# TWO VOICES: SOCIAL PRESENCE, PARTICIPATION, AND CREDIBILITY IN ONLINE NEWS.

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

TWO VOICES: SOCIAL PRESENCE, PARTICIPATION,
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presented by Brian Hamman, 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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## Abstract

An experiment tested hypotheses predicting that social presence would increase participation and credibility on a newspaper website. Participants read four news articles in one of four conditions created by crossing two manipulations: use or absence of social language, and use or absence of a reporter photograph, both designed to increase feelings of social presence. Repeated measures ANCOVA was used to test the effects of the manipulations on social presence and regressions were used to test the effects of social presence on credibility and participation. In the first part of the experiment, it was found that social language increased social presence, but use of the photograph had no effect. In turn, social presence increased an expressed intent to participate on the news website, but did not result in an actual increase in participation. Social presence also significantly hurt credibility.

## Introduction

In 2004, journalists watched as their readers took to their keyboards and became a small army of micro publishers. By the end of the year these new bloggers had created an estimated 4.12 million blogs – more than 28,000 for every daily newspaper in the United States (NAA, 2004; Perseus, 2004). Bloggers noisily muscled their way into the national media landscape. They fueled the presidential campaign of Howard Dean. They demanded and secured press credentials to the Democratic National Convention, and eventually they forced CBS News to admit to reporting on falsified documents. Yet still, according to a Pew study, only two percent of all Internet users maintained blogs (Lenhart et al., 2004). As the number of blogs grew, trust in the press appeared to decline proportionally. Pew reported that credibility ratings for newspapers had dropped to an all-time low (Pew, 2004). Believing that their own credibility was being eroded by this new "citizen media," many journalists predicted and feared having to compete with their readers for control of the media landscape.

While some were calling for the licensing and professionalization of "real" journalists, others saw the wave of bloggers as an opportunity. The call went out to transform news from a "lecture" into a "conversation" (Rosen, 2004). Journalists hoped that involving readers in the news process – as informants, critics, and contributors – would make the news more transparent and credible. Throughout the next year newspapers across the country introduced blogs, forums, and other venues where reporters could relax and communicate with readers. The Spokane *Spokesman Review* introduced the blog "News is a Conversation," which invited readers to comment on the

daily content of the paper (Lipton, 2005). The editor of the Greensboro *News & Observer* started a blog where he could share the paper's mistakes and awards with readers. Others, like the Lawrence *Journal-World* and the Seattle *Times,* invited readers to publish blogs on the newspaper's website.

The editors of these blogs imagine them as an open communication channel with their readers that runs parallel to the content printed in the newspaper. During a panel talking about the blogs at his own paper, *News-Observer* editor John Robinson noted that "the reporters, in particular, have two voices, just as editorial folks and I do. One is institutional, and that one is in the newspaper, and the other, which is more collegial and accessible is in the blogs," (Robinson, 2005 p. 56). But can reporters really have two voices, or does transparency by definition expose the social side of once-invisible print reporters? It would appear that online communication channels now available to print journalists are collapsing the distinction between their personal and institutional voices. While in some ways, the addition of blogs to newspaper websites is nothing new. In tone, the writing of blogs mirrors the social, casual style of the staff columns already present in most newspapers and on many newspaper sites. But unlike columns in the print edition, this new breed of news blogs allows for immediate response and feedback through comments forms. As research into online communities has shown, the ability to interact and exchange messages can lead to more social attitudes (Gunawardena, 1995). Can print journalists continue to enjoy an institutional distance while they increase the social communication channels with their readers, viewers, and listeners?

This is the question I explore in my thesis. What happens to the credibility of print journalism when the reporters step out from behind their keyboards and become real

people with recognizable faces and personalities? Print journalists have long enjoyed an institutional anonymity. What happens when that starts to fade away?

Part of the answer to this question can be found in research conducted when news first made the jump from paper to the television. After a few years of fairly comparable credibility ratings, television became the most credibly rated news medium in decades of surveys (Abel & Wirth, 1977). Researchers puzzling over the survey results speculated that it was because television was more entertaining, more immediate, and that in the end "seeing is believing" (Abel & Wirth, 1977; Meyer 1988). Newhagen and Nass (1988) argued that the differences could be because readers of print news and viewers of television news were paying attention to two different voices and rating the credibility of two different things. Whereas readers of print news rated the credibility of the institution, viewers of television news rated the credibility of the newscasters. Applying Newhagen and Nass's theory to the transition of print journalists into the richer online media landscape, we might now ask whether readers will focus their attention on human rather than institutional sources of the news.

This study presents an experimental test of Newhagen and Nass's theories regarding credibility in the context of online news. Two types of social information, photographs of reporters and social language, are introduced into online news stories in order to trigger social responses in readers. Through this manipulation I intend to show three effects (1) that the use of social behaviors does, in fact, increase the social presence of the reporters, (2) that this social presence in turn leads to the increased participation on a news website and engagement with the readers as it is intended, and (3) that readers of news sites with more socially present reporters perceive the articles on that site and the

media organization to be more credible. The literature review will trace prior research into social presence, online communities, define the manipulations as social behaviors, and then relate them to participation and credibility.

## Literature Review

First, I will review the literature surrounding social presence. I will tie the concept to its roots in immediacy and intimacy, trace some of the debate over the measurement and conceptualization of social presence, and finally connect the concept to the proposed manipulations (use of a photograph and use of social language). I will then turn to more recent research into why people participate in online communities, and argue that structural factors of websites can influence participation. Finally, I will discuss the literature of credibility. I will argue that a community-based model of credibility is most appropriate when considering online social interactions.

### *Social presence*

In the 30 years since it was first introduced by Short, Williams, and Christie (1976), social presence has attracted the interest of a wide range of scholars attempting to explain the social phenomena of mediated environments. As a result, the concept has no true disciplinary home, several extant measurement techniques, and as many definitions as there are definers. Varied research traditions have led to conceptualizations of social presence as everything from an illusion to an intentional and natural byproduct of communicating through channels lacking in social cues. In turn, measures of social presence have ranged from the use of semantic differential and Likert-style scales to content analysis and physiological sensors. Biocca, Burgoon, Harms, and Stoner (2001) recently identified more than a dozen active definitions and measures for social presence.

Much of the debate about definitions of social presence can be traced to research traditions exploring widely divergent phenomena, from social responses to computers (Lee & Nass, 2003; Reeves & Nass, 1996) to interpersonal communication in text-based

environments, (Baym, 1995; Gunawardena, 1995; Hwang, 2005), to immersive virtual reality (Biocca, 1997; Lombard & Ditton, 1997). On one hand, those interested in social responses to computers define social presence as an illusory projection of social expectations and behaviors onto non-social actors (Lee & Nass, 2003; Reeves & Nass, 1996). At the other extreme, scholars of virtual reality argue that social presence requires a feeling of togetherness and mutual awareness. "The minimum level of social presence occurs when users feel that a form, behavior, or sensory experience indicates the presence of another intelligence. The amount of social presence is the degree to which a user feels access to the intelligence, intentions, and sensory impressions of another" (Biocca, 1997).

This paper, however, will take the middle ground, drawing on social presence research concerning interpersonal and group communication in online communities. Because news websites are asynchronous and largely one-way communication channels, they do not meet the criteria for behavioral engagement that are the focus of virtual reality research. Nor are online communities a projection of social behaviors onto computers. Rather, personal communication researchers have identified three relevant dimensions of social presence: (1) source attention, defined as the degree to which the source is focused on relative to other cues, (2) co-presence, or the feeling of existing with the person, and (3) mutual awareness or psychological involvement – the feeling of being "known" by the other (Biocca et al., 2001; Gunawardena & Zittle, 1997; Tamborini & Skalski, 2005). This stream of interpersonal communication research defines social presence as the degree of psychological involvement or salience of real people communicating through a mediated environment. This definition, in turn, traces back to the concept as introduced by Short, Williams, and Christie (1976).

Short, et. al.(1976) first defined social presence as "the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships" (67) or, more informally, "the degree to which [someone] is perceived as a 'real person'" (73). They related the concept to Argyle and Dean's (Argyle, 1968 qtd in Short, 1976) concept of intimacy, which predicted an equilibrium of approach and avoidance and Wiener and Mehrabian's (1968) concept of immediacy, defined as the degree of psychological distance between two communicators. Though the terms are all closely related, Short et. al. distinguished social presence from immediacy and intimacy by saying it was a property of a particular medium, rather than a psychological condition. It could be said that social presence was a measure of the amount of immediacy and intimacy that any given medium could support. They argued that the social presence of a medium varied according to the number of social cues it offered. Channels lacking in cues, such as audio and text, would have lower social presence because they lacked capacity to communicate the amount of social information included in richer media and face-to-face communication. They theorized that people would choose a medium that was appropriate for different types of communication: high cue media such as face-to-face for highly social situations, or text-based media for more informational exchanges.

Clearly this has not been the case. A large body of research into early text-based games and chat rooms has demonstrated that rich social relationships and communities develop in even the simplest text-based environment (Baym, 1995; Jones, 1995). Online communities can connect individuals to exchange emotional support and encouragement on everything from a classroom homework assignment to dealing with breast cancer (Gunawardena, 1995; Rodgers, 2005). Given time, people can develop more intimate

friendships through mediated communication than they would have in only a face-to-face setting (Hian et al., 2004; Hu, 2005; Walther, 1996). In fact, rather than shy away from low-cue communication channels, as Short et al. theorized, people seem to be drawn to them. Users of instant messaging programs, for example, choose the mediated communication environment because they are able to comfortably have more intimate conversations than otherwise possible (Hwang, 2005).

How does this intimacy develop in a communication environment lacking in social cues? Drawing from Argyle's (1965) equilibrium theory of intimacy, Walther (1992) argued that communicators would substitute textual cues for non-verbal cues lacking in CMC in order to maintain an equilibrium of sociability. Researchers have identified numerous examples of this cue substitution (Baym, 1995; Jones, 1995). Users of instant-messaging programs, for example, use emoticons (such as smiley faces :-)) and short-hand text (such as LOL for laugh-out-loud) to convey emotion and other behaviors (Hu, 2005). Participants in online educational communities often use humor, referential posts, and share personal anecdotes unrelated to the course work (Conaway et al., 2005; Swan, 2002). Taken together, these behaviors can develop into sophisticated social norms that can either form boundaries (Honeycutt, 2005) or encourage participation (Preece, 2001; Preece & Maloney-Krichmar, 2005) in online communities.

While Short et al. were aware of the social undertones of language, they did not anticipate that users of a communication medium would be able to modify their behavior in order to maintain a high level of sociability. They thought that each medium had an upper bound on how sociable it could be – of how much immediacy and intimacy it could sustain. Contrary to what Short et al. originally theorized, however, current researchers

define social presence not as a characteristic of the medium, but rather how participants use the medium to communicate (Gunawardena, 1995; Swan, 2002). In this new paradigm, social presence is defined as a "subjective" measure of the sociability of a communications medium which is derived from a combination of a medium's interactivity (an objective measure of sociability) and whether that interactivity was realized (Rafaeli, 1988). For example, while it may be fair to say that communication through a business letter has fewer available social cues than communication in person, this does not necessarily predict that readers of the letter will experience lower feelings of social presence. It would depend on the contents of both the letter and in-person communication.

It is important to note that accounting for message characteristics in the definition of social presence has eroded its conceptual distinction from Wiener and Mehrabian's concept of immediacy. Short et al. originally described the differences between the two concepts in these terms: "[A person] making a phone call may choose to speak in such a manner as to give an impression of aloofness and 'distance' (non-immediacy) or he may choose to adopt an attitude of informality and comradeship. In either case, the degree to which he is perceived as a 'real person' – the social presence afforded by the telephone – will be the same" (Short et al., 1976). Research into social responses to computers and online communities in particular, however, has shown that perception of someone (or something) as a 'real person' does indeed vary due to the tone and content of a mediated message (Lee & Nass, 2003; Walther, 1992). Because social presence varies according to both the message and characteristics of the medium it has largely replaced the concept of immediacy in studies of online communities (Richardson & Swan, 2003). This paper,

then, retains Short et al.'s definition of social presence as a measure of the "salience of the other" in a mediated communication, but with some important differences. Social presence is not a measure of the medium, but rather a measure of a psychological feeling of distance that can vary depending on the characteristics of the medium and the message. In short, social presence is treated as a measure of "mediated interpersonal immediacy"

For this study I focus on how journalists can alter both the characteristics of a webpage and a message in order to increase perceptions of social presence. Research into online educational communities, in particular, has focused on the use of text-based social behaviors – which I call "social language" – to convey social messages outside of the normal coursework. The studies have identified three categories of social language in online communities: affective responses (the use of self-disclosure, humor, or emoticons), interactive responses (referential posts, using someone's first name) and cohesive responses (using inclusive terminology such as "we") (Rourke et al., 2001; Swan, 2002). Through content analysis, these studies have found social language to be present in online communities in high concentration – sometimes more than on-topic messages (LaRose & Whitten, 2000; Swan, 2002). It is important to note, however, that these studies use social language as a *measure* rather than a *cause* of social presence. The researchers argue that the presence of social language in an online community is evidence of social presence. Their assertion seems to be supported by other researchers who have measured the social presence of online communities through the use of modified versions of the scales developed by Short et. al. At least two studies have found

that social presence can be cultured within an online learning community (Gunawardena, 1995; Richardson & Swan, 2003).

While social language has been used to measure the development of social presence over time, there is no experimental evidence that social language can cause social presence. There is, however, some anecdotal support for an effect. Preece (2001) has argued that social language in online communities can encourage participation by making the community appear active to newcomers. Several studies have found that intimate friendships can develop in mediated environments through the use emoticons and other techniques (Hian et al., 2004; Hu, 2005). In this study, I will test whether social language can encourage feelings of social presence after reading a single news article. I predict that despite the short-term, one-way nature of communication, the presence of social language will encourage feelings of social presence in readers of a news website.

**H1:** People who read news articles with social language will report higher levels of social presence than people who read news articles without social language.

While online communication is primarily restricted to text-based language, researchers have identified several non-verbal ways that communicators transmit social messages. For example, people use the delay between messages as an indication of the attention paid by their communication partner (Bargh, 2004; Blanchard, 2004). Similarly, previous studies have identified photographs as an immediate behavior communicating "social approval" and "social interest" online (LaRose & Whitten, 2000). Walther et. al. (2001) found that photographs can increase short-term feelings of social presence during a group project. Photographs have also been shown to increase the

response rate for survey solicitations through email (Gueguen & Jacob, 2002). I predict the presence of a photograph of a reporter on a news website will act as a non-verbal social behavior that encourages feelings of social presence in readers of a news article.

**H2:** People who read news articles with a photo of the reporter will report higher levels of social presence than people who read a story without a photo.

While each of these social behaviors alone will encourage feelings of social presence, I expect that both behaviors together will give the reader the most social information about the reporter. When social language and a photograph are both used, I expect the reader to have the strongest feeling of the reporter's presence.

**H3:** People who read news articles with social language and a photo of a reporter will report the highest levels of social presence.

In turn, as feelings of social presence increase, I expect that this will have a positive impact on perceptions of news credibility and will encourage participation. I will now discuss the concepts of participation and credibility.

*Intent to Participate*

Managers of online communities and editors of news websites are eager to encourage participation such as commenting and posting original content on their websites and with good reason. Users who participate often become more loyal and likely to return and participate again (Light & Rogers, 1999). In online education, participation in group discussions has been linked to higher satisfaction with the course (Gunawardena, 1995; Swan, 2002) and increased learning (Richardson & Swan, 2003). Participation in an online breast-cancer support group has been shown to improve psychological well-being (Rodgers, 2005). But not everyone participates. A recent Pew

study (Lenhart et al., 2004) found that about 44% of Internet users had contributed some form of content to a website. Nonnecke and Preece (2000) found that lurkers – non-contributing members of online communities and newsgroups – make up about 55 percent of the membership of online communities, though as many as 90 percent of members may remain silent in some types of communities.

Much of the research into participation in online communities has focused on the personal differences that cause some to contribute and others to remain silent. In several studies into the demographics and habits of lurkers, Nonnecke and Preece (2001) identified a number of reasons why members of online communities never participate, including shyness and privacy concerns, prohibitions by an employer, and unfamiliarity with the community. Lack of ability is also a deterrent. Members who lack confidence in their ability to write appear to be particularly discouraged from participating in text-based online communities (Mabrito, 2000; Scott & Rockwell, 1997), while a high degree of self-efficacy increases the likelihood of contributing to an online community (Hofstetter et al., 2001; Newhagen & Cordes, 1995; Wang & Fesenmaier, 2003). The effect may be recursive. Participation in an online community is a predictor of continued participation (Light & Rogers, 1999).

Those who do choose to participate online often do so initially in order to exchange information or share an opinion (Light & Rogers, 1999), but continue to visit and contribute to the community because of the desire for social interaction (Kaye, 2005; Kindred, 2005; Ridings, 2004). Ridings and Gefen (2004) found that information exchange was a leading reason for participating across a variety of community types followed closely by the need for friendship and social support. While students posting

professor ratings to a website said they did so primarily in order to help other students, Kindred found that contributing fulfilled the social gratification of "interpersonal utility" (2005). Kaye (2005) similarly found that contributors who said they were attracted to a forum for topical reasons were also motivated to post because of needs for personal contact and affiliation.

When they visit a new website, potential contributors pick up on the cues available to them in order to judge the sociability of a community and decide whether to participate (Baym, 1995; Nonnecke & Preece, 2000; Nonnecke & Preece, 2001). In particular, visitors to a new community use the frequency of message posts as an indication of the sociability of the community(Blanchard, 2004; Maloney-Krichmar & Preece, 2005), as a measure of the attentiveness of those involved (Walther & Bunz, in press), and as an indication of how crowded the communication channels are (Nonnecke & Preece, 2000). If messages are too frequent, users may choose to lurk rather than further crowd the discussion (Nonnecke & Preece, 2001), but if messages are infrequent it may give the impression the community is inactive (Kindred, 2005; Nonnecke & Preece, 2001; Schultz, 2000).

A community needs to be more than just large and active, however, to be sociable. It also needs to be safe and inviting. In addition to making judgments about size and vibrancy, potential members of online communities study what social norms are in place to ensure friendly communication (Baym, 1995; Honeycutt, 2005; Porter, 2004). In an online political community, for example, where discussions can often become heated the presence of a moderator has been shown to increase intentions to participate(K. Thorson & Hamman, 2005; Wise et al., 2006). A moderator might not be necessary,

however, when a community shows a history of good behavior. Posts and comments on a website contain examples of interactive behaviors described by Rafaeli (1988), such as using first names and referring to previous messages, can also increase the intention participate (K. Thorson & Hamman, 2005; Wise et al., 2006).

In the current study, many of the social cues normally associated with online communities are notably absent. Rather than visiting a community with several interactive messages, they will simply read a series of articles each from a different reporter. Yet readers will still have the opportunity to participate with an available comment form. Each article, then, is essentially an invitation to form a small temporary community about that topic. Previous studies have suggested that even in these early stages of online community, participants contribute for a mixture of informational and social reasons (Kindred, 2005; Light & Rogers, 1999). In the absence of an established community, then, the only social cues available will come from the reporter. I propose that in this limited version of an online community, the social presence of a reporter will take the place of the sociability of a community in encouraging participation on a news website. This assertion leads to the following hypotheses:

**H4a:** Visitors to a newspaper website who report higher perceptions of social presence will express a greater intent to participate than those who report lower perceptions of social presence.

**H4b:** Visitors to a newspaper website who report higher perceptions of social presence will be show greater participation by posting comments than those who report lower perceptions of social presence.

*News Media Credibility*

While the use of reporter mug shots and social language may increase social presence and encourage participation on a news website, these proposals would likely make many journalists uncomfortable. Credibility is the real currency of the news industry and journalists have long believed that a key to protecting credibility, especially in print, is to minimize the social presence of reporters in an effort to remove personality and bias from the equation. On most news websites, evidence of a reporter is generally limited to a small byline, occasionally accompanied by an email address or telephone number. Most newspapers would hesitate to adopt measures to encourage participation if it came at the expense of credibility.

These concerns are reasonable. Recent surveys of attitudes toward the press have found that credibility is on the decline (Pew, 2004). This is an uncomfortable finding for journalists, who have long believed that credibility and readership were inextricably linked. And they appear to be correct. Sundar (1999) found that credibility – along with liking, quality and representativeness – was one of four ways that readers judge the quality of print and online news. Wanta and Hu (1994) found that news readers gravitate toward the publications they believe the most. In order to convince journalists to adopt measures that will encourage participation on a news website, it is necessary to demonstrate that the changes will not have an adverse affect on credibility.

Credibility has been the subject of considerable attention and frequent debate among media researchers who have disagreed on methodological and theoretical approaches to the concept. Most broadly, credibility is defined as a multidimensional construct that measures the perceived believability of a message, source, or medium. Research often falls into one of two categories: (1) identifying the dimensions of

credibility, and (2) theorizing on how the effects of cues found in different sources, messages, and media – as well as individual differences – will affect credibility. This study will blend the two approaches. By investigating the effects of social presence on credibility, I intend to demonstrate that credibility has a social or community dimension that has been somewhat ignored by new media researchers.

Much of the research into new media credibility has focused on how differences in individual experiences or motivations affect the perceived credibility of online information. Researchers have found that behavioral differences such as verification of news sources (Flanagan & Metzger, 2000) and the purpose of reading (Dutta-Bergman, 2004) can influence perceptions of credibility. Hofstetter (2001) showed that media self-efficacy – confidence in using the media to achieve desired ends – led to increased credibility. In several large studies Johnson and Kaye (1998; 2000; 2002) demonstrated that reliance on and use of news media is a strong predictor of media credibility. Their results are mixed, however. Reliance has been shown to be both a positive (T. J. Johnson & Kaye, 1998; T. J. Johnson & Kaye, 2000) and negative (T. J. Johnson & Kaye, 2002) predictor of online news credibility. Wanta and Hu (1994) argue there may be a recursive relationship between reliance on a news source, credibility, and exposure.

While studies have shown how individual differences can change perceptions of credibility, they have revealed comparatively little about the effect of the presence or absence of various website features. In several large surveys of web users, Fogg et. al. asked respondents to rate whether dozens of features would increase or decrease the believability of a website (2002; 2001). They found that features such as photographs of members, and a physical address that contributed to a "real world feel" were rated as the

strongest contributors to overall believability (2001). Indeed, indicators of a real-world presence have been found by several to boost credibility. Kensicki (2003) found that warm colors and photographs can boost credibility of nonprofit websites while the effect created by the overall layout depends on the content. Greer (2003) found that evidence of a credible source of information can "inoculate" a message against the effects of non-credible advertisements online. In addition, interactive features such as the ability to contact reporters through email can also boost credibility (Hofstetter et al., 2001).

In the absence of compelling structural cues, Austin and Dong (1994) found that message characteristics can serve as a proxy for the credibility of a news source. Bland messages were perceived as more credible than opinionated messages, while the credibility of the source had no effect. Hong (2006) found that message cues but not structural cues predicted the credibility of websites. Slater and Rouner (1996) showed that message quality could affect impressions of speaker expertise, credibility, and belief change.

The content of a message is also important. Dutta-Bergman (2004) reported that more complete messages on a health website are thought to be more credible. Sundar (1999) found that disturbing messages were found to be less credible than non-disturbing messages online. Some of the foundational practices of journalism also seem to hold sway online. Unbalanced stories can lead to perceptions of bias and lower credibility (Fico et al., 2004), while sourcing information in news stories can increase credibility (S. Sundar, 1998).

Despite these advances in the understanding of credibility online, Metzger et. al. argued in their review of the new media credibility literature that "researchers who are

currently re-engaging the issue of information credibility have not taken full advantage of the rich heritage left by credibility research conducted over the last half century," (Metzger *et al.*, 2003). In particular, Metzger et. al. point to the source and media credibility traditions, which they argue can inform how researchers approach the study of online news. Research into source and media credibility stem from somewhat separate research traditions and for the most part Metzger et. al. keep them separated. However, linking these two theories perhaps provides the best framework for understanding how social presence will affect the credibility of online news.

Source credibility theory stems from attitude change and persuasion research conducted by Carl Hovland at Yale, which is grounded in Aristotle's concept of *ethos*, or personal credibility of a speaker in persuasive communication (Bucy, 2003). The primary measure and conception of source credibility appears to be the result of an annoyance with hand coding. Frustrated with the time that was needed to score currently available source credibility scales, McCroskey (1966) sought to develop Likert or semantic differential scales that would ease coding of the measure. By conducting several experiments McCroskey (1966) developed two Likert scales to measure the authoritativeness and character of a speaker, and an additional semantic differential scale for those without a Digitex machine who need to "substantially reduce the time for hand punching and hand scoring," (p.71). Those measures formed the basis of most source credibility research to follow. Indeed, much of the research into source credibility has been an attempt to further identify the dimensions of source credibility. Perhaps most influential was the work of Berlo, Lemert, and Mertz (1970), who found four factors of source credibility: safety, qualification, dynamism, and sociability. Baudhuin and Davis

(1972) similarly found four dimensions, which they labeled character, authoritativeness, interpersonal attraction, and dynamism. Both studies measured source credibility using semantic differential scales. In their revue of source credibility literature, Metzger et. al. (2003) concluded that most researchers found primary support for dimensions of trustworthiness (analogous to safety and character in the above studies) and expertise (analogous to qualification and authoritativeness), and some support for secondary dimensions such as sociability, dynamism and composure.

When they developed their own scales nearly a decade later, mass media researchers incorporated the dimensions first identified in the study of *ethos* but tailored them to the news environment. Whereas source credibility scales can be traced to a frustration with technology, modern media credibility theory stems largely from a methodological debate surrounding results of the annual Roper surveys of the media. For years, the surveys used a single question to measure credibility: "If you got conflicting or different reports from radio, television, the newspapers or magazines, which of the four versions would you believe – the one on radio or television or magazines or newspapers?" (qtd. In Abel & Wirth, 1977, p.371). This question, in turn, became the basis for a large number of academic studies (Gaziano & McGrath, 1986). The results surprised researchers. Survey respondents repeatedly rated television news as more credible than newspapers, despite the lack of depth and completeness. Further, the relative nature of the question made results difficult to compare. Taking the cue from the source credibility tradition, Gaziano and McGrath (1986) sought to normalize the research by creating a multidimensional scale. The resulting 12-item scale included questions measuring accuracy, fairness, and concern for the community. Gaziano and

McGrath found that all 12 dimensions loaded onto a single factor, which they called "credibility."

Meyer (1988), however, pointed out that their results indicated two factors: credibility and a social concerns factor that they ignored in their discussion. He defined the two dimensions as believability and "maintaining harmony in and leadership status with the newspaper's community." He cautioned that believability alone was not enough. "A newspaper can be believed but still be alienated if it advocates positions strongly opposed by a majority in its community or undertakes investigations or editorial positions that run counter to the perceived economic or social interests of the community." Meyer accounted for this community harmony in his own distillation of Gaziano and McGrath's scale into a five-item scale measuring fairness, bias, tells the whole story, accuracy, and trust. Both scales form the basis of most current credibility measures.

While the multidimensional scales addressed some of the methodological concerns with the Roper question, they did not resolve the question of why television news was rated as more credible than newspapers. Gaziano and McGrath (1986) found that while newspaper and television news credibility scores were correlated, television still scored much higher in direct comparisons of credibility. Other researchers attempted to explain this phenomena in terms of a bias of the question. Abel and Wirth (1977) argued that the Roper question was biased in favor of television because respondents were comparing local newspapers to national news organizations. Through a more specific survey that focused only on local news outlets for comparison, however, they found that television was still rated as more credible. They theorized respondents had

trouble separating the entertainment and information functions of television news, which resulted in the higher credibility ratings for television.

Perhaps the most compelling analysis of why television is rated as most credible comes from Newhagen and Nass (1988), who argued that survey respondents have different criteria for evaluating the sources of television and newspapers. When they are evaluating newspapers, the respondents consider the institution of the newspaper, which is a cold and unfamiliar source. In contrast, when they are evaluating television news respondents evaluate the credibility of a personable anchorperson. To test their theory, Newhagen and Nass asked survey respondents to rate the credibility of television and newspapers across several levels. They found that television credibility was accounted for first by the personality of the anchor people, then by ethical standards and finally by confidence in television as an institution. By comparison, newspaper credibility was accounted for first by confidence in the institution, then by the personal standards of reporters, and finally by the ethical standards of reporters. Newhagen and Nass concluded that

> "The newspaper may be encumbered with an image of being distant, unfeeling and unresponsive, because of its inability to establish reporters or editors as distinct individuals. The distance between newspaper people and their readers creates an editorial product with an anonymous quality, which works against credibility ratings for newspapers as much as immediacy of television works for that channel." (Newhagen & Nass, 1988, p. 279).

Though this assertion has not been tested experimentally, several researchers have found evidence to confirm their results. Schweiger (2000) identified a six-level hierarchy of potential "credibility reference objects," with two levels between the "presenter" (a reporter or anchor) and "media product" (the news organization). He argued that "the credibility of one single level interacts with, or is based on other levels" (Schweiger, 2000). Thus the higher ratings for television – or in the case of Germany, newspapers –

could be an artifact of the relatively higher credibility at another level within the hierarchy of reference objects. Sundar and Nass (2001) have similarly found that readers of online news can conceptualize source at many different levels such as the computer, the website, or the author of an article.

Taking the theories of Newhagen and Nass, and Schweiger together then, we should expect that as social presence increases on a news website it will result in a corresponding increase in credibility. Newhagen and Nass (1988) argue that as social presence increases – as with television – the focus shifts from the institutional to the personal level, leading to higher ratings of credibility. As Schweiger (2000) suggests, the credibility at this personal level can leak into an overall more favorable perception of the source at all levels. Further, once the communication has become more closely akin to interpersonal communication, the effects of a sociable speaker identified in the source credibility tradition can be expected to have an effect (Berlo et al., 1970; McCroskey, 1966).

**H5:** Visitors to a news website who report a higher perception of social presence will perceive the article as more credible than those who report lower levels of social presence.

**H6:** Visitors to a news website who report a higher perception of social presence will perceive the news organization as more credible than those who report lower levels of social presence.

I tested these hypotheses with an experiment in which participants read four news articles. All four articles corresponded to one of the four possible combinations of the two independent variables: whether the article had social language and whether the article

had a photo. After reading each article, the participants filled out an online questionnaire with questions about credibility, social presence, liking, involvement, and their intentions to participate. They could also voluntarily choose to comment by using a comment form at the bottom of each article.

## Methods

*Sample*

A convenience sample of 162 students recruited from several courses at a large Midwestern university participated in the experiment for extra credit. The sample was 59 percent female and 90 percent of the students reported a major in journalism.

*Independent Variables*

*Photo/No Photo.* I created four fictional reporters – two male and two female – for the experiment, all between the ages of 30-50. In the no-photo condition, stories contained only a byline with the name of the reporter. In the photo condition a small (80 X 100 pixel) headshot of the reporter was included above the byline.

Prior to the experiment, I tested ten possible photographs using a small sample of students (n=20) with the same demographics as the experimental population, with the goal of identifying four similar photographs. The pretest participants rated each of the photographs across five semantic differential scales measuring the following dimensions: attractive/unattractive, professional/unprofessional, trustworthy/untrustworthy, friendly/unfriendly, and likeable/not likeable. Factor analysis followed by Varimax rotation resulted in a single factor ($\alpha$=.71), so all measures were summed to create a single score for each photograph. Four photographs with similar scores were selected for the experiment, and paired samples *t*-tests confirmed no significant differences between their scores.

*Social language.* I modified the selected articles to satisfy the requirements of the social and non-social language conditions. In the social language condition the articles contained three examples of social language identified in content analysis of online

educational communities (Rourke et al., 2001; Swan, 2002). Each article with social language had one example of affective language (the use of self-disclosure), one example of interactive language (a reference to reader comments) and one example of cohesive language (the use of "we"). Articles in the non-social language condition did not contain these examples of social language.

*News Article.* Each subject read four brief news articles on topics of general interest that were selected from newspapers and websites throughout the United States. I modified the articles to fit the requirements for the social language/non-social language conditions. In order to ensure that no confound was introduced into the experiment, I further modified each pair of social/non-social articles to be within 2 points on the 100-point Flesch-Kincaid reading ease scale. A *t*-test showed no significant difference [t(6) = .06, *ns*] between the mean reading ease scores for articles in the non-social condition (M=64.83, SD=6.28) and the social condition (M=65.07, SD=5.71). In addition, I maintained a consistent word count between stories in the non-social language (M=332.75, SD=20.5) and social language (M=345.25, SD=11.79) conditions [t(6) = 1.06, *ns*]. I kept each social language article to within 30-words of the length of the paired non-social language article.

*Dependent Variables*

*Social Presence.* In a survey of social presence research, Biocca et. al. (2001) identified eight different measures for social presence, ranging from Likert scales, to physiological measures, to single-item graphical measures. Social presence has been primarily measured, however, in three ways: with a semantic differential scale, as originally suggested by Short et. al. (1976), with Likert scales (Gunawardena & Zittle,

1997; Richardson & Swan, 2003), and by conducting content analysis on community conversations (LaRose & Whitten; Swan, 2002). Content analysis was inappropriate for the current experiment because participation was voluntary and expected to be minor. The semantic differential scale developed by Short et. al. was considered similarly inappropriate for the current experiment. While the scale is excellent for measuring the sociability of a particular medium or community, it does a poor job of measuring the social attitudes toward specific individuals in mediated communication. Instead, a Likert-style scale tailored to the current study seemed most appropriate.

Unfortunately, existing scales to measure social presence are not theoretically relevant to the current study. In most cases, the scales were developed to measure virtual reality or online communities in which the survey respondent was a participant (Biocca et al., 2001; Gunawardena & Zittle, 1997). As a result, the scales tap dimensions of social presence such as behavioral engagement, which requires a repetitious and ideally synchronous exchange of messages that would not happen in the current experiment.

This study tested three dimensions of social presence that are relevant to one-way communication: source attention, mutual awareness, and co-presence. Social presence was measured using a scale developed by Tamborini (2005), which was adapted in the current study to apply to the reader-reporter relationship. The scale consisted of eight 7-item Likert-style questions. Factor analysis followed by Varimax rotation yielded two factors. One factor contained only two items ("I felt like the reporter was talking directly to me," "I felt like the reporter was thinking about readers like me when he or she wrote the article."), and was dropped from the analysis. The remaining factor contained six items: "I paid more attention to the reporter than the story," "When I read the story I

imagined the reporter writing it," "I felt like I got to know the reporter," "At times, I felt like the reporter was in the room with me," "I felt present with the reporter," and "I was aware of the reporter while reading the article." These items were summed to create the social presence measure ($\alpha$=.90).

*Credibility.* The measurement of news credibility has been a subject of considerable debate in the literature of journalism. Early surveys of news media credibility simply measured the construct by asking respondents to say which news report they would believe (radio, television, magazine, or newspaper) if each presented a conflicting reports (Abel & Wirth, 1977). Researchers argued, however, that this measure introduced bias because respondents were rating the credibility of the media based on different criteria (Abel & Wirth, 1977; Newhagen & Nass, 1988). Further, using a relative measure made it difficult to compare results across studies. In response Gaziano and McGrath (1986) introduced a multidimensional scale to measure media credibility, which included items measuring accuracy, fairness, and concern for the community. Shortly after, Meyer (1988) distilled Gaziano's scale into five items for use in measuring the credibility of newspapers: fairness, bias, accuracy, completeness, and trust. Meyer argued that both scales measured two dimensions: believability and the degree to which a newspaper maintained a harmonious relationship with the community.

Researchers have since developed dozens of derivatives of both the Gaziano and Meyer scales with a variety of sub dimensions (Abdulla et al., 2002). In addition to the core dimensions of Meyer's scale, researchers have considered items such as expertise (Fogg et al., 2001), currency or timeliness (Abdulla et al., 2002), and depth, (Bucy, 2003; T. J. Johnson & Kaye, 1998). As credibility has moved online, however, research

appears to have tended toward the use of Meyers' five-item scale, which has essentially eliminated the dimension of credibility related to concern for the community. In part, this may be due to the nature of the research, which has tended to focus on the credibility of a website as a product of motivations and use (T. J. Johnson & Kaye) or as a product of specific features on websites (Fogg et al., 2001; Greer, 2003). In the present study, however, I focus on how visitors to online news sites rate the credibility of the media organization. Consequently, community-based components of credibility are relevant to the current study, and, indeed, they have been used in other studies focusing on the credibility of media organizations.

In the past, the validity of credibility research has been somewhat marred by conflation of sources in responses to credibility questions. Newhagen and Nass (1988) for example argued that survey respondents could be rating the credibility of a newscaster when asked about television, but rating the credibility of the entire newspaper when asked about print news. Readers of online news are also faced with several possible sources to choose from. Internet users could identify the source of a news story as the website or organization, as the reporter, or even as an indexing system such as Google News(Sundar, 1999). In addition, as several studies have shown, the content of a message can lead to a credibility assessment of a message that is independent of the source (Austin & Dong, 1994). In fact, the credibility of the message can color the perceived credibility of the source (Slater & Rouner, 1996). In order to avoid conflating the credibility assessment of the article and the source, I used two separate measures.

*Article Credibility*. Article credibility was measured using an 8-item, 7-point semantic differential scale modified from Gaziano and McGrath's (1986). Factor

analysis followed by Varimax rotation yielded two factors. The first factor consisted of five items: fairness, bias, accuracy, trust, and believability. I summed these items to create the variable article fairness ($\alpha$=.88). The second measure included three items: tells the whole story, in-depth, and complete. I summed these items to create the variable article depth ($\alpha$=.79).

*Media Organization Credibility*. Media Organization credibility was measured using an adaptation of the article credibility scale with additional items suggested by Thorson and Brown (2006) to represent the dimensions of community interest. Factor analysis followed by Varimax rotation yielded two factors representing two dimensions of credibility. The first measure, which was analogous to article fairness, consisted of six items representing the following dimensions of credibility: fairness, bias, accuracy, trust, reliability, and believability. I summed these items to create the variable media fairness ($\alpha$=.94). The second measure included four items representing the dimensions cares about readers like me, it's reporters are well trained, in-touch with the average person, and in-depth. Conceptually, the first three items fall within the community dimension of credibility. In order to test a more conceptually meaningful scale, I dropped the in-depth item and summed the others to create the variable media concern($\alpha$=.76).

*Intent to Participate*. Intent to participate in an online community is a new concept in communications research. It was first measured by Ng and Detember (2005) using ten, seven-point Likert-style questions. While the scale has been found to be reliable (K. Thorson & Hamman, 2005) it has not correlated with actual participation in an experimental setting (Wise et al., 2006). Conceptually, the scale is only loosely connected to actual participation in an online community. Rather, the questions may

more directly measure interest or involvement, writing efficacy, and valence with the community. In the current study I modified Ng and Detember's (2005) scale to include six 7-item Likert-style questions that apply to a news website. Factor analysis followed by Varimax rotation yielded one factor containing five of the six items: "I would be interested in commenting on this article," "I would be interested in sending my friends a link to this article," "I am interested in what others thought about this article," "I would be interesting in participating in an online forum about this topic," and "I would be interested in discussing this article with a friend." I summed these items to create the variable intent to participate ($\alpha$=.86).

*Actual Participation.* Actual participation was measured by capturing voluntary comments on each article through a web-based comment form, similar to that on a blog. I created the variable actual participation by giving each subject a score of one if they commented on a news article, or a zero if they did not comment.

*Control Variables*

*Demographic Variables*. Several demographic variables have proven relevant to studies of Internet use and credibility, including age, gender and major (T. J. Johnson & Kaye, 1998). Since my population was drawn from a classroom on campus, I expected the subjects to be of similar age. However, I measured their gender, grade level, and major as demographic control variables.

*Exposure*. In addition to demographic characteristics, subjects come to the experiment with a variety of experiences using the Internet and different reading abilities. In particular, exposure to the Internet has been positively related to both social presence (Gunawardena, 1995; Gunawardena & Zittle, 1997) and credibility (T. J. Johnson &

Kaye, 1998). To measure exposure I asked subjects four questions: “Do you maintain your own website,” “Have you ever participated in an online discussion,” “Have you ever read a blog or web log,” and “Have you ever contributed content to a website.” Each question was kept as a single item.

*Reading ability*. Reading ability was measured using three 7-point Likert-style questions. "I often read for enjoyment," "I sometimes have difficulty understanding what I read," (reversed), and "I consider myself a good reader." Factor analysis followed by Varimax rotation resulted in a single factor, so the items were summed to create the variable reading ability ($\alpha$=.73).

*Involvement*. Involvement in the content has been found to moderate a variety of perceptual responses to media, including social presence and credibility (McMillan et al., 2003; Slater & Rouner, 1996; K. Thorson & Hamman, 2005). Involvement was measured using an abbreviated version of a seven-point semantic differential scale developed by Zaichowsky (1985), which included five dimensions: involving, interesting, relevant, exciting, and important that all loaded onto a single factor. I summed the items to create the variable involvement ($\alpha$=.89).

*Liking*. Similar to involvement, liking of content has been found to moderate perceptual variables (Metzger et al., 2003; S. Sundar, 1999). Liking of each article was measured using a single question, “How much did you like the news story you just read?” Respondents rated each article on seven points from like it a lot, to didn’t like it.

*Procedure*

The hypotheses were tested with a 2 (photograph: yes/no) by 2 (language: social/non-social language) by 4 (news article) mixed-design experiment. Photograph

and language were between-subjects factors, while news article was a within-subjects factor. During the experiment participants read four articles from a fictional community newspaper website. Each article included a form where participants could comment, much like a blog. After reading each of the articles, subjects completed an online questionnaire containing measures for the dependent variables. The questionnaire following the fourth article also included measures for demographics and Internet use.

The experiment was conduced in a computer laboratory on the university campus with approximately 20 computers. Upon arriving at the computer lab and signing a release statement, students were logged into the computer, which assigned them to one of the four possible experimental conditions. Aside from a verbal introduction and debriefing, all instructions and questionnaires for the experiment were presented to the subjects on the computer screen. The total time to complete the experiment was between 20 and 30 minutes.

*Data Preparation*

*Manipulation Checks.*

Four questions following all of the manipulations confirmed whether subjects noticed the manipulation of the independent variables. Three questions related to the social language manipulation: "the reporter mentioned him or herself in the story," "the reporter mentioned input from the readers," and "the article used inclusive language such as 'we'," and one question related to the use of photographs "the article pages included photographs of the reporter." Independent samples *t*-tests found significant differences in the means between the social/non-social language and photo-no photo conditions on each of their measures. In addition, none of the students correctly guessed the nature of the

experiment on a final question, "What do you think this experiment was about," so the manipulation was considered successful.

***Table 1: Manipulation Checks***

| | Non-Social ($n$=80) | | Social ($n$=81) | | $t$ |
|---|---|---|---|---|---|
| | *M* | SD | *M* | SD | |
| The reporter mentioned him or herself in the story | 2.38 | 1.61 | 5.54 | 1.56 | -12.70* |
| The reporter mentioned input from the readers | 2.81 | 1.74 | 5.22 | 1.70 | -8.89* |
| The article used inclusive language such as "we" | 3.11 | 1.73 | 4.84 | 1.71 | -6.40* |
| | No Photo ($n$=80) | | Has Photo ($n$=81) | | |
| | *M* | SD | *M* | SD | |
| The article pages included photographs of the reporter | 1.27 | 0.87 | 6.67 | 0.89 | -38.75* |

*p < .01

*Testing for Violations of Assumptions*

To test for violations of the assumption of normality, I checked the kurtosis and skewness of all dependent variables in two ways, first on the entire set of data, and then on each article individually. In both cases the absolute value of kurtosis and skewness was less than one, well below the critical values outlined by Pedhazur (1997). Throughout the analysis, checks of the multicollinearity condition index showed that it did not exceed critical values as suggested by Pedhazur. In addition, I checked the standardized residual and standardized predicted scores for the presence of outliers. Three subjects had standardized residual scores above the critical value of two outlined by Pedhazur, but none of these had leverage scores above the calculated maximum of 0.9. As a result of these tests, I kept all subjects (N=162)in the final analysis.

*Interaction Effects*

Analysis of the first three hypotheses yielded a significant interaction between news article and immediacy on social presence [$F(3, 151)=4.40$, $p<.05$, partial-$\eta^2=.031$].

Further exploration of the data indicated that this interaction was caused by variance in the third news article, which had the lowest means for social presence in the non-social language condition (M=13.63, SD=6.49) and the highest means in the social language condition (M=20.94, SD=9.66). The third article had a mean difference of 9.23 for social presence between the non-immediate and social language conditions, compared to an average mean difference of 4.98 for the other three articles. In particular, the third article had the widest range in responses to a single question "I felt like I got to know the reporter," with a mean difference of 1.863, compared to an average of .772 for the other three articles. Returning to the text of the article, it is clear that the example of personal disclosure in this article is stronger than the other manipulations. In the other three articles, the example of personal disclosure in the social language condition is at most two sentences, and only relates peripherally to the topic of the article. In the third news article, the example of self disclosure is three paragraphs long and central to the topic of the article. Quite clearly, then, readers of this article felt they got to know the reporter better. Indeed, dropping the third article from the analysis eliminated the interaction between news article and social language on social presence. All of the results reported in this study, including the factors and reliabilities already reported, have been calculated with the third news article removed from the analysis.

## Results

*Intent to Participate and Actual Participation*

The first three hypotheses predicted relationships between the manipulations (social language and photo) and social presence. All three hypotheses were tested with a 2(language) X 2(photo) repeated-measures ANCOVA using the covariates outlined above.

The first hypothesis predicted that readers of articles with social language would report higher levels of social presence than readers of articles without social language. Participants who read articles with social language reported greater social presence (M=18.99, SD=.74) than did participants who read articles with non-social language (M=14.39, SD=.75) [$F(1, 151)=18.99$, $p<.01$, partial-$\eta^2=.11$]. Hypothesis 1 was supported.

The second hypothesis predicted that readers of articles with an accompanying photo of the reporter would reporter higher levels of social presence than readers of an article without an accompanying photo. The main effect for the inclusion of a photo on social presence was not significant [$F(1, 151)=.465$, *ns*]. Hypothesis 2 was not supported.

The third hypothesis predicted the highest reported levels of social presence would be in the condition with social language and a photograph of the reporter. The interaction between social language and photo on social presence was not significant [$F(1, 151)=.267$, *ns*]. Hypothesis 3 was not supported.

Hypotheses 4 through 7 proposed that social presence would be a significant predictor of participation, article credibility, and media credibility. These hypotheses

were tested using a linear regression model. To account for repetition within the experiment, the regression was run on the average of each participant's scores over all three articles. In the first step I entered the demographics, and the covariates (liking and involvement) in the second step. I entered social presence in the third step.

*Intent to Participate and Actual Participation*

Hypothesis 4a predicted that visitors to a newspaper website who report higher perceptions of social presence will express a greater intent to participate than those who report lower perceptions of social presence. As Table 2 (Appendix C) shows, social presence was a significant and positive predictor of intentions to participate. Hypothesis 4a was supported.

Hypothesis 4b predicted that visitors to a newspaper website who report higher perceptions of social presence will be show greater participation by posting comments than those who report lower perceptions of social presence. Social presence was not a significant predictor of actual participation. Hypothesis 4b was not supported.

Hypothesis 5 predicted that visitors to a news website who report a higher perception of social presence will perceive the article as more credible than those who report lower levels of social presence. Recall that article credibility split into two factors during factor analysis, article fairness and article depth. Article fairness included the following five items: fairness, bias, accuracy, trust, and believability. Article completeness contained the following three items: "tells the whole story," in-depth, and complete. I tested each variable independently in the regression model. Social presence was a significant predictor of both article fairness and article completeness. However, as

Table 2 shows, the relationship was negative, which runs counter to what was predicted. Hypothesis 5 was not supported.

The final hypothesis predicted that visitors to a news website who report a higher perception of social presence will perceive the news organization as more credible than those who report lower levels of social presence. Organizational credibility also split into two concepts, organizational fairness and organizational awareness. Organizational fairness contained five items, fairness, bias, accuracy, trust, reliability, and believability. The final variable for organizational reputation, which was used in this analysis, included three items, "cares about readers like me," "It's reporters are well trained," and "In-touch with the average person." Again both variables were tested separately. Social presence was a negative predictor of both organizational fairness, and organizational concern. Hypothesis 6 was not supported.

## Discussion

This study set out to explore whether print journalists could encourage participation and boost credibility by stepping out from behind the anonymity traditionally provided by the paper and engage readers on a more personal level. I expected they could. I expected that the introduction of a photograph of the reporter and the use of social language in the story would make the reader feel more present with the reporter and this presence would translate into participation and favorable credibility ratings. The results were mixed. The use of social language did increase feelings of social presence, but the photograph had no effect. In turn, social presence encouraged intentions to participate but not actual participation. And, perhaps more importantly, social presence predicted significantly lower ratings for the credibility of the article and media organization.

This study expanded on previous work on social presence research in three key ways: first, it demonstrated experimentally that social presence could be cultivated by altering message characteristics; second, that the effect could take place in the span of a single one-way message; and third, that social presence could act as an independent variable with a significant effect on participation and credibility, two variables of vital interest to understanding how online news readers behave. While some of these results run counter to expectation, they confirm that social presence is an important variable to consider in future media effects research about online news.

The first goal of this experiment was to test whether social presence could be cultivated in online news by making limited changes to message characteristics. While Lee and Nass (2003) have found that changes to the tone of synthesized speech could affect social presence, there was only anecdotal evidence to suggest users of online

communities and text-based chat use social language to create a more intimate environment (Preece, 2001, Hwang, 2005). This study provides the first experimental evidence that the use of social language in a text-only communication could encourage feelings of social presence. The result is especially striking considering the failure of the photograph to have an effect. It confirms the importance of considering message tone and content as well as structural features in understanding social presence. For print reporters, this finding suggests that it is possible to become more visible to their audience without introducing multimedia features such as audio and video, to their websites. Simply by altering the tone of their news stories, or perhaps by introducing blogs or other content, reporters could foster a more social connection with readers.

A particularly compelling implication of this experiment is that the effects of altering the messages are instant. Previous research has focused largely on highly interactive communities over time. While Baym (1995) and Richardson and Swan (2003) showed that social presence could develop out of text-only exchanges, their findings were based on posts to a group discussion board over the course of a semester. They found that social presence only developed toward the middle or end of the semester as the participants had a chance to exchange several messages and become more familiar. In this study participants reported feelings of social presence after reading a single news article. While the participants had the opportunity to comment on the news article, many of them did not and, in fact, commenting was not correlated with feelings of social presence. The feeling of social presence resulted from the passive act of reading the story, not from participation in a community.

This finding has several implications for online news and communities. First, it suggests that the social presence developed in a community over time is stored in the text as social language and made accessible to a newcomer. Someone reading a blog or column or visiting an online community for the first time experiences some of the feelings of social presence of a long time visitor. As previously suggested by Preece (2001) and others visitors to online communities can get a strong sense of the people and community represented in the text. Further, this first-time reader can experience these feelings of social presence without participating. This may help explain some of the popularity of newspaper columnists, who encourage feelings of social presence in their readers without offering a direct channel for communication. Finally this study provides additional support for the validity of LaRose & Whitten (2000) and Swan's (2002) use of social language to measure for social presence in the content analysis of online communities. While those studies argued that the use of social language suggested the authors were experiencing social presence, this study confirms the converse: that social language can also cause social presence.

While the study confirmed that text-based social cues can trigger feelings of social presence, it failed to find any effect from a photograph. This is surprising. The photographic manipulation closely followed the original theory of Short et. al. (1976), who argued that as the medium offered more social information then social presence would increase. That was not the case here. Being able to see the reporter did not change the reader's reported feelings of mutual awareness. This finding contradicts Walther (2001), who showed that photographs could encourage feelings of social presence in a short-term group project. Again, however, the present results suggest it may be important

to consider content in addition to the presence of features. The photographs in Walther's study were selected by the participants in the group, who were all peers. Presumably the participants chose photographs that they thought showed them in the best light. In the current study, a pretest eliminated the photographs rated most attractive, friendly, and likeable by participants. In addition, the reporters in the photograph were approximately 20 years older than the article readers. The photographs were also kept to a small size to maintain external validity and minimize the risk that the effect was simply coming from the presence of any large photograph. Finally, in the current experiment the photographs were kept intentionally bland in order to test whether the photograph itself – rather than any special characteristic of them – would have an effect. This study suggests that simply including a photograph is not sufficient to encourage short-term feelings of social presence. Future studies, however, should investigate whether and to what degree the content of the photograph matters. I expect that photographs showing individuals who appear more similar, friendly, and attractive to the participants will be more likely to encourage social presence than the ones used in this experiment.

While these results do indicate that a single message can cultivate feelings of social presence in readers of news articles, the findings should be qualified. During factor analysis, two questions representing the mutual awareness dimension of social presence ("I felt like the reporter was talking directly to me," and "I felt like the reporter was thinking about readers like me when he or she wrote the article,") loaded onto a separate factor. Thus, the measure used in this analysis represents only the most superficial dimensions of social presence: source-attention and co-presence, not mutual awareness. While the measure certainly indicates attention to and awareness of the reporter, I cannot

say that readers of the news articles in this experiment experienced a deep psychological connection to the author. Indeed, in his survey of the theory, Biocca questioned whether these two dimensions were even sufficient to constitute social presence (2001). Certainly the dimensions of source-attention and co-presence represent temporary feelings that result immediately from the article, but they do not necessarily represent a lasting connection between the author and reader. In the present experiment, it appears that social language was sufficient to increase the reader's awareness of the reporter, but the reader did not feel the attention of the reporter.

This is an important distinction. Proponents of citizen journalism have argued that journalism be transformed from a lecture to a conversation – that we should invite readers to participate in reporting the news rather than just consume it. In the current experiment, it appears that the use of social language simply succeeded in making the reader more aware of the lecturer without necessarily inviting them into the conversation. The goal of this research was to see if changes to a website can help foster relationships between the reader and reporter, not simply to put the reporter on display. Future experimental research should look at the effect of repeated exposure to news articles with social language to see whether they can foster feelings of mutual awareness in readers. Based on the level of personal connection that Gans (1977) found in letters to the anchors of a news show, repeated exposure to news rich in social cues should be able to foster mutual awareness.

Despite these limitations, readers who experienced more feelings of social presence said they were more likely to participate in future discussions about the news articles. This offers experimental support for the argument by Baym (1995), Preece (2001) and

others that readers of online content use social cues, such as social language, as a proxy for the sociability of the community. In particular, this finding further explains the results of (K. Thorson & Hamman, 2005;), which found that the presence of interactive posts (posts that refer to each other) encouraged intent to participate. In those studies, we argued that visitors to the website used the interactive posts as a proxy for the attentiveness and sociability of the community. In this study, I demonstrated that as readers become more aware of the presence of the reporter then they are also more likely to participate. Indeed, the weakness of the current social presence measure suggests that simply being convinced there is someone "there" is enough to encourage online participation.

The current result is especially interesting given the nature of the scale. Only one of the five items in the instrument measured intentions to respond directly to the author of the article. The other items measured intentions to discuss the article with other people. Curiously, as social presence increased – as the reader become more aware of the author – they said were more likely to discuss the article with others. This mirrors the activity on many blogs. While the blog author publishes the post that starts a discussion, the comments often address other readers rather than the original poster. On some blogs these discussions can range into the thousands of comments. The blog author, as convener of these conversations often chimes in only rarely. Rather the blog author – or in the present study, the reporter – acts more as a moderator for a discussion happening in the comments. Previous research has shown that evidence of moderation can increase intentions to participate (Wise et al., 2006), suggesting that even the passive presence of the original author is encouraging. Future researchers should explore the role of the blog

author in these online communities. This study and previous research suggest that the presence of a single convening author or moderator motivates communication between other community members. I hope that previous research will help us to better understand how active the original author must be in order to keep the interest of an online community triggered by a single post or news article.

As Wise (2005) and others have previously found, however, intentions to participate expressed by participants did not correspond to actual participation by commenting on the articles. There are several possible explanations for this disconnect. First, as already stated, the intent to participate instrument measured several forms of participation. Commenting on the article was only one of those. Indeed, actual participation only correlated with three of the six items in the participations scale and two of those referred directly to the author: "I would be interested in commenting on this article" ($r=.23$, $p<.01$), "I would be hesitant to email the author of this article" (reversed) ($r=.11$, $p<.01$), and "I am interested in what others thought about this article," ($r=.09$, $p<.05$). The other items in the scale referred to discussing the article with friends or in an online forum. Much of the disconnect, however, can also be blamed on the participants. More than seventy percent of participants were journalism students, many of whom were in their first or second class in the school. Rather than commenting on the content of the article, many of the students commented on the quality of the journalism. Here, for example, is a typical comment:

> So this is a one source story that doesn't answer in totality the question with which it started. The reporter talekd to one person, who gave a bunch of unsubstantiated figures for growth, and he did not go into any reasons why the city has been or will be growing so much. In fact, it seems as though the population has been static until now, and will explode over the next thirty years due to unkown reasons. All we know is that the people of this city have big families. As for the question on taxes, I don't think he gave any clear

> indication about how much people would be taxed and how that would effect the budget issues.

While this is a form of participation and it was counted in the final analysis, it represents a very different psychological reaction than what is measured by the scale. These comments represent a journalistic judgment rather than the intention to participate in a community discussion about the topic. Still, the disconnect between attitude and behavior once again raises questions about the validity of the intent to participate scale. In order to continue studying why people participate in online communities we need to develop a more accurate scale or scales to measure the concept. In particular, future participation scales should distinguish between different types of participation: communication with the author or website being tested; communication with other imagined readers or participants in the community; and communication with friends or others who are unfamiliar with the content. Each of these represent different forms of participation, which are all conflated in the current scale.

While news organizations have expressed increasing interest in taking measures to increase participation on their websites they have tread softly in order to protect that most valuable of assets, their credibility. The results of this study show that their anxiety is, unfortunately, wise. The relationship between social presence and credibility in this study was both surprising and highly significant. Readers of news articles who experienced higher feelings of social presence found both the news article and the responsible media organization less credible. The results should give pause to anyone who wants to experiment with making their reporters more visible to readers. This study demonstrated quite powerfully that attention to the reporter, without an underlying psychological connection, can have a strong negative impact on perceptions of

credibility. Due to the limited social presence experienced in this study, however, the question is left open how cultivating a more psychologically meaningful experience of social presence will affect readers.

Quite clearly these results indicate that merely focusing attention on the reporter has the potential to damage the credibility of a news story. The effect is particularly compelling given the nature of the manipulation. As Slater and Rouner (1996) have demonstrated, changing the style of the text – as in this experiment – could have detrimental effects on credibility. And, indeed, social language did have a direct negative effect on credibility. However, when social presence was introduced into the regression it completely mediated the effect of social language on each of the credibility variables. Given the previous research showing the effects of message characteristics on credibility, the overwhelming power of social presence is highly significant.

Indeed, these results suggest that social presence is not to be taken lightly. Newhagen and Nass (1988) argued that survey respondents focused on news anchors rather than a news institution and therefore rated television more credible. In this study, those readers who focused more on the reporters rated articles as less credible. Simply focusing on a human rather than institutional source of news is not enough to increase credibility. Rather, these results suggest that a more psychologically complex connection is being made when people watch news on television than when they read it in the newspaper. As Burris, (1987), has shown, watchers of television news think of the anchors as familiar figures, whereas the reporters in this study were unknown. When the reporter is unfamiliar, it appears that social presence can hurt credibility. Rather than assuring the

reader that the information comes from a credible and familiar individual, social presence here acts as an unwelcome intrusion of the reporter into the reader's attention.

In many ways, the experience of social presence in this study was an intrusion. The readers did not report feeling that the reporter was aware of them, only that they were more aware of the reporter. In order to understand why this intrusion would hurt credibility, however, future research should account for attitude toward the reporter. Given the limited experience of social presence in this study, I expect that its detrimental affect on credibility is not solely due to social presence. Rather, because the reader is more aware of the reporter, they are also made more aware of their preexisting skepticism and unfamiliarity. By testing how this limited experience of social presence, really awareness, interacts with attitude toward the reporter we should have a better understanding of how social presence contributes to perceptions of credibility. Such research is particularly important to understanding how readers respond to citizen journalism, which is characterized by attention to unfamiliar readers.

In addition, more research should be done to determine whether a full experience of social presence – including mutual awareness – could have a positive effect on credibility. In this study I tested whether social presence could substitute for long-term familiarity to increase reader's perceptions of the credibility of a news story. As Hu et. al (2005) have shown, social presence could signify an intimate connection. Since readers in this study did not experience such a connection, we still don't know what effect a full experience of social presence would have. However, given the strong negative effect of mere attention to the reporter, these results suggest that social presence is unlikely to have positive short-term effects. Rather, as Gunawardena (1995) and others have

suggested, the experience of social presence may take several articles to grow into a more meaningful experience. It may even require the reporter and reader to exchange messages.

This study has demonstrated that social presence is a powerful and complicated variable in communication effects that deserves more research. These results show that it is possible to encourage feelings of social presence, even through a single message in a setting that is traditionally low in social cues. However, that experience of social presence isn't as psychologically meaningful as others have observed in more interactive settings such as instant messaging and online communities. While even this limited experience of social presence is enough to make people say they want to participate on website, it may not be enough to encourage actual participation, and may come at the expense of credibility.

The results of this study confirm that strong relationships can develop through mediated communication. However, taking shortcuts to mimic those relationships, as this experiment in many ways attempted to do, is not an effective substitute for the legitimate intimacy that develops online. Rather than building trust, the limited and awkward experience of social presence hurt the credibility of the fictional websites in this study. These results should serve as a cautionary to news organizations hoping to cash in on the benefits of social media without investing in the human relationships that make them work. While simple tricks on the website can make readers more aware of the reporters behind the institutional curtain, this does not guarantee a positive outcome. Only by developing meaningful relationships – mediated or otherwise, can reporters gain their trust of their readers.

*Appendix A*

Screenshots of article pages

**Article with a photo**

THE DAILY TIMES

76 ° F

October 22, 2006

## That first glance a missed chance?

By David Stoffel

I talked to her for only two minutes. It was a quick conversation as she pulled her bags from the train and waited to squeeze her way through the aisle.

But as I watched the brunette weave her way through the crowds I had a feeling, a belief as strong as any I ever felt: She was special and I'd blown it. I had to get her back.

In mid-March, I posted a belated APB for my lost love on Craigslist. In the process I found I'm not alone in my search for missed love. Some of you sent me emails about similar experiences. Take Jaime, for example:

"The chance of my meeting that guy I saw at the diner if I didn't post was zero. The chance of meeting the diner guy if I do post is 1 in 100,000, which is way better than zero," Jaime said.

Many people think of Craigslist as a free place to find a roommate or post a personal ad seeking a random and racy encounter. But it's also a place where we can find "Missed Connections" - the guy with the cap in the coffee shop, the girl reading Proust in the park.

Webmasters have seen postings to the chance encounters section of craigslist grow from 100 to a few thousand to five digits in just a few years. And it's not the only venue catering to this crowd: The website

**Article without a Photo**


By David Stoffel

## That first glance a missed chance?

He talked to her for only two minutes. It was a quick conversation as she pulled her bags from the train and waited to squeeze her way through the aisle.

But as he watched the brunette weave her way through the crowds Travis had a feeling. It was a belief as strong as any he ever felt: She was special, and he'd blown it. He had to get her back.

In mid-March, Travis posted a belated APB for his lost love on Craigslist. He joined the thousands of others looking for those chance encounters.

"The chance of my meeting that person at Reading Terminal if I didn't post was zero. The chance of meeting that person if I do post is 1 in 100,000, which is way better than zero," Travis said.

Many people think of Craigslist as a free place to find a roommate or post a personal ad seeking a random and racy encounter. But it's also a place where they can find "Missed Connections" - the guy with the cap in the coffee shop, the girl reading Proust in the park.

*Appendix B*

Text of the Articles

**Stim 1 (Social Language)**

Sometimes it's the flavors that are right at hand — or buried in the crisper drawer — that are most worth celebrating.

Take celery. Because it's integral to so many recipes, a dedicated cook always has it around.

Yet most of us take celery for granted. We never hear people talking about it at parties unless they're debating its merits in a Bloody Mary. We don't see it touted on menus. And curiously little has been written about its flavor.

Although wild celery, also known as lovage, is strong and bitter, cultivated celery has a delicate flavor that's alluring but hard to pin down.

I have to confess that I look forward to the moment when, after snapping off the leaves, I'm left with tender pale white-green stalks of celery heart to munch. This is raw celery at its best. It's a lovely, subtle, elusive flavor with no strings attached. I bite a bit and get a white peppery flavor, but fresher, brighter and almost a little salty. I'm in heaven.

As with other aromatic vegetables, celery is good at imparting its flavor to dishes; that's why it's so important to cooks. But who ever spotlights it?

The Chinese do. According to Alan Davidson in "The Oxford Companion to Food," the Chinese had been using wild celery as early as the 5th century.

Diced celery stalks are a hugely important element of many Chinese stir-fries. In fact, true celery lovers can tolerate even the most mediocre of Chinese restaurants — they know they'll find in the lion's share of the dishes at those tables terrific celery flavor and crunch.

There's no reason to stop at stir-fry. One reader sent in her favorite recipe: Whip up a light cream of celery soup that really isolates and elevates the fresh celery flavor. Just simmer lots of sliced celery in chicken stock with a little onion and potato until the vegetables are tender. Purée, then push the mixture through a strainer for a super silky soup. Stir in a touch of cream — just a touch — and you have something truly elegant.

**Stim 1 (Non-social language)**

Beyond the crunch, the taste of celery

Sometimes it's the flavors that are right at hand — or buried in the crisper drawer — that are most worth celebrating.

Take celery. Because it's integral to so many recipes, a dedicated cook always has it around. Fresh celery is easy to come by at the local store.

Yet most of you take celery for granted. You never hear people talking about it at parties unless they're debating its merits in a Bloody Mary. You don't see it touted on menus. And curiously little has been written about its flavor.

Although wild celery, also known as lovage, is strong and bitter, cultivated celery has a delicate flavor that's alluring but hard to pin down.

The true celery lover looks forward to the moment when, after snapping off the leaves, you're left with tender pale white-green stalks of celery heart to munch. This is raw celery at its best: lovely, subtle, elusive flavor with no strings attached. Bite a bit, along with some tender leaves, and you get a white peppery flavor, but fresher, brighter and almost a little salty. It’s delicious.

As with other aromatic vegetables, celery is good at imparting its flavor to dishes; that's why it's so important to cooks. But who ever spotlights it?

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**Stim 2 (Social Language)**

"It's almost like I have breasts on my back."  One reader left this in the comments section of my previous story about healthy cooking with spring vegetables along with some questions about how to get in shape for the summer. While a somewhat disturbing visual, I think we all can relate to storing excess fat somewhere, often around the chest, back, shoulders or arms.

After months of packing on the layers it's time to pull out our shorts and tee shirts for the coming spring. Luckily, there's still time to get in shape...not just to look good, but to tackle all those warm-weather activities we'll be doing. Here's how.

Strength training is a crucial factor in losing fat. Not only does it make body and bones stronger, it also helps you to burn more calories all day long. To lose weight make sure your workouts are balanced between cardio and lifting.

Keep your reps between 10-16. Lift enough weight so that your last rep is difficult (not impossible) and don't be afraid of heavy weights (women included). If you lift weights more than three times a week, make sure to vary your exercises so you give your muscles time to recover.

If you want to build muscle and gain weight, focus on your strength training workouts. Use enough weight that you can only complete between 6-8 reps of each exercise (use a spotter!). And, again, make sure you give your muscles time to rest, recover and grow.

If you're going to start weight training, focus on some key areas like the abs and arms says certified trainer Catherine Fathke.

Strength training can also be important for getting your body ready for summer activities you often don't do in the winter. (This summer my husband and I are taking waterskiing lessons!) If you haven't been exercising this winter, you set yourself up for injury when you jump into summer sports with little preparation. Even a simple total body workout twice a week can help you get strong...even better is a sports-specific program.

**Stim 2 (Non-social language)**

"It's almost like I have breasts on my back." While a somewhat disturbing visual, statements like this can be heard at gyms all over the city. Summer is approaching and gyms are full of people getting in shape. Most people can relate to storing excess fat somewhere, often around the chest, back, shoulders or arms.

After months of packing on the layers, it's time to pull out the shorts and tee shirts for the coming spring. There's still time to get in shape...not just to look good, but to tackle all those warm-weather activities.

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**Stim 3 (Social Language)**

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But as I watched the brunette weave her way through the crowds I had a feeling, a belief as strong as any I ever felt: She was special and I'd blown it. I had to get her back.

In mid-March, I posted a belated APB for my lost love on Craigslist. In the process I found I'm not alone in my search for missed love. Some of you sent me emails about similar experiences. Take Jaime, for example:

"The chance of my meeting that guy I saw at the diner if I didn't post was zero. The chance of meeting the diner guy if I do post is 1 in 100,000, which is way better than zero," Jaime said.

Many people think of Craigslist as a free place to find a roommate or post a personal ad seeking a random and racy encounter. But it's also a place where we can find "Missed Connections" - the guy with the cap in the coffee shop, the girl reading Proust in the park.

Webmasters have seen postings to the chance encounters section of craigslist grow from 100 to a few thousand to five digits in just a few years. And it's not the only venue catering to this crowd: The website rightplacerighttime.net allows members who pay an annual fee to put up ads seeking the ones who got away.

Although the chances that "Cosi 4th Chestnut - You had a great smile and black sweater" will read the ad are slim, the sites offer people a forum to deal with their feelings and intuitions, experts say.

"There are whole books written on how events come together beyond chance," said Barbara Winston, a psychiatrist who teaches at the University of Illinois.

For the sake of my love from the train, let’s hope that’s true.

**Stim 3 (Non-social Language)**

He talked to her for only two minutes. It was a quick conversation as she pulled her bags from the train and waited to squeeze her way through the aisle.

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“There are whole books written on how events come together beyond chance,” said Barbara Winston, a psychiatrist who teaches at the University of Illinois.

But as Travis has found, it’s better to post on Craigslist than let chance run its course.

**Stim 4 (Social Language)**

Yesterday, the city announced a special election in August where voters will decide whether to increase the sales tax to improve roads.  Overnight my inbox filled up with emails from readers asking whether such a tax was necessary. I decided to take those questions straight to the source.

Spectacular. Staggering. Explosive. Those are some of the words being used around city hall to describe local population growth over the next three decades.

Over the next 30 years the size of our city is expected to more than double. In some places it's projected at upwards of 500 percent growth.

Much of the west side of the Valley is undeveloped now, but that's changing fast. Urban areas are expected to grow at the twice the national rate in the next thirty years. Conservatively 300,000 new residents are expected in the next 30 years. And that's just on the west side where I live. That's a lot of new neighbors I'll have to invite over for dinner.

According to Timothy Cook, Planning Manager for the City "Growth is essentially more certain than any place in the country. We have the nation's biggest families. As those families mature into the next generation our growth will be staggering."

Those numbers make transportation planners in particular very nervous. According to Cook our highways are already at 85 percent capacity, while travel continues to grow. Meantime, there's a 16 billion dollar future funding shortfall. That's more than five times the total current spending on roads in the city.

Much of the funding gap is the result of large projects planned by the department of transportation. According to Cook it costs $200 to fill in a pothole. Yet it costs $10,000 to build one mile of highway.

On the drawing boards are new light rail lines and a new highway for the west side of the valley. Many of us want walkable neighborhoods but we may face serious development pressures before new transportation options arrive.

Here's one final statistic to chew on: the number of new residents projected for the western Valley is about 10,000 people a year. We better start cooking for our new neighbors.

**Stim 4 (Non-Social Language)**

Spectacular. Staggering. Explosive. Those are some of the words being used around city hall to describe local population growth over the next three decades.

Yesterday, the city announced a special election in August where voters will decide whether to increase the sales tax to improve roads. The city council has been discussing the tax in weekly meetings during the last four months.

Population growth in the next 30 years is projected to more than double. In some places it's projected at upwards of 500 percent growth.

Much of the west side of the Valley is undeveloped now, but that's changing fast. Urban areas are expected to grow at the twice the national rate in the next thirty years.

Conservatively 300,000 new residents are expected in the next 30 years. And that's just on the west side. That's a lot of new neighbors for some people to welcome.

According to Timothy Cook, Planning Manager for the City "Growth is essentially more certain than any place in the country. We have the nation's biggest families. As those families mature into the next generation our growth will be staggering."

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Here's one final statistic to chew on: the number of new residents projected for the western Valley is about 10,000 people a year. You better start cooking for your new neighbors.

*Appendix C*
Regression Tables

***Table 2 Predictors of Credibility and Participation***

| | **Article Fairness**[a] | | **Article Depth**[b] | | **Media Concern**[c] | | **Media Depth**[d] | | **Intent to Participate**[e] | | **Actual Participation**[f] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Step 1** | *β* | *t* | *β* | *t* | *β* | *t* | *β* | *t* | *β* | *t* | *β* | *t* |
| Gender | 0.03 | 0.41 | 0.11 | 1.42 | 0.12 | 1.59 | 0.13 | 1.6 | -0.04 | -0.52 | -0.11 | -1.39 |
| Major | -0.13 | -1.64 | -0.17 | -2.18** | -0.17 | -2.2** | -0.11 | -1.44 | -0.01 | -0.06 | -0.13 | -1.67* |
| **Step 2** | | | | | | | | | | | | |
| Gender | -0.04 | -0.63 | 0.05 | 0.68 | 0.06 | 0.85 | 0.02 | 0.39 | -0.14 | -2.4** | -0.10 | -1.22 |
| Major | -0.09 | -1.33 | -0.14 | -1.92* | -0.14 | -1.95* | -0.06 | -1.01 | 0.05 | 0.82 | -0.14 | -1.75* |
| Involvement | 0.41 | 4.24*** | 0.39 | 3.77*** | 0.36 | 3.52*** | 0.66 | 8.07*** | 0.59 | 6.95*** | -0.10 | -0.9 |
| Liking | 0.15 | 1.52 | 0.05 | 0.47 | 0.10 | 1.04 | 0.04 | 0.54 | 0.14 | 1.62 | 0.04 | 0.35 |
| **Step 3** | | | | | | | | | | | | |
| Gender | -0.06 | -0.83 | 0.04 | 0.51 | 0.05 | 0.73 | 0.02 | 0.3 | -0.14 | -2.32** | -0.10 | -1.18 |
| Major | -0.10 | -1.46 | -0.14 | -2.12** | -0.14 | -2.07** | -0.06 | -1.06 | 0.05 | 0.9 | -0.14 | -1.73* |
| Involvement | 0.41 | 4.43*** | 0.39 | 4.01*** | 0.36 | 3.63*** | 0.66 | 8.15*** | 0.59 | 7.14*** | -0.10 | -0.9 |
| Liking | 0.20 | 2.14** | 0.11 | 1.17 | 0.15 | 1.52 | 0.07 | 0.84 | 0.10 | 1.19 | 0.03 | 0.23 |
| Social Presence | -0.26 | -3.91*** | -0.32 | -4.65*** | -0.22 | -3.23*** | -0.12 | -2.07** | 0.18 | 3.09*** | 0.06 | 0.78 |

[a]$R^2$=.36 (*F=17.21****) [b]$R^2$=.32 (*F=14.39****) [c]$R^2$=.29 (*F=12.44****) [d]$R^2$=.51 (*F=32.92****) [e]$R^2$=.50 (*F=30.94****) [f]$R^2$=.04 (*F=1.15*)

$p < .10$. *$p < .05$. ** $p < .01$ ***

*Appendix D*
Descriptive Statistics and Correlations

***Table 3: Measured Variables by Condition***

| | Social language | | | | Photo | | | |
|---|---|---|---|---|---|---|---|---|
| | Yes (n=240) | | No (n=246) | | Yes (n=243) | | No (n=243) | |
| | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| Article depth | 12.60 | 4.59 | 11.87 | 4.13 | 12.58 | 4.20 | 11.88 | 4.52 |
| Article fairness | 25.93 | 6.37 | 24.61 | 5.62 | 25.73 | 5.80 | 24.79 | 6.24 |
| Involvement | 19.42 | 8.35 | 18.78 | 8.47 | 19.87 | 8.31 | 18.31 | 8.45 |
| Liking | 3.70 | 1.88 | 3.79 | 1.81 | 3.91 | 1.81 | 3.59 | 1.86 |
| Media concern | 14.34 | 4.11 | 13.65 | 3.83 | 14.21 | 3.72 | 13.78 | 4.22 |
| Media fairness | 29.98 | 8.16 | 28.61 | 7.24 | 29.54 | 7.46 | 29.04 | 8.00 |
| Intent to participate | 14.64 | 8.43 | 13.96 | 8.07 | 14.76 | 8.45 | 13.83 | 8.03 |
| Participation | 0.21 | 0.41 | 0.17 | 0.38 | 0.17 | 0.38 | 0.21 | 0.41 |
| Social Presence | 14.44 | 7.97 | 18.93 | 8.77 | 16.46 | 8.71 | 16.97 | 8.65 |

***Table 4: Correlations of Measured Variables and Manipulations***

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Social Presence | | -.10*** | -.17*** | -.22** | -.13*** | .17*** | .03 | .02 | .31*** | .06 | .08** |
| 2. Article Depth | | | .59*** | .47*** | .61*** | .25*** | -.15*** | -.06 | -.08** | .41*** | .41*** |
| 3. Article Fairness | | | | .63*** | .86*** | .27*** | -.08 | -.03 | -.13*** | .48*** | .45*** |
| 4. Media Similarity? | | | | | .74*** | .35*** | -.12 | -.17 | . | .66*** | .50*** |
| 5. Media Fairness | | | | | | .23*** | -.10*** | .01 | -.11** | .46*** | .42*** |
| 6. Intent to Participate | | | | | | | .09** | -.04 | -.07* | .66*** | .56*** |
| 7. Participation | | | | | | | | .05 | .01 | -.06 | -.02 |
| 8. Has a Photo | | | | | | | | | .00 | -.05 | -.03 |
| 9. Social Language | | | | | | | | | | -.06 | -.02 |
| 10. Involvement | | | | | | | | | | | .65*** |
| 11. Liking | | | | | | | | | | | |

*$p < .10$. **$p < .05$. ***$p < .01$

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