Saving Face(book): Effects of Interactions with Third Parties on

Social Attractiveness of a Facebook Profile Owner

by

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ABSTRACT

The purpose of this study was to determine how a profile owner's (PO's) response to a friend's comment on Facebook impacts social attractiveness of the PO. A 3 (response type: denial, humble, no response) x 2 (sex of the participant) between-subjects experiment was conducted using 297 participants who were recruited from a large public university and a community college in the southwest United States. It was hypothesized that being humble and accepting of implied negative behavior statements would increase the social attractiveness of the profile owner compared to denial or no response. A one-way ANCOVA with social desirability as the covariate was used to analyze the data. Results were non-significant for the main effects of response type but were significant for the main effects of the sex of the participants. The results suggest that a PO's response to a negative Friend comment does not impact the PO's social attractiveness.

Dedicated to my family and friends who have supported me endlessly.

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Introduction

Social networking on the Internet has had a major impact in social relations since the Internet first began its commercial expansion in the 1980s and 90s, expediting twoway communication between individuals. According to the International Telecommunication Union (2013), the number of individuals using the Internet is still growing at a rapid pace, approaching 2.75 billion individuals globally. Internet innovations such as email, instant messaging, video chat, and other functions have transformed the way we communicate and connect with other individuals. Social networking sites (SNS) have streamlined the communication process and allowed people to maintain a large network. Boyd and Ellison (2007) have defined SNSs as any webbased site that allows a person to create and edit a self-representative profile that can be viewed in part or whole by the public. A SNS must also provide users with a personal network of connections between profiles and allows users to browse through other profiles and their networks located within the system. These media sources allow for a new means of self-presentation and social interactions.

An important aspect of SNSs is their ability to facilitate social communication between users, especially as it differs from regular offline communication. When socializing in an offline setting, people often rely on visual cues of their social partner(s) to provide additional information about one another, such as sex, attractiveness, height, weight, and other qualities of the other communicator (Duck, 1982). In a dyadic face-toface conversation, these visual cues are present in facial expressions, hand gestures, posture, etc. as well as more regularly self-managed cues such as dress, make-up,

hairstyle etc. of the two people involved. On SNSs, visual cues are present in how a user presents himself/herself within the context of the particular SNS. Facebook.com is one of the most popular SNSs on the internet ("Alexa," 2013). On Facebook, there is a primary photo representing the user, additional photos that can be uploaded by the user or his/her friends, self-descriptions, and a display of public social interactions with other users on what is commonly referred to as a "wall" or "timeline."

Visual cues on SNSs have been shown to have a significant effect on the impression of a user to an outside observer by implying aspects of a user's personality and interests, which enable an observer to make judgments about the user's personality and social attractiveness (Manago, Graham, Greenfield, & Salimkham, 2008; Wang, Moon, Kwon, Evans, & Stefanone, 2010). However, SNSs are not simply a self-presentation medium, but a forum for discussion, interaction, and sharing, which can also affect how a user is perceived by others. Various activities on SNSs allow for other users to influence the image of a profile owner (PO), such as posting comments or photos on another person's wall. These activities have also been shown to affect how a PO is perceived by other people (Hong, Tandoc, Kim, Kim, & Wise, 2012; Walther, Van, Hamel, & Shulman, 2009; Walther, Van, Kim, Westerman, & Tong, 2008). This fact has given rise to the question of how does content presented by third parties on a social network affect the impression others make of SNS users (Walther et al., 2008)?

People have a need for self-esteem (Schlenker, 1980) and the fulfillment of that need can be affected by using Facebook (Kalpidou, Costin, Morris, 2011; Manago, Taylor, Greenfield 2012). A person needs to feel in control of himself/herself and his/her environment in order to maintain a desired social image and gain social benefits (Schlenker, 1980). Users of SNSs are able to accomplish this image control by actively managing their self-presentation by posting status-updates, modifying their photos, or altering their personal information. There are times when people in a user's network may challenge the self-presentation image a SNS user creates. Challenges come when a networked friend of the PO posts a statement that is incongruent with the desired image of the PO. When others present a challenge to a person's social image, that person can produce evidence to withstand that challenge (Schlenker, 1980). An example might be if a PO wants to appear competent at a sport like baseball, but a friend posts on his wall "Way to make us lose the game last night." The PO may then be motivated to react in order to mitigate the loss of control in his social network environment and lost social desirability. Determining the effect of confronting friend-generated comments has thus become a topic of interest. To that end, the purpose of this review is to report the previous research on how users of Facebook create and manage their online identities, and how users interpret what they see on other people's profiles. The purpose of the present study is to examine the effect of various PO responses to negative comments on that PO's social attractiveness.

Review of Literature

An Overview of Facebook

Before examining the effect of PO responses to negative comments, it is important to better understand the medium through which these social interactions occur. Facebook.com is the most popular SNS and was ranked as the second most popular website on the Internet in 2013 ("Alexa," 2013). Though it is impossible to get a completely accurate and current account of the number of users due to the rate at which Facebook is expanding, a report in March 2013 announced that Facebook had reached over 1.11 billion active users, expanding from just 500 million 3 years earlier (Facebook, 2013; Fowler, 2012). Most users are between ages 18 – 35 years and report checking their Facebook profile at least once a day (Hampton, Goulet, Rainie, & Purcell, 2011). The swift expansion of users of Facebook highlights the importance of expanding research into the motivations and effects of use of SNSs such as Facebook.

The vast quantity of users and functions offers a near endless supply of research opportunities to better understand the changing face of human interaction in a digital world (Wilson, Gosling, & Graham, 2012). Facebook can be viewed as an "ongoing database of social activity with information being added in real time" (p. 204). Facebook currently has the capacity to store up to 100 pedabytes of personal information, conversations, photos, and videos spanning over years of operation (Facebook, 2013). That is almost enough memory to store 10¹⁵ pages of plaintext or 3.6 * 10¹¹ digital photos. The massive quantity of social access and ease of interaction have had a significant effect on how users see and interact with the world. Terminology is always changing, especially as new technology is introduced and grows in popularity. Many SNSs such as Facebook use the term "Friend" to describe all people located within a person's social network, regardless of the real life connection, contrasting the familiar term usage as a nonfamilial close connection (Ledbetter, Mazer, & DeGroot, 2011). Following boyd and Ellison (2007), when referencing a contact on a person's SNS list,

the word "Friend" will be capitalized. Facebook provides users with a variety of functions to facilitate interactions between Friends.

Facebook users are able to set up a profile on Facebook and include personal information, pictures, and interests. Additionally, a user has a "wall" or space on his or her profile that allows for others who are in his or her social network to have social exchanges including posting a form of media, or inviting some or all of a network to an event. Users are able to search through a database of other users and offer them "Friend" requests or the request to be linked in each others' networks. The majority of users' networks are made up of connections that are formed in an offline setting (Ellison, Steinfield, & Lampe, 2007; Hampton et al., 2011). Users who are not network-connected friends are not able to engage in public interactions on each others' walls, thus making Facebook a bi-directional network. These public interactions, photo uploads, and status updates are then displayed on a "News Feed" for network-connected friends to browse and contribute to via "comments" or statements posted on other users' walls.

Younger adults, aged 18 to 29 years old, are perhaps the most studied population as they relate to social media. Hargittai (2008) explains that users of computer-mediated communication can only receive the full effect of their online resources if they have the necessary skills. College students, who have had to develop their own identities in the age of SNSs during the last decade, have developed those skills needed to optimize their usage of SNSs. Additionally, younger adults are also more likely to experience anxiety related to SNSs, experience peers who are trying to manage their online impression, and post misleading information on Facebook, because of their concern for how they are

perceived by their social network (Holmes, 2013). College undergraduates have been shown to visit Facebook frequently and for a significant length of time (Holmes, 2013; Kalpidou et al., 2011; Manago et al., 2012; Thompson & Lougheed, 2012). This suggests that college undergraduates would be a strong target population for study, as they are more likely to be involved in networks, both their own and their Friends', where social stresses stimulate impression management in response to comments that threaten one's social attraction.

Identity Presentation in an Online Community.

When considering how a person might react to negative comments directed toward him/her on Facebook that could affect one's social appearance to Friends, it is important to consider how online identities develop and operate. SNS users have developed rules that govern how and why people present their online identities to Friends online (Donath & boyd, 2004, Ellison et al., 2007). This section explains how online identities are developed, and how users try to use online identities to appear more socially attractive.

Online identity presentation has been a topic of interest in research ever since online interactions have been possible and causes internet users to often reconsider their perception of self (Surratt, 1998; Turkell, 1995; Yurchisin, Watchravesringkan, & McCabe 2005). One's identity presentation is also heavily influenced by one's interactions others. Erickson (1959) discussed how people develop their concept of identity as being heavily influenced by interaction with and perceptions by peers. As an online identity is primarily created through social interactions (Gergen, 1991; Surratt,

1998), a powerful influence into the creation of an identity in an online medium is how others will perceive that identity, what is known as a "reflexive evaluation" (Solomon, 1983, p. 321). Internet users, therefore, would strongly consider how they are being perceived on the internet when constructing their identity. However, since communication prior to SNSs was often in the form of Multi-User Dungeons, blogs, forums, online games, and e-mails, a great deal of online communication occurred in anonymity. Most of those media allowed no photos and users could provide fake names and create interactions between people with no off-line connection. As such, early research into computer-mediated communication led to the reputation of online communication being impersonal (Walther, 1996), when in reality it allowed for users to experiment with personae not regularly presented in an offline medium (Turkell, 1995).

Once identities began to be more representative of the users making the posts with personal information such as name, photo, and other identifying cues, behavior and identity presentation changed as a person could receive real life social benefits from a positive presentation (Ellison et al., 2007, Zhao, Grasmack, & Martin, 2008). When the online persona better represents the offline person, users began becoming more concerned with forming a positive self-presentation. An example of this is the creation of self-representative profiles that emerged with the creation of online services such as online dating. Clients needed to construct a profile that had to serve a dual purpose of finding a desirable mate and, simultaneously, attracting that desirable mate. As such, users of online date sites tended to exaggerate qualities and traits that they believed to be more desirable (Yurchisin et al., 2005). This was because users reported frequently

considering the perspective of people viewing their constructed identity and wanted to gain social benefits from having a more attractive image. This shows more evidence that Facebook users are likely to act to give themselves the best possible image to receive social benefits from their SNS.

Additionally, the online medium gave users an opportunity to experiment with characteristics and attributes that they did not possess (Ellison, Heino, & Gibbs, 2006; Manago et al., 2008; Yurchisin et al., 2005). For instance, a user could try to appear more outgoing and active than they truly were, not because they were intentionally trying to deceive but were instead trying to gauge how those traits affected their desirability to other users. Manago and colleagues (2008) explain that without grounding in a physical environment, online modes of communication allow users to "reify aspects of personal identity that are absent from their everyday physical lives" (p. 454). However, this effect was reduced due to the anticipation of future face-to-face interaction, which could reveal the extent of any excessively exaggerated self-generated statements (Ellison et al., 2006; Gibbs, Ellison, & Heino, 2006). Additionally, users constantly reconstruct their identities in reaction to feedback received and would continuously reconstruct their online identity. This demonstrates that SNS users are willing to respond to stimuli on SNSs in a variety of ways based on how it impacts their social image.

SNSs and Facebook rules for identity construction are similar to that of online dating sites; however, there are three notable differences in the functionality of a selfconstructed profile for SNSs. First, a SNS profile does not necessarily have a specific and universal goal, unlike an online dating site. Second, most of the people viewing the profile will know the PO previously through offline interactions. Last, SNSs allow for the presentation of content outside of the personal information structure of the site itself, which offers new tools to allow for identity construction and presentation to social connections. Content such as photos, conversations, and comments offer visual cues regarding the PO's identity (Wilson et al., 2012).

SNS users would still attempt to exaggerate qualities that they believed would enhance their social attractiveness, much like online dating users. Zhao et al. (2008) found that self-presentation through Facebook allows users to appear more social than may actually be true, due to a universal desire to be "popular among friends" (p. 1827). Exaggerating desirable qualities was only mildly effective in achieving the appearance of being more popular due to the fact that most of users' networks are made up of offline connections who can spot blatant, excessive exaggerations. For instance, Buffardi and Campbell (2008) measured how independent observers assessed narcissistic Facebook users' profiles, as narcissistic people tended to present idealized images and descriptions of themselves. The research participants were able to see through the exaggerations and identify the POs as narcissists. Most users are less likely to make direct textual bloated self-descriptions and instead use their activity to advance a pro-social presentation (Zhao et al., 2008). If a user can be more subtle and indirect, he/she may be more successful with his/her identity manipulation than users who claim more direct traits or qualities. This means that it is likely that a Facebook user who does not confront a challenge to one's identity directly with denial may be more successful at appearing socially desirable.

How People Form Impressions on Facebook

Since Facebook users often try to make themselves seem more socially attractive, it would be relevant to know how Facebook users are actually perceiving people's attempts to appear more socially attractive. The present study looks at how other users view the social attractiveness of the PO whose identity is being challenged. Therefore this section will examine how users form impression of other users on SNSs.

Early research in computer-mediated communications (CMC) suggested that the limit of visual and social cues, such as appearance, body language, vocal tone, which are present in face-to-face communication, reduces the ability of people involved to form impressions (Culnan & Markus, 1987; Sproull & Kiesler, 1986). However, it depends on the functionality of the medium used in determining how effectively social cues are transmitted and received (Short, Williams, & Christie, 1976). The creation of a social avatar on SNSs actually allows for observers to easily make strong and quick assessments of a PO due to the snap-shot of self-disclosing information presented (Donath, 2007). The theory behind this is based on how social impression formation compensates for this lack of social cues.

Social Information Processing theory (SIP; Walther 1992, 2006) posits that "impression-bearing and relational functions, for which communicators rely on nonverbal cues face-to-face, are translated into verbal content, linguistic, stylistic, and chronemic cues in the CMC environment" (p. 466). In a sense, SIP relies on the concept that even though a social medium is less efficient, social cues can be transmitted through a variety of modalities. With regard to online SNSs such as Facebook, SIP theorizes that even without the visual and social cues presented in face-to-face communication, users still form impressions of other users based on provided data so long as the person making the evaluation has enough time. This means that observers looking at a Facebook profile may be able to make an accurate assessment of a PO's personality without normal off-line cues and without even interacting with the PO.

Many researchers have tested this theory experimentally. Wang et al. (2010) examined the relationship between the physical attractiveness of a PO's profile picture and the social desirability of the PO as measured by how willing the observer would be to add the PO as a Friend. The effects of gender were also analyzed. Their results indicated a three-way interaction where males and females were more willing to initiate Friendship with a person of the opposite gender who was attractive than with either an attractive user of the same gender or unattractive profile picture. They also tested whether having no profile picture would impact their results. With no profile picture presented, males were more willing to initiate friendship with opposite gender profiles. This is consistent with Walther's (1996) theory of Hyperpersonal CMC, which says interpreters of social context cues presented by CMC will construct exaggerated impressions of their social partners. Facebook provides other social cues, such as popularity.

Facebook offers additional information to users such as the Friend count of another user. Research on previous SNSs, such as Friendster.com, discovered that people with a relatively excessive network size were labeled as a "Friendster whore" (Donath & boyd, 2004, p.80) describing a person whose growth of social network is motivated by the desire to appear more socially attractive but was actually causing a negative social impression. Tong, Heide, Langwell, and Walther (2008) examined the relationship between the number of Friends a Facebook user has and how socially desirable and extraverted they appeared to an outside observer. Using mock-up profiles, they manipulated the number of Friends a PO would have and then examined the impression research participants had of the PO. Their study revealed a curvilinear relationship between the number of Friends in a person's network and the degree to which a person is considered socially desirable. Users who have too many or too few friends are perceived more negatively. Additionally, Tong and colleagues found a non-linear relationship between Friend count and perceived extraversion of a PO, where more Friends would make a PO appear more extraverted to a point, but then would begin to decline at the highest Friend count. This shows that a researcher can use fake Facebook profiles to evaluate social attraction and personality.

The PO generates much of the content added to a Facebook profile. Not only does this lead to enhanced self-presentation but also to a diminished trust of user generated self-image. Gibbs and colleagues' (2006) survey of online dating users suggests that a large portion of users felt that others were misrepresenting characteristics such as physical appearance, age, income, marital status, and relationship goals. Though not always intentional, users still attempted to present either a potential future self one intends to reify (Ellison et al., 2006) or a false representation of a user's self-perception. Therefore, users forming impressions rely on additional sources of information about their target.

In general, manipulation of profile cues have been shown to impact the social impression people have of the user behind the profile. There are visual cues, which a PO would have less control over but can still make a significant impact on how a person is perceived. Those cues include information provided by a PO's network. A PO's Friends and their contribution to a profile affect a PO's ability to successfully manage his or her impression.

Theoretical Foundations

Facebook and other SNSs allow Friends of the PO to post text, photos, and other media on a PO's wall, effectively providing an observer with more information regarding the PO's interests, personality, and behaviors that contribute to his or her social attractiveness. The current study examines the effects of Friend generated comments and the PO's response on a PO's social attractiveness. The Friend generated comments are additional content, outside the control of the PO because it is created by another source. This section examines the effects of content generated by another source, but placed on the PO's profile, has on the PO's impression to observers.

The Brunswik Lens Model (1956) posits that environmental cues influence the perception of the person being observed. In the context of SNSs, this includes the environmental contributions a person's profile, wall, and social connections make to the PO. Walther and Parks' Warranting Principle (2002) describes this information as providing greater warranting value. What that means is that outside observers will inherently trust the impression posed by another over a self-generated presentation (Walther & Parks, 2002).

An example of how Friends can influence the impression others' have of a PO is based on the Friends' physical appearance. Walther et al. (2008) examined the effect of physical attractiveness of a Facebook user's Friends, as well as the content of his or her interaction, on the impression participants developed towards the PO. Their experiment consisted of presenting Facebook profile mock-ups with friend comments posted on the profile wall. The friends would have either physically attractive or unattractive photos, and the comments would be positive or negative. The physical attractiveness of the photos was rated by online users of a photo rating website. The male and female photos were assessed to be of comparable physical attractiveness for both the high and low physical attractiveness conditions by a team of ten mixed-gender raters. Positive or negative statements reflect socially desirable or undesirable actions the PO has done or would do. Such undesirable behavior could include sexual innuendo or excessive drinking while positive statements implied social competence and healthy social connections. A survey would then ask participants to rate the PO on measures of physical, social, and task attractiveness (McCrosky & McCain, 1974). The actual physical attractiveness of the profile picture was controlled by being of neutral attractiveness. The researchers found that POs who had more physically attractive friends were rated to be significantly more physically attractive themselves, while appearing more attractive than one's friends offered no benefit.

The statements made by Friends in the Walther and colleagues' (2008) study also seemed to impact the social attractiveness of the PO. Comments made by Friends that implied prosocial behavior of the PO enhanced their social attractiveness to the research participants. This demonstrates that Friends have an influence on the social perception of Facebook users. The next step was to examine how the Friend implied image of a PO influenced the PO's social attractiveness when it conflicts with the PO's self-presentation.

Hong et al. (2012) researched the effect of incongruence of self-presentation and other generated statements on impression formation. Their experiment consisted of Facebook profile mock-ups with high and low social cue profile pictures, and statements generated by social network Friends who were consistent or inconsistent with the PO's presentation. High and low social cue was defined as a picture that conveyed additional elements that could be judged by an observer. In their study, high social cue had the PO in a beauty contest outfit and crown, while the low social cue picture was zoomed closer, which blocked any additional environmental cues in the background. The profile picture was controlled to be physically attractive in all conditions. Statements congruent with the physical attractiveness of the PO included statements such as "Such a beautiful girl, my friend!" while statements incongruent with the self-presentation would be like "You're too pale! Are you still sick?" They found that when statements by others were congruent with the presentation of the PO, the PO was perceived as having more friends and being more socially attractive. Additionally when a PO provided more social cues, they were perceived as being more popular.

There are some concerns with the measures Hong et al. (2012) used in their study. The authors decided to define social attractiveness as whether or not the participant would want to add the PO as a friend. However, previous research has shown that most people do not regularly add people they do not know to their Friends list (Ellison et al., 2007; Hampton et al., 2011) and that using an attractive female PO is likely to skew the responses to that question for males (Wang et al., 2007). Secondly, Hong and colleagues decided to ask participants how many Friends are in the PO's network as a measurement of the popularity of the PO. Previous research has shown that measuring popularity through "number of Friends" is more complicated as there appears to be a curvilinear inverted U shape between number of Friends and social desirability (Tong et al., 2008), which means that a person might not actually be well liked and was just collecting a large network of weak ties to appear more popular than they truly were (Donath & boyd, 2004). Finally, their study is limited due to the fact that they did not measure gender interactions by including conditions for male and female POs as well as male and female participants. Other studies have shown that SNS social judgments can be influenced by these factors (Manago et al., 2008, Walther et al. 2008).

Walther et al. (2009) examined the effect of other-generated comments when they conflicted with the PO self-presentation in two experiments. In the first, they manipulated the level of extraversion, as measured by the NEO – Five Factor Inventory (Costa & McCrae, 1992), expressed by the PO. Walther et al. (2009) created a Facebook profile mock-up with information presented in self-presentation areas of the profile (e.g., "About me," "Interests," "Activities," "Quotations," "Groups," etc.), which suggested high levels of extraversion or high levels of introversion. They also implied different levels of extraversion of the PO through Friends' textual comments on the profile wall. A high-extraversion comment might be "you were the life of the party last night!"

while a high introversion comment would state "missed you last night, your roommate said you stayed in...are you ok?" Friend generated statement would be either congruent or incongruent with the image presented by the PO. Comments that were incongruent with the PO self-presentation were shown to have a limited effect on the impression of the PO, with participants rating extraverted self-presentation and Friend comment higher than incongruent statements, higher than introverted self-presentation and introverted Friend comment. However, the Warranting Principle could not be solely identified as the cause for these results as there is not necessarily a social benefit to lying about the level of one's extraversion, and there being no obvious self-enhancing reason to lie about a trait like extraversion. Therefore, they conducted a second experiment.

Their second experiment was designed to determine the effect physical attractiveness had the PO, after identifying high physical attractiveness as a socially beneficial trait (Walther et al., 2009). They presented Facebook profile mock-ups with the same neutrally attractive profile picture. In that study manipulation occurred with high and low levels of physical attractiveness expressed by the PO, and implied by Friends through textual comments. Profiles would have statements suggesting being physically attractive or unattractive in the self-presentation areas of the profile again. For instance, an attractive PO's description in the "About me" section would be "Just hangin out…getting better looking everyday," while the unattractive PO's description would be "I like hanging out online, and I'm trying my best to lose a few pounds." Friend generated comments would either support or contradict this image. An example of a comment suggesting the PO was attractive would be "If only I was as hot as you," while

a comment suggesting the PO was unattractive would be "don't pay attention to those jerks last night, what matters is on the inside." The study would then measure the level of physical attractiveness participants perceived for the PO as well as the level of honesty of the PO. Incongruent Friend statements overrode a user's physical attractiveness selfstatements, with users being perceived as more or less attractive if Friends say so. Perception of honesty seemed to be dependent solely on a PO's self-statements and not on the congruence of statements with Friends. Claims of physical attraction were met with suspicion, regardless of Friend comments, and thus lowered the perception of honesty of the PO, while modesty was rewarded with trust by observers.

A concern with both of the experiments in the Walther et al. (2008) and Walther et al. (2009) studies is that Friend generated comments that were intended to lower the social attractiveness were never responded to by the PO. Previous research has shown that users of SNSs are aware of and actively manage their social attractiveness to their social network (Karl et al. 2010, Manago et al. 2008, Zhao et al., 2010). Facebook is not a static display of people's opinions, but a dynamic environment of interactions that involves post and response dialogue between members in a network. Therefore, the effect of responding to other-generated content on a PO's wall should be examined as well. A PO can gain trust by demonstrating humility in their self-presentation, as demonstrated by Walther et al. (2009). Interpersonal trust is an important component of social interactions, one that is difficult to gain in an online environment (Henderson & Gilding, 2004). If a Friend posts a comment that would normally detract from a PO's social attractiveness, could the PO gain back some of that social attractiveness by displaying humility and gaining trust? Gregg, Hart, Sedikides, and Kumashiro (2008) survey of 79 U.K. employees and 118 U.S. undergraduate students indicated that individuals who display modesty are considered more likeable. Though the Warranting Principle (Walther & Parks, 2002) stresses that observers will trust content generated by sources outside of the PO's control, like Friends, a PO may still be able to manage his/her impression by his/her response to those Friends' comments.

Summary and Statement of Purpose

Facebook has become an integral component of social interactions in modern society. Users engage in a complex system of content generation and consumption on a massive scale. When a user creates a profile, they are able to connect with Friends' profiles to create a network for social interaction. Users are also provided with an opportunity to control their image with pictures, self-descriptions, and Friend interaction, allowing for users to promote a desirable image of themselves. Successfully claiming a desired identity leads to positive psychological and social effects; therefore, people react to challenges presented to that identity claim. On Facebook, challenges come in the form of Friends generating content on a profile that contrasts with the impression the PO wishes to transmit to others on his or her network. Previous research has tested challenges in several forms. Challenges can be made because the Friend is trying to be playful with the PO, is concerned with the negative behavior of the PO, or believes the PO has excessively exaggerated his/her self-image. These challenges have been shown to have a strong effect on how the challenged user is perceived. Previous research has only examined the effect of how these challenges alters a third-party user's impression of the PO, when the PO takes no action in response to these challenges. However, Facebook is not a static environment, and the PO is able to respond through multiple methods. A PO has several options of reaction. First, a PO could ignore that challenge and make no response to the challenge. Second, the PO could deny it and provide supporting evidence. Third, a PO could humbly accept the presented image as previous research has shown that Facebook users can be rewarded for modesty, which has been shown to be a factor in being more likable (Gregg et al., 2008). It is the purpose of this study to address the following question: How are Facebook profile owners' (PO) social attractiveness to third-party users affected by the responses they make to challenges to their desired image by Friends' comments?

It is predicted that:

1. Participants who view profiles of POs who respond to Friend presented challenges with a humble confirmation of the comment will rate the PO as being more socially attractive than they will rate a PO who makes no comment.

2. Participants who view profiles of POs who respond to Friend presented challenges with denial of the comment will rate the PO as being more socially attractive than they will rate a PO who makes no comment.

3. Participants who view profiles of POs who respond to Friend presented challenges with a humble confirmation of the comment will rate the PO as being more socially attractive than they will rate a PO who denies the comment.

Method

Participants

The population for this study was college undergraduates who use Facebook. A convenience sample of 297 participants was recruited from undergraduate classes from a university and community college located in the greater Phoenix area in the United States. The sample was 63.95% female (N = 188). They were primarily freshmen (62.2%) with an average age of 19.49 years old. The majority of participants reported being White or Caucasian (59.1%), Hispanic or Latino (24.0%), Black or African American (7.4%), Asian (6.4%), American Indian (2.4%), and Native Hawaiian/Pacific Islander, or other (0.6%). Fourteen participants were removed from analysis due to not possessing an active Facebook account.

Design

This study exposed participants to controlled representations of Facebook profiles. On the profiles would be two comments, posted by Friends of the PO, which put the PO in a negative light. The participants were randomly assigned to one of three conditions where the PO responded to the Friend post with denial, humility, or no response This study utilized a 3 (type of response) x 2 (sex of participant) design. The dependent variable was the perceived social attractiveness participants had of the PO.

Independent Variables

Responses by a PO. One independent variable is the response made by the PO to a Friend generated comment that challenges the PO's image. The three conditions are: (a) The PO's response denies the challenge presented; (b) The PO's response expresses humility and confirms the challenge to the PO's image; (c) The PO will have no response to a Friend presented challenge to his/her image

Sex of the participant. The sex of the participant was a second independent variable. It had 2 levels, male and female.

Profiles

A fake Facebook profile was created and shown to the study participants. The profile had a stick-figure for a profile picture, and used the gender neutral name, "Taylor Johnson." The profile had Friends of the PO post on the profile wall saying "I heard you were going with Chris for spring break? I thought we were planning something?" and "Hey could you not spread rumors about Alex. It's getting kinda outta hand..." The Friends that posted these comments were named "Jaime Carter" and "Same Miller" and were also depicted with stick-figure pictures. A panel of four graduate student raters independently evaluated the comments on a 5-point Likert-type scale (1- strongly disagree to 5-strongly agree) based on how much they agree with the following statements: (a) I have seen friend comments similar to this on Facebook; and (b) The friends' comments do not put the profile owner in a positive light. The picture received mean scores of 4.25 and 4.00 for each item respectively.

Three variations of the profile were generated to match the three conditions of the "Type of Response" factor. The first condition had the PO deny the Friends' statements by replying to each comment with "I never told you I would for sure go! I only said I'd think about it" and "I don't know what you're talking about. I never said anything" respectively. A panel of four raters were used to assess quality and clarity of responses by

the PO to a challenge made to his/her identity made by a Friend. The raters were instructed to independently rate the comments on a 5-point Likert-type scale (1- strongly disagree to 5-strongly agree) based on how much they agreed with the following statements for the PO responses in the denial condition: (a) The profile owner is denying the friend's comment; and (b) I have seen responses similar to the profile owner's response in this picture, on Facebook. The four raters' scores were averaged for each item. The picture received mean scores of 4.25 and 4.50 for each item respectively.

The second profile had the PO respond to the Friends' comments with humble responses. The responses for the humility condition were "You're right. I should've told you sooner" and "Yeah, I'm sorry. I probably shouldn't have said that..." respectively. our raters were used to assess wall postings that imply undesirable social qualities generated by the Friends, and that they accurately reflect comments one would expect to find on Facebook. The raters independently evaluated the comments on a 5-point Likerttype scale (1- strongly disagree to 5-strongly agree) based on how much they agree with the following statements: (a) The profile owner is demonstrating humility; and (b) I have seen responses similar to the profile owner's response in this picture, on Facebook. The four raters' scores were averaged for each item. The comments received mean scores of 3.75 and 4.25 for each item respectively. Because the ratings were not dichotomous, Cohen's Kappa was not an appropriate measure of inter-rater reliability. As a crude estimate of reliability, I computed a percentage of identical or "near-identical" ratings of the raters. Overall, 87.5% of the ratings were identical, or only one digit away from the other ratings for each item.

The third condition had no response from the PO to the Friends' comments.

Dependent Variable

Social Attractiveness. Social attractiveness was measured by the social attractiveness subscale of McCrosky and McCain's (1974) measurement of interpersonal attraction. The complete instrument uses 15 items rated on a seven-point strongly agree-strongly to disagree Likert-type response format and measures social attractiveness, task attractiveness, and physical attractiveness. The social attractiveness dimension contains 5 items such as "I think he/she could be a friend of mine" and "He/she would be pleasant to be with." Several items are reverse coded such as "it would be difficult to meet and talk with him/her."

A number of studies have been conducted to evaluate the validity and reliability of the measure (McCroskey & McCain, 1974). Reliability was determined for each of the subscales, with social attractiveness yielding a Cronbach's alpha of .75. Items were reanalyzed for internal consistency by calculating Hoyt statistics based on analysis of variance. An additional study conducted by McCroskey and Weiner (1973; cited in McCroskey & McCain, 1974) indicated a Cronbach's alpha of .84. Berger and Clatterbuck (1976) conducted a correlational analysis on the Measure of Interpersonal Attraction with Byrne's (1971) Interpersonal Judgment Scale (IJS). Both are designed to measure social attraction and task attraction. The two instruments' social attractiveness subscale correlated at .71.

Social Desirability. The tendency for participants to provide socially desirable answers was used as a covariate. Participants were asked to respond to the ten-true/false

response item Marlow-Crown Social Desirability Scale Short-Version (Strahan & Gerbasi, 1972). Sample items include: "I never hesitate to go out of my way to help someone in trouble" and "I have never intensely disliked anyone." Scores range from 0-10 with higher scores indicating a greater tendency to provide socially desirable responses (Cronbach's alpha = .60) (Strahan & Gerbasi, 1972).

Procedures

An invitation to participate in the study was sent out to several instructors in a community college and a university in the greater Phoenix area in the United States. The instructors then provided interested participants with a URL to the survey website where they were shown the informed consent information. After reading the informed consent form and selecting that they agree to participate they were given the demographics questionnaire. Participants were then randomly assigned to 3 groups via the survey website's random assignment feature and shown a fake Facebook profile with two Friend generated comments and the PO responses reflecting one of the 3 conditions. Participants then completed a survey measuring the social attractiveness of the PO of the fake Facebook profile. The participants were then asked to fill out the social desirability scale. At the completion of the two surveys, there was a picture of a certificate of completion, signed by me, to present to their instructor. Some instructors offered class credit or extra credit for their participation in the study.

Analysis

Data was analyzed using a two-factor ANCOVA using Social Desirability as a covariate. Main effects of PO response type were analyzed using a priori contrasts. Main

effects of sex of the participant and interactions were analyzed using a posteriori contrasts.

Results

In this study, the Cronbach's alpha for Social Attractiveness was .745. A twofactor ANCOVA was performed with PO response type (Humble vs. Denial vs. No Comment) and sex of participant as between-subjects factors and social desirability as a covariate. Table 1 shows the adjusted and unadjusted means and standard deviations for perceived social attractiveness of the PO. Table 2 shows the F scores for the main effects of the factors. The main effect of PO response type was found to be non-significant, F (2, 276) = .445, p = .641, as was the interaction effect of PO response type and sex of participant, F (2, 276) = .354, p = .702. The main effect of sex of the participant was found to be significant, F (1, 276) = 9.543, p ≤ .01, η_p^2 = .033, with males (M = 3.30, SD = 1.01 N = 102) finding the POs more socially attractive than females (M = 2.87, SD = 1.14, N = 181). The covariate, Social Desirability, was found to produce non-significant mean adjustments and was dropped from the analysis.

The research hypothesis postulated that participants in the "humble" condition would rate the PO higher than participants in the "no response" was not supported by the data. The research hypothesis postulated that participants in the "denial" condition would rate the PO higher than participants in the "no response" was not supported by the data. The research hypothesis postulated that participants in the "humble" condition would rate the PO higher than participants in the "denial" was not supported by the data.

Table 1

Adjusted and Unadjusted Means and Standard Deviations for Perceived Social Attraction Scores for Males and Females in Three Conditions

		Unadjusted		Adju	Adjusted ^a	
	n	М	SD	М	SD	
Male						
Denial	48	3.22	1.02	3.22	1.02	
Humble	23	3.46	1.15	3.42	1.16	
No Response	31	3.33	0.86	3.35	0.87	
Total	102	3.31	1.00	3.30	1.01	
Female						
Denial	68	2.90	1.14	2.90	1.14	
Humble	48	2.96	1.14	2.99	1.13	
No Response	65	2.77	1.14	2.76	1.15	
Total	181	2.87	1.14	2.87	1.14	
Total						
Denial	116	3.03	1.10	3.03	1.10	
Humble	71	3.12	1.16	3.13	1.13	
No Response	96	2.94	1.09	2.95	1.10	
Total	283	3.02	1.11	3.03	1.11	

^a Means adjusted for Social Desirability covariate.

Table 2

F scores, Significance, and Effect Sizes for Main Effects of Type of Response and Sex of Participant Factors and the Interaction

	df	F	р	η_p^2
Type of Response	2	0.445	.641	.002
Sex of Participant	1	9.543	.002	.033
Interaction	1	0.425	.702	.003

Discussion

The goal of this research was to examine if a Facebook user's social attraction to observers could be affected by his/her response to a negative Friend comment based on different methods of response: humble acceptance, defensive denial, or no response, as well as to see if the sex of the observer or participant influenced the outcome. The results do not support that the type of response by a PO to a negative social image can affect the impression he/she forms with people looking at his/her Facebook page. The results did indicate that women perceived a Facebook PO as being less socially attractive than did the males perceived the PO, regardless of how the PO responded to a negative Friend post. One explanation for not finding a significant difference between the social attraction of the PO based on the PO's response type may be due to the Warranting Principle (Walther et al., 2002). The Warranting Principle posits that people are more likely to trust information that is outside of the person's control, or in this case, Facebook Friends. The PO in this study had Friends post comments on his/her wall. In this case, the content was negatively directed at the PO, implying that the PO is rude or thoughtless. The Warranting Principle suggests that it is because these comments are outside the control of the PO that they are more likely to be viewed as factual, when compared to the responses made by the PO. This study tested the effect of information on a profile that is inside the control of the PO, which is the PO's response to a negative Friend comment. This information may not be trusted as much as the negative Friend comment itself, because the PO is viewed as lying to improve his or her social image (Gibbs et al., 2006; Walther et al., 2002).

The studies of Walther et al. (2008), and Walther et al. (2009) both involved examining the effects of Friend comments on a PO's image. The studies found that participants were more likely to believe information provided by Friends than information provided by the PO. Those studies did not have a PO respond to a Friend's post. In this study, the PO's response to a negative comment did not affect the PO's social attraction to observers of the PO's wall. Based on the data collected in this study, the reduction in social attraction is not mitigated by the response of a PO to a negative comment, thus giving more evidence to support the Warranting Principle (Walther et al.

2002). This also further supports the findings of Walther et al. (2008) and Walther et al. (2009).

Another explanation for why the "Humility" condition was not significantly different than either the "Denial" or "No Response" conditions as predicted, is that there could be an operational definition difference between the reviewed literature that found modesty to be a socially attractive feature, and the term "humility." Though Gregg et al. (2008) found that modesty made people more socially attractive, humility might not operate the same way. Peterson and Seligman's (2004) review of humility and modesty literature compiled consensual definitions, where humility requires an "acknowledgement of one's mistake" (p. 462), while modesty is just "the moderate estimation of one's merits or achievements" (p.463). Tangney (2000) explains that humility might be perceived as weak, passive, and associated with a humiliation that could be seen negatively by others. In this study, participants could have seen the PO's acknowledgement of his/her mistake negatively, and more of an admission of guilt than an expression of regret.

Thompson and Lougheed (2012) found that gender influences a great deal of activities on Facebook. Women reported spending more time on Facebook. They also reported feeling closer to Facebook Friends than friends they see daily, feeling uncomfortable about what others do on Facebook, and feeling stress due to Facebook. It is possible that closer attachment and emotional investment in Facebook may be influencing why female participants ranked the PO lower in social attraction than males. The PO was being described by Friends as gossiping and unreliable, which could make the PO be seen by females as a person who causes conflict and stress on Facebook. McAndrew and Jeong (2012) also found that female Facebook users spend more time looking at others' profiles and gathering personal information about others on Facebook. Female users might have more experience in interpreting social cues on Facebook. Spending more time looking at personal information might impact how women interpret activities that they see on Facebook. Tufekci (2008) found that women are also more likely to use the SNSs for expressive purposes. It is possible that the female participants related more to the Friends who were expressing their frustration with the PO's behavior on Facebook and therefore rated the PO lower in social attraction.

Another explanation for the gender difference found is the issue of betrayal. The dialogue exchanged between Friends in this study involved a betrayal of trust, which could influence how the PO was perceived differently between males and females. Schratter (2000) found that women report a greater expectation and observation frequency of broken promises, broken trust, and telling secrets, and Metts (1994) found that women are more likely to feel betrayal from such acts. The participants in this study might have been reacting to the sense of betrayal expressed by the Friends in their comments when assessing their social attraction of the PO, which is why female participants rated the PO lower than male participants.

Limitations

One limitation of this study is that the Facebook profiles were not very realistic. Most Facebook profiles have a great deal of social cues such as a listed friend count, pictures, interests, and shared activities between a PO and his/her friends. Hong et al. (2012) also found that greater social cues in a PO's profile picture will also help a PO present himself/herself as being highly social. Additionally, Seidman and Miller (2013) found that participants spent less time looking at profile cues that would help them form an impression (wall posts, activities, interests, etc.) of the PO if the PO was unattractive. This study's Facebook walls were very simplistic, using stick-figure profile pictures for the PO and the PO's Friends. Another aspect of improving the realistic representation of a Facebook profile would involve presenting all the aspects of the profile, and not just the wall for participants to access. Facebook profiles are multi-dimensional media with multiple pages for presenting personal information, photos, wall postings, Friend list, etc. This study used only the profile wall, denying the participants the ability to look at all components of a Facebook profile. Without additional visual cues for an observer to use to judge the PO, the perception of the profile as being a realistic representation of someone they would encounter on Facebook may have been reduced.

This study only used negative comments posted by Friends. The majority of Facebook content is designed to support and strengthen ties between two users (Ellison et al., 2007), which can increase a user's social attractiveness to observers (Walther et al., 2008). Responses to positive Friend generated content might have an impact on social attraction gained from the Friend post. Additionally, the humility condition received only a 3.50 on the question of if the response is similar to what the raters expect to see on Facebook. This is a rather low score, indicating that the humility condition may not have been phrased in a way that is reflective of how users express humility on Facebook, or that users do not typically express humility on Facebook.

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Another limitation of this study may be the measurements used. The Social Attraction scale developed by McCroskey and McCain (1974) and adapted for SNSs by Walther et al. (2008) has items that involve the participant deciding if he/she could or would like to make contact with the PO. Items such as "I would like to have a friendly chat with the PO" and "It would be difficult to meet and talk with the PO" may not be the ideal for assessing social attraction for users of SNSs, as it has been established that SNS users generally do not use SNSs to meet and connect with new people. Walther et al. (2008) and Tong et al. (2008) found only a very small effect size, $\eta^2 = .04$ and .02 respectively, when using the McCroskey and McCain (1974) social attraction scale to assess SNS user social attractiveness. It may be that the items on the measurement scale are poor at detecting changes in social attraction for SNS users, compared to social attraction for offline. People may be using Facebook for reasons other than how they use their offline social interactions. Special and Li-Barber's (2012) study found that after relationship maintenance, passing the time and entertainment were the two most commonly reported reasons for logging on to Facebook. McCroskey and McCain (1974) social attraction measurement does not ask any questions pertaining to finding the PO "entertaining." A new measurement for use in assessing social attraction in an online medium may be needed for future research.

Future Research

There are several implications for research in regard to the results of this study. The differences in results based on the sex of the participants highlights the importance of taking the sex of the participant into account when studying social networking. A great deal of research has focused on the gender of the SNS user being observed by a participant, but less research has been done on how males and females interpret SNS information differently. Future research should expand on how and why males and females perceive and interpret information differently on SNSs. There may also be benefit to exploring further how males and females feel pressured to present themselves differently on SNSs. That might also influence how men and women perceive others should be acting on SNSs like Facebook.

Another consideration for future research regards the ability for a Facebook user to manage his or her image when his or her network contains coworkers, employees, and/or bosses, or when the PO is being considered for a new job. In this case, maintaining one's social image may be influenced by the desire to maintain one's professional image as well. Kluemper and Rosen (2008) found that employers actively, accurately, and consistently assess potential employees as being high or low performers based on the information provided on their SNS profile, by comparing employer assessment of employee SNS profiles to the employees academic performance, IQ, and self-reported big-five personality traits. Research should evaluate if these effects can be influenced by Friend generated content and a PO's response to Friend generated content. Goodmon et al. (2014) found that Facebook users who had negative content on their profile were less likely to be perceived accurately by colleagues. Future research should focus on how a PO can better manage his/her image through interactions with Friends on his/her profile.

Conclusion

Facebook and other SNSs have millions of active users from around the world logging-on and managing their online image to present themselves in the best possible way. Users attempt to groom their social self-presentation through postings and public interactions with other users. When negative public comments are created by Friends and outside of the control of a PO, the PO will attempt to manage his/her image by responding to the negative public comment. The results of this study indicate that a PO's response to a negative Friend comment did not affect the social attraction of the PO. One main explanation may be that the observers do not believe a PO's response as much as they trust the Friend's comment, which is outside of the control of the PO. However, the gender of the observer does affect how socially attractive a PO is, with females rating PO's with negative Friend comments lower than males rated them. One explanation for this may be that females have more experience with and develop a different perspective of social interactions on Facebook.

A major limitation of this study may be the lack of realism of the profile. The profiles used in this study were very simple, with very few social cues that users would normally be able to view and interpret to develop a clearer perception of a PO. Another limitation of the study may be that the profiles only had negative Friend comments, which are less likely to be seen on Facebook than positive Friend comments.

Future research should expand on why males and females may perceive Facebook profiles and activities differently. Another factor worth examining may be how interactions on SNSs affect professional attractiveness to users who communicate with coworkers, employers, or employees on SNSs.

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APPENDIX A

MEASURES

Demographic Questionnaire:

1. What is your gender?

1. Female 2. Male

- 2. What is your age?
- 3. What year in school are you?

1. Freshman 2. Sophomore 3. Junior 4. Senior 5. Graduate

4. Please specify your ethnicity.

1. Hispanic or Latino 2. Not Hispanic or Latino

5. Please specify what race you identify yourself as.

1. American Indian 2. Asian 3. Black or African American

4. Native Hawaiian or Pacific Islander 5. White or Caucasian

6. Other

6. Do you have an active Facebook account?

1. Yes 2. No

Social Attraction (McCroskey & McCain, 1974):

1. I think the profile owner could be a friend of mine.

1. Strongly disagree 2. Disagree 3. Slightly disagree 4. Neither disagree nor agree 5. Slightly agree 6. Agree 7. Strongly agree

2. I would like to have a friendly chat with the profile owner

1. Strongly disagree 2. Disagree 3. Slightly disagree 4. Neither disagree nor agree 5. Slightly agree 6. Agree 7. Strongly agree

3. It would be difficult to meet and talk with the profile owner

1. Strongly disagree 2. Disagree 3. Slightly disagree 4. Neither disagree nor agree 5. Slightly agree 6. Agree 7. Strongly agree

- 4. The profile owner and I could never establish a personal friendship with each other
- 1. Strongly disagree 2. Disagree 3. Slightly disagree 4. Neither disagree nor agree 5. Slightly agree 6. Agree 7. Strongly agree

5. The profile owner just wouldn't fit into my circle of friends

1. Strongly disagree 2. Disagree 3. Slightly disagree 4. Neither disagree nor agree 5. Slightly agree 6. Agree 7. Strongly agree

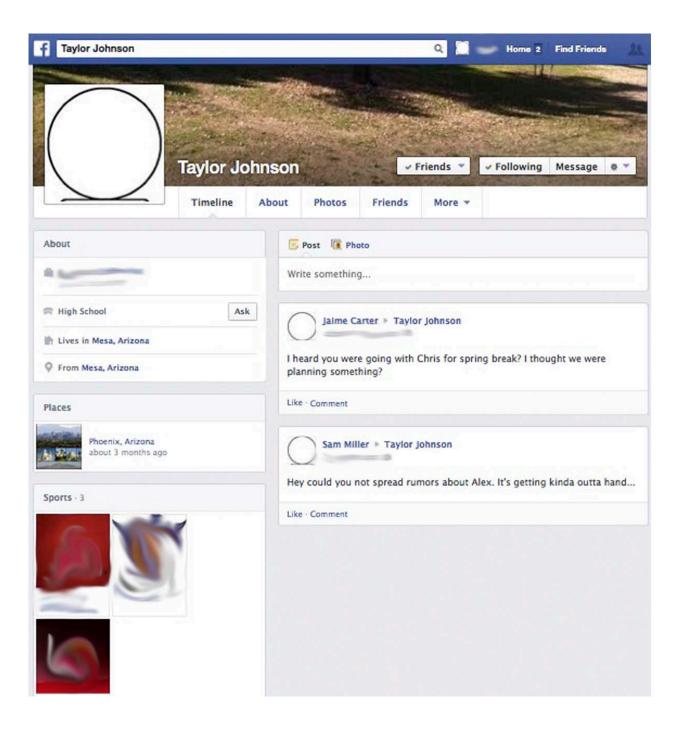
Social Desirability (Strahan & Gerbasi, 1972):

	True	False
1. I never hesitate to go out of my way to help someone in trouble.		
2. I have never intensely disliked anyone.		
3. There have been times when I was quite jealous of the good fortune of others.		
4. I would never think of letting someone else be punished for my wrong doings.		
5. I sometimes feel resentful when I don't get my way.		
6. There have been times when I felt like rebelling against people in authority		
even though I knew they were right.		
7. I am always courteous, even to people who are disagreeable.		
8. When I don't know something I don't at all mind admitting it.		
9. I can remember "playing sick" to get out of something.		
10. I am sometimes irritated by people who ask favors of me.		

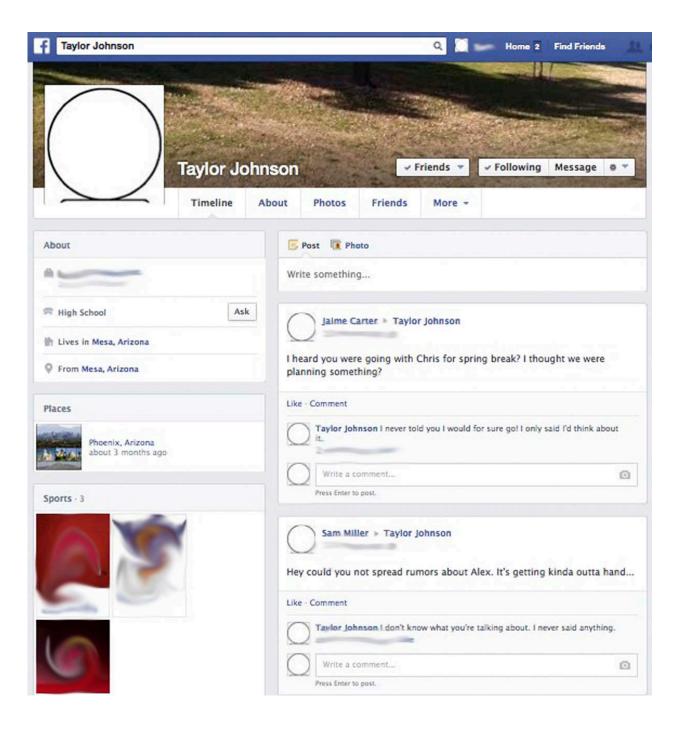
APPENDIX B

STIMULI

No response condition



Denial condition



Humble condition

f Taylor Johnson	Q 🤶 Home 2 Find Friends 🔔
Taylor Johns Timeline Abo	
About	📴 Post 🔞 Photo
a	Write something
High School Ask Lives in Mesa, Arizona From Mesa, Arizona Places Phoenix, Arizona about 3 months ago	Jalme Carter > Taylor Johnson I heard you were going with Chris for spring break? I thought we were planning something? Like - Comment Taylor Johnson You're right. I should've told you sooner Like
Superior 2	Write a comment
Sports - 3	Sam Miller • Taylor Johnson Hey could you not spread rumors about Alex. It's getting kinda outta hand Like • Comment Taylor Johnson Yeah, I'm sorry. I probably shouldn't have said that Write a comment
	Press Enter to post.