's main text. Owing to the popularity of retweets, Twitter recently enabled a special "retweet function," which allows Twitterers to acknowledge their retweets with a special icon. The new retweet function also shows how many other users previously retweeted that same message (Paul, 2009). This seemed to suggest activity beyond the basic user "What are you doing?" status question, prompting Twitter to change the question to "What's happening?" The new status update prompt is more flexible, and encourages more variety and creativity in tweets.

On the other hand, Java et al. (2007) maintained that "daily chatter" (p. 7), or tweets regarding everyday routine activity revolving around the "What are you doing?" question, is the most common form of communication on Twitter. Perhaps it is no

surprise the Twitter logo involves a bird, a visual that evokes comparison between the twittering of birds and the shared chatter of Twitter (see Figure 2 for various renderings of the Twitter logo). Regardless, users' tendencies to treat Twitter as an outlet for personal expression, strictly limited to 140 characters per update, have earned it the label of "microblog."

FIGURE 2. Twitter Logos. Different versions of the Twitter logo, courtesy of Texas Tech University (2010), Bahwani (2009), and Duffy (2010), respectively.



Twitter and Phatic Communication

Anthropological studies have long established the importance of social contact for humans, who depend on mutual cooperation. Dunbar (1996) proposed that language evolved to assist in our "grooming" of one another, the care and attention necessary to maintain close, cooperative relationships. He wrote that, through language, we can (1) engage in the "vocal grooming" (p. 78) of several other peers at once, allowing us to (2) "groom" a broader social network than would otherwise be

possible. Essentially, Dunbar argued that language facilitates bonding between people. In fact, language is such an important dimension of our social bonding, Dunbar concluded in a study that 60 to 70 percent of conversation is devoted to social topics. Furthermore, Dunbar found that this gossip was used primarily for reputation management.

Phatic communication, defined by what is informally known as gossip or small talk, is founded upon such ideas. Bronislaw Malinowski (1959), considered the founder of phatic communication studies in the 1920s, wrote,

> Speech is the necessary means of communion; it is the one indispensable instrument for creating the ties of the moment without which unified social action is impossible (p. 310).

He went on to describe phatic communication as "a type of speech in which ties of union are created by a mere exchange of words" (p. 315), quite different from intellectual, reflective or technical conversation. Vetere, Howard and Gibbs (2005) likened phatic communication to inquiries about the weather ("It's nice today."), questions of health ("How are you?") and obvious affirmations ("Busy time of the year!").

It is essential to note that the label of phatic communication is not meant to judge the value of such communication as important or unimportant, significant or insignificant. Phatic communication has a purpose, as do other forms of communication. The label is meant merely to describe the characteristics of its content. Vetere et al. (2005) emphasized that the purpose of phatic exchange is to ensure a communication

channel between individuals is open and functional, either before other forms of conversation are pursued, or in order to prime the channel for future use. Vetere et al. also proposed that "phatic technologies" are those existing primarily to satisfy parameters of phatic communication and general social connectedness. E-mails, text messages and IMs were suggested as possible phatic technologies, because these media allow for mutual social expression and are often used as a means to assure social contacts of continued connection.

Miller (2008) explicitly linked Twitter to phatic communication. Noting the prominence of profiles and their social networks, Miller argued that Twitter and other SNS give visual social relationships prominence over text. Miller observed that, with only 140 maximum characters per status update, Twitter strips communication down to the bare minimum. The point of SNS seems to be the establishment of a connected presence, not in-depth communication. Miller wrote,

> Births of babies are announced alongside random musings and lunch menus, and these messages are sent out to real-time networks of mobile phones, e-mails and instant messaging, as well as to the 'public timeline' on the Twitter main page (p. 397).

Twitter, then, serves easily as a tool of phatic communication, which fulfills a basic human instinct—the need to keep and maintain a cooperative network of relationships with others. There is a clear connection between Twitter, phatic communication and network maintenance. Yet, as discussed previously, Twitter is not strictly devoted to chatter without substance. It is also a venue for breaking news and crisis communications. What this implies for journalists and strategic communications

practitioners is that Twitter might be a good platform for social research and marketing connections. It might also be important for organizations to monitor product and brand discussion on social media like Twitter, as e-gossip and electronic word of mouth—shown to be especially powerful when negative messages are involved—can spread quickly between users (Park & Lee, 2009).

Twitter and Social Networks

Social networks have a long history in the social sciences domain, and are one lens through which Twitter can be viewed. After all, Twitter is referred to as a type of "social media" (Currie, 2009; Hawn, 2009), suggesting interaction between its members is the platform's purpose (Agichtein et al., 2008). Classification of Twitter as a phatic technology also acknowledges this social function.

Social network theory is focused on interactions. We hear the term 'network' often. But what does it mean? Examples of networks include communication networks like cell phones, information networks like the Internet, and even neural networks like the human brain (Sattenspiel & Lloyd, 2009). Social networks involve social structure, and how the individuals within that structure are connected. Huberman, Romero and Wu (2009) describe social networks as "a very old and pervasive mechanism" (p. 2). And as McPherson, Smith-Lovin and Cook (2001) write, "similarity breeds connection" (p. 415)—meaning we desire social contact with individuals perceived to be similar, which mutual social network connections seems to imply. Even when individuals do not actually know each other, they can still wield considerable influence over one another if

part of the same social network (Kempe, Kleinberg, & Tardos, 2003). If strategic communicators can tap into that spread of influence in a social network, it could be useful in persuasion.

Scott (1987) wrote in his handbook for social network analysis that the study of social networks began as relatively nontechnical research examining social relationships. Arising from the work of famed anthropologist Radcliffe-Brown, and heavily influenced by German gestalt theory of the 1930s, social network analysis became increasingly complex. By the 1970s, it involved many technical mathematical and statistical techniques intended to calculate and predict connections within networks. A body of formal language exists to describe social networks. The most basic terms in social networks involve nodes (the unit of analysis in a social network, usually representing an individual) and paths (links between nodes). These can be directed or undirected, depending on whether or not the path is two-way (Scott, 1987; Kautz, Selman, & Shah, 1997; Sattenspiel & Lloyd, 2009). In relation to Twitter, Huberman, Romero and Wu (2008) advocate the need for scholars and practitioners interested in social media to consider the importance of "hidden social networks" (p. 8), the portion of a user's online network that is made up of two-way paths, representing mutual relationships between users. They argue that word of mouth and the spread of other information is likely most efficiently pass along users' "hidden networks" of mutual relationships, as their analysis of Twitter revealed users with more mutual relationships also posted tweets more often.

Social network analysis has a number of practical applications. For example, it is used to study and trace the outbreak of infectious disease, which tends to spread between the nodes of a social network. Sattenspiel & Lloyd (2009) cite a study of the SARS outbreak in Toronto by Varia et al. (2003) as an example, in which a detailed social network analysis traces how SARS was spread in Toronto. The spread of information similarly diffuses social networks by moving from node to node, for instance via word-of-mouth and viral marketing (Kempe et al., 2003), processes that can occur online. Twitter and other social media provide an abundance of social networking opportunities as users form online communities, allowing information to pass easily from node to node.

Kautz et al. (1997) propose hyperlinking as an example of how information can pass from node to node of a social network online. One user can post a link to a source of information, and others in that user's social network can click the link and also access that information. This example works well for Twitter, where tweets can be hyperlinked and, perhaps even more conducive to the spread of information, rebroadcasted in the form of retweets.

Social network sites

Web sites that encourage the formation of social networks online fall under the umbrella of social network sites. In defining social network sites (SNS), sometimes referred to as social networking sites, Boyd and Ellison (2008) proposed three key features. (1) Users must be able to create public profiles; (2) they must make known a

list of other users with whom they have connections; and (3) they must be able to see and interact with other users' lists of social connections. Twitter meets all three requirements. Strategic communicators interested in using Twitter to communicate must therefore create public profiles and participate in social networking activity. Research discussed in more detail below suggests desirable profiles disclose personal information (Boyd & Ellison, 2008; Java et al., 2007; Lampe, Ellison, & Steinfield, 2007), are interactive with other users (Antheunis, Valkenburg and Peter, 2009; Boyd & Ellison, 2008) and have a large or at least consistent network size (Kleck, Reese, Ziegerer-Behnken and Sundar, 2007; Tong, Van der Heide, Langwell, & Walther, 2008).

Personal information

Several SNS studies have shown that user profiles are important components in networking online. Specifically, certain profile features play a role in forging and maintaining connections with other users. Different from face-to-face networking situations, SNS users have virtually total control over the information they reveal to other users via profile pages. Gaonkar, Li, Choudhury, Cox and Schmidt (2008) emphasized the immediacy of online SNS, as well as the potential opportunities they provide users in sharing and searching for information. This supports the idea that profile features play a role in the formation of social networks online, and therefore how information is spread within those networks—something strategic communicators should consider before using SNS as a communication platform.

Lampe et al. (2007) found that Facebook profiles providing more personal information generally reported higher numbers of friends, presumably because users search for friends with common interests. Java et al. (2007) also stated that users with similar intentions connect with each other through SNS. Boyd and Ellison (2008) pointed out that SNS communities are egocentrically defined by users themselves, with their friends lists defining the communication context. Users believe they are addressing their network of friends when they modify their profiles or post messages to the SNS site. Antheunis et al. (2009) described profiles on SNS platforms of computer mediated communication as "cue-rich and open" (p. 1), possibly because users must reduce uncertainty about each other before they can connect and form a friendship. Because SNS users are unable to interact face-to-face, they need plenty of interactive profile cues in order to get to know each other, or reduce uncertainty about each other.

Still, with 80% of college Facebook users believing strangers from their own campus who are not Facebook friends view their profiles, and 40% of college Facebook users believing strangers from other campuses view their profiles (Ellison, Steinfield, & Lampe, 2007), SNS apparently offer the opportunity for both acquainted and unacquainted parties to network online. Profiles, as the digital representation of a user, are naturally referenced in making decisions and judgments about those potential social connections online. Spokespersons who create profiles on behalf of a brand or an organization should keep this information in mind, and design SNS profiles equipped with the right cues to appeal to their targets.

Making Friends on SNS

In a study of two SNS sites, Friendster and MySpace, Boyd (2006) investigated motivations for users to add friends. The top six reasons for adding friends included (1) a real-world friendship; (2) an acquaintance, family member or colleague; (3) denial of friendship would be socially inappropriate because the users knew each other; (4) many friends enhance popularity; (5) friendship indicates fanhood (of a person, product, organization, etc.); and (6) that a friends list reveals what kind of person the user is. Boyd's study thus confirmed the notion that SNS are used to reinforce existing social connections and to comment on the user's broader social niche.

Results of a uses and gratifications study (Raacke & Bonds-Raacke, 2008) applied to two SNS, Facebook and MySpace, echoed Boyd's findings. Raacke and Bonds-Raacke concluded that the primary uses and gratifications for SNS are (1) to keep in touch with old friends; (2) to keep in touch with current friends; (3) to make new friends; (4) to learn about events; (5) to post social functions; and (6) to feel connected.

Despite the apparent tendency for SNS users to pursue an online network of familiar or similar friends, it seems that friendship on SNS and friendship in a real-world context have different meanings. Although SNS "friends" might have social interaction face-to-face, to truly consider them friends can imply more intimacy than really exists. To avoid confusion, Boyd (2006) made a distinction between friends, a social relationship between two people, and Friends, a SNS networking feature. Similarly, Huberman et al. (2008) suggested the number of followers and following declared on

Twitter was inflated compared to the real Twitter "friends" interacted with regularly. They propose that network sizes expand beyond "true" size because the cost of adding extra followers and following is low. Nevertheless, there are similarities between "friends" and "Friends." One type of friendship can lead to another. In a qualitative study, Dwyer (2007) interviewed SNS users about their online activity. Several users indicated that they had formed new friendships on SNS that later led to face-to-face meetings. On the whole, however, research suggests SNS are mostly used both to confirm already existing connections, and also to gravitate toward like-minded individuals.

These conclusions align well with previous academic research investigating friendship. In finding like-minded individuals, Goffman (1959) wrote that unacquainted parties observe each other closely, paying special attention to conduct and appearance. They can then make use of previous social experience to gauge one another. Examination of others' SNS profiles almost certainly takes the place of face-to-face observation in making new connections online. It seems strategic communicators on SNS like Twitter must realize they will likely be measured by their profiles, and should therefore ensure their profile cues result in the intended persuasive effects. But how do users evaluate profiles? Which profile cues do they pay attention to?

SNS Profile Evaluation

Profile features are perhaps crucial to the evaluation of SNS users on Facebook, Friendster and MySpace (Antheunis et al., 2009; Boyd & Ellison, 2008; Ellison et al.,

2007). If this is true, it is reasonable to assume the general patterns also apply to Twitter, a fellow SNS. As Twitterers maintain profiles openly indicating networks and other content, Twitterers are likely similarly judged based on the information they reveal through their profiles.

One concept clearly linked to the evaluation of spokespersons is credibility. Hovland and Weiss (1951) maintain that people's attitude toward communicators influence how effective attempts at communication are. When people perceive that a spokesperson is trustworthy and shows expertise, they are more likely to respond positively to communication with that spokesperson, resulting in source credibility. High source credibility is generally linked with persuasion (Sternthal, Dholakia, & Leavitt, 1978), and McCroskey (1966) developed a much-used credibility scale to help measure the ethos, or trustworthiness, of sources. It is made up of three categories, with multiple seven point self-report Likert items in each category. See Table 1 for a list of the measurement questions.

Also important, Network size is consistently isolated determinate of social attractiveness on other SNS, and might be important on Twitter. Social and interpersonal attraction theories have been researched since at least the 1930s. Communication competence and communication style both influence how socially attractive a person is perceived, as does responsiveness. Supervisors who are more available, for example, tend to be rated as more socially attractive by subordinates

TABLE 1. Source Credibility. Measure of Source Credibility (McCroskey, 1966).

Competence
Intelligent / Unintelligent*
Untrained / Trained
Inexpert / Expert
Informed / Uninformed*
Incompetent /Competent
Bright / Stupid*
Caring/Goodwill
Cares about me / Doesn't care about me*
Has my interests at heart / Doesn't have my interests at heart*
Self-centered / Not self-centered
Concerned with me / Not concerned with me*
Insensitive / Sensitive
Not understanding / Understanding
Trustworthiness
Honest / Dishonest*
Untrustworthy / Trustworthy
Honorable /Dishonorable*
Moral / Immoral*
Unethical / Ethical
Phony / Genuine

*Requires reverse coding

(McCroskey and Richmond, 2000). McCroskey and McCain (1974) defined three different dimensions of interpersonal attraction: (1) a social dimension, or social attraction; (2) a task dimension; and (3) a physical dimension. Table 2 lists the self-report Likert questions McCroskey and McCain suggest to measure each dimension of interpersonal attraction. Social attractiveness, according to McCroskey and McCain (1974), is an evaluation of how well-liked a person is by peers—not of how physically attractive (the physical dimension) or respected (the task dimension) a person is.

Social attraction, one dimension identified by McCroskey and McCain (1974) as part of interpersonal attraction, arises from self-categorization and social identity theories, which are dedicated to understanding the psychology of group dynamics. Hogg and Terry (2000) explained that social interaction occurs through the management of "symbols" like speech, behavior, and attire. They wrote that people attempt to define their social identity and categorization by flavoring these symbols so that they are meaningful to the individual and to the individual's peer group. Thus social attractiveness reflects how likeable or desirable peers deem those symbols to be. It relates back to SNS profiles because users choose how to "flavor" their profiles (Antheunis et al., 2009), and make friends accordingly. The principles of social attraction, while not often specifically applied to spokespersons, are still likely relevant when considering them, especially in tandem with strategic communication on SNS where social connections are the crux of interaction. Physical and task attraction have already been found influential in attraction toward spokespersons (Alperstein, 1991; Bower, 2001; Petroshius & Crocker, 1989), and as physical, task and social attraction together make up interpersonal attraction, it is reasonable to assume social attraction of spokespersons is important.

Even outside the SNS realm, uncertainty reduction theory dictates individuals must be able to understand each other's emotions, behaviors and intentions before they can become friends (Berger & Calabrese, 1975; Clatterbuck, 1979). This means that before social attraction can occur, uncertainty must first be reduced. Profile cues play a

TABLE 2. Interpersonal Attraction. McCroskey and McCain's (1974) best-fit interpersonal attraction measurement items, including questions to measure (1) social attraction, (2) physical attraction, and (3) task attraction.

Social Attraction 1. I think he (she) could be a friend of mine. 2. I would like to have a friendly chat with him (her). 3.* It would be difficult to meet and talk with him (her). 4.* We could never establish a personal friendship with each other. 5.* He (she) just wouldn't fit into my circle of friends.
Physical Attraction 1. I think he (she) is quite handsome (pretty). 2. He (she) is very sexy looking. 3. I find him (her) very attractive physically. 4.* I don't like the way he (she) looks. 5.* He (she) is somewhat ugly. 6.* He (she) is not very good looking. 7. He (she) wears neat clothes. 8.* The clothes he (she) wears are not becoming.
Task Attraction 1.* I couldn't get anything accomplished with him (her). 2.* He (she) is a typical goof-off when assigned a job to do. 3. I have confidence in his (her) ability to get the job done. 4. If I wanted to get things done I could probably depend on him (her). 5.* He (she) would be a poor problem solver.

*Requires reverse coding

role in reducing uncertainty and increasing social attraction in computer mediated communication (Antheunis et al., 2009), and most related research also suggests reduction of uncertainty has a positive impact on social attraction (VanLear & Trujillo, 1986; Gudykunst & Kim, 1992; Hogg & Terry, 2000). For instance, Gudykunst and Kim

(1992) found that uncertainty is lower between close friends as opposed to acquaintances, and Parks and Adelman (1983) linked low uncertainty to high stability in relationships. On Twitter, the "symbols" of social identity and self-categorization that determine social attractiveness are encoded in the user profile. Twitterers likely make use of their profile cues to share information about themselves and reduce uncertainty about who they are and what they stand for.

Many scholars have assumed that social attraction is a necessary component in friendship (Lundberg & Steele, 1938; McCroskey & McCain, 1972; Huston & Levinger, 1978). Without it, individuals would not feel connected enough to make friends. An important concept in social attraction is the proximity principle, which says similar individuals seek each other out for social interaction. Verbrugge (1977) noted in his research examining adult friendships that individuals with similar social and demographic characteristics are ranked more highly for friendship potential. As mentioned earlier, connections on SNS sites reflect similar social patterns, as like-minded individuals seek each other out for relationships even in online contexts.

Hogg, Hardie and Reynolds (1995) extended that idea beyond individuals, finding in an experiment that attraction between members of a social group was based on prototypical similarity. An earlier study by Hogg and Hardie (1991) of a soccer team's social dynamics suggested group prototype is more closely linked to social attraction and social popularity than personal attraction or personal popularity. In other words, social attractiveness is an indicator of group popularity, not necessarily of individual

popularity or attraction. Social attractiveness applies to SNS because McCroskey and McCain (1972) maintained that the more attracted people are to one another, the more likely they are to interact. In a SNS setting, this could mean that the more socially attractive a user is perceived, the larger the user's network of friends. By extension, the larger the user's network of friends, the more potentially influential the user. For spokespersons on Twitter, this is particularly interesting.

Number of friends is a profile feature repeatedly isolated as important in judging social attractiveness of other SNS users. Kleck et al. (2007) found that Facebook users with larger friend networks were perceived as more self-confident, popular and attractive compared to users with smaller networks. Prior research has pegged the average number of Facebook friends somewhere around 246 or 272 (Walther, Van der Heide, Kim, Westerman, & Tong, 2008; Vanden Boogart, 2006). However, other findings have challenged those results (Tong et al., 2008), contending that networks much larger than average might not be interpreted as popularity, but rather as disingenuous behavior.

This suspicion is supported by the research of anthropologists like Dunbar (1996). Primatologists believe that social networks involve "grooming," or maintenance. Because of the time and effort associated with "grooming," Dunbar hypothesized that humans have social networks of about 150 members. While computerization of networks might change that dynamic, the time and effort required to "groom" members of SNS might still limit network size (The Economist, 2009). Perhaps that number even

differs from SNS to SNS, depending on what "grooming" on each platform entails, but for Facebook, it might be in the neighborhood of 246, as proposed by Walther et al. (2008), or the 272 suggested by Vanden Boogart (2006).

Indeed, Tong et al. (2008) found a curvilinear inverted V-shape relationship between number of Facebook friends and social attractiveness, with the curve's apex at 302 friends. While higher number of friends was rated more socially attractive up until the apex, very high number of friends beyond 302 was rated less socially attractive. The curvilinear relationship implies that larger network sizes are only socially attractive to a point. When network size becomes too large, its social attractiveness scores drop.

The SNS studies above exploring network size and social attractiveness used mock SNS profiles of regular, college-aged students as stimuli (Stam, Chao, Dong, Liu, Cameron & Stam, 2010; Tong et al., 2007; Walther et al., 2008). They have therefore only examined the impact of network size on social attractiveness of profiles participants believed represented average people in their own age group, often even their own social group. In the context of mass communication between purposeful communicators like journalists and strategic communication practitioners on Twitter, however, not much is known about social attractiveness. Presumably, this matter is especially significant for strategic communicators, as a spokesperson might be chosen to tweet on behalf of a company or brand.

The body of research addressing spokespersons reveals that they are used strategically by organizations to vie for visibility in a crowded marketplace. According to

Stafford, Stafford and Day (2002), a spokesperson can enhance the salience or "tangibility" (p. 17) of a product, if a carefully and appropriately selected spokesperson in alignment with the organization or brand's unique characteristics is used. "An effective advertising campaign requires the right spokesperson to deliver a persuasive message through appropriate media" (p. 17), they wrote, and the idea applies to Twitter. One could say that an effective strategic communication campaign requires the right spokesperson to deliver a persuasive message—but on Twitter, one major concern is creating an appropriate profile. A spokesperson's SNS profile, as the vehicle of mass communication, must appeal to a broad audience. However, considering the public nature of a spokesperson, do the social network size "rules" discussed above change when applied to spokespersons versus average users on Twitter?

While network size likely matters in the judgment of SNS profiles, no research has been conducted to explore how network size impacts social attraction toward spokespersons on SNS. The following two hypotheses are posed for the relationship between network size and social attractiveness of spokespersons on Twitter:

> **H1**: The larger the profile's network size, the higher its social attraction scores.

Because credibility is also an important mechanism at play in spokesperson effectiveness, it would be interesting to also apply social network size to source credibility on Twitter:

> **H2**: The larger the profile's network size, the higher its credibility scores.

Gender-based judgment differences

Prior research suggests men and women might behave and are perceived differently online. In their survey of personal relationships online, for instance, Parks and Floyd (1996) found that women were much more likely than men to forge relationships online, with 72.2% of the women surveyed reporting personal online connections, compared to only 54.5% of men. Lee, Nass and Brave (2000) found that male computer-generated voices were found more trustworthy and socially attractive than female computer-generated voices in an experiment involving computer-generated speech. Additionally, Lee et al. showed that female participants in the experiment tended to identify with the female computer-generated voice, while males identified with the male voice, confirming principles of proximity theory in social attraction. Interestingly, male voices were found to be more persuasive, whereas female voices were more trustworthy. The computer-generated voices in the experiment were not conveyed to participants in the context of real, face-to-face interaction—rather, they were perceived by participants as digital representations of real people. While these specific differences in gender appraisal online do not necessarily transfer to SNS profiles, it still seems to support the possibility that males and females are perceived differently online, SNS profiles included. Spokesperson gender could have an influence on the profile's perceived social attractiveness and credibility, and by extension its effectiveness.

More recent studies do, in fact, indicate differences in perceptions of SNS profiles based on the profile's gender. Walther et al. (2008) point to a sexual double standard of social judgment on Facebook, as their Facebook experiment revealed females were judged *less* physically attractive when negative wall posts containing sexual innuendo and excessive alcohol consumption were posted on their profile pages by other users. Males, on the other hand, were viewed as *more* physically attractive when similar wall posts were posted by other users on their profiles. Stam et al. (2010) found that while female Facebook profiles with a high number of friends received the best social attraction scores, male Facebook profiles with a low number of friends received the best social attraction scores. After examining credibility of online messages, Flanagin and Metzger (2003) maintain that gender differences persist in cyberspace. Males and females significantly evaluated credibility of both web sites and message credibility online differently, with males consistently rating credibility higher.

If males and females judge and are judged differently for things like credibility and physical attractiveness on SNS, it is feasible that social attraction cues for males and females are also judged differently. This is important particularly for organizations and strategic communicators on Twitter, because if males and females are judged differently on SNS, optimal communication strategies on Twitter might vary according to the profile's gender.

Because it is possible that social attraction cues on Twitter are judged differently for males and females, but no research on the subject has been conducted, the following gender-related research question is posed:

RQ1: Is there a difference in social attraction scores between male and female spokespersons?

Considering how important credibility is for spokesperson effectiveness, it could be useful to apply these credibility findings to spokesperson profiles on Twitter.

RQ2: Is there a difference in credibility scores between male and female spokespersons?

METHOD

Both journalists and public relations practitioners are creating profiles on Twitter, a SNS growing in popularity. In order to successfully use this platform for communication, journalists and public relations practitioners must understand how to develop effective Twitter profiles. An effective profile should maximize the ability to successfully communicate with other SNS users by ensuring the profile cues used in social evaluation are intended.

Little academic research on Twitter has been conducted. However, there has been research published pertaining to other SNS, such as Facebook and MySpace. Social network size on SNS is shown to be important in determining user perceptions. Usually this appears to be a positive relationship, with greater network size increasing social attractiveness (Antheunis et al., 2009; Kleck et al., 2007; Tong et al., 2008; Walther et al., 2008).

Experiments are recommended by Wimmer and Dominick (2006), authors of *Mass Media Research: An Introduction*, to researchers looking for "evidence of causality" (p. 231) between variables. Careful to acknowledge that science can never truly prove causality, Wimmer and Dominick state that experiments are nevertheless most effective for establishing cause-and-effect relationships, which is what this study sought to achieve been profile gender and network size, and credibility and social

attraction. Two hypotheses are therefore proposed for social attractiveness and credibility on Twitter, a SNS site:

H1: The larger the spokesperson profile's network size, the higher its social attraction scores.

H2: The larger the spokesperson profile's network size, the higher its credibility scores.

A research question also explores whether or not social attractiveness and credibility is judged differently by gender of the spokesperson, as prior research hints this is possible (Flanagin & Metzger, 2003).

RQ1: Does the spokesperson's gender influence social attraction scores?

A second research question addresses the potential differences in credibility by spokesperson gender:

RQ2: Does the spokesperson's gender influence credibility scores?

Design

An experiment with a 2 (network size) x 2 (gender) repeated measures factorial design was conducted in order to address the hypotheses and research questions above. One variable was manipulated within groups (gender) and the other variable was measured between groups (network size). Each participant viewed a total of four Twitter profiles and answered questions regarding personal use and experience of Twitter and other media.

The experiment was conducted with the approval of the University of Missouri's Internal Review Board (IRB), and followed the experimental research rules and guidelines advocated by that entity (see Appendix 1 for proof or IRB approval).

Independent variables

Gender

The study's first independent variable is gender, a within-groups variable. The study tested two Twitter profiles from each gender. Prior research suggested social attractiveness on SNS is judged differently by gender (Stam et al., 2010; Walther et al., 2008), so it is worthwhile to explore whether or not the same is true for Twitter, another SNS.

Social Network size

Prior research also suggested size of network cues on other SNS has implications for both social attractiveness and credibility (Kleck et al., 2007; Stam et al., 2010; Tong et al., 2008; Walther et al., 2008). Research concerning network size on Facebook suggests low, medium and high network sizes make a difference in perceptions of social attractiveness, with small and large networks perceived as less attractive, and medium networks perceived as more attractive (Tong et al., 2008). The concept has not yet been applied to Twitter, but as a SNS, social network is likely to play a role in a profile's perceived social attractiveness by other users. The social network size on Twitter is made up of two numeric components: number of followers and number of following.

Number of followers

Number of followers on Twitter profiles is a numeric cue indicating how many other users keep up with the profile in question. In other words, number of followers is how many other Twitter users subscribe to the profile's tweets. It was a between-groups variable in this study. The experiment assigns the number of followers variable two levels: high number of followers and low number of followers. As no prior research exists to determine what 'high' and 'low' network sizes on Twitter are, these values were chosen based on Twitter statistics reported by the media, staying within +/- 10 from the numbers reported—this was to ensure participants do not become suspicious of identical network sizes between profiles.

RapLeaf social media database (2009) says the median number of followers for the top 1% of Twitter users is 1,329 as of June 2009. This served as the guideline for high number of followers. Marketing Charts (2008) reports 35% of Twitter users have 10 or fewer followers. This was the low value.

In summary, the high value for number of friends in the experiment was 1,329. The low value of number of followers was 10. Mock Twitter profiles were between +/- 10 units from these numbers, but no lower than 0.

Number of following

Number of following on Twitter profiles is a numeric cue indicating how many other users the profile keeps up with. In other words, number of following is how many other Twitter users' tweets the profile subscribes to. In this study it was a within-groups

variable. The number of following variable also has two levels: high number of following and low number of following. Like the number of followers variable, the researcher could find no academic studies to determine what the exact 'high' and 'low' values on Twitter should be. Therefore, a similar strategy used to fix number of followers above (including using values +/- 10 from determined values in order to minimize participants' suspicions) was applied to number of following variable.

RapLeaf social media database (2009) states that the average (median) ratio of followers to following in the top 1% of Twitter users is .97, as [followers / following = .97]. Additionally, several Twitterers have discussed the so-called Follower to Following Ratio ("TFF") in their blogs, explicitly suggesting that the TFF ratio matters in social judgments between users (Donaldson, 2008; Mishra, 2007; Schaffer, 2009). There is even a web site, tffratio.com, designed to calculate Twitterers' own TFF ratios by dividing the number of followers by the number of following.

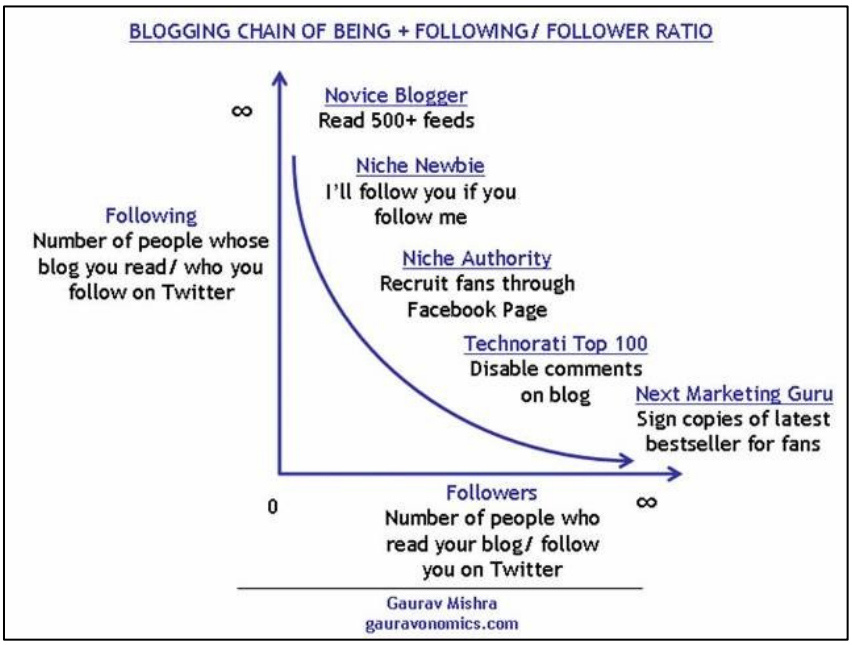
As tffratio.com (Hounshell, 2009) claims on its homepage, "the higher the ratio the more Twitter heat you pack." It goes on to differentiate how different TFF ratios are judged by other users:

> A ratio of **less than 1.0** indicates that you are seeking knowledge (and Twitter Friends), but not getting much Twitter Love in return. Check your pulse, you might be a bot.
>
> A ratio of **around 1.0** means you are respected among your peers. Many people think that a ratio of around 1.0 is the best--you're listening and being listened to.

> A ratio of **2.0 or above** shows that you are a popular person and people want to hear what you have to say. You might be a thought leader in your community.
>
> A TFF Ratio **10 or higher** indicates that you're either a Rock Star in your field or you are an elitist and you cannot be bothered by Twitter's mindless chatter. You like to hear yourself talk. Luckily others like to hear you talk, too. You may be an ass.

Note what tffratio.com says about TFF ratios of around 1. “Many people think that a ratio of around 1.0 is the best—you’re listening and being listened to” (Hounshell, 2009). It seems that a TFF ratio of 1 is perhaps an ideal balance between number of followers and number of following, a ratio that suggests healthy interaction between a Twitterer and the Twitter community. It also conveniently coincides with RapLeaf’s (2009) .97 ratio for the top 1% of Twitter users. For a TFF ratio visual, see Figure 3.

FIGURE 3. Blogging Chain of Being. Mishra’s (2007) Blogging Chain of Being.



Based on the number of followers already calculated previously, the high value for this study's number of following variable was [1,329 / .97 = 1,370]. Marketing Charts (2008) says users with 0 – 10 followers have an average of 2 following. This was the low following value.

In summary, the high number of following was 1,370. The low number of following was 2. Mock Twitter profiles were within +/- 10 units from these numbers, but were no lower than 0.

Dependent variables

Social attractiveness

The experiment's first dependent variable was social attractiveness. Used as a measure of liking in other SNS studies (Kleck et al., 2007; Stam et al., 2010; Tong et al., 2008; Walther et al., 2009), the scale used for social attractiveness is adapted from McCroskey and McCain's (1974) self-report Likert measurement. That scale ranges from 1 = "Strongly Agree" to 7 = "Strongly Disagree" in response to questions probing social attractiveness judgments, such as "I think he/she should be a friend of mine," and "I wish I were more like him/her." The same scale was applied to the Twitter experiment.

Six items chosen for inclusion Items to be rated on the scale from 1 to 7 in the questionnaire included:

I think he (she) could be a friend of mine.

I would like to have a friendly chat with him (her).

He (she) just wouldn't fit into my circle of friends.

He (she) would be pleasant to be with.

We could never establish a personal friendship with each other.

It would be difficult to meet and talk with him (her).

Social attraction items chosen for inclusion in the experiment were selected based on reliability data provided McCroskey and McCain (1974). Only the six most reliable items were used. Refer back to Table 2 to see the complete McCroskey and McCain interpersonal attraction scale.

Reliability of the six social attraction items in this study was found to be strong, with a Cronbach's alpha reliability coefficient of .847, which falls into the expected range McCroskey and McCain (1974) claimed for their scale. According to both Cronk (2008) and Wimmer and Dominick (2006), Cronbach's alpha is used to determine the internal consistency of items in a scale measuring a given construct (in this case, social attractiveness). The closer the reliability coefficient is to 1, the better the reliability, and as a general guideline, reliability coefficients above .70 are most acceptable. The .847 coefficient calculated for the six social attraction items used in the experiment is thus well within the safe range.

Credibility

The experiment's second dependent variable is source credibility. Used as a measure of trustworthiness in other studies, the scale used for credibility is adapted from McCroskey's (1966) self-report Likert measurement. That scale ranges from 1 =

"Strongly Agree" to 7 = "Strongly Disagree" in response to questions probing credibility judgments, and is thought to have a reliability coefficient of between .80 and .94 (McCroskey & Teven, 1999).

As McCroskey (1966) vetted three factors within the credibility scale, Competence, Caring/Goodwill and Trustworthiness, this study selected an equal number of items from all three, so that each factor was represented evenly in the experiment. A total of nine credibility items were used for this study.

The three credibility items chosen to represent the Competence factor were rated on a scale from 1 to 7. The calculated Cronbach's alpha reliability coefficient for these three items based on this experiment's data was .913. These included:

Expert/Inexpert

Untrained/Trained

Incompetent/Competent

The three credibility items chosen to represent the Caring/Goodwill factor were rated on a scale from 1 to 7. The calculated Cronbach's alpha reliability coefficient for these three items based on this experiment's data was .875. These included:

Concerned with me/Not concerned with me

Cares about me/Doesn't care about me

Understanding/Not understanding

The three credibility items chosen to represent the Trustworthiness factor were rated on a scale from 1 to 7. The calculated Cronbach's alpha reliability coefficient for these three items based on this experiment's data was .897. These included:

Honest/Dishonest

Untrustworthy/Trustworthy

Phony/Genuine

Note that all items used to measure credibility had strong internal consistency, or reliability, in this study. All reliability coefficients fell into the range predicted by McCroskey and Teven (1999).

Sample

Data was gathered via a computer-generated questionnaire at 182 Gannett. Participants were undergraduates at the University of Missouri, who participated in the study either in exchange for course credit for a freshman-level communications course, or received five dollars in exchange for participation if recruited via a general university listserv. Students recruited from the communications course were recruited with professors' consent.

The study had a total of 69 valid participants, 33 in Condition 1 and 36 in Condition 2. Roughly half were male (34, or 49.3%) and half were female (35, or 50.7%). Average age was 20.97 (SD = 2.35), with participants ranging in age from 19 to 32. Of the 69 participants, 27 (39.1%) reported having their own personal Twitter account, meaning the majority of respondents had little prior experience with Twitter, although

all 69 (100%) had Facebook accounts, 20 (29%) had MySpace accounts, 2 (2.9%) had Friendster accounts, and 9 (13%) had some other SNS account. Level of comfort navigating Twitter was fairly low, as rated on a scale from 1 = Very comfortable to 7 = Very uncomfortable, participants averaged 5.06 (SD = 2.16).

Stimuli

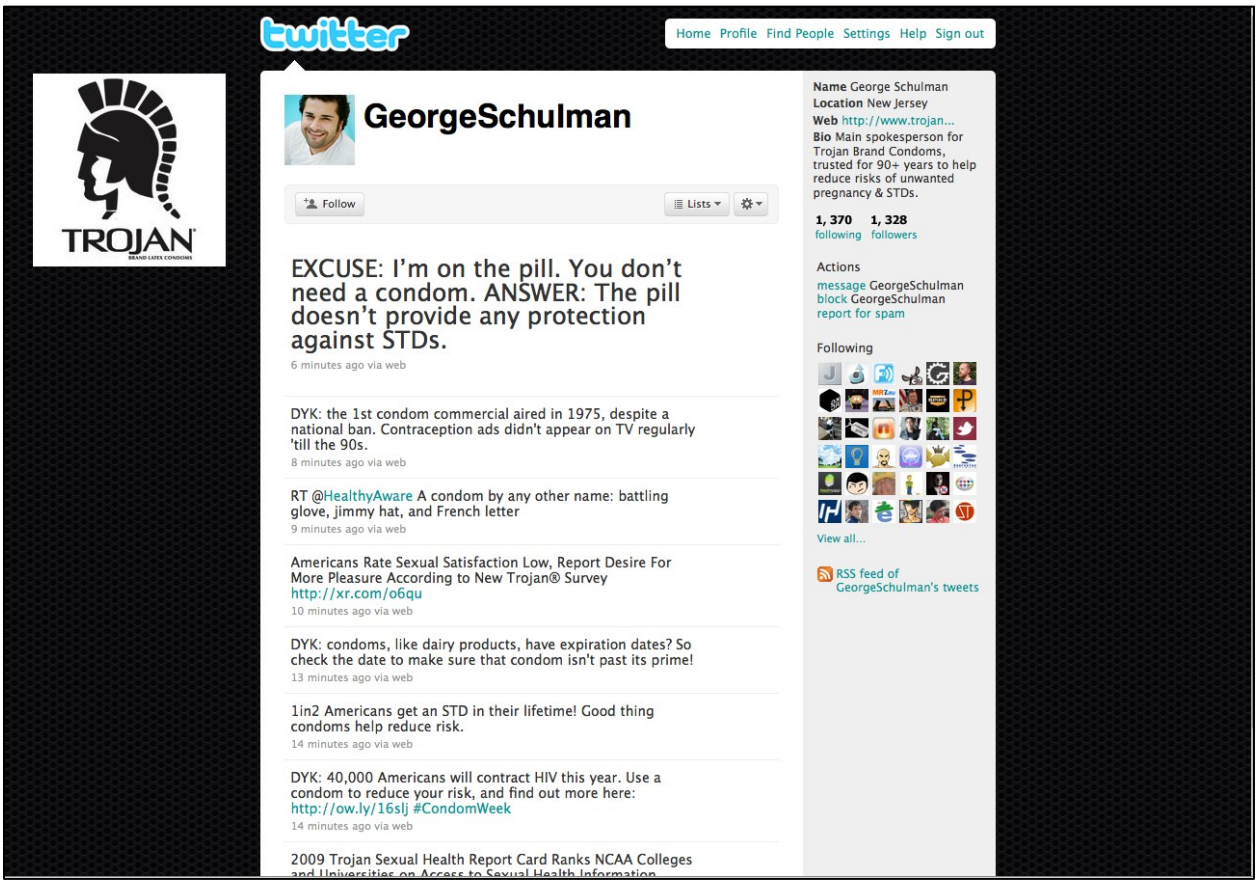
Overview

A total of four basic mock Twitter profiles were created as stimuli, and each participant viewed some version of all four profiles over the course of the experiment. In order to simulate a real Twitter user experience, spokesperson profiles were created using Photoshop, InDesign and screenshots of real Twitter profiles. Profile pictures of the mock profiles were only of the spokesperson's face, not any other animations or avatars. All tweets were made to look recent, within a 24 hour period of time. Additionally, the mock profiles made mention only of the locations, bios and web sites of the spokesperson's company—no personal information, aside from the spokesperson's name. The spokesperson's professional role and brand were referred to in the bio, and the brand's logo was featured prominently in each profile. See a sample mock Twitter profile created for the experiment in Figure 4 below. For all mock Twitter profiles used in the experiment, refer to Appendix 3 and Appendix 4.

Choosing spokesperson brands

A pretest conducted via SurveyMonkey was circulated among undergraduates to help isolate four brands for use in the experiment. The pretest's aim was to discern four brands that the participant demographic of Missouri undergraduates would find

FIGURE 4. Mock Profile. Sample mock Twitter profile created for the experiment. The profile below happens to be a male spokesperson for the Trojan brand with a large network size. For other mock profiles, see Appendices 3 and 4.



compelling. For the sake of consistency, all 11 brands and organizations tested were drawn from the same domain—health-related. Appendix 5 contains screenshots of all questions asked in the pretest, as well as the pretest's results.

Pretest participants answered questions about brand familiarity on a 7 point self-report Likert scale made up of the following items:

Familiar/unfamiliar

Knowledgeable/unknowledgeable

Experienced/inexperienced

The scale has been used in prior studies investigating brand familiarity, for example in Kent and Allen's (1994) study, which that found familiar brands enjoy recall advantages in advertising. The simple scale was used in part because it was suitable for a quick pretest with no course credit or monetary compensation to participants involved.

Pretest participants were also asked to indicate on a 7-point Likert scale how likely they would be to follow the brands on Twitter, in an attempt to further identify which brands would resonate with participants looking at mock Twitter profiles for the experiment. The pretest assumed the most familiar brands which were most likely to be followed on Twitter would be the best brands to use in mock profiles for the experiment.

The four health-related brands selected for the experiment were the Centers for Disease Control (CDC), the World Health Organization (WHO), Planned Parenthood, and Trojan.

Choosing spokesperson gender

Each brand was assigned its own spokesperson. Gender was randomly assigned, and a random name generator using U.S. Census data was used to determine the spokespersons' names. The CDC was represented by a female, "Bonnie Arana." The WHO was represented by a male, "Dale Gauthier." Planned Parenthood was represented by a female, "Emily Hyatt." Trojan was represented by a male, "George Schulman."

Differences between treatment groups

The four basic Twitter profiles were tweaked in Photoshop to create similar stimuli for two treatment groups. Both groups viewed essentially the same profile, except for the manipulated between-groups stimulus (network size). The two treatments are referred to as Condition 1 and Condition 2.

Condition 1 viewed the four profiles, two male and two female, Photoshopped to have a large network size. Condition 2 viewed the four profiles, two male and to female, Photoshopped to have a small network size.

Instrument

The Twitter profiles were shown to participants in the context of a computer-generated questionnaire. Included in the questionnaire were the four mock profiles presented in random order, in addition to social attractiveness (randomized order) and credibility questions (randomized order) for each profile, and finally a section with

questions about the participants' demographics and personal Twitter and media use. Appendix 2 contains all questions asked in the questionnaire.

Procedures

Recruited participants were randomly assigned a condition when they signed up for participation in the experiment. Upon entering Gannett 182 at the appointed time, participants were briefed about the experiment, given a consent form, and led to a computer. Once at their computer, participants followed these steps:

(1) Indicated consent to the experiment by reading and signing the consent form.

(2) Proceeded to Twitter Profile #1, where they were asked to carefully examine the profile before continuing.

(3) Answered several questions meant to measure perceived social attractiveness of the spokesperson.

(4) Answered several questions meant to measure perceived credibility of the spokesperson.

(4) Repeated steps 2-3 for Twitter Profile #2, Twitter Profile #3, and Twitter Profile #4. NOTE: The profiles were presented in random order.

(5) Answered demographics, media use and Twitter use questions.

(6) Exited survey, underwent debriefing, and received compensation.

The participants were instructed the questionnaire could take up to 30 minutes to complete, but trial pretests revealed most participants completed the questionnaire

within 10-15 minutes. Trial pretests of five participants also indicated questions were clear and data was correctly collected by the software at 182 Gannett.

RESULTS

Hypothesis tests

Social attraction

Analysis examined the effect of social network size and gender on social attraction using a 2 (network size) x 2 (gender) repeated measures ANOVA. As Cronk (2008) explains, a 2 x 2 mixed design repeated measures ANOVA involves three results: two for the within-subjects IV (social attraction scores for the male profiles, social attraction scores for the female profiles) and one for the between-subjects IV (network size). There was no significant main effect for network size ($F(1, 67) = .004$, $p > .05$), nor was there a significant main effect for gender ($F(1, 67) = 1.488$, $p > .05$). There was no significant interaction between network size and gender ($F(1, 67) = 2.067$, $p > .05$). H1 is not supported. Refer to Table 3 for means.

TABLE 3. Social Attraction Descriptives. Means and standard deviations for the impact of network size and gender on social attractiveness. The means are on a scale of 1 to 7, with higher numbers representing better social attraction scores.

	Condition 1 (large network)	**Condition 2 (small network)**
Male	4.22 (SD = .73)	4.04 (SD = .70)
Female	4.19 (SD = .91)	4.35 (SD = 1.02)

Credibility

Analysis also examined the effect of social network size and gender on source credibility. As source credibility is made up of three factors, a 2 (network size) x 2 (gender) repeated measures ANOVA was calculated for each factor. For each factor, two variables represented the within-subjects IV (credibility scores for the male profiles, credibility scores for the female profiles) and one represented the between-subjects IV (network size).

For the Competence factor of credibility, there was no significant main effect for network size ($F(1, 67) = 0.031$, $p > .05$). There was no significant main effect for gender ($F(1, 67) = 1.840$, $p > .05$). There was no significant interaction between network size and gender ($F(1, 67) = 0.006$, $p > .05$). H2 is not supported. Table 4 contains means for these calculations.

For the Caring/Goodwill factor of credibility, there was no significant main effect for network size ($F(1, 67) = 0.144$, $p > .05$). There was no significant main effect for gender ($F(1, 67) = 0.052$, $p > .05$). There was no significant interaction between network size and gender ($F(1, 67) = 0.417$, $p > .05$). H2 is not supported. Table 4 also contains means for these calculations.

For the Trustworthiness factor of credibility, there was no significant main effect for network size ($F(1, 67) = 0.848$, $p > .05$). There was no significant main effect for gender ($F(1, 67) = 0.130$, $p > .05$). There was no significant interaction between network

size and gender (F(1, 67) = 0.077, p > .05). H2 is not supported. See Table 4 for the means.

TABLE 4. Source Credibility Descriptives. Means and standard deviations for the impact of network size and gender on source credibility. The means are on a scale of 1 to 7, with higher numbers representing better credibility scores.

	Male		**Female**	
	Condition 1	**Condition 2**	**Condition 1**	**Condition 2**
Competence Factor	5.26 (1.18)	5.31(1.00)	5.09 (1.04)	5.12 (1.26)
Caring/Goodwill Factor	4.47 (1.14)	4.66 (1.14)	4.59 (1.41)	4.60 (1.08)
Trustworthiness Factor	5.02 (1.08)	5.19 (.96)	4.95 (1.16)	5.18 (.93)

Extra Tests

Analysis for Participants with Twitter Accounts

Additional tests were conducted to further probe the data. The 27 participants who reported maintaining Twitter accounts were isolated from the rest of the sample. For Condition 1, N = 12. For Condition 2, N = 15. Repeated measures ANOVA was again used to analyze the affect of social network size and profile gender on both social attraction and credibility.

There was no significant main effect for social network size on social attraction (F(1, 25) = 0.059, p > .05). There was no significant main effect for gender on social attraction (F(1, 25) = 0.016, p > .05). There was no significant interaction between social network size and profile gender on social attraction (F(1, 25) = 1.294, p > .05). Means are available in Table 5 below.

TABLE 5. Social Attraction Descriptives (2). Means and standard deviations for the impact of network size and gender on social attractiveness for participants with Twitter accounts. The means are on a scale of 1 to 7, with higher numbers representing better social attraction scores.

	Large Network	**Small Network**
Male	4.27 (SD = .63)	4.02 (SD = .70)
Female	4.06 (SD = .64)	4.19 (SD = 1.01)

A significant main effect for gender on the Competence factor of credibility ($F(1, 25) = 5.365$, $p = .029$) was found. There was no significant main effect for social network size on the Competence factor of credibility ($F(1, 25) = 0.081$, $p > .05$). There was no significant interaction between social network size and profile gender on the Competence factor of credibility ($F(1, 25) = 0.034$, $p > .05$). See the means in Table 6.

Neither was there a significant main effect for social network size on the Caring/Goodwill factor of credibility ($F(1, 25) = 0.016$, $p > .05$). There was no significant main effect for gender on the Caring/Goodwill factor of credibility ($F(1, 25) = 0.052$, $p > .05$). There was no significant interaction between social network size and profile gender on the Caring/Goodwill factor of credibility ($F(1, 25) = 0.241$, $p > .05$). Means are below in Table 6.

There was also no significant main effect for social network size on the Trustworthiness factor of credibility ($F(1, 25) = 3.069$, $p > .05$). There was no significant main effect for gender on the Trustworthiness factor of credibility ($F(1, 25) = 0.000$, $p > .05$). There was no significant interaction between social network size and profile gender

on the Trustworthiness factor of credibility (F(1, 25) = 0.004, p > .05). To see the means, consult Table 6.

TABLE 6. Source Credibility Descriptives (2). Means and standard deviations for the impact of network size and gender on source credibility. The means are on a scale of 1 to 7, with higher numbers representing better credibility scores.

	Male		***Female***	
	Large Network	**Small Network**	**Large Network**	**Small Network**
Competence Factor	4.46 (1.06)	4.51 (.92)	4.83 (1.10)	4.99 (1.56)
Caring/Goodwill Factor	4.35 (1.14)	4.66 (1.43)	4.42 (1.20)	4.32 (1.22)
Trustworthiness Factor	4.76 (1.14)	5.38 (1.00)	4.78 (1.12)	5.37 (.82)

Maintenance of Own Twitter Account as an IV

The researcher ran a final round of repeated measures ANOVA tests, adding the participants' prior user/nonuser Twitter status as an extra between-groups independent variable. No main effect for profile gender (F(1, 65) = .0864, p > .05), network size (F (1, 65) = 0.008, p > .05) or user/nonuser status (F(1, 65) = 0.395, p > .05) was found on social attraction. There were no significant interactions between network size and user/nonuser status (F(1, 65) = 0.066, p > .05), profile gender and user/nonuser status (F(1, 65) = 0.575, p > .05), profile gender and network size (F(1, 65) = 1.025, p > .05), or profile gender, network size and user/nonuser status (F(1, 65) = 0.468). Table 7 below contains means and standard deviations.

TABLE 7. Social Attraction Descriptives (3). Means and standard deviations for social attractiveness. The means are on a scale of 1 to 7, with higher numbers representing better social attraction scores.

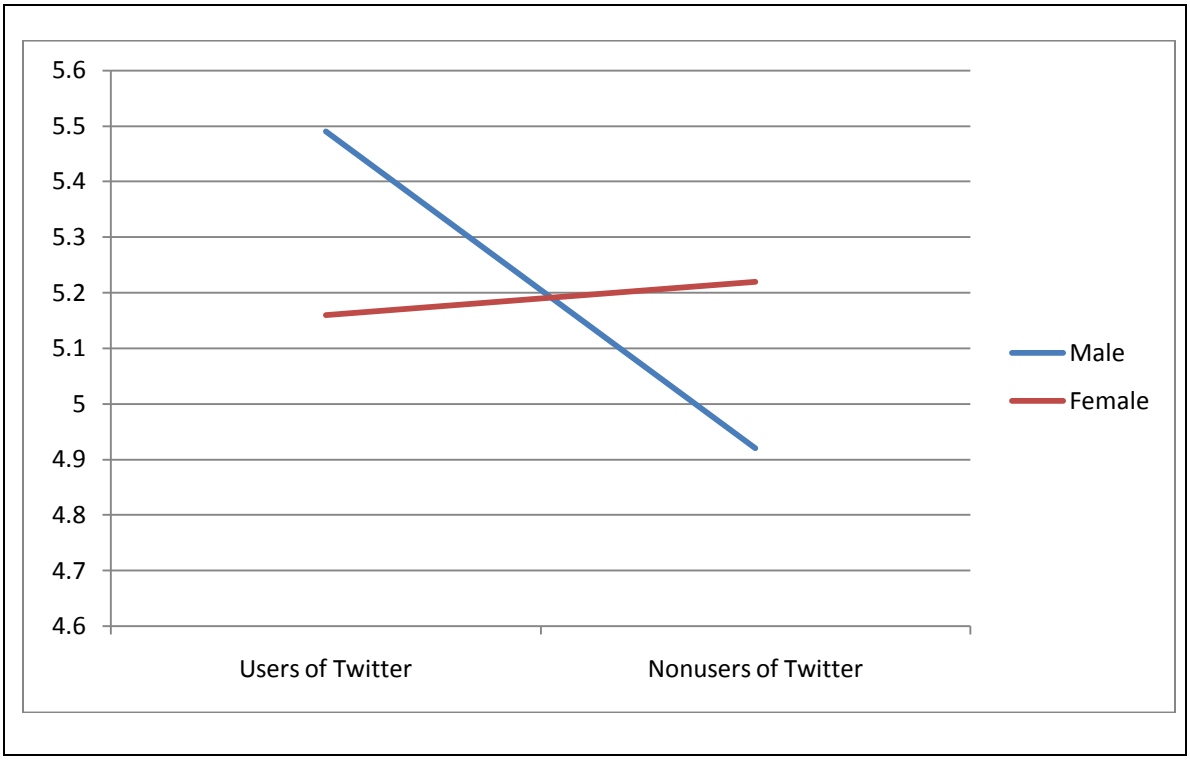
	User			Nonuser		
	Large Network	**Small Network**	**Total**	**Large Network**	**Small Network**	**Total**
Male	4.27 (.63)	4.02 (.70)	4.13 (.67)	4.19 (.79)	4.06 (.71)	4.12 (.75)
Female	4.06 (.64)	4.19 (1.02)	4.13 (.85)	4.27 (1.04)	4.46 (1.04)	4.36 (1.03)

For the Competence factor of credibility, no main effect was found for network size ($F(1, 65) = 0.047$, $p > .05$) or user/nonuser status ($F(1, 65) = 0.005$, $p > .05$). There was, however, a result approaching significance for a profile gender main effect ($F(1, 65) = 3.496$, $p = .066$). There was no significant interaction between network size and user/nonuser status ($F(1, 65) = 0.105$, $p > .05$), network size and profile gender ($F(1, 65) = 0.009$, $p > .05$), or network, profile gender and user/nonuser status ($F(1, 65) = 0.035$, $p > .05$). However, a significant interaction was found between profile gender and user/nonuser status on Competence ($F(1, 65) = 5.282$, $p = .025$). See reported descriptive statistics in Table 8. Figure 5 visualizes the latter significant results.

TABLE 8. Competence Descriptives. Means and standard deviations for the Competence factor of credibility. The means are on a scale of 1 to 7, with higher numbers representing better credibility scores.

	User			Nonuser		
	Large Network	**Small Network**	**Total**	**Large Network**	**Small Network**	**Total**
Male	5.46 (1.00)	5.52 (.92)	5.49 (.97)	5.15 (1.28)	5.17 (1.00)	5.16 (1.16)
Female	4.83 (1.10)	4.99 (1.56)	4.92 (1.35)	5.23 (1.00)	5.21 (1.02)	5.22 (1.15)

FIGURE 5. The Interaction Between Profile Gender and User/Nonusers on Competence. These results were found significant at p = .025. The means are on a scale of 1 to 7, with higher numbers representing better credibility scores.



The Goodwill/Caring factor of credibility had no significant main effects for network size ($F(1, 65) = 0.141$, $p > .05$), profile gender ($F(1, 65) = 0.013$, $p > .05$) or user/nonuser status ($F(1, 65) = 1.308$, $p > .05$). There were no significant interactions between profile gender and network size ($F(1, 65) = 0.427$, $p > .05$), profile gender and user/nonuser status ($F(1, 65) = 0.298$, $p > .05$), network size and user/nonuser status ($F(1, 65) = 0.059$, $p > .05$), or profile gender, network size and user/nonuser status ($F(1, 65) = 0.079$, $p > .05$).

TABLE 9. Goodwill/Caring Descriptives. Means and standard deviations for the Goodwill/Caring factor of credibility. The means are on a scale of 1 to 7, with higher numbers representing better credibility scores.

	User			Nonuser		
	Large Network	**Small Network**	**Total**	**Large Network**	**Small Network**	**Total**
Male	4.35 (1.06)	4.51 (1.43)	4.44 (1.26)	4.55 (1.21)	4.76 (.90)	4.65 (1.14)
Female	4.42 (1.20)	4.32 (1.22)	4.36 (1.19)	4.69 (1.54)	4.80 (.95)	4.75 (1.26)

Finally, the Trustworthiness factor of credibility had no significant main effects for network size ($F(1, 65) = 2.501$, $p > .05$), profile gender ($F(1, 65) = 0.072$, $p > .05$) or user/nonuser status ($F(1, 65) = 0.005$, $p > .05$). There were no significant interactions between profile gender and network size ($F(1, 65) = 0.015$, $p > .05$), profile gender and user/nonuser status ($F(1, 65) = 0.034$, $p > .05$), network size and user/nonuser status ($F(1, 65) = 3.435$, $p > .05$), or profile gender, network size and user/nonuser status ($F(1, 65) = 0.038$, $p > .05$).

TABLE 10. Trustworthiness Descriptives. Means and standard deviations for the Trustworthy factor of credibility. The means are on a scale of 1 to 7, with higher numbers representing better credibility scores.

	User			Nonuser		
	Large Network	**Small Network**	**Total**	**Large Network**	**Small Network**	**Total**
Male	4.76 (1.14)	5.38 (1.00)	5.10 (1.09)	5.17 (1.05)	5.06 (.93)	5.11 (.98)
Female	4.78 (1.12)	5.37 (.817)	5.10 (.99)	5.05 (1.19)	5.06 (1.00)	5.05 (1.09)

DISCUSSION

Interpretations

At face value, neither network size nor gender has a statistically significant effect on social attractiveness or source credibility. Certainly neither hypothesis was supported in this experiment, and the answer to both research questions is that—no—gender has no significant effect on social attractiveness or source credibility either. It is possible that the researcher must conclude that Twitter functions differently from Facebook, MySpace and Friendster, that social networks play a reduced role in judgments on Twitter than in other SNS. That might be the case.

On the other hand, in light of prior SNS studies clearly showing the importance of network size in social judgments online, specifically concerning social attractiveness (Kleck et al., 2007; Stam et al., 2010; Tong et al., 2008; Walther et al., 2008), and considering the anecdotal evidence of Twitterers and bloggers about the influence of the TFF ratio (Donaldson, 2008; Hounshell, 2008; Mishra, 2007; Schaffer, 2009), in addition to research into networking as the foundation and purpose of SNS (Agichtein et al., 2008; Currie, 2009; Hawn, 2009; Miller, 2008)—it is difficult to simply accept this experiment's findings without doubts. Is there any explanation for the lack of significant results?

Yes, in fact—an immediate red flag is found in the sample characteristics. At a sizeable 69 participants, the experiment had plenty of subjects. As expected, the sample

was dominated by undergraduates with an average age of 20.97 (SD = 2.35), and split relatively evenly between Condition 1 (33) and Condition 2 (36).

But while every single participant reported maintaining a Facebook profile, only 27 (39.1%) of the users reported maintaining a Twitter account. That is a low percentage, and means the vast majority of participants had little to no experience with Twitter profiles. This assumption is also supported by participants' low level of comfort navigating Twitter. Asked to rate their level of comfort on a Likert scale of 1 = Very comfortable to 7 = Very uncomfortable, participants' responses averaged at 5.06 (SD = 2.16).

It is entirely plausible that the overall lack of significant results can be attributed to the sample's inexperience with Twitter. After all, if participants do not maintain their own Twitter profiles and rarely visit the Twitter web site, how can they be expected to have a strong sense of how to make sense of the multitude of profile cues there?

The researcher also faced a problem when a third independent variable was added to the experiment for the sake of closer analysis. This variable separated prior Twitter users from nonusers, but results were largely insignificant. Perhaps this was due to a lack of power, as well as an unbalanced N between users and nonusers.

However the extra tests did show significant findings, all related to competence and gender. In addition to a main effect for profile gender on Competence for prior Twitter users, there was a significant interaction between user/nonuser status and profile gender for the Competence factor of source credibility. The interaction suggests

prior Twitter users rated male profiles more competent than female profiles. But Twitter nonusers rated female profiles as more competent than male profiles. (See Figure 5 for a visual of this interaction.)

The explanation for this gender effect on Competence is elusive. The researcher suspects it shows that Twitterers learn methods of profile judgment with which nonusers remain unfamiliar. Perhaps the explanation is that females are generally considered more communication competent than males. Therefore, nonusers might automatically assume that the female profiles represent more competent spokespersons. Prior users, on the other hand, might use their learned methods of profile judgment to determine competence—and the profile's gender somehow factors into that judgment. Whether or not those judgment cues are related to social network size in addition to credibility is yet unclear.

Limitations

The problem with Twitter is that there is very little guiding research to suggest which pressing issues on Twitter should be addressed. Of course, that is also its strength—Twitter is a new playground for researchers to explore. Realistically, however, it is difficult to tell precisely how applicable issues like gender and social network size are on Twitter, even when other SNS studies provide insights about these variables.

This experiment might not be able to accurately answer the hypotheses and research questions posed, due to sampling issues discussed above. Mainly, the results

might be limited because too few prior Twitter users participated (Type II error, or false negative), leading to an underpowered secondary analysis.

Additionally, a possible limitation involves the experiment's manipulation of social network size. As more and more people join Twitter, what is "large" and what is "small" as far as a user's network size is concerned can quickly evolve. Perhaps the experiment's "large" network sizes, chosen based on published statistics several months prior to the experiment, simply were no longer large enough to elicit the desired responses in participants.

Suggestions for Future Research

If it is true that the experiment's lack of statistical significance stem from a sample issue, the first suggestion for future research is to retool the stimuli and questionnaire for SurveyMonkey. The experiment was performed in a supervised environment at the computer lab in 182 Gannett, but SurveyMonkey would allow the experiment to be done online. Links to the questionnaire could be circulated to actual Twitterers, through Twitter, in order to ensure participants were experienced with that platform, and likely to have familiarity with social judgments on Twitter.

With a significant gender effect for profile gender, the reasons for which are unknown, further research is strongly suggested. Perhaps the effect is attributable to some profile cue unrelated to network size. Regardless, male and female profiles do seem to be judged differently by Twitter users and nonusers. Spokespersons on Twitter should be mindful of this effect, and should explore its cause.

While the experimental design would be more complex, it would also be interesting to examine how other levels of "network size," in addition to large and small, would impact social attractiveness and source credibility of spokespersons. Also, instead of looking only at large and small network sizes, inclusion of mixed-size networks (those with conflicting network size cues—for example, high number of followers but low number of following) could provide insight into Twitter's social innards.

Finally, this experiment focuses on spokespersons. Considering the researcher's interest in advertising and public relations as a student studying those fields, spokespersons and "regular" Twitterers are not necessarily judged by the same standards. Comparison of the two could inform whether the distinction of spokesperson versus "regular" Twitterer really matters.

Conclusions

Should organizations interested in creating Twitter spokesperson profiles to tap into the opportunity to connect with the abundant users there, and should these organizations accept this experiment's results without further thought or questions, there could be complications. The lack of significant results (aside from a gender effect between users and nonusers on Competence) concerning the impact of gender and network size on social attractiveness and credibility might be misleading.

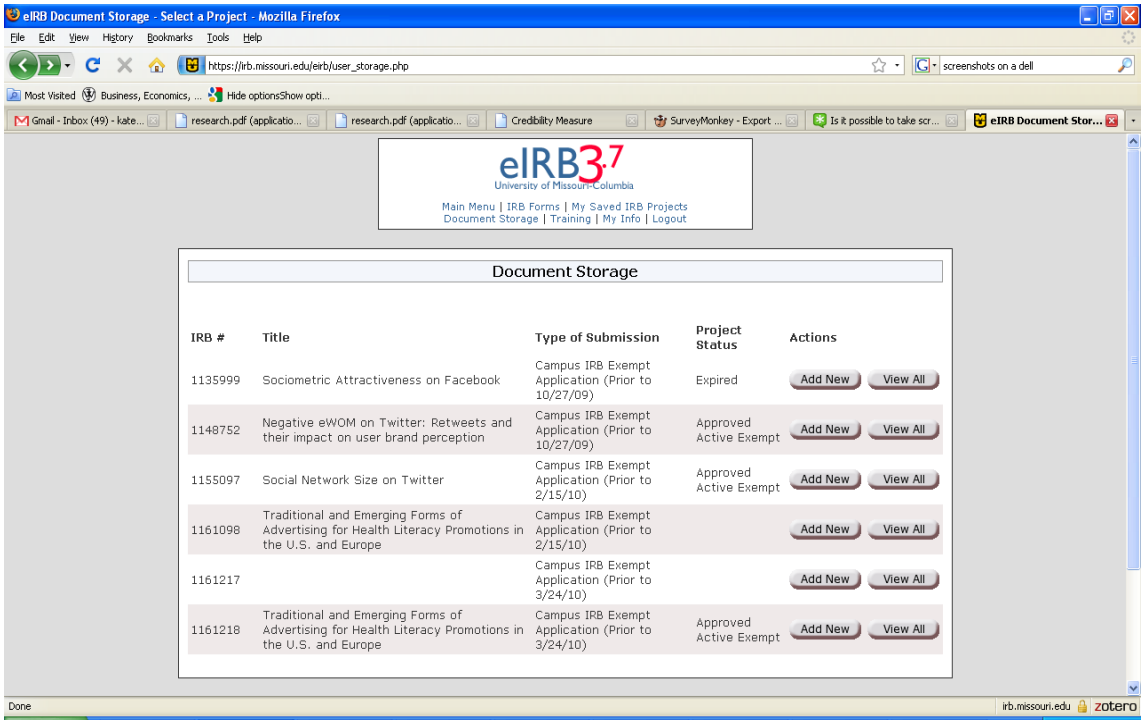
As all significant results revolved around competence and profile gender, it is indeed prudent for strategic communicators to understand how a Twitter spokesperson's gender affects competence. Findings indicate that male profiles are

generally judged more competent than female profiles. Looking at that result more closely, prior users see male profiles as more competent, but nonusers see female profiles as more competent. As Competence is a dimension of credibility, of utmost importance to strategic communicators, this finding deserves their consideration.

Before deciding how to tackle effective spokesperson profiles on Twitter, a platform full of interpersonal small talk, sharing and social interactions, strategic communicators should also consider that Twitter shares many features with other SNS sites. In the researcher's opinion, this is justification for caution in taking this experiment's lack of significance as the final word. In all likelihood the results are a reflection of a sample unacquainted with Twitter, and as such not realistically able to judge Twitter profiles as real Twitterers would.

It still makes sense to assume that indications of popularity and the nature of a profile's social interaction *could* matter in social judgments. It also still makes sense that, like other SNS, profile gender plays a role in social judgments on Twitter as well—as the gender effect on competence reveals. More research is required before these profile features can be dismissed as unimportant. It seems spokespersons are representing brands and organizations on social media, and will continue to do so. Through their experiences and complementary academic research, the characteristics of effective spokespersons on Twitter can still be found.

Appendix 1 – Proof of IRB approval



See IRB # 1155097, third from the top, titled *Social Network Size on Twitter*. Project status is "Approved Active Exempt."

Appendix 2 – Complete Questionnaire

Social attraction scale
(7 pt. Likert for each question – Strongly Agree/Strongly Disagree)
Presented in random order after each profile

I think he (she) could be a friend of mine.

I would like to have a friendly chat with him (her).

He (she) just wouldn't fit into my circle of friends.

He (she) would be pleasant to be with.

We could never establish a personal friendship with each other.

It would be difficult to meet and talk with him (her).

Source credibility scale
(7 pt. Likert for each question)
Presented in random order after each profile

Expert/Inexpert

Untrained/Trained

Incompetent/Competent

Concerned with me/Not concerned with me

Cares about me/Doesn't care about me

Understanding/Not understanding

Honest/Dishonest

Untrustworthy/Trustworthy

Phony/Genuine

Profile Following
(7 pt. Likert scale – Very likely/Very unlikely)
Presented after each profile

How likely would you be to follow this person on Twitter?

Demographics Questions
Presented at the end of the questionnaire

How old are you?
(Fill in the blank)

What is your gender?
1 = Male
2 = Female

Personal Twitter use

Do you have a Twitter account?
1 = Yes
2 = No

How long have you had your Twitter account?
1 = 1 month or less
2 = Between 1 month and 6 months
3 = Longer than 6 months
4 = Not applicable

How often do you use Twitter?
1 = Multiple times per day
2 = Approximately once per day
3 = Approximately once per week
4 = Approximately once per month
5 = Never
6 = Not applicable

How comfortable are you navigating the Twitter web site?
(7 pt. Likert scale, Very comfortable/Very uncomfortable)

Do you have an account on another social networking site (Facebook, MySpace, etc.)?
1 = Facebook
2 = MySpace
3 = Friendster
4 = Other

SNS questions
(7 pt. Likert scale for all questions – Extremely important/Not at all important)

When judging a Twitter or other social network profile online, how important is the profile's colors?

Its network size?

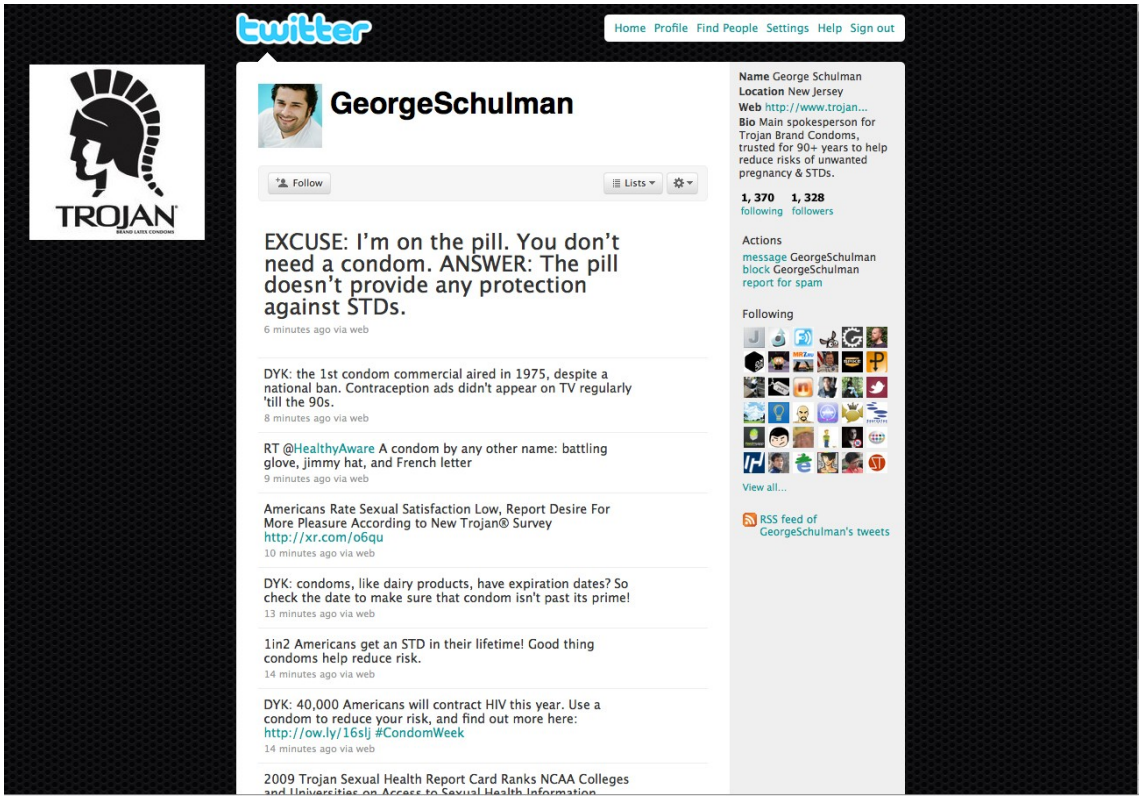
Its number of followers?

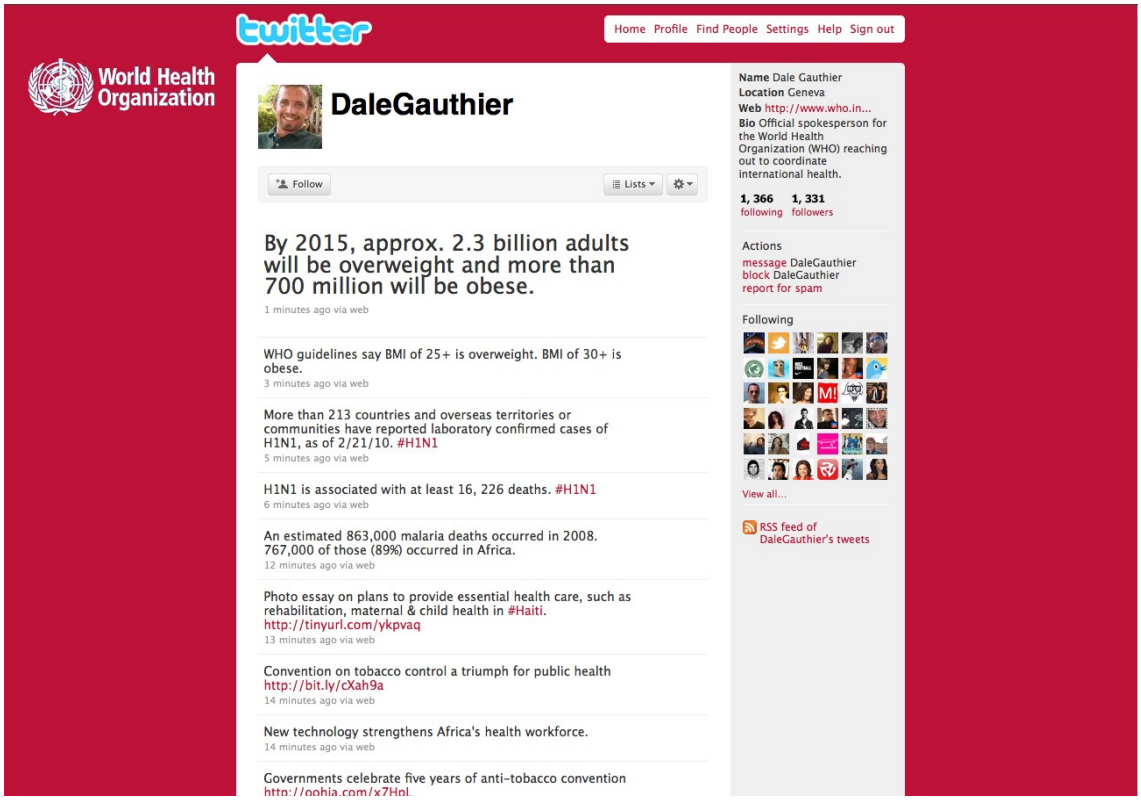
Its number of following?

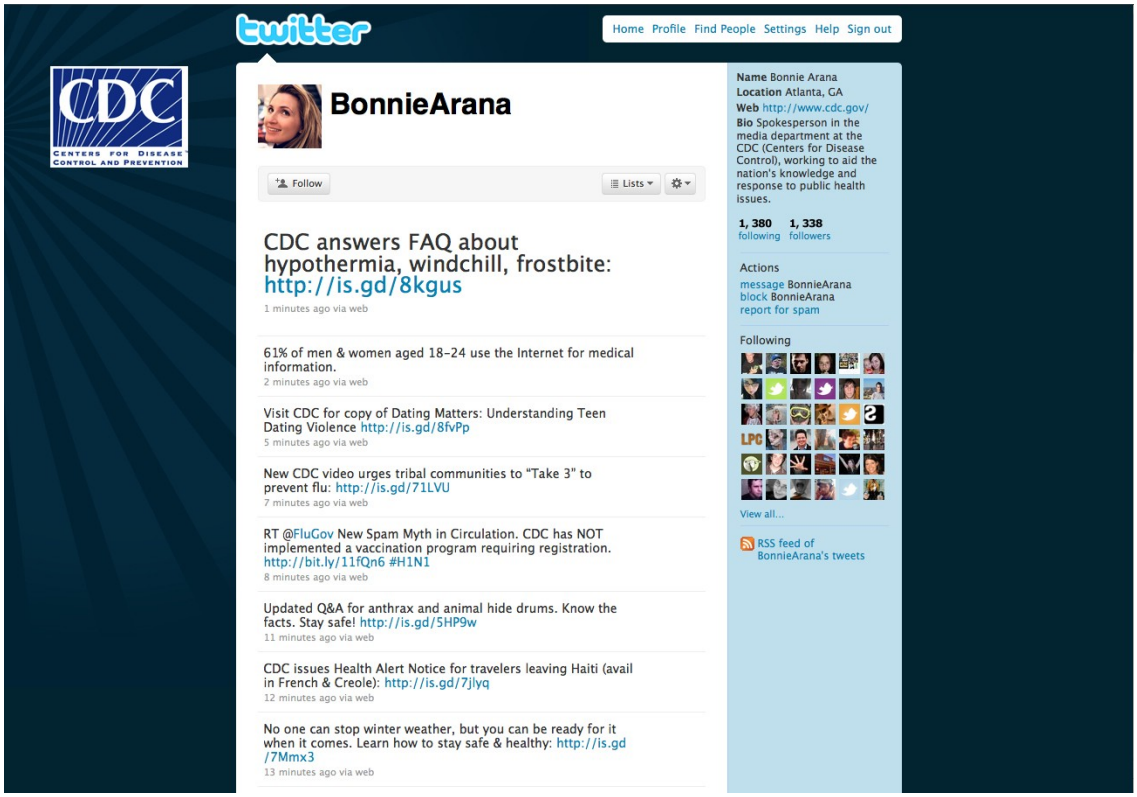
The content of its tweets?

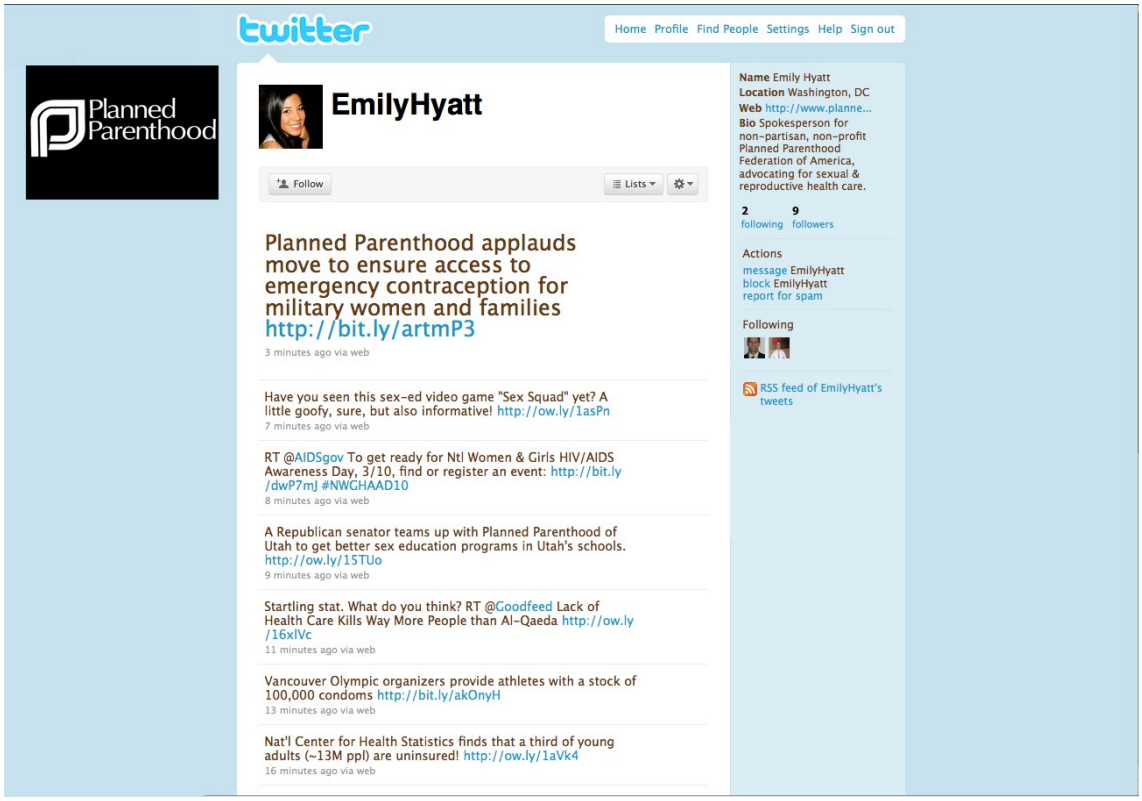
Its profile picture?

Appendix 3 – Twitter profiles with large networks (Condition 1)

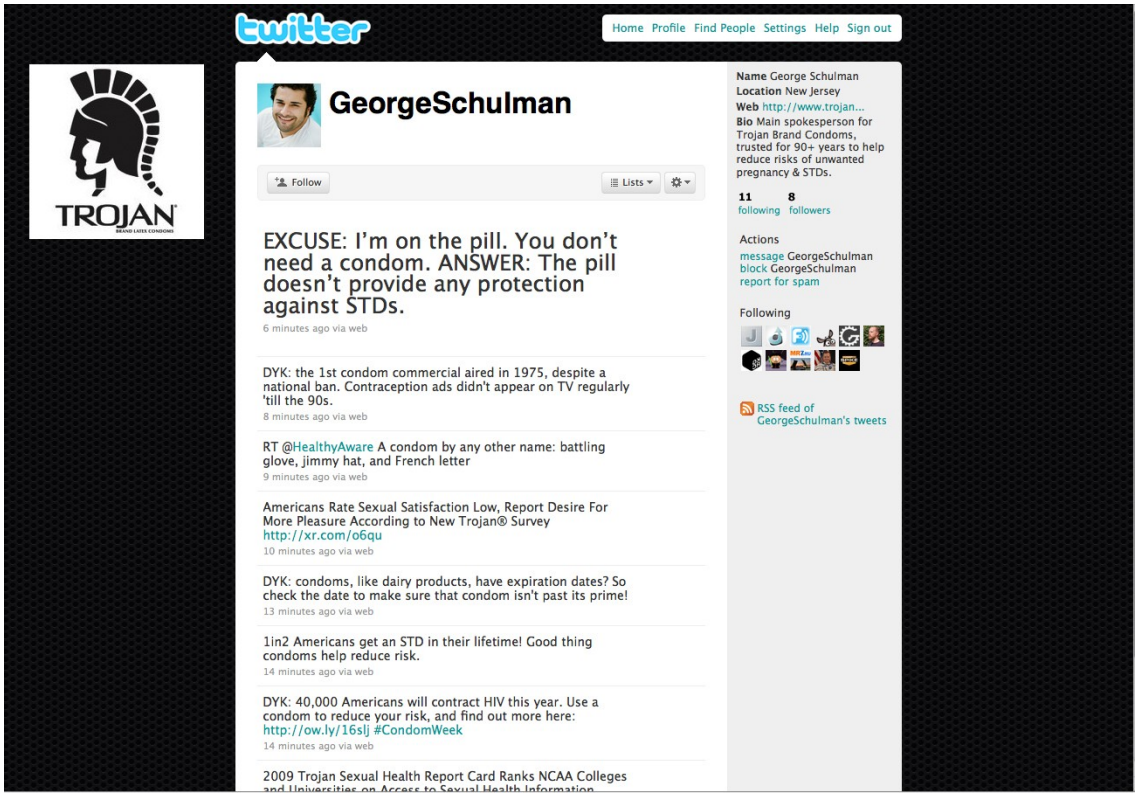


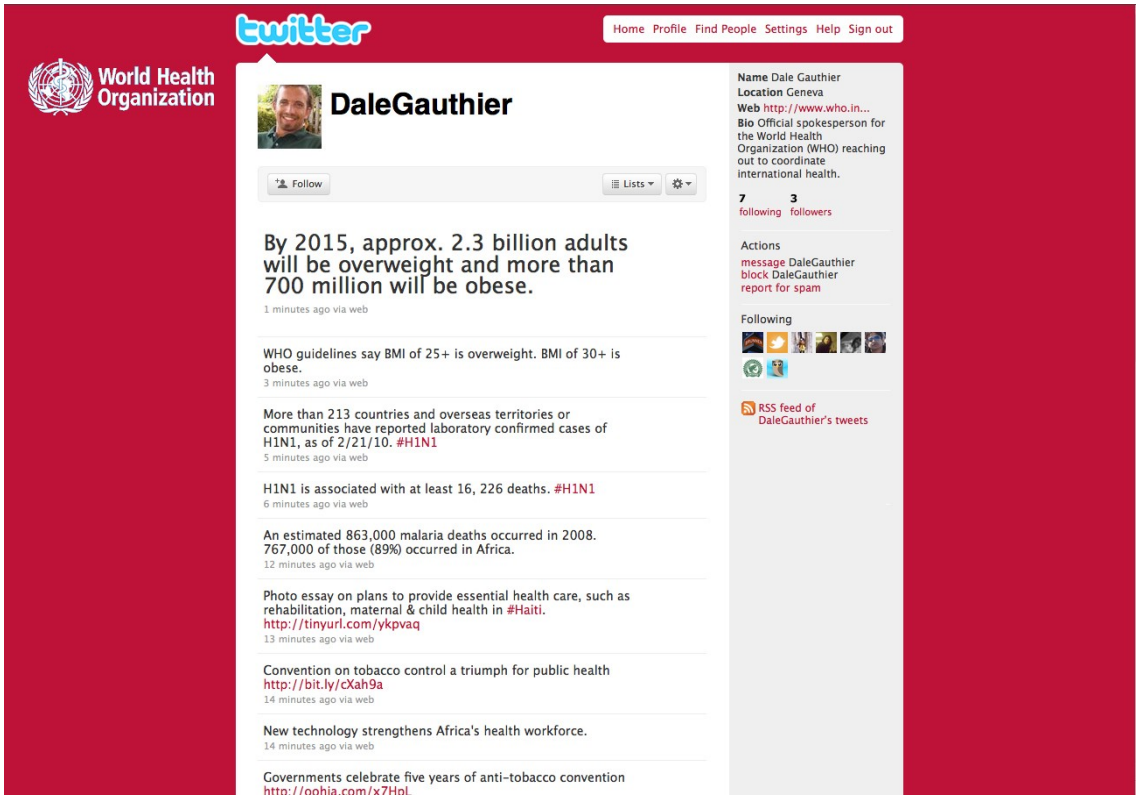

World Health Organization
twitter
Home Profile Find People Settings Help Sign out
DaleGauthier
Follow
Lists
By 2015, approx. 2.3 billion adults will be overweight and more than 700 million will be obese.
1 minutes ago via web
WHO guidelines say BMI of 25+ is overweight. BMI of 30+ is obese.
3 minutes ago via web
More than 213 countries and overseas territories or communities have reported laboratory confirmed cases of H1N1, as of 2/21/10. #H1N1
5 minutes ago via web
H1N1 is associated with at least 16, 226 deaths. #H1N1
6 minutes ago via web
An estimated 863,000 malaria deaths occurred in 2008. 767,000 of those (89%) occurred in Africa.
12 minutes ago via web
Photo essay on plans to provide essential health care, such as rehabilitation, maternal & child health in #Haiti. http://tinyurl.com/ykpvaq
13 minutes ago via web
Convention on tobacco control a triumph for public health http://bit.ly/cXah9a
14 minutes ago via web
New technology strengthens Africa's health workforce.
14 minutes ago via web
Governments celebrate five years of anti-tobacco convention
Name Dale Gauthier
Location Geneva
Web http://www.who.in...
Bio Official spokesperson for the World Health Organization (WHO) reaching out to coordinate international health.
1, 366 following
1, 331 followers
Actions
message DaleGauthier
block DaleGauthier
report for spam
Following
View all...
RSS feed of DaleGauthier's tweets


twitter
Home Profile Find People Settings Help Sign out
CDC
Centers for Disease Control and Prevention
BonnieArana
Follow
Lists
CDC answers FAQ about hypothermia, windchill, frostbite: http://is.gd/8kgus
1 minutes ago via web
61% of men & women aged 18-24 use the Internet for medical information.
2 minutes ago via web
Visit CDC for copy of Dating Matters: Understanding Teen Dating Violence http://is.gd/8fvPp
5 minutes ago via web
New CDC video urges tribal communities to "Take 3" to prevent flu: http://is.gd/71LVU
7 minutes ago via web
RT @FluGov New Spam Myth in Circulation. CDC has NOT implemented a vaccination program requiring registration. http://bit.ly/11fQn6 #H1N1
8 minutes ago via web
Updated Q&A for anthrax and animal hide drums. Know the facts. Stay safe! http://is.gd/5HP9w
11 minutes ago via web
CDC issues Health Alert Notice for travelers leaving Haiti (avail in French & Creole): http://is.gd/7jlyq
12 minutes ago via web
No one can stop winter weather, but you can be ready for it when it comes. Learn how to stay safe & healthy: http://is.gd/7Mmx3
13 minutes ago via web
Name Bonnie Arana
Location Atlanta, GA
Web http://www.cdc.gov/
Bio Spokesperson in the media department at the CDC (Centers for Disease Control), working to aid the nation's knowledge and response to public health issues.
1, 380 following
1, 338 followers
Actions
message BonnieArana
block BonnieArana
report for spam
Following
LPC
View all...
RSS feed of BonnieArana's tweets


twitter
Home Profile Find People Settings Help Sign out
Planned Parenthood
EmilyHyatt
Follow
Lists
Planned Parenthood applauds move to ensure access to emergency contraception for military women and families http://bit.ly/artmP3
3 minutes ago via web
Have you seen this sex-ed video game "Sex Squad" yet? A little goofy, sure, but also informative! http://ow.ly/1asPn
7 minutes ago via web
RT @AIDSgov To get ready for Ntl Women & Girls HIV/AIDS Awareness Day, 3/10, find or register an event: http://bit.ly/dwP7mJ #NWGHAAD10
8 minutes ago via web
A Republican senator teams up with Planned Parenthood of Utah to get better sex education programs in Utah's schools. http://ow.ly/15TUo
9 minutes ago via web
Startling stat. What do you think? RT @Goodfeed Lack of Health Care Kills Way More People than Al-Qaeda http://ow.ly/16xlVc
11 minutes ago via web
Vancouver Olympic organizers provide athletes with a stock of 100,000 condoms http://bit.ly/akOnyH
13 minutes ago via web
Nat'l Center for Health Statistics finds that a third of young adults (~13M ppl) are uninsured! http://ow.ly/1aVk4
16 minutes ago via web
Name Emily Hyatt
Location Washington, DC
Web http://www.planne...
Bio Spokesperson for non-partisan, non-profit Planned Parenthood Federation of America, advocating for sexual & reproductive health care.
2 following
9 followers
Actions
message EmilyHyatt
block EmilyHyatt
report for spam
Following
RSS feed of EmilyHyatt's tweets

Appendix 4 – Twitter profiles with small social networks (Condition 2)




World Health Organization
twitter
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14 minutes ago via web
New technology strengthens Africa's health workforce.
14 minutes ago via web
Governments celebrate five years of anti-tobacco convention
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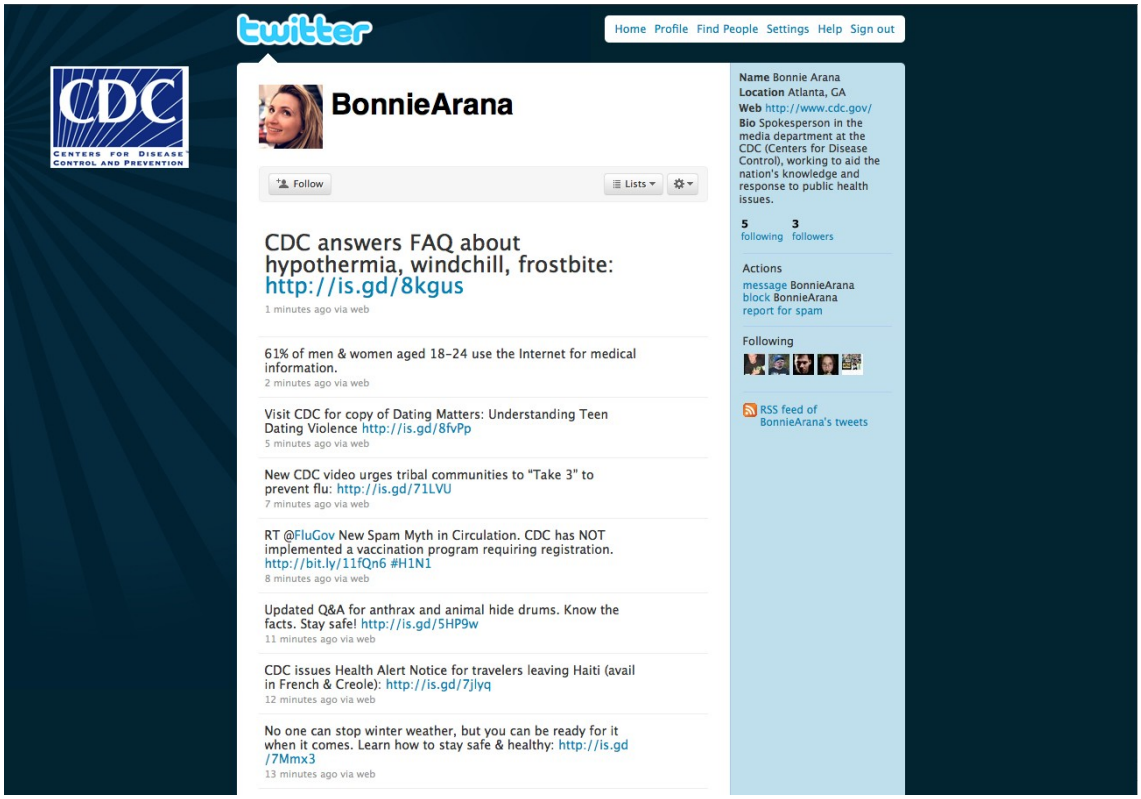
Location Geneva
Web http://www.who.in...
Bio Official spokesperson for the World Health Organization (WHO) reaching out to coordinate international health.
7 following
3 followers
Actions
message DaleGauthier
block DaleGauthier
report for spam
Following
RSS feed of DaleGauthier's tweets


twitter
Home Profile Find People Settings Help Sign out
CDC
Centers for Disease Control and Prevention
BonnieArana
Follow
Lists
CDC answers FAQ about hypothermia, windchill, frostbite: http://is.gd/8kgus
1 minutes ago via web
61% of men & women aged 18-24 use the Internet for medical information.
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New CDC video urges tribal communities to "Take 3" to prevent flu: http://is.gd/71LVU
7 minutes ago via web
RT @FluGov New Spam Myth in Circulation. CDC has NOT implemented a vaccination program requiring registration. http://bit.ly/11fQn6 #H1N1
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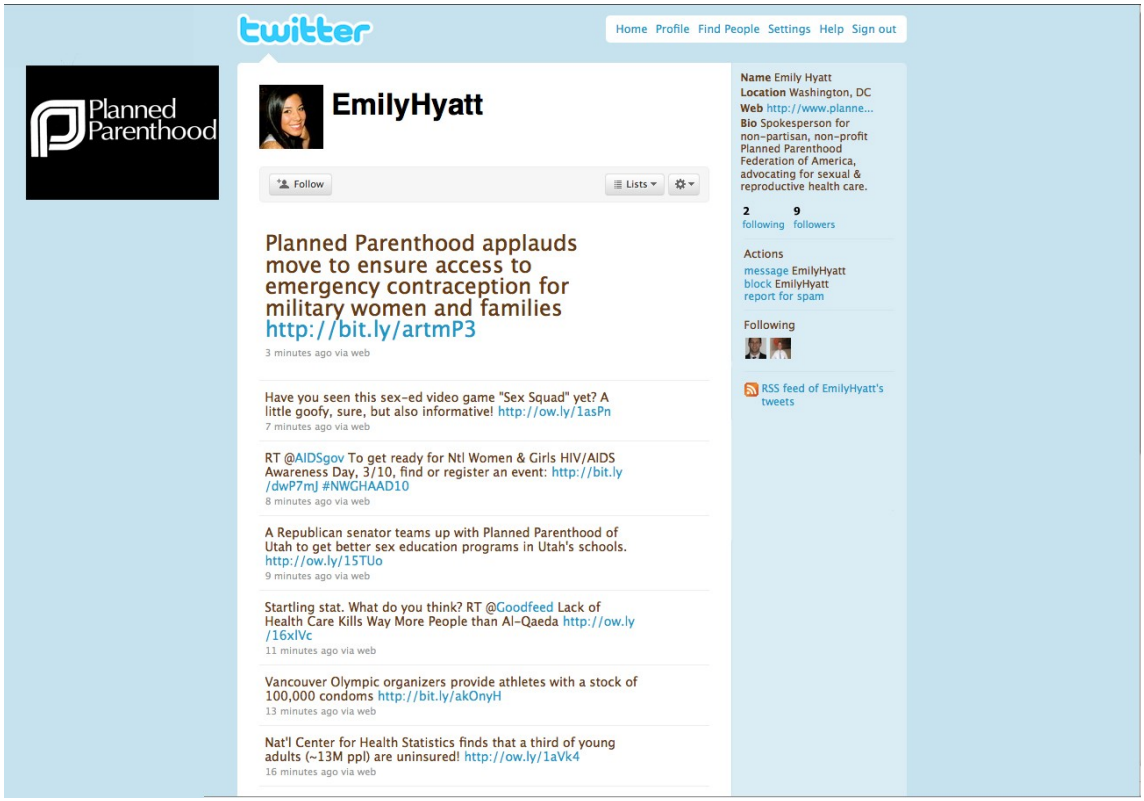
Updated Q&A for anthrax and animal hide drums. Know the facts. Stay safe! http://is.gd/5HP9w
11 minutes ago via web
CDC issues Health Alert Notice for travelers leaving Haiti (avail in French & Creole): http://is.gd/7jlyq
12 minutes ago via web
No one can stop winter weather, but you can be ready for it when it comes. Learn how to stay safe & healthy: http://is.gd/7Mmx3
13 minutes ago via web
Name Bonnie Arana
Location Atlanta, GA
Web http://www.cdc.gov/
Bio Spokesperson in the media department at the CDC (Centers for Disease Control), working to aid the nation's knowledge and response to public health issues.
5 following
3 followers
Actions
message BonnieArana
block BonnieArana
report for spam
Following
RSS feed of BonnieArana's tweets


twitter
Home Profile Find People Settings Help Sign out
Planned Parenthood
EmilyHyatt
Follow
Lists
Planned Parenthood applauds move to ensure access to emergency contraception for military women and families http://bit.ly/artmP3
3 minutes ago via web
Have you seen this sex-ed video game "Sex Squad" yet? A little goofy, sure, but also informative! http://ow.ly/1asPn
7 minutes ago via web
RT @AIDSgov To get ready for Ntl Women & Girls HIV/AIDS Awareness Day, 3/10, find or register an event: http://bit.ly/dwP7mJ #NWGHAAD10
8 minutes ago via web
A Republican senator teams up with Planned Parenthood of Utah to get better sex education programs in Utah's schools. http://ow.ly/15TUo
9 minutes ago via web
Startling stat. What do you think? RT @Goodfeed Lack of Health Care Kills Way More People than Al-Qaeda http://ow.ly/16xlVc
11 minutes ago via web
Vancouver Olympic organizers provide athletes with a stock of 100,000 condoms http://bit.ly/akOnyH
13 minutes ago via web
Nat'l Center for Health Statistics finds that a third of young adults (~13M ppl) are uninsured! http://ow.ly/1aVk4
16 minutes ago via web
Name Emily Hyatt
Location Washington, DC
Web http://www.planne...
Bio Spokesperson for non-partisan, non-profit Planned Parenthood Federation of America, advocating for sexual & reproductive health care.
2 following
9 followers
Actions
message EmilyHyatt
block EmilyHyatt
report for spam
Following
RSS feed of EmilyHyatt's tweets

Appendix 5 – SurveyMonkey pretest for isolating spokesperson brand

J7236 Brand familiarity2

1. Do you concent to partiolpate in this questionnaire?

		Response Percent	Response Count
Yes		100.0%	46
No		0.0%	0
	answered question		46
	skipped question		0

2. Familiarity with HTH Worldwide

	Unfamiliar	2	3	4	5	6	Familiar	Rating Average	Respond Count
How familiar are you with HTH Worldwide?	97.6% (38)	0.0% (0)	0.0% (0)	0.0% (0)	2.5% (1)	0.0% (0)	0.0% (0)	1.10	4
							answered question		4
							skipped question		

3. Experience with HTH Worldwide

	Inexperienced	2	3	4	5	6	Experienced	Rating Average	F
How experienced are you with HTH Worldwide?	100.0% (41)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	1.00	
							answered question		
							skipped question		

4. Knowledge of HTH Worldwide

	Not Knowledgeable	2	3	4	5	6	Knowledgeable	Rating Averag
How knowledgeable are you about HTH Worldwide?	97.6% (40)	2.4% (1)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	1.0
							answered question	
							skipped question	

6. Following HTH Worldwide on Twitter

	Very unlikely	2	3	4	5	6	Very likely	Rating Average	Response Count
Assuming you had a Twitter account, how likely would you be to follow HTH Worldwide (subscribe to its tweets)?	92.5% (37)	7.5% (3)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	1.08	40
							answered question		40
							skipped question		8

8. Familiarity with Planned Parenthood

	Unfamiliar	2	3	4	5	6	Familiar	Rating Average	Resp Cou
How familiar are you with Planned Parenthood?	10.0% (4)	2.5% (1)	10.0% (4)	20.0% (8)	12.5% (5)	7.5% (3)	37.5% (15)	4.95	
							answered question		
							skipped question		

7. Experience with Planned Parenthood

	Inexperienced	2	3	4	5	6	Experienced	Rating Average
How experienced are you with Planned Parenthood?	53.7% (22)	2.4% (1)	9.8% (4)	9.8% (4)	7.3% (3)	12.2% (5)	4.9% (2)	2.71
							answered question	
							skipped question	

8. Knowledge of Planned Parenthood

	Not Knowledgeable	2	3	4	5	6	Knowledgeable	Rat Ave
How knowledgeable are you about Planned Parenthood?	17.1% (7)	9.8% (4)	14.6% (6)	31.7% (13)	17.1% (7)	7.3% (3)	2.4% (1)	
							answered ques	
							skipped ques	

9. Following Planned Parenthood on Twitter

	Very unlikely	2	3	4	5	6	Very likely	Rating Average	Response Count
Assuming you had a Twitter account, how likely would you be to follow Planned Parenthood (subscribe to its tweets)?	72.5% (29)	12.5% (5)	7.5% (3)	0.0% (0)	2.5% (1)	2.5% (1)	2.5% (1)	1.65	40
							answered question		40
							skipped question		6

10. Familiarity with World Health Organization

	Unfamiliar	2	3	4	5	6	Familiar	Rating Average	Rec Co
How familiar are you with World Health Organization?	13.2% (5)	7.9% (3)	13.2% (5)	**26.3% (10)**	13.2% (5)	10.5% (4)	15.8% (6)	4.13	
								answered question	
								skipped question	

11. Experience with World Health Organization

	Inexperienced	2	3	4	5	6	Experienced	Rating Average
How experienced are you with World Health Organization?	**48.7% (18)**	23.1% (9)	15.4% (6)	2.6% (1)	7.7% (3)	0.0% (0)	2.6% (1)	2.08
								answered question
								skipped question

12. Knowledge of World Health Organization

	Not Knowledgeable	2	3	4	5	6	Knowledgeable	Rat Ave
How knowledgeable are you about World Health Organization?	20.5% (8)	12.8% (5)	**33.3% (13)**	17.9% (7)	7.7% (3)	5.1% (2)	2.6% (1)	
								answered ques
								skipped ques

13. Following World Health Organization on Twitter

	Very unlikely	2	3	4	5	6	Very likely	Rating Average	Response Count
Assuming you had a Twitter account, how likely would you be to follow World Health Organization (subscribe to its tweets)?	57.9% (22)	18.4% (7)	10.5% (4)	5.3% (2)	7.9% (3)	0.0% (0)	0.0% (0)	1.87	38
							answered question		38
							skipped question		8

14. Familiarity with American Red Cross

	Unfamiliar	2	3	4	5	6	Familiar	Rating Average	Resp Cou
How familiar are you with American Red Cross?	0.0% (0)	0.0% (0)	5.6% (2)	25.0% (9)	13.9% (5)	13.9% (5)	41.7% (15)	5.61	
							answered question		
							skipped question		

16. Experience with American Red Cross

	Inexperienced	2	3	4	5	6	Experienced	Rating Averag
How experienced are you with American Red Cross?	21.6% (8)	16.2% (6)	16.2% (6)	10.8% (4)	10.8% (4)	8.1% (3)	16.2% (6)	3.6
							answered question	
							skipped question	

16. Knowledge of American Red Cross

	Not Knowledgeable	2	3	4	5	6	Knowledgeable	Ra Av
How knowledgeable are you about American Red Cross?	2.7% (1)	2.7% (1)	36.1% (13)	16.2% (6)	13.5% (5)	16.2% (6)	13.5% (5)	
								answered que
								skipped que

17. Following American Red Cross on Twitter

	Very unlikely	2	3	4	5	6	Very likely	Rating Average	Response Count
Assuming you had a Twitter account, how likely would you be to follow American Red Cross (subscribe to its tweets)?	52.8% (19)	13.9% (5)	8.3% (3)	5.6% (2)	8.3% (3)	5.6% (2)	5.6% (2)	2.42	36
							answered question		36
							skipped question		10

18. Familiarity with Yaz

	Unfamiliar	2	3	4	5	6	Familiar	Rating Average	Resp Cou
How familiar are you with Yaz?	41.7% (16)	11.1% (4)	8.3% (3)	16.7% (6)	11.1% (4)	5.6% (2)	5.6% (2)	2.83	
							answered question		
							skipped question		

19. Experience with Yaz

	Inexperienced	2	3	4	5	6	Experienced	Rating Average	R
How experienced are you with Yaz?	89.2% (33)	2.7% (1)	2.7% (1)	2.7% (1)	2.7% (1)	0.0% (0)	0.0% (0)	1.27	
								answered question	
								skipped question	

20. Knowledge of Yaz

	Not Knowledgeable	2	3	4	5	6	Knowledgeable	Rat Ave
How knowledgeable are you about Yaz?	64.1% (20)	13.5% (5)	13.5% (5)	10.8% (4)	5.4% (2)	2.7% (1)	0.0% (0)	
							answered ques	
							skipped ques	

21. Following Yaz on Twitter

	Very unlikely	2	3	4	5	6	Very likely	Rating Average	Response Count
Assuming you had a Twitter account, how likely would you be to follow Yaz (subscribe to its tweets)?	83.3% (30)	11.1% (4)	2.8% (1)	0.0% (0)	2.8% (1)	0.0% (0)	0.0% (0)	1.28	36
								answered question	36
								skipped question	10

22. Familiarity with Trojan

	Unfamiliar	2	3	4	5	6	Familiar	Rating Average	Respo Cour
How familiar are you with Trojan?	5.6% (2)	2.8% (1)	8.3% (3)	8.3% (3)	19.4% (7)	11.1% (4)	**44.4% (16)**	5.44	
								answered question	
								skipped question	

23. Experience with Trojan

	Inexperienced	2	3	4	5	6	Experienced	Rating Averag
How experienced are you with Trojan?	16.2% (6)	10.8% (4)	8.1% (3)	13.5% (5)	10.8% (4)	16.2% (6)	**24.3% (9)**	4.3
								answered question
								skipped question

24. Knowledge of Trojan

	Not Knowledgeable	2	3	4	5	6	Knowledgeable	Ra Av
How knowledgeable are you about Trojan?	10.8% (4)	10.8% (4)	5.4% (2)	**21.6% (8)**	18.9% (7)	13.5% (5)	18.9% (7)	
								answered que
								skipped que

26. Following Trojan on Twitter

	Very unlikely	2	3	4	5	6	Very likely	Rating Average	Response Count
Assuming you had a Twitter account, how likely would you be to follow Trojan (subscribe to its tweets)?	76.0% (27)	11.1% (4)	5.6% (2)	2.8% (1)	2.8% (1)	2.8% (1)	0.0% (0)	1.56	36
							answered question		36
							skipped question		10

28. Familiarity with Listerine

	Unfamiliar	2	3	4	5	6	Familiar	Rating Average	Respo Cour
How familiar are you with Listerine?	5.6% (2)	0.0% (0)	5.6% (2)	8.3% (3)	16.7% (6)	16.7% (6)	47.2% (17)	5.69	
							answered question		
							skipped question		

27. Experience with Listerine

	Inexperienced	2	3	4	5	6	Experienced	Rating Average
How experienced are you with Listerine?	10.8% (4)	8.1% (3)	5.4% (2)	18.9% (7)	16.2% (6)	10.8% (4)	29.7% (11)	4.73
							answered question	
							skipped question	

28. Knowledge of Listerine

	Not Knowledgeable	2	3	4	5	6	Knowledgeable	Ra Av
How knowledgeable are you about Listerine?	10.8% (4)	5.4% (2)	21.6% (8)	18.9% (7)	10.8% (4)	18.9% (7)	13.5% (5)	
								answered que
								skipped que

29. Following Listerine on Twitter

	Very unlikely	2	3	4	5	6	Very likely	Rating Average	Response Count
Assuming you had a Twitter account, how likely would you be to follow Listerine (subscribe to its tweets)?	78.4% (29)	13.5% (5)	5.4% (2)	0.0% (0)	0.0% (0)	2.7% (1)	0.0% (0)	1.38	37
								answered question	37
								skipped question	9

30. Familiarity with NyQuil

	Unfamiliar	2	3	4	5	6	Familiar	Rating Average	Resp Cou
How familiar are you with NyQuil?	5.6% (2)	0.0% (0)	11.1% (4)	8.3% (3)	13.9% (5)	16.7% (6)	44.4% (16)	5.53	
								answered question	
								skipped question	

31. Experience with NyQuil

	Inexperienced	2	3	4	5	6	Experienced	Rating Average
How experienced are you with NyQuil?	16.2% (6)	5.4% (2)	8.1% (3)	16.2% (6)	18.9% (7)	5.4% (2)	29.7% (11)	4.51
							answered question	
							skipped question	

32. Knowledge of NyQuil

	Not Knowledgeable	2	3	4	5	6	Knowledgeable	Ra Av
How knowledgeable are you about NyQuil?	13.5% (5)	8.1% (3)	16.2% (6)	24.3% (9)	10.8% (4)	13.5% (5)	13.5% (5)	
							answered que	
							skipped que	

33. Following NyQuil on Twitter

	Very unlikely	2	3	4	5	6	Very likely	Rating Average	Response Count
Assuming you had a Twitter account, how likely would you be to follow NyQuil (subscribe to its tweets)?	77.8% (28)	19.4% (7)	2.8% (1)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	1.25	36
							answered question		36
							skipped question		10

34. Familiarity with Centers for Disease Control

	Unfamiliar	2	3	4	5	6	Familiar	Rating Average	Respo Cour
How familiar are you with Centers for Disease Control?	5.6% (2)	2.8% (1)	5.6% (2)	25.0% (9)	22.2% (8)	8.3% (3)	**30.6% (11)**	5.03	
								answered question	
								skipped question	

36. Experience with Centers for Disease Control

	Inexperienced	2	3	4	5	6	Experienced	Rating Average
How experienced are you with Centers for Disease Control?	29.7% (11)	**32.4% (12)**	13.5% (5)	8.1% (3)	8.1% (3)	2.7% (1)	5.4% (2)	2.62
								answered question
								skipped question

38. Knowledge of Centers for Disease Control

	Not Knowledgeable	2	3	4	5	6	Knowledgeable	Ra Av
How knowledgeable are you about Centers for Disease Control?	10.8% (4)	13.5% (5)	**29.7% (11)**	21.6% (8)	18.9% (7)	0.0% (0)	5.4% (2)	
								answered que
								skipped que

37. Following Centers for Disease Control on Twitter

	Very unlikely	2	3	4	5	6	Very likely	Rating Average	Response Count
Assuming you had a Twitter account, how likely would you be to follow Centers for Disease Control (subscribe to its tweets)?	61.1% (22)	8.3% (3)	19.4% (7)	0.0% (0)	0.0% (0)	5.6% (2)	5.6% (2)	2.08	36
							answered question		36
							skipped question		10

38. Familiarity with Advil

	Unfamiliar	2	3	4	5	6	Familiar	Rating Average	Respon Count
How familiar are you with Advil?	5.6% (2)	0.0% (0)	8.3% (3)	2.8% (1)	25.0% (9)	5.6% (2)	52.8% (19)	5.69	
							answered question		
							skipped question		

39. Experience with Advil

	Inexperienced	2	3	4	5	6	Experienced	Rating Average
How experienced are you with Advil?	8.1% (3)	5.4% (2)	13.5% (5)	18.9% (7)	8.1% (3)	2.7% (1)	43.2% (16)	4.95
							answered question	
							skipped question	

40. Knowledge of Advil

	Not Knowledgeable	2	3	4	5	6	Knowledgeable	Rat Ave
How knowledgeable are you about Advil?	10.8% (4)	5.4% (2)	13.5% (5)	16.2% (6)	**24.3% (9)**	5.4% (2)	**24.3% (9)**	
								answered ques
								skipped ques

41. Following Advil on Twitter

	Very unlikely	2	3	4	5	6	Very likely	Rating Average	Response Count
Assuming you had a Twitter account, how likely would you be to follow Advil (subscribe to its tweets)?	**77.8% (28)**	11.1% (4)	8.3% (3)	2.8% (1)	0.0% (0)	0.0% (0)	0.0% (0)	1.36	36
							answered question		36
							skipped question		10

42. Familiarity with Ricola

	Unfamiliar	2	3	4	5	6	Familiar	Rating Average	Respo Cour
How familiar are you with Ricola?	22.9% (8)	2.9% (1)	14.3% (5)	8.6% (3)	14.3% (5)	5.7% (2)	**31.4% (11)**	4.31	
							answered question		
							skipped question		

43. Experience with Ricola

	Inexperienced	2	3	4	5	6	Experienced	Rating Average
How experienced are you with Ricola?	38.9% (14)	13.9% (5)	13.9% (5)	2.8% (1)	5.6% (2)	5.6% (2)	19.4% (7)	3.17
								answered question
								skipped question

44. Knowledge of Ricola

	Not Knowledgeable	2	3	4	5	6	Knowledgeable	Rati Aver
How knowledgeable are you about Ricola?	26.0% (9)	22.2% (8)	26.0% (9)	5.6% (2)	5.6% (2)	5.6% (2)	11.1% (4)	3
								answered questi
								skipped questi

46. Following Ricola on Twitter

	Very unlikely	2	3	4	5	6	Very likely	Rating Average	Response Count
Assuming you had a Twitter account, how likely would you be to follow Ricola (subscribe to its tweets)?	88.1% (31)	11.1% (4)	2.8% (1)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	1.17	36
								answered question	36
								skipped question	10

Appendix 6 – Consent Form

CONSENT FORM

About the study

You have been invited to participate in a research study conducted by a master's student at the University of Missouri School of Journalism. The aim of this study is to understand more about spokespersons on Twitter.

Only participants 18 years of age or older may take part. All data from this study will be kept confidential and anonymous. Participation is one-time and voluntary, meaning you may choose to withdraw from the study at any time without penalty. Your decision whether or not to participate will not affect your current or future relationship with the University of Missouri or with the School of Journalism.

Procedures

Participants in the study complete a computer-generated questionnaire. Within that questionnaire, participants view four Twitter profiles and evaluate each profile. Participants are also asked to provide basic demographics information and answer questions about their own personal Twitter and use. The questionnaire should take about 30 minutes to complete.

If you have any questions while completing the questionnaire, please raise your hand for assistance.

Contact information

The researchers conducting this study are Kate Stam and Dr. Glen Cameron.

If you have questions about the study, feel free to contact Kate Stam at kate.stam@gmail.com or (573) 446-8457. If you would like to speak with Dr. Cameron, his e-mail address is camerong@missouri.edu.

If you have any questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact - anonymously, if you wish - the Campus IRB office at Campus Institutional Review Board, 483 McReynolds, University of Missouri, Columbia, MO 65211. The web site is available at www.research.missouri.edu/cirb/index.htm and the phone number is 573.882.9585.

Statement of consent

By signing your name, you state that you have read and understand the above information, are 18 years of age or older, and voluntarily consent to participate in the study.

I voluntarily consent to participate in this study.

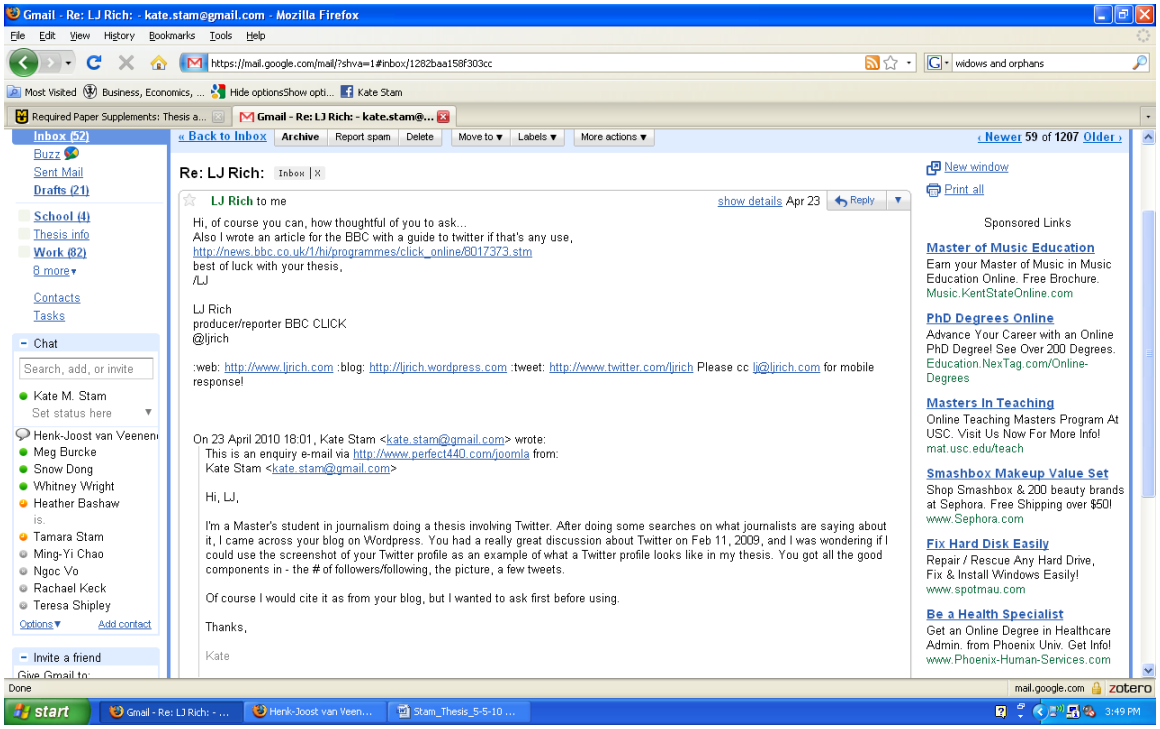
_____ _____

NAME (PRINTED) DATE

_____

SIGNATURE

Appendix 7 – Image permission



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