Affinity Through Instant Messaging

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Affinity Through Instant Messaging

When meeting someone new, individuals decide how much they like the other person and attempt to determine whether that liking is shared (Dindia & Timmerman, 2003). This process is often identified as affinity-seeking (Bell & Daly, 1984). The present study explores how affinity is signaled, perceived, and detected during an initial interaction through instant messaging (IM) between two opposite-sex strangers. The purpose of this study is to determine the relationship between overall liking of the conversational partner and three types of affinity found in the text of an IM interaction: showing liking toward conversation partners (i.e., affinity-seeking), perceptions of liking shown by conversation partners (i.e., affinity-signaling), and the ability to accurately detect liking when it is shown by conversation partners (i.e., affinity-testing). Because the communication of affinity is crucial for forming and advancing relationships, it is important to examine affinity in IM, popular computer-mediated communication (CMC) application (Ramirez & Broneck, 2009).

Although the present study is concerned with exploring the ways affinity-seeking, affinity-testing, and affinity-signaling are related to overall liking, the increasing integration of Internet technology into everyday life requires further attention to relationship initiation online (Bakardijieva & Smith, 2001). Despite the increasing use of IM in both forming and maintaining relationships (Ramirez & Broneck, 2009; Valkenburg & Peter, 2009), there are few studies that explore how affinity is sought, tested, and signaled during CMC generally and in IM specifically. Although not all online relationship initiation attempts are successful, some individuals are able to initiate and develop intimate relationships solely through online interaction (Gibbs, Ellison, & Heino, 2006). Sending and interpreting verbal messages conveying affinity are necessary skills in all interpersonal relationships (Dindia & Timmerman, 2003), but are particularly important

when using lean text-based media to initiate new relationships. In developing a better understanding of how text-based message production and interpretation affects overall liking for a conversation partner, the present study offers insight into relationship initiation using IM. Finally, this study will also explore which features of IM text are related to overall liking of and perceived liking by conversation partners.

Instant Messaging

Instant messaging is a synchronous Internet application that allows users to have conversations with other users who are online at the same time. Typically, IM is a one-on-one interaction between users who are not co-present, but communicators in the same room can use IM as well. The use of IM is prevalent and it is continually growing (Schneider & Hemmer, 2006). Although email is used more often overall, IM is used more than email for personal messages (Ramirez, Dimmick, Feaster, & Lin, 2008), and longitudinal data has confirmed that IM use is positively related to friendship quality (Valkenburg & Peter, 2009). CMC that allows users to be anonymous, such as IM, are also more likely to be used when users attempt to learn information about new people (Westerman, van der Heide, Klein, & Walther, 2008). IM allows users to learn about others in private, which sets it apart from other text-based CMC applications, such as message boards. IM is often used in a first interpersonal encounter not only because of anonymity, but also because of the personal nature of IM -- the feeling of having a one-on-one conversation (Slatcher, Vazire, & Pennebaker, 2008).

Despite the broad and growing use of IM, there are several limitations of the medium. IM allows for the expression of few nonverbal behaviors, excepting silence and chronemics, feedback is not instantaneous, and natural language is altered (Baron, 2007). However, Social Information Processing Theory (Walther & Burgoon, 1992) and the hyperpersonal model

(Walther, 1996) suggest that relationships initiated through CMC can develop intimacy like face-to-face (FtF) relationships, but they require careful crafting and interpreting of messages. This suggests that when using text-based applications like IM during relationship initiation, message construction is of the utmost importance (Walther, 1996). This manuscript will explore whether four aspects of IM text are associated with liking a new conversational partner.

During initial FtF interactions, disclosing information about oneself and asking questions about one's partner leads to more liking (Afifi & Lucas, 2008). One meta-analysis concluded that individuals tend to like those who disclose to them and disclose more to those they like (Collins & Miller, 1994). During CMC interactions, asking questions is particularly associated with more self-disclosure and liking (Schouten, Valkenburg, Peter, & Antheunis, 2007). The rate of disclosure may also affect liking. Because it conveys social responsiveness-- an active interest in what the other person is saying --the time elapsed between messages sent might influence liking inversely (i.e., less time indicates more liking) (Fehr, 2008). Finally, conversing about multiple topics is likely to build affinity because it communicates social responsiveness and adds breadth to the conversation (Fehr, 2008). To clarify, we offer the first hypothesis:

H1: (a) The number of messages sent, (b) the number of questions asked, (c) the less time between messages, and (d) the number of topics covered will predict liking a conversational partner; and (e) the number of messages sent, (f) the number of questions asked, (g) the less time between messages, and (h) the number of topics covered will predict the perception of being liked by a conversational partner.

Affinity

When using IM to initiate a relationship, individuals must carefully choose words and formulate appropriate and engaging responses to show liking and to be liked. This process,

identified as affinity, has been explored extensively in FtF interactions (Bachman & Zakahi, 2000; Martin & Rubin, 1998; Richmond, Gorham, & Furio, 1987; Tolhuizen, 1989). Past research on FtF communication has identified three important components of the process of building affinity: affinity-seeking, affinity-signaling, and affinity-testing. Affinity-seeking messages are meant to communicate, "I like you" (Bell & Daly, 1984). Although affinity-seeking strategies intend to show liking toward another person, the use of such strategies do not guarantee liking being reciprocated. The second concept, affinity-signaling, is also called target response (Bell & Daly, 1984). Affinity-signaling occurs when one perceives that one's partner has sent a message of liking. Messages that signal affinity are perceived to say, "You like me." Finally, affinity-testing is the intentional use of communicative behaviors to confirm partner liking (Douglas, 1987, 1990). When communicators believe their partners like them, the goal of affinity-testing is to accurately determine whether or not this is true.

Past research on affinity has generated lists of potential strategies that a communicator might use to seek, signal, and test affinity (Bell & Daly, 1984; Douglas, 1987). However, coding IM transcripts for the presence of affinity strategies may be problematic. Part of the difficulty lies in deciphering communicators' intent. Affinity-seeking strategies intend to show liking, but for outside observers to correctly label them as such is challenging. That is, observers determining which messages seek affinity would likely lead to errors due to the difficulty of determining message intent (Bavelas, 1990). Second, messages can serve multiple affinity purposes at the same time. For example, if one types the following message during IM: "I love the Beatles! How about you?" it is difficult to say whether one is seeking affinity by naming a band liked by many people, testing affinity by hoping for agreement, or signaling affinity by enthusiastically answering a prior question. Finally, the strategies identified in past research commonly used to

test affinity in FtF interactions may not be applicable to IM interactions. Prompting responses, waiting for the other person to send a message, and asking questions all fit the definition of affinity-testing according to Douglas' (1987) inventory of strategies. During IM, those are also the primary means of carrying on a conversation. An observer identifying strategies as affinity-testing would lead to many false positives. Therefore, it is not the purpose of the present study to identify and classify specific affinity strategies used in during IM by employing past affinity-strategy rubrics. Rather this study will attempt to combine IM transcripts and communicator and partner data to test whether affinity-seeking, affinity-signaling, and affinity-testing influence the amount of liking experienced by communicators.

Affinity in IM

Each of the three affinity strategies are predicted to be related to overall liking felt and overall liking perceived. By definition, the number of messages that participants identify as affinity-seeking should predict liking the other person (Bell & Daly, 1984). That is, the number of messages intended to communicate "I like you" should be related to liking another person. Affinity-seeking should also be related to the perception of being liked by a conversational partner. The perception of being liked by another person is strongly related to liking that person in return (Sprecher & Felmlee, 2008). That is, we express liking to those we believe like us. Similarly, more messages that show disliking are negatively related to liking and the perception of being liked by a conversational partner (Kellermann, 1984). Therefore:

H2a: The frequency of affinity-seeking messages will positively predict liking a conversational partner and (b) the perception of being liked by the conversational partner.

H3a: The frequency of disliking messages will negatively predict liking a conversational partner and (b) the perception of being liked by the conversational partner.

Affinity-signaling is also likely to predict liking the partner and perceived liking from the partner. In believing one is liked, liking is reciprocated (Fehr, 2008; Sprecher & Felmlee, 2008). Therefore, the perception that a conversational partner has sent many messages of liking will increase liking overall. For example, if John believes that Susan frequently says, "I like you, John," in the way she communicates, then John will probably like Susan more. On the other hand, the perception of more disliking messages sent will negatively predict liking the partner and perceived liking from the partner. In summary, we offer the following hypotheses:

H4a: The frequency of messages from a conversational partner perceived to show liking will positively predict liking a conversational partner and (b) the perception of being liked by the conversational partner.

H5a: The frequency of messages from a conversational partner perceived to show disliking will negatively predict liking a conversational partner and (b) the perception of being liked by the conversational partner.

Affinity-testing will be measured by participants' accuracy in detecting liking and disliking from a conversational partner. Douglas (1987) suggests the purpose of affinity-testing is to experience more liking. By definition, in accurately decoding a message of liking, participants are more likely to perceive liking from the message sender. For example, if John believes that Susan's comment, "You are soooo funny," is evidence of her liking him, and Susan also intended that comment to indicate liking, then a successful affinity-test has occurred. The more successful tests of affinity will likely build rapport – both in the sense of liking someone and believing they like us in return (Douglas, 1987). On the other hand, accurately decoding messages of disliking will decrease liking of that person. For example, if John accurately believes that Susan is saying,

"I don't like you", when she sarcastically comments, "Yeah right, genius," then John will like Susan less and perceive that she likes him less too. Therefore, we offer the following hypotheses:

H6a: The accuracy of interpreting messages of liking from a conversational partner will positive predict liking a conversational partner and (b) the perception of being liked by the conversational partner.

H7a: The accuracy of interpreting messages of disliking from a conversational partner will negatively predict liking a conversational partner and (b) the perception of being liked by the conversational partner.

Partner Effects

When collecting dyadic data from conversational partners, partner effects can be tested (Kenny, Cook, & Kashy, 2006). Partner effects occur when the behavior of one partner (e.g., affinity-seeking) directly affects the other partner (e.g., liking), after accounting for the lack of independence of a dyad. This is different from the participants' perception of liking by their partners in that partners' actual reported liking is predicted. Partner effects can determine whether affinity-seeking by one person is related to increases in liking from one's partner. By analyzing these data using dyadic analyses, the above hypotheses can be replicated to explore partner effects in affinity strategies. Without guidance from prior research on partner effects in affinity, we offer the following research question:

RQ1: What partner effects will predict liking and the perception of being liked?

METHOD

Participants

Participants were undergraduate students at a large Midwestern university who were offered partial course credit or extra credit for participation ($N = 120$). Sixty males and 60 females

participated (M_{age} = 19.8 years, *SD* = 3.31; range: 18 to 50). Seventy-five participants (62%) were single and 45 were in a relationship (38%). Most participants reported being heterosexual (88.7%, *N* = 107), and 13 reported being homosexual or bisexual (11.3%).

Procedure

Male and female participants signed up signed up for one hour time blocks on different online enrollment pages to ensure one male and one female were signed up for each time slot and to conceal the identities of interacting participants. When participants arrived, they were led to separate rooms. Participants were consented and completed a user profile sheet to simulate an online profile. Once finished, these profiles were exchanged between participants by the researcher. The two participants then chatted for 20 minutes using IM, which was installed on computers in separate rooms. They were instructed to "get to know one another and find out if you would interact with this person again." After 20 minutes, participants logged off, completed a survey that measured liking, and identified affinity and disaffiliation messages in the printed IM transcript.

Measures

Four characteristics of the transcript text were coded. The number of messages was measured by counting the number of messages each participant sent. All messages were counted, including when participants sent two messages that were part of one sentence. The number of questions asked was measured by counting the number of messages stated in the form of a question. The number of topics covered was measured by identifying each unique general topic that was brought up in the transcript. For example, talking about two different bands was considered a single general topic (i.e., music). Topics that were left and returned to were not counted twice. Finally, time between messages sent was measured by measuring the time between a message

sent and the previous message sent by the same participant. These times were then totaled and divided by the number of messages sent to get the rate of communication. Both study authors coded the number of questions and topics, and high intercoder reliability was found (kappa = .94).

Liking toward the partner and *perceived liking by the partner* were measured using 6-item, 7-point Likert-type scales modified from McCroskey and McCain's (1974) social attractiveness scale (e.g., "I like him/her," "I believe he/she really enjoyed talking to me," "I do not have positive feelings towards him/her" reverse coded). The scales showed acceptable reliability (liking $\alpha = .70$; perceived liking $\alpha = .71$), and were averaged ($M_{liking} = 5.24$, $SD = .82$; $M_{perceived} = 5.06$; $SD = .80$).

Liking and disliking shown and perceived in the text: To remedy the challenges inherent to coding the three affinity concepts in IM, participants were asked when they showed liking and when they perceived liking being shown by conversational partners by identifying each on an IM transcript. After their 20-minute interaction, participants received a copy of the transcript and determined when they showed liking and disliking, and when their partner showed liking and disliking using highlighters of different colors to show each of the four behaviors (i.e., self liking, self disliking, partner liking, partner disliking). For example, participants used a yellow highlighter to identify any message where they showed liking toward their conversational partners. Messages that sough affinity were those that participants identified as intended to show liking. Although this procedure requires participants to retroactively assign intent, this method was likely to result in fewer errors than observers interpreting the intent of communicators. Affinity-signaling is the perception of liking being conveyed by a conversational partner. The

present study measured affinity-signaling by requiring participants to identify messages sent by conversational partner that were perceived to show liking.

Accuracy: When individuals are able to correctly identify a partner's message as showing liking, then a successful affinity-test has occurred. Therefore, an accuracy measure was needed to measure affinity-testing. Because self-report and partner perception data was available from both participants, messages that were intended to show liking by one person and the perceptions of those same messages by the interaction partner were compared. This yielded a measure of accuracy that captures a successful test of affinity. To do so, participants' highlighted transcripts were compared with participants' partners' transcripts. Accuracy was calculated so that person A's accuracy was the number of messages correctly perceived as liking (as determined by person B's report) divided by the number of total messages A perceived as liking plus total messages B reported as liking ($A_c / (A_t + B_t)$). Therefore, accuracy was reduced for both false-positive and false-negative perceptions.

RESULTS

On average, participants sent 43.69 messages (*SD* = 20.80), asked 9.39 questions (*SD* = 5.12), and discussed 8.65 topics (*SD* = 2.74) in 20 minutes. Participants highlighted messages showing liking and disliking and messages perceived as showing liking and disliking on IM transcripts. The mean frequency of showing liking was 6.05 times in 20 minutes (*SD* = 4.96), and the mean frequency of messages perceived as liking from a partner was 6.20 times in 20 minutes (*SD* = 4.74). Disliking shown and disliking perceived from a partner were relatively low in frequency, less than 1 message in 20 minutes for each. (M_{shown} = .52, *SD* = 1.46; $M_{perceived}$ = .73; *SD* = 1.35). The mean accuracy in decoding liking messages (i.e., agreement between perceived liking and liking shown) indicated that participants were correct in their assessments

18.2% of the time (*SD* = .15). The mean accuracy of participants for detecting disliking was 6.9% (*SD* = .20).

Regression Results

To test the study hypotheses, two regression analyses were conducted in blocks. The first block explored whether relationship status (1 = In a relationship), age, IM use frequency, sexuality (1 = Heterosexual, 0 = Homosexual or Bisexual), and sex (Female = 1) were predictors of liking the conversation partner and the perception of being liked by the partner. The second block contained the four text-based measures (i.e., messages sent, questions asked, topics covered, mean time between messages). The third block contained the measures of affinity and disaffinity shown (i.e., affinity-seeking) and affinity and disaffinity perceived (i.e., affinity-signaling). The fourth block included the accuracy of affinity measure (i.e., affinity-testing). The fifth block included disaffiliation accuracy, which was reserved for the final block because only 53 participants showed disliking, therefore disaffiliation could have been detected accurately for 53 participants.

The first regression tested hypotheses that predicted that text features and affinity messages would influence overall liking of a partner. The results suggest that features of the text (H1a-d) and affinity-seeking messages (H2a & H3a) were unrelated to overall liking. H4a predicted that perception of liking messages shown by the conversational partner would predict overall liking, but this was not supported. H5a predicted that the perception of disliking show by partners would negatively predict liking. This hypothesis was supported, $\beta = -.31$, $p < .01$. Participants' perception of the frequency of messages signaling dislike predicted participants' overall liking of their partners. H6a predicted that accuracy in detecting liking would positively predict liking, but this was not supported. Finally, H7a predicted that accurately detecting disliking would decrease

liking the conversational partner. Although this relationship approached significance, H7a was not supported (see Table 1).

The second regression explored whether the same variables were related to the perception of being liked by the partner. The results indicated that features of the text (H1e-h) and affinity-seeking messages (H2b & H3b) were unrelated to the perception of being liked. However, both affinity-signaling hypotheses were supported. The number of liking messages perceived in the text positively predicted the perception of being liked, $\beta = .30$, $p < .05$ (H4b), and the number of disliking messages perceived negatively predicted the perception of being liked, $\beta = -.31$, $p < .01$ (H5b). Results support H6b in that accurately decoding messages of liking was related to the perception of being liked, $\beta = .27$, $p < .01$. However, the accuracy in detecting disliking did not predict the perception of being liked, indicating a lack of support for H7b (see Table 1).

In summary, participants liked their partners more when they perceived fewer messages of dislike (H5a). Additionally, participants believed their partners liked them more when they perceived more messages of liking sent (H4b) and fewer messages of disliking sent (H5b). They also believed their partners liked them more when they accurately interpreted messages of liking from their partners (H6b). No other hypothesis was supported.

Dyadic Analyses

When data are collected from both partners in a relationship, partners' responses are related. In the present study, affinity messages in the text and liking are dependent upon one another and cannot be assumed to be independent (Kenny et al., 2006). As recommended by Kenny et al. (2006) for distinguishable dyads, structural equation modeling (SEM) and the Actor-Partner Independence Model (APIM) estimated the impact of affinity-seeking, testing, and signaling on participants' own liking (actor effect) and on partners' liking (partner effect). To create an APIM

for distinguishable dyads (Kenny et al., 2006), the effects of affinity on liking for male participants were estimated separately than the effects of affinity for female participants. By allowing the error terms of the dependent variables (i.e., male and female overall liking) to be correlated with one another, the APIM accounts for shared variance on the dependent variable. This procedure allows researchers to estimate the effects of independent variables (i.e., affinity) on dependent variables (i.e., liking), accounting for the non-independence of samples.

Each of the APIMs estimated all actor and partner effects for all affinity behaviors (i.e., a saturated SEM model). After estimates were found for males and females, an additional test was used to determine whether the effects of affinity shown in the text on overall liking differed by sex. As recommended by Kenny et al. (2006), when significant effects were identified for both males and females, they were fixed to be equivalent using SEM. If model fit was unchanged, as determined by a χ^2 test ($p < .01$), then the paths were considered equivalent. If the model fit was worsened, paths were considered different and sex differences were reported.

Liking Partners

The first APIM explored the effect of showing liking and showing disliking (i.e., affinity-seeking) on liking a partner. Results indicate two actor effects and one partner effect. The first actor effect demonstrates that when females show more liking, females report liking male conversational partners more, β= .04, *SE* = .02, $p < .05$ (H2a). The second actor effect indicates that when females show more disliking in the text, females report liking male conversational partners less, β= -.10, *SE* = .06, $p < .05$ (H3a). The partner effect demonstrates that when males show more disliking, females report liking males less, β= -.26, *SE* = .12, $p < .05$ (RQ1). The second APIM explored the effects of perceiving liking and perceiving disliking (i.e., affinity-signaling) on liking a partner. The results indicate one actor effect and one partner effect. The

actor effect demonstrated that when females perceive more disliking in the text, females like male conversational partners less, β= -.19, *SE* = .06, $p < .001$ (H5a). This replicates regression results. The partner effect suggests that when females perceive more disliking in the text, males like females less, β= -.12, *SE* = .07, $p < .05$ (RQ1). This partner effect shows that disliking communicated by the sender is related to disliking perceived by the receiver. The third APIM explored the effects of accurately decoding liking and disliking (i.e., affinity-testing) on liking a partner. Results indicate only one actor effect: when females accurately interpret males' disliking in the text, they like male partners less, β= -4.09, *SE* = .80, $p < .001$ (H2b).

Perceiving Being Liked by Partners

The fourth, fifth, and sixth APIM analyses explored a different dependent variable: the perception of being liked. The fourth APIM explored the effect of showing liking and showing disliking (i.e., affinity-seeking) on the perception of being liked. Results indicate one actor effect: when females show more disliking messages in the text, females perceive male interaction partners liking them less, β= -.13, *SE* = .06, $p < .05$ (H3b). The fifth APIM analysis explored the effect of perceiving liking and perceiving disliking in the text (i.e., affinity-signaling) on the perception of being liked. Results indicate three actor effects and no partner effects. The first two actor effects demonstrate the same effect for males and females: When individuals perceive more liking by their partner, they believe their partners like them more (for females: β= .05, *SE* = .02, $p < .01$; for males: β= .04, *SE* = .02, $p < .05$) (H4b). This replicates regression results. To test for sex differences, a χ^2 test was conducted. When paths are fixed to be equivalent, the model fit is worsened significantly, $\chi^2 = 9.30$, $df = 2$, $p < .01$. This effect is stronger for females than for males. The third actor effect demonstrated that when females perceive more disliking by males in the text, females perceive males as liking them less, β= -.13, *SE* = .06, $p < .001$ (H5b). This

replicates regression results. The sixth APIM explored the effects of affinity-testing (i.e., accuracy) on the perception of being liked. The results indicate three actor effects and no partner effects. The first two actor effects demonstrate the same effect for males and females: When individuals accurately interpret their partners' messages of liking in the text, they believe their partners like them more (for females: $\beta = 1.55$, $SE = .62$, $p < .05$; for males: $\beta = 1.16$, $SE = .67$, $p < .05$) (H6b). This replicates regression results. To test for sex differences, a χ^2 difference test was conducted. When paths are fixed to be equivalent, the model fit is unchanged, $\chi^2 = 4.59$, $df = 2$, $p = ns$. This effect is equivalent for both males and females. The third actor effect demonstrated if females accurately decode males' signs of disliking in the text, females perceive that their male conversational partners like them less, $\beta = -1.91$, $SE = .86$, $p < .05$ (H7b).

Post-Hoc Analysis

Given the strong evidence of participant sex moderating the effects of affinity on overall liking and perceived liking, six independent samples *t*-tests were conducted to explore sex differences in affinity. No sex differences were found. There was no difference in frequency of liking shown between males ($M = 6.53$, $SD = 5.37$) and females ($M = 5.57$, $SD = 4.49$), $t(106) = .87$, $p = .39$. There was no difference between males ($M = 6.35$, $SD = 4.87$) and females ($M = 6.05$, $SD = 4.81$) in perceived liking frequency, $t(106) = .32$, $p = .75$. There was no difference between males ($M = .37$, $SD = .85$) and females ($M = .61$, $SD = 1.93$) regarding shown disliking frequency, $t(106) = -.82$, $p = .41$. There was no difference between males ($M = .63$, $SD = 1.08$) and females ($M = .81$, $SD = 1.63$) for perceived disliking frequency, $t(106) = -.67$, $p = .51$. Males were accurate 18.8% ($SD = .15$) of the time and females 17.6% ($SD = .15$) of the time in their assessments of liking shown by their partner, but this difference was not significant, $t(106) = .44$,

p = .66. Males were accurate regarding disliking 10.3% (SD = .23) of the time and females 3.9% (SD = .14) of the time, but this difference was not significant, $t(51) = 1.14$, p = .26.

DISCUSSION

The present study extended research on affinity-seeking, testing, and signaling by introducing a new method for measuring affinity in a popular CMC medium. Results suggest that all three affinity processes are related to overall feelings of liking toward an interaction partner and to the perception of being liked by that partner. Overall, affinity-signaling (i.e., messages that say "You like me") was particularly predictive of liking felt and perceived. That is, when more messages of liking and fewer messages of disliking in IM text are perceived from interaction partners, individuals are more likely to develop affinity with their partner. Additionally, accurately decoding messages of liking from IM interaction partners is consistently associated with stronger feelings of liking for the partner. The dyadic analyses demonstrate that other relationships are moderated by participant sex, particularly the effects of sending, perceiving, and decoding disliking. The affinity processes and an interpretation of the dyadic analyses are discussed below.

Affinity Processes

It was predicted that more messages showing liking and fewer messages showing disliking sent through IM would be associated with overall feelings of liking and perceptions of being liked by a conversation partner. The regressions demonstrated no support any of these hypotheses (H2a & H2b, H3a & H3b). Dyadic analyses revealed, however, that this relationship was moderated by participant sex. The lack of support for H2a-b and H3a-b for the total sample demonstrated by the regression analysis suggest that the effects were so weak for men as to attenuate the effects of affinity seeking on liking overall. SEM analyses demonstrated that

females showed more liking in the IM text messages when they liked their conversational partner, and showed more disliking in the messages when they disliked their partner. Similarly, females showed more disliking when they believed their partner disliked them. In the context of IM, messages of disaffiliation may be more important for females in comparison to males when forming impressions.

Affinity-signaling, or target response, was conceptualized as perceiving liking in messages sent by a partner. Unlike affinity-seeking, affinity-signaling was a consistent and strong predictor of liking and the perception of being liked. Participants liked partners more when they perceived fewer messages of disliking (H5a). Participants believed their partners liked them when they detected more messages of liking in the text (H4b), and when they detected fewer messages of disliking (H5b). Results suggest that the interpretation of messages from others is a critical component of feeling affinity toward others and in forming impressions of being liked by others. This finding reinforces the idea that individuals' perceptions of the amount of "You like me" messages are more important in feeling and perceiving liking than are the amount individuals communicate messages that say, "I like you."

Affinity-testing was conceptualized as accurately interpreting messages of liking and disliking in the IM text. Results from both regressions and dyadic analyses suggest that when individuals accurately decode messages of liking, they are more likely to believe their partners like them (H6a). Douglas (1987) suggests individuals test the affinity of others to confirm and develop greater rapport. This study extends prior research by providing very clear evidence of successful affinity-testing in a new context using a new measure of the concept. This study shows that accurate knowledge of messages of liking sent by another person helps to build liking through certainty. People who are skilled at testing affinity are able to accurately perceive others'

affinity by interpreting IM text, therefore are more capable of better estimating partners' overall liking. Also, dyadic analyses suggest that females who accurately decode disliking in the text like their partners less and believe their partners like them less, a result not found for males. The importance of disaffiliation testing for women is discussed in more detail below.

Finally, in response to the sole research question, results from the dyadic analyses demonstrated two partner effects. The APIM exploring affinity-seeking demonstrates that males who show more disliking have female partners who like them less. Similarly, females who perceive more messages indicating that their partners dislike them are more likely to have male partners who actually like them less. This study is the first to use the APIM statistical procedure to offer evidence of affinity-seeking and affinity-signaling in text generated by communication partners using a CMC medium. The results offer clear support for the strong effects of disaffiliation messages on partner response in CMC (Walther & D'Addario, 2001). These results demonstrate that showing dislike for a partner through IM directly impacts the partners' responses. Taken in combination, these effects appear to be dependent on the sex of the sender and receiver. The results of this study demonstrate that when males communicate disliking in their construction of IM messages, females notice it and react according (i.e., negatively).

The present study suggests that affinity-signaling and affinity-testing are more consistently related to building positive regard than affinity-seeking, or merely showing liking. This supports claims that despite the 20 minute time period, feelings of affinity can develop and be accurately known through CMC (Walther & Burgoon, 1992). This process occurs, not because of strong messages of liking communicated, but due to an ability to accurately interpret messages of liking. Because the measures of accuracy are derived from indicators of liking as reported by both participants, there is strong evidence that decoding liking in a text-based exchange is an

important part of knowing the affinity of others using IM. In addition, results suggest that messages of disliking are also predictive of affinity, particularly for females, offering support for a phenomenon known in FtF impression formation as the negativity effect (Kellermann, 1984). Taken together, the lack of influence of showing liking (e.g., affinity seeking), yet strong effect of disaffiliation messages can be explained in a consistent manner. During a first conversation with an opposite sex person, individuals are especially polite and concerned with maintaining a positive face (Richmond et al., 1987). Therefore, messages of disliking may be particularly potent in contrast with polite, positive scripts. Polite messages of liking are part of a script that is pleasant but not diagnostic of one's true feelings; following the friendly script is not indicative of actual liking felt or liking perceived.

Results suggest that defining affinity in the ways described in the present study and using IM as a medium for interaction can produce new conclusions regarding the affinity process. Partner effects found in dyadic analyses are particularly revelatory in that they show direct evidence how affinity behaviors of one partner in an IM conversation can lead to changes in liking in the other partner. These results and the ability to operationally define affinity-testing in terms of decoding accuracy demonstrate that IM offers scholars a new context for researching the affinity process.

Sex Moderation

This study did not set out to explore sex differences in affinity messages, and post hoc *t*-tests demonstrated no sex differences in measures of affinity and accuracy. In addition, regression results indicate no sex differences in liking a conversational partner or in liking perceived from the partner. Furthermore, in comparison to males, females do not show liking more, do not perceive liking more, and are no more capable of detecting liking using IM. This is also not a consequence of participants' use of IM, relational status, or sexuality (see Table 1). Nonetheless,

sex was an important moderator in the relationships among affinity and liking. Seven of the actor effects and one of the partner effects were significant for females but not for males. That is, relationships between these behaviors and overall liking were stronger for females than for males. There are several possible explanations for these results.

Examining the results of affinity-seeking, there appears to be a strong relationship between what females intend to convey in IM messages and how much they like their partners and how much they perceive their partners like them. Results for affinity-signaling are similarly moderated by participant sex. Females who perceive more disliking in their male partners' messages dislike their male partners more and perceive their male partners also are feeling stronger dislike. This suggests that there is a strong relationship between what females perceive in the text and how they feel about their interaction partner as a whole. Additionally, females appear to be more sensitive to accurately decoded messages of disliking. That is, for females, greater accuracy in decoding negative messages was related to liking the partner less and perceiving being liked less. Because affinity-testing is measured by comparing messages perceived to show dislike to messages intended to show dislike, these perceptions are in line with the reality of the interaction. Given the dyadic moderation results, it is clear that after males convey messages of dislike, accurate decoding by females plays a strong role in forming females' subsequent impressions. Although females are not more likely to accurately decode messages than males, decoding plays a stronger role in females' interpretation of overall liking. This is a new and unique finding in that although negative messages are more salient than positive messages in FtF (Kellermann, 1984) and CMC (Walther & D'Addario, 2001) interactions, the heavy reliance on negative messages by females in forming impressions has not be shown in past research. The findings of the present analyses may imply that females exhibit

greater relational sensitivity than males to messages exchanged in online media, especially to messages of disaffiliation.

As an alternative explanation, consider these findings from the perspective of male participants. Males and females both utilize accurately decoded messages of liking when forming judgments about overall affinity. Therefore, the results support the conclusion that males focus on positive messages when forming impressions and females focus on both positive *and* negative messages. Although males are equally capable of accurately decoding messages of disliking, males may use some other information to form their judgments. Possibly, males are also using non-diagnostic indicators, such as messages sent or topics of conversation, to make their judgment about liking.

Overall, the results support two conclusions. First, in comparison to males, females' overall liking of conversational partners is strongly related to what they intend to communicate in text messages. Second, while both males and females use affinity-signaling and affinity-testing of positive messages when making judgments of overall liking, females are more likely than males to use messages that signal and test disliking when making judgments of overall liking.

Limitations and Directions for Future Research

The laboratory context limits the external validity of this study. Participants in a zero-acquaintance situation, given a one-time opportunity to interact for 20 minutes may not accurately represent affinity-related behaviors in natural settings. The laboratory may have also affected the predictive value of text-based features. Because participants had no other choices but to respond to one another while part of this study, response rates, questions, and topics covered may have not been as strongly related to liking as they would be if individuals were in natural settings. The failure of any text-based features to predict liking may have occurred because

participants knew they would be participating for 20 minutes, and communicated merely to follow instructions and fill up time rather than because of liking *per se*. If participants could have stopped communicating or continued to communicate for as long as they wished, questions asked and messages sent may have been predictive of liking.

Additionally, creating opposite-sex dyads allowed for sex-moderated dyadic analyses, future work should explore same-sex dyads and affinity. Will the moderation of effects due to sex appear when males and females interact in same-sex pairs or are these results an artifact of this study's opposite-sex pairing? Perhaps females are particularly sensitive to messages of dislike because they are in a conversation with males, but will not show similar sensitivity when talking with other females. Finally, the sample size may have limited power to detect small effects. This limitation was particularly challenging in that only 53 of 120 participants showed dislike. This reduced the *N* for calculations of disliking accuracy, which even further decreased the ability to identify small effects. Finally, participants may have acted in a socially desirable manner by increasing reports of positive messages sent and decreasing reports of negative messages sent. However, given the significant value of accuracy in predicting liking, we believe that this did not systematically distort the results.

Future work should explore the concept of affinity-testing in relation to accurate textual interpretation. The predictive value of affinity-testing in the present study offers promise for the future investigation of variability in the ability to accurately interpret liking by others who are not co-present. The growing use and importance of IM in initiating and maintaining long-distance relationships (Valkenburg & Peter, 2009) suggests that further study of affinity-testing using the procedures outlined in this study may encourage the development of a line of research regarding text literacy or text sensitivity. Like nonverbal sensitivity, some individuals are more

capable than others of accurately interpreting text-based messages. As a consequence, more text-sensitive individuals should be capable of forming accurate judgments of the attitudes, emotions, and motivations of others by simply interpreting features of the text. Because the composition of text messages is an important part of impression formation in CMC, this concept of textual sensitivity may prove to be quite useful and informative in future work.

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Table 1
Multiple Regression Standardized Beta-weights for Liking Outcomes (N = 120)

	Liking of Partner			Partner Liking		
Variable	β	SE	R^2	β	SE	R^2
Relationship Status (1 = In Relationship)	-0.07	0.17		0	0.16	
Age	-0.11	-0.03		-0.1	0.02	
IM Use Frequency	0.13	0.05		0.13	0.05	
Sexuality (1 = Heterosexual)	-0.04	0.25		-0.12	0.24	
Sex (1 = Female)	-0.08	0.17	0.032	-0.08	0.16	0.045
Messages Sent	-0.3	0.01		0.1	0.01	
Questions Asked	-0.14	0.02		-0.08	0.02	
Topics Covered	0.06	0.04		0.12	0.04	
Mean Time Between Messages (sec.)	-0.26	0.01	0.037	0.09	0.01	0.022
I Showed Liking Frequency	-0.03	0.02		0.02	0.02	
Perceived Liking Frequency	0.16	0.03		0.30*	0.02	
I Showed Dislike Frequency	0.03	0.07		0.01	0.07	
Perceived Dislike Frequency	-0.31**	0.08	.067**	-0.31**	0.07	.154**
Accuracy of Perceived Liking	0.12	0.48	0.01	0.27**	0.45	.07**
Accuracy of Perceived Dislike†	-0.23✦	0.61	0.03	-0.05	0.6	0

✦ $p < .10$, * $p < .05$, ** $p < .01$
† N = 53