

Impression management and formation on Facebook:
A lens model approach

Jeffery A. Hall, PhD

Natalie R. Pennington, M.A.

Allyn Lueders, PhD

WORD COUNT: 8,425

Jeffrey A Hall (PhD University of Southern California) is an associated professor in the Department of Communication Studies at The University of Kansas. His research focuses on dating and flirting, friendship, online communication, humor in long-term relationships, and homophobia and masculinity. [email: hallj@ku.edu]

Natalie Pennington (MA Kansas State University) is a PhD student in the Department of Communication Studies at The University of Kansas. Her research focuses on interpersonal communication online through social media, and more specifically, impression management, social support, and relational development. [email: natpen@ku.edu]

Allyn Lueders (PhD University of Kansas) is an assistant professor in the Department of Communication Studies at East Texas Baptist University. Her research interests include interpersonal and nonverbal communication in online contexts, social media, and social support. [email: alueders@etbu.edu]

Corresponding author: Jeffery A. Hall, Department of Communication Studies, 1440 Jayhawk Blvd., Lawrence, KS 66047, USA. Email: hallj@ku.edu

A previous version of this manuscript was presented at the 2012 annual conference of the International Communication Conference in Phoenix, AZ.

Abstract

To extend research on online impression formation and warranting theory, the present investigation reports a Brunswick lens model analysis of Facebook profiles. Facebook users' ($N = 100$) personality (i.e., extraversion, agreeableness, conscientiousness, neuroticism, openness) was self-reported. Facebook users' profiles were then content analyzed for the presence and rate of 53 cues. Observers ($N = 35$), who were strangers to profile owners, estimated profile owner personality. Results indicate that observers could accurately estimate profile owners' extraversion, agreeableness, and conscientiousness. For all personality traits except neuroticism, unique profile cues were diagnostic warrants of personality (i.e., indicative of profile owner personality and used to estimate personality by strangers). The results are discussed in relation to warranting theory, impression formation, and lens model research.

Keywords

Facebook, lens model, online impression formation, online impression management, personality

Impression Management and Formation on Facebook: A Lens Model Approach

Facebook (FB) is the largest online social network. It is the second most trafficked website on the Internet and has 845 million active users, 50% of whom log onto FB at least once a day (Facebook Newsroom, 2012). Through sharing images and information via status updates, photos, and user profiles, FB profile owners convey a self-image to their social network. In constructing an online profile, FB users are engaging in impression management (Walther et al., 2009). Given the importance and popularity of FB with young adults (Ellison et al., 2007) and the role social network sites (SNS) play in both impression management and impression formation (Tong et al., 2008; Walther et al., 2009), research on how impressions are created and formed on FB is both timely and important.

Managing and forming impressions online can provide equal parts challenge and opportunity for actor and perceiver. For the actor, SNS provide ample opportunities to fashion desirable and even misleading impressions. Yet, most actors maintain a fairly accurate self-presentation on personal websites (Vazire and Gosling, 2004) and SNS (Gosling et al., 2011). Indeed, there may be severe social consequences for creating an inaccurate online profile; friends consider a misleading profile owner less trustworthy and more hypocritical (DeAndrea and Walther, 2011). For the perceiver, the challenge rests in determining what information accurately reflects the profile owner's actual offline personality.

Warranting theory, introduced by Stone (1995) and developed by Walther and Parks (2002), offers a theoretical framework to study the connection between the self and the online representation of the self. A warrant is online information that creates a perceived link between the online and offline self (Walther and Parks, 2002). A warrant could be anything from a picture posted to a status update about favorite music; it is information shared online that can be used to

judge what a person is like. Warrant credibility is the degree to which an online cue is believed to be immune to manipulation. Research on FB has explored the relationship between warrants and perceivers' impressions, including the number of FB friends (Tong et al., 2008), friends' comments about the user (Walther et al., 2009), user photos (Utz, 2010) and all three together (Antheunis and Schouten, 2011). These studies have explored the perceived value of a warrant, which is the degree to which perceivers use online cues to form an impression of a FB user. However, past research has not addressed warrant diagnosticity, which is the degree to which any given cue is *actually* indicative of the user's offline personality. To extend warranting theory, the present manuscript will distinguish between warrant credibility, perceived warrant value, and warrant diagnosticity.

To determine the perceived value and the diagnosticity of warrants on FB, the present investigation will conduct a Brunswik (1956) lens model analysis. The lens model takes into account both the mediated impression management actions of actors and the impression formation processes of perceivers. The lens model has gained renewed prominence in person perception research due to its ability to account for cues indicative of actors' personality and cues used by strangers to form impressions (Gifford, 2006). The lens model can test propositions of warranting theory by revealing which specific FB cues are associated with targets' personality (i.e., cue validity), which FB cues are used by strangers to estimate targets' personality (i.e., perceived warrant value), and the match between the two (i.e., diagnostic warrants).

Self-Construction on Social Network Sites

The FB profile page is the mediated representation of the FB user. In March of 2011 (the time of data collection), the FB profile page had several sections. The primary view of the page was the 'wall' of the profile. There FB users could update or change their 'status' to tell friends

what they were doing or thinking, and could view messages left by friends on their wall. FB friends could comment on and/or 'like' users' status updates and wall posts. Additionally, a tab on the profile page led to an 'Info page,' which included personal information and the hobbies/interests of the profile owner. A final tab allowed FB friends to view pictures uploaded by the profile owner and uploaded by FB friends.

In creating and maintaining a profile, FB users engage in online impression management, wherein one 'actively engages in creating, maintaining, and modifying an image that reflects one's ideal self' (Gonzales and Hancock, 2008: 168). Although users may be tempted to enhance their self-presentations, friends who are both offline and online keep FB users' self-presentations in check. When a small group of friends compared the personality reflected in SNS profiles in relation to their offline perception of that friend, profiles were judged to be accurate, although slightly enhanced (Vazire and Gosling, 2004). Misrepresentation on profile pages can have serious offline consequences: 'even those near and dear can be castigated for misleading/dishonest online self-portrayals' (DeAndrea and Walther, 2011: 819). Therefore, online impressions are typically managed within the parameters of users' offline personality (Vazire and Gosling, 2004).

Impression management on FB has implications for online impression formation, or judgments of the personality or characteristics of a profile page's owner. Although many first interactions are in person, early impressions are increasingly formed through some form of digital mediation (Utz, 2010). SNS are often used to gather information about new acquaintances (Westerman et al., 2008). What is available on FB profiles is particularly important for new FB friends who do not have access to offline information to form impressions. Without other information, perceivers must seek warranting information that can provide a trustworthy link

between the online and offline self (Stone, 1995).

Theoretical Framework: Warranting Theory

Due to the disconnect between an offline self and the possibility of a misleading or outright fabricated online self-presentation, warranting theory states that perceivers seek information that can establish trustworthy links between the offline and online self (Walther and Parks, 2002). This manuscript will argue that there are three components of a warrant: warrant credibility, the perceived value of a warrant, and warrant diagnosticity. Most akin to Walther and Parks' (2002) original conceptualization of a warrant, warrant credibility is 'derived from the receiver's perception about the extent to which the content of that information is immune to manipulation by the person to whom it refers' (522). Research on online communities suggests that warrant credibility is affected by the particular norms of a community. Ellison et al. (2011) note that online communities, such as online dating sites, establish 'communal common ground' regarding the norms, lexicon, and practices of the community (48). Online dating community members rely upon this common ground 'when producing and interpreting information promised in the profile' (Ellison et al., 2011: 58-9). When constructing and viewing profiles, community members recognize that certain cues are more trustworthy links to the offline self than others. On both online dating sites and FB, profile creators and observers must be sensitive to communal common ground to successfully manage and form impressions. Therefore, warrant credibility is established through exposure to how cues are used and interpreted within an online community.

The second component of warranting theory is the perceived value of a warrant, which is the degree to which observers rely upon certain cues to judge user personality (Walther et al., 2008). The perceived warrant value is the degree to which any given cue influences impressions formed by strangers, wherein greater perceived value occurs when individuals are more reliant

upon or influenced by certain cues. Specifically, Walther et al. (2008) operationalize warrant value as variance explained in perceivers' impressions of users, not the perceived trustworthiness or manipulability of cues. Perceived warrant value is distinct from warrant credibility in that it strictly refers to cues used by perceivers to judge users' personality or other characteristics. Although these cues may also be perceived trustworthy, it is not necessary by definition that they be thought of as trustworthy to be relied upon when forming impressions.

Research employing warranting theory often compares the perceived warrant value of self-generated versus other-generated information. Self-generated cues are believed to have less warrant credibility because self-generated cues cannot be corroborated with offline information (Walther and Parks, 2002). When applied to FB, self-generated claims entail any information put on a FB profile by the profile owner. This includes status updates, wall posts, and descriptions of personal interests. Other-generated cues refer to comments and wall posts made by FB friends that can validate user-generated claims (e.g., a user claims to be a hip-hop fan and a friend comments on going to a hip-hop concert). Information posted by the FB profile owner is much more susceptible to manipulation than content generated by FB friends (Walther et al., 2008) or the FB system itself (Antheunis and Schouten, 2011). Studies have explored whether self or other-generated cues have greater perceived warrant value in influencing strangers' impressions of users' attractiveness (Walther et al., 2009) and popularity (Utz, 2010). To further explore the relative value of a warrant and to explore warrant value in general, we offer:

RQ1: What cues will have perceived warrant value when strangers estimate FB users' personality?

RQ2: Will self-generated cues on FB have less perceived warrant value than other-generated cues when strangers estimate FB users' personality?

The present manuscript will introduce a third component of warranting theory, warrant diagnosticity, which is the actual predictive value of a warrant. Although not central to the warranting principle, warranting theory is concerned with whether or not a warrant is truly indicative of users' underlying personality. Walther and Parks (2002) point out that when attempting to detect deception, individuals often turn to nonverbal behaviors, believing them to be more accurate indicators of deception. Yet, individuals often rely upon nonverbal cues to detect deception that have little relationship with behaviors actually related to deception (Burgoon et al., 2008). In this case, the perceived value of the warrant is high, but the warrant is not diagnostic. To determine whether a warrant is diagnostic, there must be evidence that (a) users who possess a certain trait will use certain cues, and (b) perceivers will value those cues when estimating that trait. The Brunswik lens model can identify the perceived value of a warrant and whether or not it is diagnostic.

The Lens Model and Online Person Perception

The lens model consists of three parts (Gifford, 2006). First, behaviors of participants, called targets, are recorded and targets' personalities are assessed. Second, independent coders classify and quantify important cues from target recordings. Third, strangers, called observers, estimate the personality traits of the targets. When all three steps are completed, the lens model allows researchers to answer four questions: (i) What cues are related to targets' personality (i.e., cue validity), (ii) what cues are used by observers to judge target personality (i.e., cue utilization), (iii) to what degree are these cues in agreement, and (iv) how accurate are observers in estimating targets' personality? Traditionally, the lens model has employed still photos of targets and/or video/audio recordings of targets' behaviors (Gifford, 2006). The lens model has since been applied to a wide range of contexts, including targets' bedrooms and

offices (Gosling et al., 2002). The lens model was recently applied to personal web pages (Marcus et al., 2006). Marcus et al. found that the personality of German personal web page owners was related to the content of their web pages, and that web page content could be used to form an accurate impression of web page owners. To explore cue validity on FB, we offer:

RQ3: What cues are associated with FB users' personality?

Critical to the present investigation, the lens model allows researchers to test two components of a warrant (see Figure 1 for conceptual model). The perceived value of a warrant is equivalent to the lens model concept of *cue utilization*. Both refer to cues that are significantly related to observers' estimates of targets' personality. The results of prior investigations on FB suggest that certain FB cues show higher perceived value in predicting user attributes (Utz, 2010; Walther et al., 2009). These studies have primarily focused on a single personality trait, extraversion. For example, Tong et al. (2008) and Antheunis and Schouten (2011) suggest that the number of FB friends influences judgments of FB users' extraversion. User extraversion has also been associated with photo expressiveness (Utz, 2010). However, perceived value of a warrant does not necessarily imply that it is diagnostic. Furthermore, prior lens model analyses have demonstrated that although certain traits are more accurately known than others (i.e., extraversion), other personality traits (i.e., neuroticism, agreeableness, openness, and conscientiousness) might also match strangers' perceptions with actors' personalities (Gifford, 2006). Whether or not this will apply to FB is an empirical question:

RQ4: Will all five personality traits have at least one discrete cue that is a diagnostic warrant of that trait?

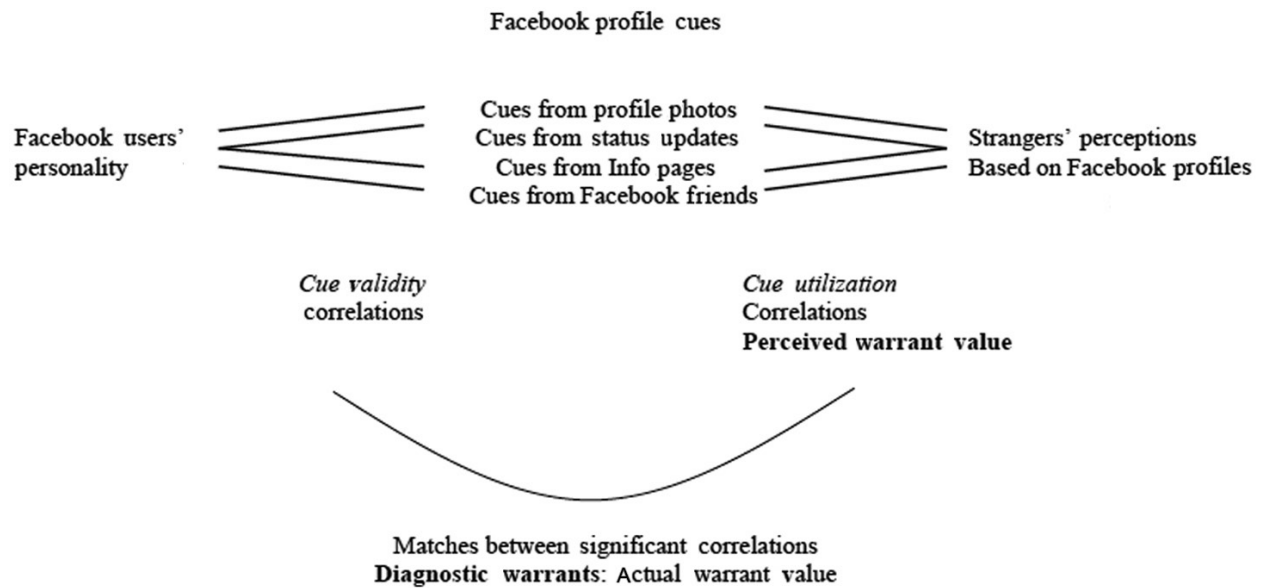


Figure 1. Conceptual Diagram Combining the Lens Model and Warranting Theory
Note: Lens Model terminology italicized, Warranting Theory terminology in bold

Warranting theory would suggest that warrant credibility, the perceived value of the warrant, and warrant diagnosticity are not independent of one another. Cues that are believed to provide trustworthy links between the offline and online self, when used will probably increase the accuracy of personality judgments. Additionally, the degree of interactivity and the influence of offline social contacts on SNS should strengthen the link between user disposition and perceived warrant value (Walther and Parks, 2002). However, it remains an empirical question as to whether cues that are associated with user disposition are also cues that are associated with observers' impressions. Therefore, we offer:

RQ5: What is the relationship between cue utility (i.e., perceived warrant value) and cue validity for all five personality traits?

The lens model allows researchers to determine how accurate the perceivers are at estimating user personality overall. Gosling and colleagues' (Gosling et al., 2011; Vazire and Gosling, 2004) research on online impression formation has found that observers can form accurate judgments of web site creators from the content of their personal web pages. When

overlap between perceived warrant value and the cues actually related to profile owners' personality is high, overall accuracy increases as well. Where there is greater mismatch, accuracy should suffer:

RQ6: Will there be a relationship between number of diagnostic warrants and the accuracy of perceivers?

Research Plan

The present study will determine the degree to which 53 FB cues are associated with targets' (i.e., profile owners) personality (i.e., cue validity), which cues are used by observers to estimate targets' personality (i.e., perceived warrant value), and the match between the two (i.e., diagnostic warrants). Given the need to use established measures of targets' personality in the lens model (Gifford, 2006), the present study measured targets' personality using the Big Five factor inventory: extraversion, conscientiousness, agreeableness, neuroticism, and openness (John et al., 2008).

The 53 cues content analyzed from each target's FB profile page were separated into four categories: profile pictures, status updates and wall posts, the Info page, and FB friends' actions (see Appendix A). These categories were created based on past research and the format of the FB profile platform at time of data collection. First, attributes of the profile picture (e.g., attractiveness) and features of friends in targets' photos (e.g., number of friends) were coded. Photos show high perceived warrant value in past lens model studies (Marcus et al., 2006) and studies of online impression formation (Antheunis and Schouten, 2011; Van Der Heide et al., 2012). Second, status updates and wall posts are considered important sources of information about the user (Walther et al., 2008; Walther et al., 2009). Objective measures of status updates and wall post content (e.g., word count; average word length) were coded using Diction (Hart

and Carol, 2011), an automated linguistic analysis program. Subjective measures of status updates and wall posts (e.g., positive affect; humor use) were coded by independent coders. Third, the Info section on the FB profile was coded for information that might contribute to personality judgments (e.g., activeness of hobbies; topics of quotes). Finally, three other-generated cues were coded (i.e., number of likes from friends; friends' agreement with posts; number of unique friends commenting).

The present study will extend the work of Marcus et al. on personal web pages and Gosling et al. (2011) on FB. The present study analyzes 22 cues from users' status updates, making it the first to explore the role of status updates in impression formation and management using the lens model. Gosling et al.'s analysis preceded the introduction of status updates on FB in 2007, and Marcus et al. did not analyze the contents of weblogs, only their presence or absence. The present study also takes into account the actions of FB friends. Although friends' behaviors are central to research exploring perceived warrant value (i.e., Walther et al., 2009), they have been unaccounted for in past lens model investigations. Finally, the present study has a larger sample of FB targets and larger number of observers than past studies using the lens model, which may provide the needed power to detect significant findings.

Table 1. Means, Standard Deviations, Accuracy, and Vector Correlations

	Profile Owners' Self Report (n= 100)		Observer Estimates (n = 3019)		Observer Accuracy (n = 3019)	Vector Correlations (n = 53)
	Mean	SD	Mean	SD		
Extraversion	4.84	1.03	4.59	0.48	0.23**	.65***
Agreeableness	5.10	0.82	4.74	0.38	0.32***	0.18*
Conscientiousness	4.87	0.94	4.54	0.37	0.20*	0.04
Neuroticism	3.89	0.94	3.57	0.29	0.16	.42***
Openness	5.10	0.84	4.40	0.38	0.15	.75***
Mean					0.21*	0.41***

Note: Observer accuracy is the correlation between the aggregated observer estimates of profile owners' personality and profile owners' self reported personality. Vector correlations reflect the association between cue-utilization correlations and cue-validity correlations.

Method

Profile Owner Targets

One hundred targets participated in this study. Targets were recruited from introductory communication courses at a large Midwestern university, and by snowball sampling to get a quota sample that matched the demographics of FB users' age and sex. Targets who were students ($n = 28$) chose to participate in this study in return for partial course credit. Non-student targets volunteered and were not compensated. Mean target age was 32.3 years ($SD = 12.23$, range 18-62, $mdn = 29$). Female targets accounted for 57% of the sample. The majority of targets were white (88%), yet other race/ethnicities were represented: 5% mixed race, 4% Asian-American, 2% African-American, and 1% Latino/Hispanic.

Target measures: Targets gave written consent to download their FB profile and to match it with a completed personality assessment. After being consented, targets completed a 44-item personality inventory (John et al., 2008). All items were measured using a 7-point Likert-type scale (1 = Strongly disagree; 7 = Strongly agree). Target personality measures were reliable:

extraversion ($\alpha = .88$), agreeableness ($\alpha = .80$), conscientiousness ($\alpha = .85$), neuroticism ($\alpha = .81$), and openness to experience ($\alpha = .82$). High scores were assigned to targets who described themselves as extraverted, agreeable, conscientious, neurotic, and open (Table 1).

Target procedures: After completing personality measures, targets assisted study authors in downloading their FB profile page, the Info page, and the first page of wall posts and status updates to a secure computer. These pages were converted in PDF files. Afterward, all references to the targets' name and contact information were blacked out with a PDF file marker to ensure confidentiality. All pages for each target were then merged into a PDF file. A unique numerical ID matched PDF files to target personality data. Due to FB formatting as of March 2011, the first 8 profile pictures were displayed under the photo tab. Only these 8 pictures were saved. The number of text postings was limited to posts indicated as 'recent' by FB. Any posts that required viewers to click 'see more posts' were not included in this study.

Independent Profile Coding

Up to four independent coders coded all 100 targets' FB profile pages for 45 of the 53 cues. Cues were identified from past research using the lens model and online impression formation (see Appendix A). Four coders were trained as a group for 30 hours on sample profile pages that were not a part of the data set. During the training, the coding scheme was modified and clarified to increase reliability. Once training was complete, coders independently assessed all 100 FB target profiles. Cues coded by only one coder were objective measures with clear verifiability (e.g., were movies listed on Info section? Y/N). A random set of 25 profiles were later coded for all 11 yes/no codes by a second independent rater. Reliability estimates for 9 of 10 yes/no cues were 1.00 (profile picture at younger age = .97). Cues coded by two coders included counts of information on profiles (e.g., number of likes on status updates; number of

quotes in Info section). The cues coded by 3 or 4 coders were interval scaled (e.g., profile picture attractiveness; activeness of hobbies in Info section). Reliability was calculated using Hayes and Krippendorff's (2007) alpha MACRO for SPSS. Mean reliability was .75, which is above the mean reliability reported by Gosling et al. (2002) (see Appendix A for reliabilities). Finally, status updates were coded for the final eight objective cues using Diction (Hart and Carol, 2011). All status updates and wall posts were copied into text files that were analyzed via Diction to get word and character counts. To create counts of online text features, such as emoticons and laughter, a dictionary was created and a program search function was used.

Observer Ratings

Thirty-five observers began evaluating targets' PDF FB profiles, and 30 observers completed all 100 targets. Five observers dropped out after evaluating between 6 and 33 target profiles ($M = 17.8$), yet all observer estimates were included in analyses. Observers evaluated each target profile for 5-10 minutes each. After examining the profile pages, observers estimated the personality of each target using John et al.'s (2008) 44-item inventory. The stem of the items was presented in terms of how the observer saw the target (e.g., 'Here are a number of characteristics that may or may not apply to this profile owner;' 'This is a person who is talkative'). Each profile took another 5-10 minutes, resulting in a total of approximately 12-16 hours for all 100 profiles. To prevent fatigue, observers signed up for several time blocks, and after 10 targets were evaluated, observers took a short break. Observers were paid \$75 upon completion. Observers were primarily students at the same university as study authors ($n = 32$), but some were community members who responded to advertisements ($n = 3$). If observers knew a target, they were asked to skip that target. Observers' aggregate estimates of targets' personality are listed on Table 1.

Results

Perceived Warrant Value/ Cue Utilization

The cue utilization correlations reported in the right-hand columns of Appendix B report the associations between observers' aggregate estimation of targets' personalities and the 53 cues content analyzed from targets' FB pages. Each significant correlation is a cue with high perceived warrant value (RQ1). RQ2 queried whether self-generated cues would have less perceived warrant value than other-generated cues. This was answered by exploring the frequency and significance of self-generated versus other-generated warrants with perceived value.

To estimate target extraversion, observers relied on evidence of social interaction, having friends, and posting outgoing pictures. Estimations of extraversion were strongly related to profile picture friendliness, the number of friends in the 8 most recent profile photos, and whether the profile picture was taken while doing sociable activities. The number of FB friends was also strongly related to estimates of targets' extraversion. Observers also used attempts at humor in status updates to estimate extraversion. Only one other-generated cue had perceived warrant value: when more unique friends commented on targets' status updates.

To estimate agreeableness, observers relied upon profile picture friendliness. They also judged more attractive targets as more agreeable. However, if the target elected to use a picture that was not of themselves as their main profile picture (e.g., a cartoon character), they were judged to be less agreeable. Status updates that expressed more positive affect were associated with more agreeable perceptions, while status updates with more negative affect were judged less agreeable. Finally, targets that posted more frequently were seen as less agreeable.

Estimates of targets' conscientiousness were most strongly related to cues on the Info

page and status updates. For example, targets in romantic relationships were considered more conscientious as were targets who listed more music on their Info page. More attempts at humor on status updates were associated with estimates of less conscientiousness, while more political talk on status updates was associated with higher conscientiousness estimates.

Observers relied on 15 cues to form judgments of targets' neuroticism. Less friendly pictures were judged to be indicative of greater neuroticism. Targets who listed less active hobbies on their Info page were considered more neurotic. Two features of status updates and wall posts were strongly related to judgments of neuroticism: expressions of negative affect in status updates and emotional support seeking. Finally, those who posted more frequently were considered more neurotic.

Observers' judgments of target openness to new experiences were strongly related to targets being interested in and sharing various forms of media. Listing music and providing more literary quotes on Info pages were associated with greater openness. Targets who shared more media posts in general were considered more open, particularly by sharing news stories. Finally, targets who commented or discussed political issues on status updates were perceived to have higher openness as were those whose political stories were more liberal (v. conservative).

In response to RQ2, self-generated cues showed high perceived warrant value for all traits while other-generated cues showed low perceived warrant value for four of the traits.

Cue Validity

To determine the relationship between targets' (i.e., profile owners) personality and the content of targets' profiles, correlations were calculated between all 53 cues and each of the five personality traits (RQ3). Correlations in the left-hand columns of Appendix B show what cues are associated with each trait. Results suggest an extraverted target had more people in

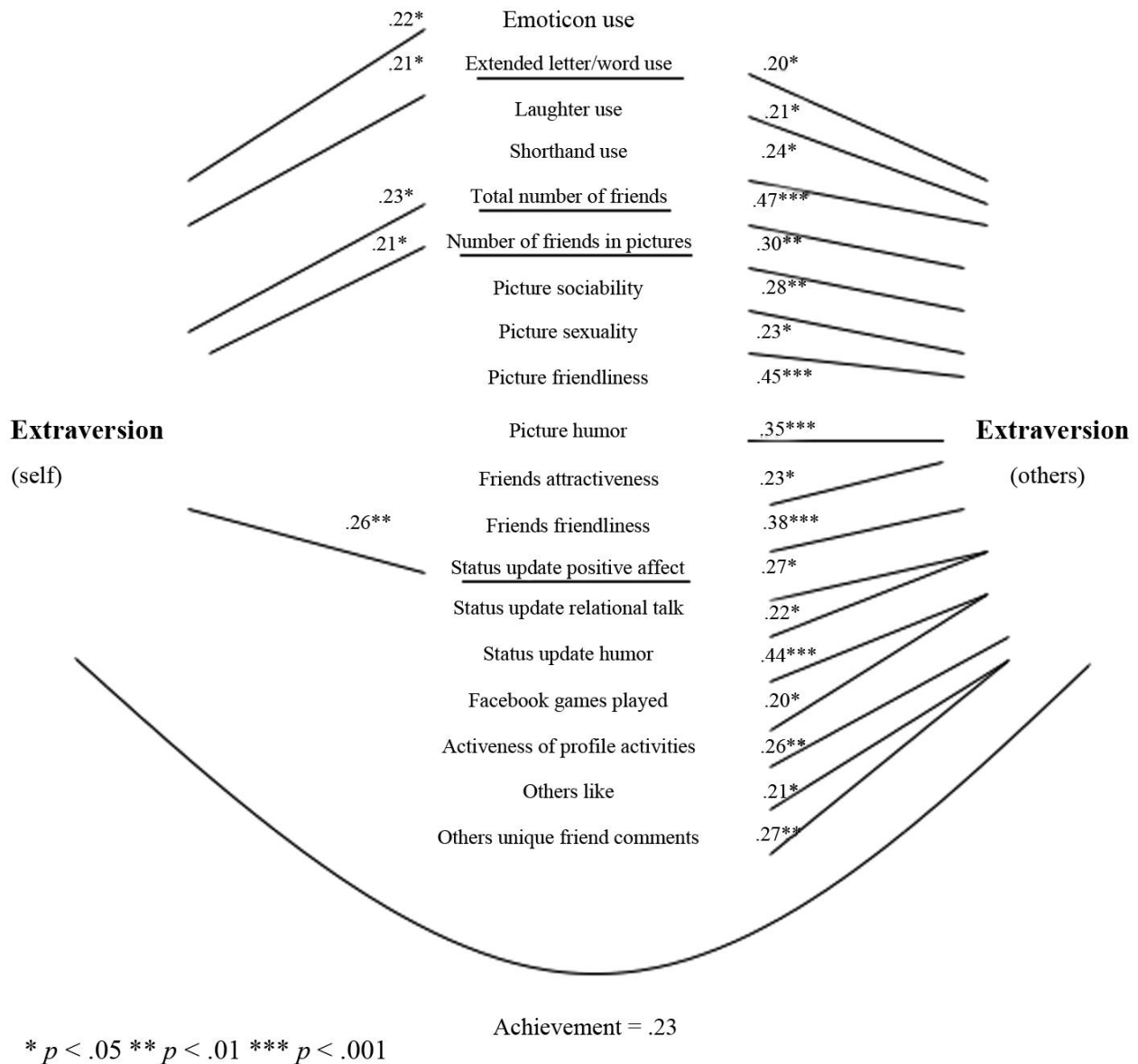
profile pictures and had more FB friends overall. Extraverted targets wrote status updates that employed more positive affect, and used more emoticons and extended letter use in their status updates. Although several areas of the profile provided diagnostic warrants, compared to the other personality traits, extraversion was best diagnosed through the pictures on a profile and the number of friends.

Agreeable targets had pictures in which both themselves and the other people in the pictures were rated as friendlier looking. Agreeable targets also had pictures that were more likely to attempt humor. Agreeable targets updated their status less frequently, specifically posting fewer status updates containing media, music, and news. Agreeable individuals also used fewer words both in terms of number and variety in status updates, as well as fewer extended letters in status update words (e.g., whyyyy). Interestingly, agreeable targets commented more frequently on other FB users' posts, even though they posted less often themselves. Among the categories of profiles developed in Appendix B, wall (or newsfeed) activity proved to be the most diagnostic of agreeableness.

Similar to agreeable targets, conscientious targets had friendlier profile pictures and updated their status less frequently overall, using fewer words both in number and variety. Conscientious targets were also less likely to list movies and books in the Info section and had fewer FB friends. FB friends who commented on conscientious targets' status updates showed more support or agreement with targets' comments. However, fewer unique FB friends commented on conscientious targets' status updates.

Two cues were associated with targets' neuroticism. Only the use of laughter in status updates (e.g., haha) and extended letter use were positively correlated with targets' neuroticism.

Correlations for openness showed that open targets had fewer friends in profile pictures. Additionally, cues that reflected an interest in media and art, such as music and books listed in the Info section and status updates with media posts, were associated with greater openness. More open targets commented less frequently on other FB friends' status updates, but had more unique FB friends comment on targets' own status updates. The text of open targets' status updates used less shorthand and less extended letter use. Finally, the content of open targets' status updates tended to have more talk about politics and less talk about romantic relationships. Openness was the only personality trait that was found to have diagnostic cues across the various sections of the profile consistently (save photos) with cues from the info page, status updates, and wall activity all diagnostic of openness.



Diagnostic Warrants

RQ4 queried whether at least one diagnostic warrant would exist of all five traits. For extraversion, a diagnostic warrant exists when there is a match between cue validity and cue utilization (see Figure 2 for extraversion example). Results suggest that total FB friends and number of friends in pictures corresponded both with how extraverted people present themselves on FB and how observers judge extraversion. These findings match up with prior research on

perceived warrant value (i.e., Antheunis and Schouten, 2011; Tong et al., 2008), and diagnostic warrants (Gosling et al., 2011). Positive affect on status updates and wall posts were diagnostic warrants for extraversion, matching cues on personal web pages (Marcus et al., 2006).

There were five diagnostic warrants for openness, including listing music and books in the Info section and sharing more media through status updates. Additionally, openness was related to posting more political status updates. Interestingly, making fewer comments on FB friends' posts was diagnostic of openness on FB. There were four diagnostic warrants for target agreeableness. Agreeableness was successfully detected by observers through profile picture friendliness, and by having fewer posts in general, specifically media and news posts. There was just one diagnostic warrant for conscientiousness, and none for neuroticism. The single diagnostic warrant for conscientiousness was other-generated: the degree to which targets' FB friends supported targets' status updates. In response to RQ4, all personality traits but neuroticism had at least one diagnostic cue.

RQ5 explored the relationship between perceived warrant value and cue validity. This was answered calculating vector correlations between cue utilization and cue validity correlations for each personality trait (see Table 1). The vector correlations tested the association between the direction and strength of all 53 cues for cue utilization and the direction and strength of all 53 cues for cue validity. This establishes whether the correlations between stranger perceptions and cue use were related to the correlations between targets' personality and cue use. Vector correlations were significant overall, and were highest for openness, extraversion, and neuroticism. This suggests that the use of cues by targets and the use of cues by observers to judge targets are in agreement for those traits. Additionally, comparisons among the five traits were consistent with past work (Gosling et al., 2002; Marcus et al., 2006), wherein the largest

vector correlation was with openness and a much weaker correlation was observed for agreeableness. In contrast with Marcus et al.'s analysis of personal web pages, the conscientiousness vector correlation was not significant.

Accuracy

RQ6 queried whether traits with more diagnostic warrants cues would increase perceiver accuracy. To calculate group accuracy, the mean accuracy score for all observers judging all profile owners was calculated (see Gosling et al., 2002). This yielded an overall accuracy score and an accuracy score for each personality trait (Table 1). The mean accuracy score was .21 across all traits, which is significant and comparable to the accuracy in judging personality reported in Marcus et al. (2006) for observers examining personal web pages ($M_r = .20$) and in Gosling et al. (2002) for observers examining offices ($M_r = .22$). As in past studies (e.g., Gosling et al., 2011), observers' mean accuracy varied by personality trait. Observers were most accurate in estimating targets' agreeableness, and were also accurate in estimating extraversion and conscientiousness. In contrast with Marcus et al., who did not find accurate judgments of agreeableness for personal web pages, results suggest that strangers can accurately judge targets' agreeableness, extraversion, and conscientiousness from a FB profile alone.

In response to RQ6, accuracy and the number of diagnostic warrants were related. Agreeableness and extraversion had significant vector correlations, more diagnostic warrants, and were accurately judged by others. Conscientiousness had one diagnostic warrant, a non-significant vector correlation, but was still accurately judged. By comparison, the results for openness and neuroticism were inconsistent: Neuroticism had high vector correlations, no diagnostic warrants, and low accuracy. Openness had high vector correlations, five diagnostic warrants, but low overall accuracy.

Discussion

The purpose of this study was to explore RQs derived from warranting theory and to identify diagnostic warrants of FB users' personality. The lens model analysis revealed which cues on targets' (i.e., profile owners) FB profiles were associated with target personality, which cues were used by strangers to estimate target personality (i.e., perceived warrant value), the match between the two (i.e., diagnostic warrants), and the overall accuracy of strangers' estimates of target personality. These results extend warranting theory in two ways. First, for each personality trait, except neuroticism, one or more diagnostic warrants were identified, which offers evidence for the construct's existence. Second, when more diagnostic warrants were present, targets' personalities were more accurately estimated. This offers evidence for the construct validity of diagnostic warrants.

Warrant Credibility and Perceived Warrant Value

Although it was predicted that other-generated cues would have greater perceived warrant value than self-generated cues, the present investigation found little support for this prediction. The results demonstrated that for all five traits at least one of the three other-generated cues was related to strangers' perceptions of target personality. However, most of the cues with perceived warrant value were self-generated, found in status updates and the Info section. What explains this generally weak support for perceived warrant value of other-generated cues? Precedent for weak perceived warrant value for other-generated information can be found in Walther et al. (2009) who identified boundary conditions for warrant credibility. Walther et al. suggest that other-generated information is less valued when forming impressions of extraversion. Furthermore, the concept of warrant credibility assumes motivated action by

perceivers. That is, a credible warrant is sought because perceivers are dubious of a malleable online portrayal of self (Walther and Parks, 2002). Yet, the present study and Marcus et al. (2006) demonstrated that perceivers highly value self-generated claims when forming online impressions. Perhaps observers in lens model studies are insufficiently motivated to accurately estimate target personality. This suggests another boundary condition for warranting theory: motivation to be accurate should moderate the relationship between warrant credibility and perceived warrant value. Other-generated cues might be more likely to show greater perceived warrant value when both motivation and suspicion are high.

In the case of extraversion, the results demonstrated similarities and inconsistencies between this study and past research on perceived warranting value. Some diagnostic warrants in the present confirm past research on perceived warrant value, such as number of FB friends (Antheunis and Schouten, 2011; Gosling et al., 2011; Tong et al., 2008) and the number of people in users' photos (Marcus et al., 2006). Past research on perceived warrant value suggested that photo friendliness and attempts at humor would influence estimates of extraversion (Tong et al., 2008; Utz, 2010). In the present study, those cues had perceived warrant value but were not diagnostic warrants. Although a warrant may be influential when forming an online impression, it might not be actually related to the offline self.

Although the present study was not able to confirm that other-generated cues had greater perceived warrant value in general, in the case of conscientiousness, a single other-generated cue was the sole diagnostic warrant. Target conscientiousness was associated with greater support from FB friends in response to status updates, and observers used this cue to estimate targets' conscientiousness. Others' support was considered high when the comments of FB friends were more affirming of the posts made by the target. Although conscientious targets

ostensibly had no control over how FB friends responded to their posts, they appeared to inspire more support from FB friends than less conscientious targets. Observers, who were strangers to targets, used this other-generated support to estimate targets' conscientiousness. Therefore, friends' support of targets' status updates had high warrant credibility, high perceived warrant value, and diagnostic value as well. This demonstrates that other-generated warrants can more accurately inform impressions than self-generated information.

The general disconnect between strangers' perceptions and truly diagnostic warrants is theoretically relevant to warranting theory and practically illuminating. Although communicators constantly give off certain impressions, they are not always aware of what specific actions convey those impressions. A target could actively use certain FB cues without knowing their effect on perceivers' impressions. The trait neuroticism provides an example. There were 15 cues that were valued by observers when estimating target neuroticism. Although not a single cue was diagnostic of a neurotic disposition, collectively these cues made a strong impression. Identifying warrants with perceived value is useful in understanding what particular cues contribute to inaccurate online impressions, and may provide insight to online communicators and FB users regarding what impressions they are giving off.

Diagnostic Warrants and Accuracy

It was anticipated that when there were more cues that served as diagnostic warrants, perceivers were likely to more accurately assess targets' personality (RQ6). For three traits, the results offered clear support for the relationship between warrant diagnosticity and trait accuracy. For extraversion, there was a significant vector correlation between cue validity and cue utilizations for all 53 cues, there were four diagnostic warrants, and accurate estimations of extraversion by observers. This is in line with Marcus et al. (2006) and Gosling (Gosling et al.,

2011; Vazire and Gosling, 2004), both of whom found significant accuracy in judging extraversion. The present study also found that conscientiousness had one diagnostic warrant and non-significant vector correlations, but target conscientiousness could still be estimated, albeit less strongly. These results are in line with Marcus et al. and Gosling et al. (2011). The trait agreeableness had four diagnostic warrants, and significant accuracy and vector correlations. However, significant accuracy for agreeableness is inconsistent with Marcus et al.'s analysis of personal web pages. What might account for this difference?

For agreeableness, it appears that FB provides observers with diagnostic cues that might not be accessible on a personal web page. Marcus et al. (2006) selected a small sample of personal web pages for their richness and interactivity. For these web pages, agreeableness was more accurately judged than for a random selection of web pages that were less expertly composed. It is possible that the FB profile is rich and interactive in a similar way, which rendered agreeableness more interpretable (see also Gosling et al., 2011). Second, one diagnostic warrant was having a friendly photo. FB prominently displays user photos, and photos are important to users when strangers form impressions (Van Der Heide et al., 2012). According to the present study, targets that did not provide at least one personal photo were judged to be less agreeable. Therefore, the salience of a user photo on FB might convey agreeableness in a way that it does not on a personal web page. Third, the other diagnostic cues suggest that agreeableness may be accurately judged by profile owners' using the FB page judiciously. By not posting media and news stories particularly and by not posting frequently in general, a highly agreeable person may be attempting to avoid posting information that could be contentious or could clutter the newsfeed of FB friends. Since agreeableness can be accurately known through the absence of heavy FB use, this suggests disagreeable individuals use FB excessively and

observers believe excessive FB use is disagreeable. All three of these explanations speak to the importance of considering the online platform and communal common ground in understanding how impressions are managed and formed online (Ellison et al., 2012).

In contrast to Marcus et al. (2006), openness to experience was less accurately judged from a FB page than from a personal web page. Openness demonstrated an inconsistent relationship between vector correlations and accuracy, wherein vector correlations were high but accuracy was low. One explanation is that observers may have had to look more deeply into a FB profile for information useful for making accurate judgments. Most of the diagnostic cues were found in the Info section, which contains the artistic and personal interests of the profile owner. This means the most predictive information about openness is buried on FB, quite unlike personal web pages. This explanation is consistent with the pattern between number of diagnostic warrants and accuracy. The vector correlations suggest that there is a very high degree of correspondence between the cues associated with open FB users and cues used by observers to make judgments of openness. The relationship between observer accuracy and vector correlations is typically strong for openness (Gosling et al., 2002), yet in the case of FB, the most relevant cues for estimating openness may be too obscured for observers to accurately judge.

Finally, for neuroticism, the vector correlation was high, there were no diagnostic cues, and accuracy was low. Neuroticism is a trait that is difficult to judge on FB (Gosling et al., 2011), so low accuracy is consistent with past research. Yet, the vector correlations were very high. To identify a diagnostic warrant, a single cue must be significantly related to a trait on both sides of the lens model. Although no single cue reached statistical significance, when taken as a whole the cues related to neuroticism covaried systematically at a level above chance. This indicates that while no one particular cue was a diagnostic warrant, the cues that were used by

neurotic users *as a whole* and employed by observers *as a whole* to judge neuroticism were in correspondence.

Limitations

This investigation could not be in dialogue with past studies on online impression formation that used popularity, social attractiveness, and physical attractiveness as dependent variables (e.g., Antheunis and Schouten, 2011; Tong et al., 2008; Utz, 2010). The choice was made to be in dialogue with past lens model research on personality. Social attractiveness and popularity may be hard for individuals to self assess, thus rendering them useful in determining perceived warrant value, but less so for determining warrant diagnosticity. Additionally, as is a challenge in all lens model studies, some cues on FB were not measured in the present study. It is likely that there are cues relevant for expressing personality and forming judgments that were not included. Yet, cues identified here confirmed past research on the importance of certain cues in making personality judgments (e.g., extraversion: number of FB friends, number of people in photos), and results were largely consistent with Marcus et al.'s (2006) study of web pages.

Three additional methodological limitations should be noted. First, the criterion measure of targets' personality was targets' own self-report. Although the methods of the present investigation are consistent with Marcus et al. (2006), Gosling (Gosling et al., 2011; Vazire and Gosling) used targets' self-report in combination with a personality assessment by a close friend for the personality criterion. This difference should be noted if comparisons are made. Second, the reliability estimates for several cues were quite low, which limits the present investigations' ability to make strong claims. Yet, these reliability estimates are comparable to low reliabilities reported in other studies with less conservative reliability estimates (e.g., Bernieri et al., 1996). Future research should seek to confirm the association between these cues and personality

estimates. Finally, the cue utilization correlations (i.e., perceived warrant value) were drawn from aggregate estimates of target personality by observers as a whole, rather than an average of the correlations between each observer's estimate of targets' personality and targets' cue use (see Bernieri et al., 1996 for further discussion). Although consistent with past research (e.g., Gosling et al., 2011), this procedure may have increased the effect size of cue utilization correlations, so those correlations should be interpreted in that light.

Directions for Future Research

The present study extends past work in several ways. Although overall accuracy was similar to Marcus et al. (2006) and Gosling et al. (2011), this study was successful at identifying more diagnostic cues and more cues with perceived warrant value, particularly from status updates, which provides guidance for future research. Future research can extend these findings by directly exploring the degree to which users of online communities trust and use certain cues to directly compare warrant credibility to perceived warrant value. By exploring several online communities simultaneously, warranting theory can be applied both within and between online communities and SNS.

Examining diagnostic cues and cue validity correlations, each section of a FB profile page appears to offer important information about personality traits: extraversion from photos and number of FB friends; openness from the Info page; conscientiousness from the comments of FB friends; and agreeableness from judicious use of status updates and infrequent media sharing by the user. Although these are not definitive categories, future research would do well to consider how each section of a profile uniquely contributes to the way impressions of users are formed about particular traits.

In conclusion, the present investigation extends warranting theory by demonstrating that

credible warrants are not always warrants with the highest perceived value by observers, and that perceived valued warrants are only sometimes diagnostic of personality. This study extends past research beyond the perceived value of a warrant, showing that there are diagnostic warrants on FB. It also illustrates that many diagnostic cues can be found in status updates and FB friends' behavior, which extends past work on FB (Gosling et al., 2011). This study shows the importance of these cues in online impression formation. When more diagnostic cues were present, more accurate judgments of personality were made. Therefore, this study provides evidence that accurately knowing someone only through their FB page is possible, not by using all of the information, but by using the best, most predictive information.

References

- Antheunis ML and Schouten AP (2011) The effects of other-generated and system-generated cues on adolescents' perceived attractiveness on social network sites. *Journal of Computer-Mediated Communication* 16: 391-406.
- Bernieri FJ, Gillis JS, Davis JM and Grahe JE (1996) Dyad rapport and the accuracy of its judgment across situations: A lens model analysis. *Journal of Personality and Social Psychology* 71: 110-129.
- Brunswik E (1956) *Perception and the representative design of psychological experiments*. Berkeley, CA: University of California Press.
- Burgoon JK, Blair JP and Strom RE (2008) Cognitive biases and nonverbal cue availability in detecting deception. *Human Communication Research* 34: 572-599.
- DeAndrea DC and Walther JB (2011) Attributions for inconsistencies between online and offline self-presentations. *Communication Research* 38: 805-825.
- Ellison NB, Hancock JT and Toma CL (2012) Profile as promise: A framework for conceptualizing veracity in online dating self-presentations. *New Media & Society* 14(1): 45-62.
- Ellison NB, Steinfield C and Lampe C (2007) The benefits of Facebook 'friends': Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication* 12: 1143-1168.
- Facebook Newsroom* (2012) Available at:
<http://newsroom.fb.com/content/default.aspx?NewsAreaId=22> (accessed 17 April 2012).
- Gifford R (2006) Personality and nonverbal behavior: A complex conundrum. In Manusov V and Patterson ML (eds) *Handbook of nonverbal communication*. Thousand Oaks, CA: Sage,

pp. 15 -179.

Gonzales AL and Hancock JT (2008) Identity shift in computer-mediated environments. *Media Psychology* 11: 167-185.

Gosling SD, Ko SJ, Mannarelli T and Morris ME (2002) Room with a cue: Personality judgments based on offices and bedrooms. *Journal of Personality and Social Psychology* 82: 379-398.

Gosling SD, Augustine AA, Vazire S, Holtzman N and Gaddis S (2011) Manifestations of personality in online social networks: Self-reported Facebook-related behaviors and observable profile information. *Cyberpsychology, Behavior, and Social Networks* 14: 483-488.

Hart RP and Carroll C (2011) DICTION 6.0 [Computer software]. Retrieved from <http://www.dictionsoftware.com/index.php>.

Hayes AF and Krippendorff K (2007) Answering the call for a standard reliability measure for coding data. *Communication Methods and Measures* 1: 77-89.

John OP, Naumann LP and Soto CJ (2008) Paradigm shift to the integrative Big-Five trait taxonomy: History, measurement, and conceptual issues. In: John OP, Robins RW and Pervin AL (eds) *Handbook of personality*. New York, NY: Guilford Press, pp. 114-158.

Marcus B, Machilek F and Schütz A (2006) Personality in cyberspace: Personal websites as media for personality expressions and impressions. *Journal of Personality and Social Psychology* 90: 1014-1031.

Stone AR (1995) *The war of desire and technology at the close of the mechanical age*. Cambridge, MA: MIT Press.

Tong ST, Van Der Heide B., Langwell L and Walther JB (2008) Too much of a good thing? The

- relationship between number of friends and interpersonal impressions on Facebook. *Journal of Computer-Mediated Communication* 13: 531-549.
- Utz, S (2010) Show me your friends and I will tell you what type of a person you are: How one's profile, number of friends, and type of friends influence impression formation on social network sites. *Journal of Computer-Mediated Communication* 15: 314-335.
- Van Der Heide B, D'Angelo JD and Schumaker EM (2012) The effects of verbal versus photographic self-presentation on impression formation in Facebook. *Journal of Communication* 62: 98-116.
- Vazire S and Gosling SD (2004) e-Perceptions: Personality impressions based on personal websites. *Journal of Personality and Social Psychology* 87: 123-132.
- Walther JB and Parks MR (2002) Cues filtered out, cues filtered in: Computer-mediated communication and relationships. In: Knapp ML and Daly JA (eds) *Handbook of interpersonal communication* (3rd ed). Thousand Oaks, CA: Sage, pp. 529-563.
- Walther JB, Van Der Heide B, Hamel LM and Shulman HC (2009) Self-generated versus other-generated statements and impressions in computer-mediated communication: A test of warranting theory using Facebook. *Communication Research* 36: 229-253.
- Walther JB, Van Der Heide B, Kim S-Y, Westerman D and Tong ST (2008) The role of friends' appearance and behavior on evaluations of individuals on Facebook: Are we known by the company we keep? *Human Communication Research* 34: 28-49.
- Westerman D, Van Der Heide B, Klein KA and Walther JB (2008) How do people really seek information about others?: Information seeking across internet and traditional communication channels. *Journal of Computer-Mediated Communication* 13: 751-767.

Appendix A: All cues coded, Krippendorff alpha reliability, mean, and standard deviations

Cue	Reliability	Coders	Coded As	Mean	SD
<i>Current Profile Picture</i>	.97	2			
Profile Picture Younger Age	1.0	2	Y/N	.04	.21
Profile Picture Not of Person	1.0	2	Y/N	.11	.31
<i>Past 8 Profile Pictures</i>					
Picture Friendliness	.55	4	5-point	2.93	.66
Picture Attractiveness	.57	4	3-point	2.91	.47
Picture Humor	.72	4	5-point	1.84	1.02
Picture Sociability	.77	3	3-point	1.59	.59
Picture Sexuality	.71	3	3-point	1.11	.32
Number of Friends in Photo	.86	2	Count	4.92	4.13
Friends Attractiveness	.34	4	3-point	2.87	.44
Friends Friendliness	.50	3	5-point	3.13	.55
Drinking in Pictures	.66	2	Y/N	.13	.31
<i>Information Page</i>					
Speaks Multiple Languages	1.0	2	Y/N	.06	.24
Movies Listed	1.0	2	Y/N	.64	.48
Books Listed	1.0	2	Y/N	.52	.50
Games Listed	1.0	2	Y/N	.13	.34
Relationship Status	1.0	2	1 = In rel. 0 = Not in rel.	.68	.47
Total Number of Friends	1.0	2	Count	523.91	385.16
Facebook Games Played	1.0	2	Count	.37	1.99
Pictures Posted	1.0	2	Count	1.75	7.46
Activeness of Profile Activities	.64	3	5-point	2.23	1.08

Total Quotes	.94	2	Count	2.47	4.81
Religious Quotes	.75	2	Count	.10	.41
Literary Quotes	.28	2	Count	.20	.50
Humor Quotes	.76	2	Count	1.19	2.53
Inspirational Quotes	.53	2	Count	.63	1.43
Movie Quotes	.48	2	Count	.38	1.23
Song Quotes	.77	2	Count	.03	.19
<i>Text Use</i>					
Total Characters		Diction	Count	850.04	960.88
Total Words		Diction	Count	152.56	174.42
Average Word Size		Diction	Letter Count	4.30	.49
Number of Different Words		Diction	Count	102.17	98.37
Emoticon Use		Diction	Count	1.42	2.60
Shorthand Use		Diction	Count	.93	1.35
Laughter Use		Diction	Count	1.13	2.20
Extended Letter/Word Use		Diction	Count	2.03	3.83
<i>Status Updates</i>					
Status Update Positive Affect	.43	4	5-point	3.22	.64
Status Update Negative Affect	.65	3	5-point	2.06	.89
Status Update Humor	.44	4	5-point	2.05	.70
Status Update Fiscal Conservative (v. Liberal)	.67	3	5-point	2.90	.34
Status Update Political at All	.77	3	5-point	1.39	.75
Status Update Relational Talk	.61	3	3-point	1.19	.49
Status Update Family Talk	.72	3	3-point	1.24	.44

Status Update Emotional Support	.57	3	3-point	1.42	.44
Status Update Instrumental Support	.65	3	3-point	1.17	.38
Status Update Religious Quotes	.53	3	Count	.10	.32
Status Update Religiousness	1.0	3	3-point	1.23	.61
Status Update Media Posts	.75	3	Count	1.57	2.09
Status Update Music Posts	.59	2	Count	.19	.64
Status Update News Posts	.30	2	Count	.20	.54
<i>Wall Activity</i>					
Comments on Other's Posts	.88	2	Count	6.30	4.22
Total Number of Posts	.78	2	Count	8.78	7.67
Others Agreement with Posts	.33	4	5-point	3.39	.46
Other's likes	.97	3	Count	12.32	19.20
Other's Unique Friends Comments	.99	3	Count	9.54	6.78

Appendix B: Correlations between Self and Other Observer Estimates of Personality and Profile Cues

Cue Validity (self-ratings)						Cue Utilization (observers)					
E	A	C	N	O	#	Profile Cue	E	A	C	N	O
						<i>Current Profile Picture</i>					
-.06	-.17	.00	.19	-.06	89	Profile Picture Younger Age	.06	-.05	.07	.18	-.06
-.17	-.04	-.00	.15	-.03	100	Profile Picture Not of Person	-.15	-.31***	-.12	.22*	.14
						<i>Past 8 Profile Pictures</i>					
.12	.26*	.24*	-.01	-.14	90	Picture Friendliness	.45***	.27**	-.01	-.34***	-.13
.17	-.03	-.11	.14	-.03	90	Picture Attractiveness	.18	.28**	.21*	-.16	-.02
.06	.24*	.08	-.00	-.06	100	Picture Humor	.35***	-.03	-.22*	-.16	.01
.16	.20	.12	-.10	-.11	92	Picture Sociability	.28**	.07	-.12	-.20*	-.11
.17	-.06	-.01	.09	.01	100	Picture Sexuality	.23*	-.06	-.06	.08	.08
.21*	.18	.03	-.11	-.23*	100	Number of Friends in Photos	.30**	-.02	-.09	-.11	-.12
.08	.17	-.01	-.09	-.04	86	Friends Attractiveness	.23*	-.02	-.09	-.07	-.02
.14	.20*	-.05	-.08	-.09	87	Friends Friendliness	.38***	.00	-.19	-.13	.00
-.06	.09	-.05	-.18	-.17	100	Drinking in Pictures	.13	.02	-.16	-.23*	-.02
						<i>Information Page</i>					
.09	-.08	-.05	.05	.19	100	Speaks Multiple Languages	-.10	.01	.10	.08	.20*
-.01	.07	-.23*	.01	.10	100	Movies Listed	.07	-.10	.00	.01	.21*
.04	-.12	-.13	-.10	.29**	100	Music Listed	-.14	.12	.28**	-.02	.37***
-.05	.00	-.27**	.01	.25*	100	Books Listed	.10	-.04	.15	-.03	.42*
-.14	.04	-.12	-.03	-.06	100	Games Listed	-.11	-.23*	.01	.24*	.15
-.03	.05	.07	-.04	.08	82	Relationship Status	.10	.28*	.33**	-.17	.28*
.23*	.12	-.26*	.13	.06	100	Total Number of Friends	.47***	-.07	-.02	-.17*	.03
.08	.02	.18	-.02	.05	100	Facebook Games Played	.20*	.01	-.11	.13	-.22
.10	-.07	-.03	.17	-.10	100	Pictures Posted	.07	-.06	-.05	.05	-.05
.05	.07	-.06	-.07	.10	95	Activeness of Profile Activities	.26**	-.02	-.02	-.31**	-.07
.14	.05	-.16	-.01	.09	100	Total Quotes	.16	-.21*	-.08	.09	.17
.13	.07	-.13	.19	-.11	100	Religious Quotes	.05	.20*	.08	.04	-.03
.03	.08	-.14	-.05	.13	100	Literary Quotes	.12	-.10	.00	-.03	.26**
.15	-.00	-.18	.01	.06	100	Humor Quotes	.17	-.18	-.17	.05	.09
.13	.09	-.08	-.03	.02	100	Inspirational Quotes	.10	-.11	-.07	.16	.07
.08	.00	-.07	.10	.10	100	Movie Quotes	.12	-.20*	.09	.06	.22*
.01	.01	.03	.08	.02	100	Song Quotes	.00	-.01	-.07	-.02	-.02
						<i>Text Use</i>					
.12	-.23*	-.21*	.13	.04	84	Total Words	.19	-.13	-.04	.25*	.06
.12	-.23*	-.21*	.14	.05	84	Total Characters	.19	-.13	-.05	.25*	.08
-.11	-.07	-.10	.13	.02	84	Average Word Size	-.09	.02	.09	-.03	.20*
.12	-.25*	-.22*	.14	.06	84	Number of Different Words	.20	-.15	-.05	.26*	.10
.22*	-.12	.02	.16	-.01	100	Emoticon Use	.07	.08	-.01	.30**	-.08
.04	-.04	.03	.11	-.22*	100	Short-hand Use	.24*	-.10	-.12	.10	.05
.05	-.12	-.01	.23*	-.14	100	Laughter Use	.21*	-.05	-.14	.09	-.17
.21*	-.22*	-.06	.25*	-.20*	100	Extended Letter/Word Use	.20*	.06	-.09	.12	-.14
						<i>Status Updates</i>					
.26**	.02	.16	-.05	-.10	90	Status Update Positive Affect	.27*	.39***	.17	-.25*	.22*
-.14	-.07	-.19	-.00	-.09	90	Status Update Negative Affect	.10	-.53***	-.20*	.51***	.11
-.06	-.06	-.16	.05	-.08	90	Status Update Humor	.44***	-.05	-.31**	-.16	.14
-.09	-.12	.08	.01	-.12	90	Status Update Fiscal Conservative	-.13	.26*	-.18	-.18	-.27**
-.11	.08	-.09	.01	.25*	90	Status Update Political at All	-.01	-.25*	.35**	.10	.45***
.07	-.08	.00	.04	-.24*	90	Status Update Relational Talk	.22*	.09	-.11	-.06	-.08
.15	-.13	.18	-.16	-.02	90	Status Update Family Talk	.00	.23*	.11	.06	-.21*
-.05	.04	-.01	.01	-.06	90	Status Update Emotional Support	.02	-.15	-.03	.41***	-.10
.03	-.13	.10	.03	.01	90	Status Update Instrumental Support	.08	-.05	-.02	.16	-.09
.07	.04	-.15	.10	-.01	90	Status Update Religious Quotes	.06	.06	.11	.09	.03
.48	.07	.22	.33	-.34	11	Status Update Religiousness	.64*	.40	.19	.41	-.14
.04	-.24*	-.08	.06	.34***	92	Status Update Media Posts	-.16	-.21*	.00	.19	.41***
-.14	-.22*	.02	.10	-.01	92	Status Update Music Posts	-.05	-.12	-.07	.07	.22*
.09	-.21*	-.10	-.04	.19	92	Status Update News Posts	-.00	-.23*	.06	.17	.32**
						<i>Wall Activity</i>					
.01	.25*	.10	-.06	-.24*	100	Comment's on Other's Posts	.14	-.05	-.14	-.08	-.23*
.05	-.30**	-.20*	.09	.18	100	Total Number of Posts	.05	-.26**	-.06	.31***	.22*
-.07	.05	.23*	.18	.01	100	Other's Agreement with Posts	-.08	.22*	.22*	-.02	.04
.06	-.16	-.17	.12	.16	100	Other's Likes	.21*	-.02	.06	-.04	.23*
.07	-.03	-.27**	.04	.20*	100	Other's Unique Friend Comments	.27**	-.02	.06	-.08	.12

E = Extraversion A = Agreeableness C = Conscientiousness N = Neuroticism O = Openness Note: * $p < .05$; ** $p < .01$; *** $p < .001$