SHARING THE POSITIVE OR THE NEGATIVE?
UNDERSTANDING THE CONTEXT, MOTIVATION AND CONSEQUENCE OF EMOTIONAL DISCLOSURE ON FACEBOOK

LIN HAN

School of Humanities and Social Sciences

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Abstract

The recent emergence of Social Networking Sites (SNSs), such as Facebook, provides substantial opportunities for emotional disclosure. A relevant and timely question arises concerning how such a context alters as well as supports emotional disclosure. Three studies were conducted to address this issue. Study 1 compares individuals’ emotional disclosure in the context of Facebook versus diary writing and real life. Results show that emotional disclosure on Facebook is more frequent than in diaries, but less frequent than in real life, supporting the notion that emotional disclosure is determined by the sociality of the context. Using a social network analysis, Study 2 further tests how emotional disclosure is associated with social network properties—network size and density. It further demonstrates that network size is associated with disclosure of positive emotions because of need for impression management, while network density is associated with both disclosure of positive emotions and disclosure of negative emotions through the need for emotional expression. Study 3 extends the concerns to the influence of emotional disclosure on well-being. Results reveal that emotional disclosure is related to fulfillment of both needs. Fulfillment of need for impression management accounts for the positive association between positive emotional disclosure and well-being, whereas fulfillment of neither need mediates the negative association between negative emotional disclosure and well-being. The set of studies demonstrates how the motivational needs play roles in the associations between emotional disclosure, context, and well-being. Altogether, this research offers a compelling account of emotional disclosure in a complicated social context and sheds light on leveraging SNSs for well-being.
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TABLES OF CONTENTS

CHAPTER 1: INTRODUCTION .................................................................................................................. 1
  Emotional Disclosure and Social Networking Sites ................................................................. 4
  Need for Emotion Expression and Need for Impression Management .............................. 7
  Emotional Disclosure and Well-being ..................................................................................... 15
  Overview of Studies .................................................................................................................... 19

CHAPTER 2: STUDY 1—PATTERNS OF EMOTIONAL DISCLOSURE ON FACEBOOK .......................................................... 21
  Study 1a .............................................................................................................................................. 21
  Study 1b .............................................................................................................................................. 29
  General Discussion .......................................................................................................................... 34

CHAPTER 3: STUDY 2—EMOTIONAL DISCLOSURE AND SOCIAL NETWORK PROPERTIES .......................................................... 37
  A Social Network Perspective ......................................................................................................... 37
  Network Structure and Emotional Disclosure ............................................................................ 39
  The Present Study ............................................................................................................................ 43
  Study 2a .............................................................................................................................................. 43
  Study 2b .............................................................................................................................................. 46
  General Discussion .......................................................................................................................... 56

CHAPTER 4: STUDY 3—EMOTIONAL DISCLOSURE AND WELL-BEING .......................................................... 60
  A Motivational Account for Well-being ...................................................................................... 61
  Fulfillment of The Two Needs ...................................................................................................... 63
  The Present Study ............................................................................................................................ 65
  Method .............................................................................................................................................. 65
  Results .............................................................................................................................................. 67
Discussion.............................................................................................................71

CHAPTER 5: GENERAL DISCUSSION..........................................................................76

Disclosure as a Contextual Behavior ......................................................................77

Relate Emotional Disclosure to Well-being .............................................................80

Revisit the Need for Emotional Expression and Need for Impression

Management...........................................................................................................83

Implications ............................................................................................................87

Limitations and Future Directions ..........................................................................88

Conclusion ...............................................................................................................89

REFERENCES ..........................................................................................................91

NOTES....................................................................................................................125

TABLES ..................................................................................................................128

FIGURES .................................................................................................................136

Appendix A: Replaced text emoticons with corresponding emotional words
(Study 1a)................................................................................................................142

Appendix B: Principal components analysis using varimax rotation
(Study 2b) ..............................................................................................................144

Appendix C: Scale of need fulfillment on Facebook (Study 3).........................145
List of Tables

Table 1. (Study 2a) Descriptive statistics and bivariate correlation between variables .......................................................... 128

Table 2. (Study 2a) Regress network properties on emotional words. .......................................................... 129

Table 3. (Study 2b) Descriptive statistics and bivariate correlation between variables. .......................................................... 130

Table 4. (Study 2b) Indirect effects of network properties on positive emotional disclosure through proposed mediators. .......................................................... 131

Table 5. (Study 2b) Indirect effects of network properties on negative emotional disclosure through proposed mediators. .......................................................... 132

Table 6. (Study 3) Descriptive statistics and bivariate correlation between variables .......................................................... 133

Table 7. (Study 3) Indirect effects of disclosing positive emotions on well-being through proposed mediators .......................................................... 134

Table 8. (Study 3) Indirect effects of disclosing negative emotions on well-being through proposed mediators .......................................................... 135
List of Figures

Figure 1. (Study 1a) Frequency of emotional words in Facebook status updates and diaries. ................................................................. 136

Figure 2. (Study 1b) Likelihood of disclosing positive emotions vs. negative emotions of Facebook and in real life. ................................................................. 137

Figure 3. (Study 2b) Coefficients representing effects of network size (Panel A) and network density (Panel B) on mediators and disclosure of positive emotions. .......... 138

Figure 4. (Study 2b) Coefficients representing effects of network size (Panel A) and network density (Panel B) on mediators and disclosure of negative emotions. .......... 139

Figure 5. (Study 3) Coefficients representing effects of disclosing positive emotions on Life satisfaction (Panel A) and loneliness (Panel B) and proposed mediators. .......... 140

Figure 6. (Study 3) Coefficients representing effects of disclosing negative emotions on Life satisfaction (Panel A) and loneliness (Panel B) and proposed mediators. .... 141
CHAPTER 1: INTRODUCTION

Emotional disclosure is prevalent in everyday life (Moreno et al., 2011; Rimé, Finkenauer, Luminet, Zech, & Philippot, 1998; Rimé, Mehdizadeh, Philipport, & Boca, 1991). When one encounters an event that induces emotional reaction, he or she tends to talk with others about the emotional experience (Rimé et al., 1991). Social networking sites (SNSs) open novel avenues for individuals to reveal themselves and interact with others (Köhler, Riedl, Vetter, Leimeister, & Krcmar, 2010). Emotions that formerly might have passed unremarked can now be easily recorded and shared. It has been shown that emotional disclosure is ubiquitous on SNSs (Carr, Schrock, & Dauterman, 2012; Kivran-Swaine & Naaman, 2011; Naaman, Boase, & Lai, 2010). The overall pattern of emotional expressions is consistent with seasonal mood changes (Golder & Macy, 2011), suggesting it is a naturally occurring behavior.

Facebook, one of the most popular SNSs, offers such an opportunity to study emotional disclosure that may be different from that in traditional contexts. Individuals on Facebook engage in various activities: updating status, posting photos, clicking “likes,” giving comments, sharing videos, and as such. Among these activities, revealing emotions is an integral and important element. On one hand, social connections induce emotional disclosure (Rimé, 1998, 2009); on the other hand, emotional disclosure in turn establishes greater social connections than other types of self-disclosure (Laurenceau, Barrett, & Pietromonaco, 1998). It has shown that people frequently disclose their emotional experiences on Facebook by updating statuses, posting photos, and making comments (Moreno et al., 2011). The popularity of Facebook and intensive emotional traces on it indicates that many individuals have integrated Facebook into their communication of emotions. In recent years, there is an emerging interest on emotional disclosure on Facebook (e.g., Kramer & Chang, 2011;
Schwartz et al., 2013). However, these studies studied did not examine the Facebook context particularly.

Importantly, Facebook is a social context that differs from previous communication channels. It is an online environment without physically presence of audience yet have full control on the information to be shown (Walther, 2007); the information on it is public or semi-public, visible to massive people from diverse social circles (Boyd, 2011; Boyd & Ellison, 2007). Concerning the novelty of Facebook context, questions arise pertaining to how the social connections on Facebook influence individuals’ emotional disclosure and how the emotional disclosure on Facebook relates to everyday wellness.

Barker (1968) suggested that most behaviors are not specific to the individual; rather, they are related to the context. The presence of audience can either facilitate or hinder an individuals’ emotional disclosure, depending on the emotional content and the interpersonal relationships between the discloser and audience (Buck, Losow, & Murphy, 1992; Fischer, Manstead, & Zaalberg, 2003; Jakobs, Manstead, & Fischer, 1999a). To account for the relation between social context and emotional disclosure, social motives are suggested to be the underlying processes (Fridlund, 1991a, 1994, 1997). Two key motives are highlighted in related research: the motive to let others know (Fridlund, 1991b; Fridlund et al., 1990; Jakobs et al., 1999a) and the motive to be perceived as good (Fischer, Manstead, Evers, Timmers, & Valk, 2004; Jakobs, Manstead, & Fischer, 2001). In view of this, I conceptualized the two motives as the need for emotional expression and the need for impression management.

Meanwhile, a common notion in media research holds that active engagement in communication on Facebook is associated with greater well-being (Ahn & Shin, 2013; Burke, Marlow, & Lento, 2010; große Deters & Mehl, 2013). Some studies of
self-disclosure on Facebook have illustrated a potential link between emotional disclosure and well-being (Denti et al., 2012; große Deters & Mehl, 2013). Since fulfillment of different needs is essential in fostering well-being (e.g., Church et al., 2013; Diener & Lucas, 2000; Ryan, 1995; Ryan & Deci, 2000; Tay & Diener, 2011), it is plausible that emotional disclosure on Facebook is related to well-being through fulfilling the motivational needs.

In light of above speculations, the purpose of this research is three-fold. First, it aims to examine the distinctive pattern of emotional disclosure in Facebook’s context relative to disclosure through other traditional channels. Second, it aims to investigate the link between the contextual factors on Facebook and emotional disclosure by disentangling the motivational factors underlying the relationships. Finally, it aims to reveal the consequence of emotional disclosure in relation to the fulfillment of corresponding motivational needs. Findings from this research are expected to shed light on the social process of emotional disclosure on Facebook and enrich the knowledge of media use.

In the following, I will introduce the theoretical background of the present research. I will first review related theories and studies on emotional disclosure. In particular, I will introduce Facebook as a vehicle for emotional disclosure by highlighting its contextual characteristics. Then, I will propose the need for emotional expression and the need for impression management as two crucial motives in understanding emotional disclosure on Facebook. Following that, I will introduce related work on the association between emotional disclosure and well-being. Finally, I will present an overview of three studies designed to examine emotional disclosure on Facebook in terms of its contextual contingency, motivational needs, and psychological outcomes.
Emotional Disclosure and Social Networking Sites

Emotional disclosure is regarded as a form of self-disclosure (Hackenbracht & Gasper, 2013), which essentially is “the process of making the self be known to others” (Jourard & Lasakow, 1958, p. 91). Researchers posit that self-disclosure consists of three layers regarding the disclosed content and depth (Altman & Taylor, 1973). The peripheral layer contains the most superficial content, such as biographical information; the intermediate layer is about attitudes and opinions; and the core layer is the deepest one, including information related to internal values, needs, and fears. According to this classification, emotional disclosure should fall in the intermediate to core layers, as it includes not only the emotional event itself but also the feelings about the emotional experiences (Luminet, Bouts, Delie, Manstead, & Rime, 2000; Pennebaker, 1997; Pennebaker, Zech, & Rimé, 2001). Different from descriptive self-disclosure that includes information merely about one’s facts in the first layer (Reis & Shaver, 1988), emotional disclosure carries deeper revelation of self than non-affective dimension of the disclosure (Chelune, 1975).

Facebook can be regarded as a social context where emotional disclosure is likely to occur. For one thing, an individual are allowed to form connections with many others on Facebook. All the contacts that one can reach on Facebook are called “friends,” no matter whether they are known personally or not. Although invisible, they are potential audience (Boyd, 2007). For the other thing, individuals are able to interact with each other on Facebook. Individuals browse the content (including texts, pictures, and videos) posted by others; meanwhile, their own posts are viewed by and draw comments from others.

Nevertheless, Facebook context shows distinctive characteristics, compared to traditional communicative contexts. First, an individual on Facebook often discloses
to a wide range of networked publics (Boyd & Ellison, 2007) without directing to a particular one (Bazarova, Taft, Choi, & Cosley, 2013). In other words, an individual’s activities on Facebook can be observed by a large number of potential audiences.

Second, friends on Facebook are usually from different social circles, ranging from intimate friends to mere acquaintances or even distant strangers (Boyd & Ellison, 2007; Gilbert & Karahalios, 2009). These social connections are rarely present simultaneously in offline environments, where different social circles are separated and individuals can manage their disclosure strategies respectively. However, these social circles appear together on Facebook to form a collapsed context (Baym & Boyd, 2012). In a collapsed context, individuals are more likely to use a strategy called “the lowest common denominator culture” (Hogan, 2010b). It refers to the practice dictating that one considers not only the intended recipients but also those who are not the intended targets, yet are able to view disclosed content. For instance, an individual may post a Facebook status update that is not purposely for a superior. However, if the superior is a Facebook friend of that individual, the user needs to consider the possibility that the message might be read by the superior.

Third, as in a computer-mediated communication (CMC), direct nonverbal cues (e.g., visual expression, auditory tone, and gestures) are lacking on Facebook. According to social information processing theory (Walther, 1992), individuals would like to disclose more as a compensation of the deficit in communicative cues (Hu, Wood, Smith, & Westbrook, 2004; Joinson, 2008; Leung, 2002; Tidwell & Walther, 2002; Valkenburg & Peter, 2007). This explains why more intimate communication are found in CMC than in face-to-face settings (Gibbs, 2006; Peter, Valkenburg, & Schouten, 2006). Meanwhile, the invisible and asynchronous communication lacks immediate and direct responses, which may also cause uncertainty. As individuals are
prone to reducing uncertainty and increasing predictability in a situation (Berger & Calabrese, 1975), they might tend to use more direct and intimate questions and details in order to obtain more information and reduce the uncertainty in CMC. Indeed, intensive use of punctuation, words, emoticons, and explicit statements of emotion were found in online text-based communication, and these were seen as an effective way to communicate emotions (Hancock, Landrigan, & Silver, 2007).

Fourth, the communication on Facebook is hyperpersonal, because disclosers could have full control over the information that is to be communicated and can easily manage their online self-presentation (Walther, 1996, 2007). In face-to-face communication, disclosers have to respond to the social situation rapidly; hence, instinctive responses like facial expressions, body gestures, and vocal tones may not be consciously controlled. In contrast, individuals on Facebook can freely decide what and how to reveal information about themselves before they really send the information off. Generally, the greater control one has in the virtual context allows information on Facebook to be more sophisticatedly selected and refined. For instance, college students often display pictures showing socialization with their friends (Zhao, Grasmuck, & Martin, 2008) and choose their most attractive photos as profile pictures (Siibak, 2009; Strano, 2008; Walther, Heide, Kim, Westerman, & Tong, 2008). In such a manner, the hyperpersonal interaction on Facebook enables individuals to easily establish and maintain a socially desirable self (Newman, Lauterbach, Munson, Resnick, & Morris, 2011; Walther et al., 2008).

In sum, Facebook constitutes an environment that is rarely seen in other context. Past research has widely acknowledged that the context can affect what and how the emotion is disclosed (Gross & John, 1995). In an earlier experiment (Fridlund, 1991b), participants were invited to the lab alone or with a friend. They
were introduced to watch a humorous film while their facial expressions were recorded, together with their self-reported happiness. Results showed that individuals’ smiling was stronger in the condition where they were together with the friend than in the solitary condition. Moreover, the smiling strength did not change with their self-reported happiness. The facilitative effect of presence of others has been supported by a series of studies as well (Jakobs et al., 1999a, 1999b). Furthermore, the presence of close friends has stronger facilitative effect than that of strangers’ (Jakobs et al., 1999a; Wagner & Smith, 1991). Similar findings were also shown in verbal sharing of one’s emotions with others. The presence of audience could either facilitate or inhibit an individuals’ emotional disclosure, depending on the emotional content and the interpersonal relationships between the discloser and audience (Buck, Losow, & Murphy, 1992).

Given the distinctive context on Facebook, it is conceivable that Facebook may bear on a particular pattern of emotional disclosure. Therefore, an empirical study on emotional disclosure regarding the way it fits Facebook context is called for. This leads to my first research question:

Research Question 1: How is the pattern of emotional disclosure in Facebook’s context different from the pattern that appears on other channels?

Chapter 2 will provide direct evidence on this issue by comparing emotional disclosure on Facebook with disclosure in semi-private writing and daily offline communication.

Need for Emotion Expression and Need for Impression Management

On an individual level, the context on Facebook is defined by one’s social contacts that he or she connects with. The specific context may be endorsed with facilitators and constraints that determine what individuals will disclose and how to
disclose (Saxena & Mehrotra, 2010). It is intriguing to delineate individuals’ social context and examine how a particular context enhances or inhibits emotional disclosure. In regard to “enhance or inhibit,” the underlying motivation could be a key process through which the environment influences the disclosure behaviors.

Among the studies on emotional disclosure, social motives are postulated to account for the effect of a social context (Fridlund, 1991a, 1991b, 1994). Specifically, social motives are referred to as motivations to communicate or to predict ones’ probable behavior through emotional expression (Fridlund, 1991a, 1997). However, the components of social motives are not clearly defined and explicitly measured (Manstead, Fischer, & Jakobs, 1999); it covers almost every motive that is related to communicative inclinations, such as the urge to talk, the motive to be helped, and to seek comfort (Fischer et al., 2003; Parkinson, 2005). The theory of social sharing of emotion (Rimé, 2009; Rimé et al., 1998; Rimé et al., 1991) also conceives that desire for social interaction drives emotional disclosure. However, it did not explicitly measure such a motivation either.

Meanwhile, there are instances that individuals suppress their emotions. For example, in Jakobs et al.’s (2001) study, sadness was induced by watching film clips, and individuals expressed less sadness in social conditions than in a solitary context. The concept of “display rules,” therefore, is highlighted to explain the general tendency for inhibiting negative emotions when others are present. Display rules are first proposed by Ekman and Friesen (1975) as the appropriateness in a society that individuals need to manage emotions to align them in accordance with. Individuals are assumed to learn to display or not to display particular emotions in a given social setting. According to the view of social motives, display rules are supposed to activate certain social motives that one expects to establish or maintain certain impression in a
given circumstance. Jacobs and colleagues (1999) attempted to interpret such a social motive as the need to adapt one’s emotional expression to adhere to the norms in the given context.

To assume an appropriate role in a particular context and display emotions accordingly is an important facet of social motives. In a situation where a particular emotion is considered favorable, social motives lead to greater amount of emotion expression; in contrast, in a situation where the same emotion is not considered appropriate, social motives lead to suppression. For instance, individuals may express negative emotions such as sadness and anger, when friends are around and the friends are expected to provide social support (Zeman & Garber, 1996). Supposing when a student speaks in front of a faculty member, he or she would be likely to be displaying his or her competence. Whereas later, when the student meets up with friends, he or she would be more likely to talk about the anxiety during the former conversation (Omarzu, 2000). A study showed that the display rule is an antecedent of social motives (Zaalberg, Manstead, & Fischer, 2004). In other words, social motives entail enhancing or suppressing one’s expression, depending on the display rules endorsed in the specific setting. In either case, one of the motives that could determine emotional disclosure is to maintain favorable impression in front of others. Fischer et al. (2004) also identified the motive of impression management as one of the crucial social motives along with other motives of sharing.

As such, the motive to express and the motive to play good both occur at an equivalent dimension. Congruence takes place when the disclosers’ expressive need is in agreement with the need to maintain desirable impression; whereas conflicts probably arise when the two needs lead to different tendencies of disclosure (Parkinson, 2005). Take an example to illustrate the coexistence of the two motives.
Buck et al. (1992) contended that the presence of a distant friend, compared to a close friend, would lessen an individual’s emotional expression. One possible reason is the presence of close friend could elicit the desire to share with the friend, while distant friend could not elicit such a desire. An alternative reason can be distant friends may be more sensitive to inappropriate behaviors than close friends, so their presence may evoke the discloser’s concern about impression. To avoid the risk of being inappropriate, the discloser may opt to disclose less.

From above review, it is evident that there are two key factors of social motives. In fact, Fridlund (1994) mentioned that revealing sadness may be driven by the need for help in some circumstances but suppressed by other motives (e.g., need for impression management) in other situations. In Jakobs et al.’s (2001) studies, social motives are further specified as the concern about others’ evaluation and the desire to communicate. The two different pathways are more explicitly addressed by Parkinson (2005): The expression of positive emotions is mediated by the motive to share on one hand, and on the other hand, inhibition of negative emotions is mediated by the motive to conform to the inhibitory display rules.

It is also suggested that individuals on Facebook engage in both self-expressed and self-censored disclosure. Individuals attempt to balance between what they want to express and what is desirable for the public; sometimes one need might outweigh the other. An interview with Facebook users found that individuals posted status updates after experiencing frustration and felt relief from the posting behaviors (Zhao et al., 2013). However, later on they worried that the messages might be misunderstood or criticized, so they may delete the messages to maintain self-image. In another study, individuals in a health community on Facebook expressed a strong need to share their health-related information in hopes of getting emotional support.
and advice from others. Nevertheless, they hesitated to do so because they wanted to avoid giving a negative impression to others (Newman et al., 2011). It demonstrates that two motivational needs may jointly influence individuals’ expression on Facebook.

Therefore, I conceptualize the two factors of social motives as the need for emotional expression and the need for impression management. Specifically, the need for emotional expression refers to the tendency of sharing and letting others know, which is similar to the motive that is mostly highlighted in Fridlund’s (1991a, 1991b, 1994) theory and Rimé et al.’s (1991) social sharing of emotion. The need for impression management refers to the motivation to convey a favorable self-image in the presence of others (Leary, Allen, & Terry, 2011; Leary & Kowalski, 1990; Martin, Leary, & Rejeski, 2000). In the following, I will elaborate on the processes of the two needs.

First, both needs have an innate readiness. It is suggested that self-disclosure could be driven by a basic and unconscious impulse for validation, and people do so by maintaining conversations with others (Giles, Coupland, & Coupland, 1991). A recent study (Tamir & Mitchell, 2012) found that individuals were more willing to forgo money for self-disclosure than for talking about others. Neuroimaging results further showed that participants’ brain regions that are related to rewards exhibit stronger activation in the self-disclosure condition than in the gaining money condition. It is concluded that human beings have an inherent tendency to express themselves and this behavior is self-rewarding. At the same time, research has long identified that humans by nature are prone to engaging in impression management to maintain a positive image for others (Goffman, 1959; Leary & Kowalski, 1990; Schlenker & Weigold, 1992). The emphasis on impression management is considered
a critical need for social survival (Hogan, Jones, & Cheek, 1985), and it takes place in daily life through dressing, expression, gestures, and as such (Goffman, 1959). Even under stress, individuals attempt to avoid additional rejection and disapproval by presenting themselves in a positive manner; they tend to engage in more pleasant expression in order to entertain the audience (Renner & Laux, 2004).

The second and the most important feature of the two needs is their contingency on the context. The need for emotional expression is enhanced in situations where people can acquire affirmation and comfort (Zeman & Garber, 1996). It is found that inducing an individual’s anxiety in a laboratory can elicit the desire to communicate with others, suggesting that social interaction is an important motive of emotional disclosure (Moscovici, 1984). A recent study also demonstrated that the degree to which an individual is free to form or terminate relationships with others (i.e., relational mobility) significantly influences the tendency of the individual to engage in self-disclosure with close friends. Specifically, individuals who perceive a higher degree of relational mobility in their environment are motivated to show social commitment and to reinforce relationships through self-disclosure, compared to individuals perceiving a lower relational mobility (Schug, Yuki, & Maddux, 2010). These findings suggest that the need for emotional expression is determined by interpersonal relations in the context. A high level of need for emotional expression is supposed to promote sharing of genuine emotions

Meanwhile, how strong the need for impression management is also contingent on the social settings. For example, in service-oriented industry, positivity is highly encouraged while negative emotions are strictly prohibited (Parkinson, 1991). Some other settings, such as family or friendship, may have a greater tolerance of negativity, leading to a low need for impression management. Also, the impression motivation is
greatly affected by the publicity, and how likely one’s behavior can be observed and how many others might observe (Leary & Kowalski, 1990). The more public the environment is, the more motivated the individuals will be to manage impression. In contrast, the need for impression management is low in a solitary setting (Arkin, Appelman, & Burger, 1980). As the presence of audience plays a crucial role in triggering one’s impression management, greater positive impression is observed in face-to-face interview than in private (Schlenker, Dlugolecki, & Doherty, 1994). In short, the audience in a context poses a need for impression management that may facilitate sharing of favorable emotions while inhibiting expression of unfavorable ones.

To summarize, both the need for emotional expression and the need for impression management come from deep impulse within, but they are manifest in facilitative or suppressive emotional disclosure depending on the socially constructed context. The two needs are divergent at the instrumental purpose. The need for emotional expression points to social attachment that could console emotions. Differently, the need for impression management focuses on social acceptance that is to construct self-competence and avoid social sanctions. The need for emotional expression is always a facilitative drive for emotional disclosure, whereas the need for impression management would have different impact depending on the favorability of the emotion in the given context.

As aforementioned, the two motivational needs are manifest on Facebook, too. Expression on Facebook is ubiquitous and one can share experiences with others, allowing the need for emotional expression to be met. Indeed, expressing oneself has been addressed as one of the important motivations for using online services (Jung, Youn, & McClung, 2007; Papacharissi & Rubin, 2000). In Andre’s (2011) study, an
application was developed for users to report emotional status on an SNS by simply clicking certain icons. User evaluation showed that people considered this application useful for self-reflection and subtle communication, suggesting that people have a propensity to disclose their emotional state during online networking activities. Studies also suggested that those who actively express their emotional experience could improve their social connectedness (Köhler et al., 2010; Sheldon, Abad, & Hinsch, 2011), which reinforces one’s motivation to express. In contrast, there are also individuals who lurk on Facebook without disclosing themselves. Research indicates that lurking is related to low relational intimacy between friends in the networks (Rau, Gao, & Ding, 2008). Henceforth, it is conceivable that the social relations one has could influence the need for express oneself on Facebook, with strong social connections enhancing the need while weak ones decreasing it.

Regarding the need for impression management, it is also a major motivation to use Facebook (Nadkarni & Hofmann, 2012). Publicity is high on Facebook, as each post is visible to multiple friends from various social circles. In order to maintain a positive self-image in public, individuals present themselves in a selective and desirable manner on Facebook (Barash, Ducheneaut, Isaacs, & Bellotti, 2010; Bazarova et al., 2013; Papacharissi, 2011). Further, the complex publicity on Facebook makes impression management more complicated (Leary et al., 2011). However, while the content is not catered for every single audience, it is expected to be appropriate to all the potential viewers while remaining appealing to important ones, according to “the lowest common denominator culture” (Hogan, 2010b). As a result, the coexistence of different audiences decontextualizes the communication and requires individuals to therefore display one single and desirable image to all friends. It is thus speculated that the strength of the impression motivation depends on the
possible boundary of one’s network. If the network includes audience with lower requirement of impression, the motivation would not be as strong as in a network where audience has higher requirement of impression.

All in all, the two needs are social and communicative, varying with the particular context. As individuals on Facebook differ in their network compositions, individuals’ motivations would be strengthened or weakened differently, leading to different disclosure tendency. Thus, the context effect can be understood on the individual level by taking into motivational needs into account. Therefore, my second research question is:

**Research Question 2:** How do the need for emotional expression and the need for impression management play a role in the association between personal social network context and emotional disclosure on Facebook?

Chapter 3 will elaborate on the association between personal context on Facebook and emotional disclosure from a perspective of social network analysis. A study will examine how the two proposed needs mediate this association.

**Emotional Disclosure and Well-being**

In addition to the concern about the contextual and motivational account for emotional disclosure on Facebook, there is a growing attention on well-being in Facebook research. Ellison, Steinfield, and Lampe (2007) conducted a survey among college students and found the intensity of Facebook use is correlated with increasing social capital. In another study, positive self-disclosure is found to correlate with greater life satisfaction, because the disclosure increases perceived social support (Kim & Lee, 2011). In a field experiment, participants who were encouraged to post more status updates than usual showed decreasing loneliness (große Deters & Mehl, 2013). It appears that using Facebook benefits well-being. The findings are inconclusive.
however, due to the diverse facets of Facebook use. Some studies focused on users’ interaction pattern (Burke et al., 2010), while some concerned only the length of time spent on Facebook (Kalpidou, Costin, & Morris, 2011). Some studies looked into overall usage (Ellison et al., 2007; Kalpidou et al., 2011; Valenzuela et al., 2009), while some examined specific behaviors, such as commenting or browsing (Chen & Lee, 2013; große Deters & Mehl, 2013; Qiu, Lin, & Leung, 2010). It is unclear which aspect of Facebook activities is really related to well-being and how the benefit has been established.

A common notion concerning Facebook usage and well-being is that only active engagement in communication on Facebook is associated with greater well-being (Ahn & Shin, 2013; Burke et al., 2010; große Deters & Mehl, 2013). For example, direct communication with friends on Facebook was found to correlate with greater life satisfaction and less loneliness (Burke et al., 2010), while browsing Facebook showed no such effect. In addition, the amount of self-disclosure in SNSs was positively related to life satisfaction (Lee, Lee, & Kwon, 2011). Given that emotional disclosure is an active behavior, it is plausible that emotional disclosure is associated with greater well-being.

Few studies have been done on the relationship between emotional disclosure on Facebook and well-being, but insight can be gained from other lines of research. Studies on expressive writing have suggested that writing about emotions is predictive of positive health outcomes (Greenberg & Stone, 1992; Pennebaker & Seagal, 1999). On the contrary, suppressing emotions may be detrimental to psychological health (King & Pennebaker, 1998). Individuals who tend to withhold their emotion are more likely to experience low well-being (DeNeve & Cooper, 1998).

Particularly, sharing positive events with others is considered capitalization
(Langston, 1994), because the process produces greater positive affect beyond the pleasure induced by the events. Individuals who share positive emotions with others can experience prolonged hedonic feelings (Mauss et al., 2011; Tugade & Fredrickson, 2007). Psychophysical experiments illustrate that a higher level of somatic activity and amusement follows the action of disclosing positive emotions, while a lower level of psychophysiological reactions is associated with suppressing the positive emotions (Gross & Levenson, 1997). In the long run, capitalization on positive emotions is positively associated with everyday positive affect and life satisfaction (Gable & Reis, 2010; Gable et al., 2004). With regards to interpersonal relationship, it is found that disclosing positive emotions increases a person’s likableness (Collins & Miller, 1994) and strengthens the person’s social bond (Peters & Kashima, 2007). Other studies also demonstrate that sharing positive emotions enhances the satisfaction of interpersonal relationship and social connectedness (Gable & Reis, 2010; Gable et al., 2004; Mauss et al., 2011).

Concerning the consequence of disclosing negative emotions, however, the results are complicated. When individuals experience negative events, disclosing the distress is perceived as a way to gain relief (Rimé, 2009). Writing about negative emotions is used as an effective way to cope with negative affect (Pennebaker, 1997), such as fear (Langens, 2005), traumatic stress (Greenberg & Stone, 1992), and depression (Radcliffe, Lumley, Kendall, Stevenson, & Beltran, 2010). Pennebaker and Beall (1986) found profound effects on participants who wrote about both events and feelings, with physiological arousal increasing in a short time and health problems decreasing in four months. Describing traumatic experience by email was also found to associate with improvement in physical and psychological health in the following weeks (Sheese, Brown, & Graziano, 2004). Refusing talking about negative emotional
events is associated with recurrent unwanted thoughts and several psychophysical symptoms including anxiety, depression and insomnia (Pennebaker, 1997). The reason for the therapeutic effect is that expressing negative emotions reduces the stress of hiding negative feelings and allows reappraisal on the negative experience (Pennebaker, 1997). Nevertheless, the beneficial effect is mainly observed in personally writing practice which focuses on distant past (Rimé, Paez, Kanyangara, & Yzerbyt, 2011). In a series of experiments (Rimé et al., 1998; Zech & Rimé, 2005), participants were asked to talk about their recent emotions to an experimenter, results failed to support the association between disclosing negative emotions and emotional recovery. Rimé (2009) attributed the effect of disclosing negative emotions to cognitive dissonance. If the disclosers stick to initial appraisal of the emotional situation and fail to resolve the cognitive dissonance, emotional recovery would not be obtained. In line with this argument, disclosing negative emotions in certain circumstances is detrimental because the disclosure behavior replays the memory of negative episodes and leads to rumination over the unpleasant experience (Rimé, Philippot, Boca, & Mesquita, 1992).

In terms of interpersonal consequence, participants who expressed their anxiety were more likely to receive help and perceived as more likable than those who did not express their anxiety (Graham et al., 2008). Interpersonal intimacy and trust is found to increase with disclosing negative emotion when it occurs necessarily but not continuously (Collins & Miller, 1994; Gable, Reis, Impett, & Asher, 2004; Graham, Huang, Clark, & Helgeson, 2008; Mauss et al., 2011). Drawing on these findings, disclosing negative emotions seems beneficial to individuals and interpersonal relationships. However, such a beneficial effect mostly emerges in close relationships, because intimate friends can provide empathy, consolidation, and support (Rimé et al.,
As for general audience, negative emotions may not be so desirable, and audience may intrinsically defend against the uncomfortable feelings that are evoked by the unpleasant disclosure (Gross, Richards, & John, 2006). Moreover, disclosing own negativity may expose ones’ weak points to others, resulting in being disliked by the audience (Hatfield, 1984).

Taken together, emotional disclosure has its indisputable benefit on well-being, but there are also instances when emotional disclosure does not pay. For one thing, some contents are perceived as socially inappropriate (Chaikin & Derlega, 1974). The contents may look awkward, leaving the audience embarrassed and incapable of responding (Collins & Miller, 1994). For the other thing, self-disclosure in general is at the risk of being misunderstood and criticized (Sermat & Smyth, 1973), which may hamper interpersonal relationships. It is found that disclosing deep aspects of self may cause loneliness and instability of personal relationship, due to the anxiety about the responses from recipients (Matsushima & Shiomi, 2001). Given Facebook is a unique context, how emotional disclosure afforded by Facebook is related to well-being remains an open question. This drives me to ask the third research question:

*Research Question 3*: What is the relationship between emotional disclosure on Facebook and well-being?

Chapter 4 will look into this issue. In particular, the association between emotional disclosure on Facebook and well-being will be discussed in light of the fulfillment of motivational needs.

**Overview of Studies**

Given that Facebook has a unique communication context, this research aims to understand the pattern, motivation, and consequence of emotional disclosure in this context. Study 1 demonstrates that emotional disclosure on Facebook is different from
those in other communication media. Study 2 further examines how the Facebook context influences emotional disclosure, by investigating the relationships between two variables that measure individuals’ social context on Facebook (i.e., social network size and density) and emotional disclosure pattern. Study 3 then examines how emotional disclosure on Facebook is related to subjective well-being.

Specifically, Study 1 is designed to investigate the pattern of emotional disclosure on Facebook, in comparison with semi-private diary writing and face-to-face communication. Drawing on the effect of social context on emotional disclosure, Study 2 focuses on Facebook context itself and look into how emotional disclosure is particularly related to individuals’ social network structure on Facebook. Two motivational pathways are proposed to explain the relationship between structural properties and emotional disclosure. One pathway emphasizes the need for emotional expression, and the other one concerns the need for impression management.

The primary assumption throughout Study 1 and Study 2 is that people can actively utilize SNSs in the service of both need for emotional expression and need for impression management. Study 3 extended this contention by examining whether the motivational needs are really fulfilled on Facebook and how the fulfillment implies on individuals’ well-being.

Overall, this thesis aims to fill up several gaps in previous research on emotional disclosure. It can demonstrate how Facebook context shapes emotional disclosure as compared to other traditional contexts. The results will shed light on the social context effect on emotional disclosure by identifying the underlying motives—the need for emotional expression and the need for impression management. Additionally, the findings will deepen the understanding of emotional disclosure in relation to individuals’ well-being.
CHAPTER 2: STUDY 1

PATTERNS OF EMOTIONAL DISCLOSURE ON FACEBOOK

As reviewed in Chapter 1, Facebook provides a context that is rarely encountered in other settings; it is conceivable that Facebook context bears on particular patterns of emotional disclosure. Thus, a portrait of emotional disclosure on Facebook and an explanation fitting the Facebook’s context is necessary. Two sub-studies are conducted to directly and quantitatively examine emotional disclosure on Facebook. In Study 1a, emotional disclosure is compared with semi-private writing so as to capture the influence of publicness of Facebook context. In Study 1b, disclosure on Facebook is compared with everyday face-to-face communication to address the collapsed context on Facebook. Together, the two sub-studies are expected to demonstrate Facebook as a distinctive context for emotional disclosure.

Study 1a

One of the prominent features of Facebook is status updates, which enables individuals to disclose their feelings and experiences through short texts (Wang, Burke, & Kraut, 2013). It is reported that more than 300,000 status updates are published every minute (Pring, 2012). Among these status updates, 80% are simply about users’ own immediate experiences (Naaman et al., 2010), reflecting people’s psychological state (Kramer & Chung, 2011). A substantial number of studies have suggested that word use indicates psychological processes, such as emotional states, biological states, personality, thinking styles, and social relationships (Chung & Pennebaker, 2012, in press; Pennebaker, Mehl, & Niederhoffer, 2003; Tausczik & Pennebaker, 2010). Thus, in this study, emotional disclosure on Facebook is represented by word use in the status updates.
To understand the effect of Facebook context on emotional disclosure, I choose to compare it with a less sociable context. This is an important comparison to make, because some of the purported social functions of emotional disclosure (e.g., reinforcing self-affirmation and interpersonal intimacy) imply the necessity for an audience that is familiar and responsive, whereas other functions (e.g., reliving positive experiences and relief from suppressing negative feelings) do not. Thus, one could argue that emotional disclosure is purely hedonic and nonsocial—in which case, emotional disclosures on Facebook would be no different from disclosures to strangers or even those made privately as in a journal.

For this reason, I provide such a comparison in the present paper by using data from a previous study (Tov, Ng, Lin, & Qiu, 2013) in which participants reported their daily experiences in the form of short entries akin to Facebook status updates. This allows emotional disclosure to be examined in a less sociable context in which participants shared their experiences with an unfamiliar audience (i.e., a small team of researchers), with no expectation of a response or reaction. If the theory about social context effect on emotional expression is applicable to emotional disclosure on Facebook, one would expect more emotional disclosure (both positive and negative) on Facebook than in the diary writing samples. However, if the motivation to disclose emotions is purely to express emotional state, one would expect no difference between the two datasets. Therefore, I hypothesized that Facebook status updates would show a greater tendency to disclose emotions than diaries do.

**Linguistic Inquiry and Work Count (LIWC)**

Computerized text analysis can handle large volumes of open-ended responses at greatly enhanced speed, without sacrificing consistency in coding. One of the text analysis program, Linguistic Inquiry and Word Count (LIWC; Pennebaker, Booth, &
Francis, 2007), was initially developed to understand contents in people’s expressive writing and has been intensively validated (Pennebaker, Chung, Ireland, Gonzales, & Booth, 2007). Nowadays, it is widely used to capture a wide variety of psychological constructs (Tausczik & Pennebaker, 2010). The core function of LIWC is based on its internal default dictionary, which defines approximately 70 word categories of a total of about 4500 words and word stems. The word categories include four major language dimensions: linguistic components (e.g., pronouns, articles, adverbs), psychological constructs (e.g., affect, social, cognitive processes), personal concerns (e.g., work, family, leisure) and paralinguistic features (e.g., assents, fillers, non-fluencies). The dictionary can be customized, such as adding words into certain categories or defining new categories. Given a writing sample, LIWC searches each word in the text and counts the frequencies of words that are defined in the dictionary, and word frequency in each category is taken as a percentage of the total word count in a given text sample. Usually, texts from an individual are compiled and treated as one writing sample; multiple individuals’ texts were analyzed as separate samples. In this way, percentage of each category could be generated for each individual. According to Pennebaker et al.’s (2007) psychometric evaluations, the default dictionary LIWC2007 has desirable internal reliability (correlations between each word’s occurrence and the sum of other words in the same category) and external validity (the correlation between judges’ evaluation and results from LIWC analysis).

With regards to emotional disclosure in particular, LIWC contains two word categories that predominantly signify different expressions of emotions: positive emotions (e.g., love, nice, sweet) and negative emotions (e.g., hurt, ugly, nasty). The two categories have been used to detect emotion words that people use when writing about positive and negative events in daily life (e.g., Kahn, Tobin, Massey, &
Anderson, 2007; Pennebaker & Chung, 2011; Slatcher & Pennebaker, 2006). These two categories of emotion words have also been applied to datasets from social media to indicate temporal pattern of individual’s happiness on Facebook and Twitter (Dodds, Harris, Kloumann, Bliss, & Danforth, 2011), to demonstrate emotional fluctuations over time on Twitter (Golder & Macy, 2011), to generate index of national happiness based on Facebook status updates (Kramer, 2010), and to understand the relationship between religion and happiness (Ritter, Preston, & Hernandez, 2014). In general, the two LIWC categories have been shown to be reliable indicators of emotional disclosure in textual samples.

**Method**

**Participants.** Participants included 441 undergraduate students. The diary sample consisted of 211 students (88 males; mean age = 21.60, \(SD = 1.68\)). The Facebook sample consisted of 230 students (68 males; mean age = 20.96, \(SD = 1.64\)) who consented to share their Facebook status updates.

**Diary entries.** Participants were asked to report two events (one positive and one negative) that occurred during the day via a website each night for 21 days. This requirement was implemented to ensure that participants would talk about their emotional experiences as those on Facebook. Eventually, each participant had an average of 348.79 words in total (i.e., 12.92 words per day). While participants understood that their confidentiality was assured, they knew that they were contributing to a research study. For this reason, their diary entries may best be described as semi-private. Nevertheless, as is the case with truly private personal diaries, participants were free to discuss a range of daily experiences and thoughts without concern for how others—particularly those in their social network—might react. Thus, a comparison between semi-private diary entries and Facebook status
updates can demonstrate the effect of context on communication. It can offer insight on the patterns of emotional experiences that individuals choose to reveal to those within their social networks.

**Status updates.** Participants’ status updates were retrieved through Facebook application programming interface (API). To ensure that the Facebook sample had a word count comparable to the diary sample, I randomly selected 27 status updates from each Facebook user’s status updates.¹ Eventually, the Facebook sample had an average of 344.20 words in total with 11.47 words per status update on average.²

**Text analysis.** I used LIWC to analyze Facebook status updates and diaries. Since the major concern of current study is emotional disclosure, I focused only on the two word categories: positive emotions and negative emotions. Common emoticons (see Appendix A) were replaced by corresponding emotional words beforehand.

In addition, to ensure the consistency of language use in the status updates sample, I applied the LIWC analysis both to the selected sample (27 status updates from each Facebook user) and to the complete set, and correlated the corresponding word frequencies in each category. It showed that the selected sample shared high consistency with the entire set, $r(230) = .84$ and .82 for positive emotions and negative emotions respectively, in both instances $p < .05$. This suggests that the pattern of emotional words in status updates was stable with minimal variation.

**Results**

Positive emotion words and negative emotional words were positively correlated ($r = .26$, $p < .001$), suggesting individuals who disclosed more positive emotions were also more likely to disclose negative emotions. A repeated-measured analysis was carried out with emotion valence (positive vs. negative) as a within-subject factor and the disclosure channel (Facebook vs. diary) as a between-subject
factor. As Figure 1 illustrates, emotion valence had a significant main effect on word frequency, $F(1, 439) = 342.28, p < .001, \eta_p^2 = .44$, with participants disclosing more positive emotions ($M = 5.82\%, SD = 2.90\%$) than negative emotions in general ($M = 3.13\%, SD = 1.96\%$). The main effect of the disclosure channel showed that the emotional disclosure significantly differed between Facebook status updates ($M = 5.34\%, SD = 1.73\%$) and diary ($M = 3.53\%, SD = 1.73\%$), $F(1, 439) = 122.14, p < .001, \eta_p^2 = .22$. The interaction effect between emotion valence and disclosure channel was not statistically significant, $F(1, 439) = 1.58, p = .21, \eta_p^2 = .004$.

Demographic differences may confound the results, as prior studies on daily expression suggests that women express emotions more often than men do (LaFrance & Banaji, 1992). To rule out this possibility, gender was added into the analysis as a between-group factor. The results did not change. The effect of emotion valence remained significant, $F(1, 437) = 289.78, p < .001, \eta_p^2 = .40$. Likewise, the difference between two channels remained significant as well, $F(1, 437) = 96.98, p < .001, \eta_p^2 = .18$. The interaction between emotional valence and channel was not significant, $F(1, 437) = .20, p = .65, \eta_p^2 = .001$. Therefore, overall emotional disclosure was greater on Facebook than in the diary entries. This effect did not vary by the valence of emotion and were independent of gender.

An inherent limitation of computerized text analysis is its insensitivity to context. For example, a status stating “I am in a good mood” and another status saying “I am not in a good mood” would both be regarded as containing positive emotions. To eliminate this confusion, I removed all the instances of words in the positive and negative emotions categories occurring with “no” or “not.” Analyses of these filtered data did not change the results from original coding. Specifically, emotion valence still had a significant main effect on word frequency, $F(1, 438) =$
351.73, \( p < .001, \eta_p^2 = .45 \), with participants disclosing more positive emotions \((M = 5.68\%, \ SD = 2.95\%)\) than negative emotions in general \((M = 2.95\%, \ SD = 1.89\%)\). The main effect of the disclosure channel remained with Facebook status updates containing more \((M = 5.12\%, \ SD = 1.77\%)\) than diary \((M = 3.44\%, \ SD = 1.76\%)\), \(F(1, 438) = 99.19, \ p < .001, \eta_p^2 = .19 \). In fact, past research also suggested that removing instances of negative use of emotional words do not alter the results significantly (Golder & Macy, 2011; Ritter et al., 2014).

**Discussion**

The current study reveals that emotional words, both positive and negative, appear more often in Facebook status updates than in semi-private diaries. It supports the hypothesis that there is generally more emotional disclosure on Facebook than in diaries. It demonstrates that the social context of Facebook promotes explicit articulation of emotional experience.

Importantly, it contributes to existing research by uncovering how emotional disclosure is manifested in text format and in an SNS setting. According to Baron’s (1998) model of language use, Facebook status updates and diaries are similar, because both are text-based, durable, and editable. They also share a common goal that is to express and reflect on one’s recent experiences. However, the two writing forms have different social contexts. Status updates are publicized to a large and mixed audience, whereas diaries are primarily restricted to the author oneself and the researchers in the study who are outside participants’ social network. Therefore, the comparison between the two writing samples sheds light on how the Facebook context influences users’ emotional disclosure.

Note that these differences were found even though diary participants were explicitly instructed to report positive and negative experiences—which could have
encouraged them to express more emotions than usual. That they still expressed less emotion than the Facebook sample supports the notion that emotional disclosure is socially motivated and not purely hedonic. This provides strong evidence that Facebook users have a greater tendency to disclose emotional experiences than diary writers do. Because individuals on Facebook face a potential audience, the messages they posted are supposed to serve for communication with audience. By articulating emotions on Facebook, individuals anticipate to receive supportive responses from their social network (Ellison et al., 2007). The anticipated feedback from audience may reward the behavior of disclosing emotional experiences in status updates. The necessity for communication and the interpersonal rewards are lacking in diary writing, which involves no third party (besides the researcher). As a result, emotional disclosure appears in a less intensive extent. The results clearly support the theories about social context effect on emotional expression, which states that individuals in a social context are more likely to express their emotion (Fridlund 1991a, 1991b, 1994). The result also aligns with uncertainty reduction theory (Berger & Calabrese, 1975) and social information theory (Walther, 1992), which believe individuals in a communicative situation tend to provide more information for reducing uncertainty and enriching information.

Since the diary dataset was initially collected for other purposes, it leaves some limitations in this study. The diary used a forced instruction method to ensure that participants disclose emotional experience, which is a common technique in studies on emotional expression (Pennebaker, 1997; Slatcher & Pennebaker, 2006). For example, Lavallee and Campbell’s (1995) participants described a negative event twice a day for two weeks. These written descriptions were then coded for the degree of self-focus and showed that negative events were more likely to induce self-focus if
they were related to important goals. Although the method is often used, it makes the writing process not as natural as in the Facebook condition. Disclosure on Facebook is often spontaneous and voluntary, whereas the disclosure in a diary study is retrospective and forced. It is possible that individuals in the diary study were less motivated than those on Facebook, because they were forced; or they wrote meaningless things as they had nothing special to write about yet they were required to do so. As such, the results may be attributed to these artifacts caused by the task itself other than the social process in the context.

Meanwhile, the study might be challenged for its between-subject design. In fact, a similar approach has been employed in previous research to compare communication styles between specific contexts. For example, text messages on mobile phones were compared with instant messages on computers from two samples of participants, demonstrating that text messages were longer and contained more sentences than instant messages (Ling & Baron, 2007). Two large bodies of spoken and written materials in computer conferences were compared to identify differences between spoken and written utterances (Yates, 1996). While between-subject design is preferred as to avoid carry-over effect, there is nonetheless a caveat to these findings. It may leave some of the variations unexplainable because of individual differences. A within-subject design can directly show how an individual shifts from one situation to another, and can further understand how the same individual adapts his or her communication style to different social platforms.

Because of above limitations, I conducted the following study, using a more straightforward and controlled design.

**Study 1b**

Strictly speaking, the semi-private diary writing is not a communication
medium. To better understand how Facebook is different from other social settings, another setting that really affords interpersonal communication is desired. As reviewed in Chapter 1, Facebook context is featured by its massive and mixed audience, which is rarely encountered in offline settings. Therefore, this study aims to directly compare Facebook with offline context in real life.

According to “the lowest common denominator culture” (Hogan, 2010b), maintaining a positive impression in a collapse context is implemented by presenting contents that are supposed to be accepted by all possible audience. In daily circumstances, where one deals with only a particular context at a time, a minimal level of impression management is required. However, on Facebook, the maximum level of impression management is required. Furthermore, the technology itself enables selective self-presentation to be easily completed. According to the hyperpersonal interaction model, impression management is enhanced when information is more manageable, especially in the online context. Drawing on the fact that positive emotions are often more favorable than negative emotions (Ekman & Friesen, 1975) and frequent display of negative emotions may lead to the impression that one is incapable of self-control and self-regulation (Gross et al., 2006), one of the strategies for impression management would be to display positive emotions while hiding the negative one. Thus, I hypothesized that the preference for positive emotions over negative emotions will be more salient on Facebook than in the offline context.

In respect of overall disclosure intensity, the difference between Facebook and real life can be inferred from the information richness theory (Daft & Lengel, 1984) as reviewed in Chapter 1. Since real life contains richer communicative information (e.g., immediate feedback, verbal and nonverbal cues, and linguistic and paralinguistic
exchange of thoughts) than Facebook, it is hypothesized that real life will afford more emotional disclosure than Facebook.

To test the two hypotheses, a within-subject comparison is carried out to identify differences between Facebook and real life communication. Because the actual disclosure in real life is so trivial and complicated to track, emotional disclosure is measured by self-report in this study. The baseline of opportunities to disclose emotions on Facebook and real life might differ, because Facebook does not require the physical presence of an audience whereas face-to-face disclosure requires so. It is plausible that individuals used Facebook more often have greater opportunities to reveal their emotional experience on Facebook than in the real life. To eliminate this possibility, the intensity of Facebook use was included as a covariate.

Method

Participants. Participants were 196 undergraduate students (66 males; mean age = 21.06 years, $SD = 1.61$). They participated in exchange for course credit. They had been using Facebook for at least one year, each with more than 50 friends on Facebook.

Procedure and Measures. Emotional disclosure on Facebook was measured by asking participants how likely they would be to disclose on Facebook if they encounter positive and negative emotional experience, respectively. Participants were asked the same questions about disclosure likelihood in real life. All the questions were on a 7-point Likert scale (1=very unlikely, 7=very likely). The intensity of Facebook use was measured by the Facebook Intensity Scale (Ellison et al., 2007), including six statements on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Examples of questions are “Facebook is part of my everyday activity” and “I feel out of touch when I haven’t logged onto Facebook for a while.”
The scale showed good reliability (Cronbach’s α = .86; M = 3.57, SD = .81).

Results

The intensity of Facebook use was positively correlated with the likelihood of disclosing positive emotions ($r = .29$, $p < .001$) and negative emotions ($r = .23$, $p < .001$) on Facebook. The intensity of Facebook use was not correlated with the likelihood of disclosing either positive emotions ($r = -.06$, $p = .41$) or negative emotions ($r = -.05$, $p = .47$) in real life. It suggests that users who use Facebook more intensively are more likely to disclose their emotions on Facebook.

A repeated-measures fully factorial analysis of covariance (ANCOVA) was carried out with 2 within-subject factors—emotion valence (positive vs. negative) and disclosure setting (Facebook vs. real life). There was a main effect of emotion valence, $F(1, 195) = 135.13$, $p < .001$, $\eta^2_p = .41$, with a greater likelihood to disclose positive emotions ($M = 5.51$, $SD = 1.04$) than to disclose negative emotions ($M = 4.42$, $SD = 1.16$). There is also a main effect of disclosure setting, $F(1, 195) = 150.43$, $p < .001$, $\eta^2_p = .44$, suggesting that participants were less likely to disclose emotions on Facebook ($M = 4.25$, $SD = 1.22$) than in real life ($M = 5.68$, $SD = 1.18$). There was an interaction effect between valence and disclosure setting, $F(1, 195) = 45.87$, $p < .001$, $\eta^2_p = .19$.

However, when controlling for the intensity of Facebook use, the main effects were unchanged while the interaction between valence and disclosure settings became not significant, $F(1, 194) = 1.76$, $p = .19$, $\eta^2_p = .01$. It suggests that the effect of valence on Facebook was the same as in real life when controlling for the intensity of Facebook use. The result was unchanged when gender was included as a between-subject factor: The main effect of valence remained significant, $F(1, 193) = 6.10$, $p = .014$, $\eta^2_p = .03$. The main effect of setting was significant as well, $F(1, 193) = 48.41$,
$p < .001, \quad \eta_p^2 = .20$. There was no significant interaction between valence and setting.

**Discussion**

Using a within-subject comparison, the current study sheds light on how individuals accommodate their emotional disclosure in the massive and collapsed context of Facebook. Consistent with my hypothesis, emotional disclosure on Facebook is less frequent than disclosure in real life. Unexpectedly, the preference for positive emotions over negative emotions is not more evident in the context of Facebook than real life.

Previous studies found greater disclosure in online platforms than face-to-face (Antheunis, Valkenburg, & Peter, 2007; Tidwell & Walther, 2002). However, those results were often obtained in controlled laboratories, where the communication settings were manipulated, the communication targets were strangers, and the conversation took place in one single discourse. In the present study, emotional disclosure is investigated on the basis of daily experiences. Individuals may have more channels to talk about emotions in real life. They can speak with different friends whenever necessary. Moreover, individuals in real life interact with each other in physical presence and through both verbal and nonverbal channels. The information richness theory suggests that communication media are ranked on a continuum of richness in terms of information that can be processed (Daft & Lengel, 1984). In this sense, real life is a richer environment than Facebook, because the former includes more immediate feedback, verbal and nonverbal cues, as well as linguistic and paralinguistic exchange of thoughts than the latter (Nguyen, Bin, & Campbell, 2012). Individuals may prefer a rich environment to share their emotions. Another possible reason is that disclosing emotion without a particular target on Facebook may not be able to get sufficient attention as it is expected. The diffused
focus may lessen individuals’ desire to express. Therefore, emotional disclosure on Facebook may take place in a less frequent manner than that in real life.

Additionally, the lack of interaction effect between valence and disclosure setting suggests that the preference of positive emotions over negative disclosure is the same across settings. It is noteworthy that the intensity of Facebook usage is a confounding variable in determining the frequency of emotional disclosure. The more intensively the person uses Facebook, the more likely that the individual discloses. Greater disclosure may enlarge the difference between the observed positive disclosure and negative disclosure. However, it may be just because the increment of positive emotions and negative emotions are not in the same amount. After all, people reported more positive emotions than negative emotions in general.

**General Discussion**

Taken together, the two studies demonstrate the pattern of emotional disclosure on Facebook versus semi-private diaries and real life communication. It reveals how emotional disclosure is related to the publicness and collapsed context.

As shown in the two studies, Facebook affords emotional disclosure as diaries and real life do. Nevertheless, Facebook stimulates a different likelihood of emotional disclosure from diary and real life. Study 1a shows that individuals indeed express their emotions on Facebook, and the tendency to express is more explicitly represented than in semi-private context. I argue that the presence of the public audience and probable interaction contributes to such a tendency. Study 1b presents results that the likelihood of emotional disclosure on Facebook decreased, with emotional disclosure in real life as the counterpart. I argue that the less communicative cues and collapsed context on Facebook accounts for the results, by attenuating the motivation to express emotions. In other words, being involved in a public context, individuals might be
driven by the need for emotional expression; however, if the context is too diverse and diffused, the need might decline. In both cases, results suggest that the context influences emotional disclosure.

However, across the two studies, results consistently show that positive emotions are more frequently disclosed than negative emotions. Such a discrepancy between positive and negative emotional disclosure demonstrates the necessity to investigate the two types of emotional disclosure separately. However, the greater impression management tendency on Facebook as suggested by the hyperpersonal interaction model seems not supported here. One possible reason is that individuals always have a stronger motivation to express positive emotions. It has been found that individuals in a day share 70.8% of positive events they encounter (Gable et al., 2004) but only 59% of negative events. Cunningham (1988) also found that when individuals were induced to experience positive emotions, they were more active in initiating conversations with others than those who were induced to feel neutral or negative emotions. It seems that a common display rule in the society is to favor positive emotions more (Ekman & Friesen, 1975). It is likely that impression management may become a habit that one gets used to carry over across settings (Leary & Kowalski, 1990). Alternatively, it is also possible that impression management on Facebook is not as higher as expected. In fact, the hyperpersonal interaction model is mainly drawn on comparisons of one-to-one communication between CMC and face-to-face in laboratory settings. When the comparison is made on naturalistic and complex settings, the enhanced effect of CMC may be cancelled out by the variations within the setting. It indicates that Facebook may not be a uniform context; the emotional disclosure may vary with the Facebook network of a particular individual. This makes the follow-up study necessary.
As the first step in this thesis, Study 1 substantiates the theoretical basis that emotional disclosure is a social act. I make the point that the Facebook context is closely related to emotional disclosure on it. It supports the social account of emotional disclosure on one hand; and on the other hand, it also leaves the underlying motives and within Facebook variations open to question. As I will elaborate in the following chapter, need for emotional expression and need for impression management would be important mechanisms in accounting for the emotional disclosure under a particular social network of Facebook.
CHAPTER 3: STUDY 2

EMOTIONAL DISCLOSURE AND SOCIAL NETWORK PROPERTIES

Study 1 found that emotional disclosure in some situations occurs more frequently than in others; even the same individuals would modify their emotional disclosure accordingly. It supports previous theories about the effect of social context on emotional disclosure. More importantly, it demonstrates that the Facebook context is different from other settings in terms of affording emotional disclosure. Meanwhile, an individual’s social context can be defined by his or her network, through which the individual relates to others (Burt, 1976). On Facebook, every individual has his or her own social context, which is constituted by the particular connections with others. Hence, one’s social context within Facebook could be related to his or her emotional disclosure online. Therefore, the current study aims to focus on the Facebook and explore emotional disclosure on a proximal and individual level.

A Social Network Perspective

In order to examine an individual’s social context, I took a social network perspective. Instead of looking solely at individuals’ own propensity, social network perspective focuses on the relationships (also known as ties) that exist between individuals, the interactions, and outcomes of these relationships (Wasserman & Faust, 1994). Specifically, an ego-centered social network analysis refers to examining a local network from a viewpoint of a person at the center. It focuses on the focal individual (also known as “ego”), and defines the local network by links to the person. On this level of analysis, specific structural indices can be generated to characterize an ego’s network structure, and contextual differences are thereby comparable among egos (Hogan, 2008a). Therefore, individual’s context on Facebook can be quantified and explicitly recognized. Individuals who have structurally equivalent networks are
supposed to exhibit similar responses by virtue of the similar facilitators and constrains in the context (Borgatti, Mehra, Brass, & Labianca, 2009). Social network perspective has been suggested to be especially valuable in understanding individual behaviors (Garton, Haythornthwaite, & Wellman, 1997).

Recently, media studies have showed that social network properties could explain the variability in media usage (e.g., Alison et al., 2006; Dimmick, Ramirez, Wang, & Lin, 2007; Park et al., 2012). For example, Dimmick et al. (2007) found that number of friends in a network was associated with the value that they can obtain from using the technology, such as telephone, email, or text messages. Park et al. (2012) showed that similarity of races among friends was positively corrected with the time spent on Facebook. Such a study offers preliminary evidence that structural properties of online networks are associated with individual behaviors in media. On Facebook, the list of friends establishes a personal network, centering at “me” (Chua, Madej, & Wellman, 2011). It is conceivable that emotional disclosure on Facebook is also related to individuals’ personal network structure on it.

Among various metrics that can characterize one’s social network structure, network size and network density are two basic and core properties (Garton et al., 1997; Hipp, 2008; Izquierdo & Hanneman, 2006). A network’s size is defined as the number of nodes in a network, and network density is the ratio of existing ties between nodes over all possible ties in the network. In an undirected network such as an individual’s network on Facebook, the number of friends is the size \( N \); the number of possible ties is \( N (N - 1) / 2 \); density is the number of actual ties \( L \) divided by the number of possible ties, i.e., \( 2L/N (N - 1) \). The value of density ranges from 0 to 1, ranking networks from completely sparse where none of the members knows each other, to completely interconnected so that everybody is linked to everyone else. In
other words, low density suggests a fragmented network whereas high density suggests a closed network. The number of possible ties increases as the number of actors grows within the network; however, it is less likely that the number of actual ties will increase to the same extent (Hogan, 2009). As a result, network density is inherently correlated with network size in a negative direction. The larger the network is, the sparser the interconnections are. The two measurements per se, however, capture distinct dimensions of a social network. Network size determines how many resources the one can gain from the network, reflecting the quantity of connections (Hanneman & Riddle, 2005), while network density is usually interpreted as cohesiveness and closure of the network, indicating the quality of interpersonal relations (Hogan, 2009).

**Network Structure and Emotional Disclosure**

There is emerging interest in the relation between emotional disclosure and online network structure. One study analyzing Facebook status updates showed a negative correlation between network size and both positive and negative emotion words (Facebook, 2010). However, another study on Twitter found that emotional words increased as the network became larger and sparser (Kivran-Swaine & Naaman, 2011). In spite of the inconsistency, the two studies have demonstrated the attempt to capture structural correlates of emotional disclosure. It stands to reason that emotional disclosure is related to the social network structure.

In Study 1a, the publicity to large audience on Facebook is suggested to induce emotional disclosure. It indicates that network size might be positively correlated with emotional disclosure. A recent study on Facebook revealed that a larger network is associated with stronger motivation to use Facebook for social connection (Spiliotopoulos & Oakley, 2013). It is also found that the size of a person’s network
on Facebook predicts the person’s popularity (Tong, Van Der Heide, Langwell, & Walther, 2008). This leads to the inference that that a large network may afford for active and widely diffused behaviors. Thus, it is plausible to expect that overall emotional disclosure is promoted in large networks.

Meanwhile, Study 1b showed decreasing emotional disclosure is caused by collapsed context on Facebook, which is supposed to be at low density. According to the principle of triadic closure (Granovetter, 1973), for three individuals, A, B, and C, if A is closely connected to B and C respectively, B and C are likely to be closely connected as well. This suggests that in a dense network, members are more likely to be close friends and they would know each other, creating a socially coherent community (Marsden, 1990; Reagans & McEvily, 2003). Close connections within a network are thought to improve communication between members (Burt, 2001). Individuals who have denser networks are more engaged in Facebook, marked by more time and messages posted on Facebook (Park, Lee, & Kim, 2012). Sparse networks, on the contrary, are comprised of diverse social circles with distinct social contacts and roles (Burt, 1992), where individuals would be confronted with people whom they are not interested in sharing information with. From this point of view, it is reasonable for individuals to disclose more in a dense network while withholding the disclosure in a sparse network.

To recap, emotional disclosure occurs because social motives are evoked in a given context (Jakobs et al., 1999a, 1999b; Zaalberg et al., 2004). The same rationale leads to the speculation that the size and density of one’s egocentric network would heighten certain motives that eventually lead to adaptive disclosure behaviors. Thus, it is necessary to identify how the social network properties are related to specific motives. Based on the review in Chapter 1, I propose the dual pathways—(a) the need
for emotional expression and (b) need for impression management—through which network properties are related to emotional disclosure on Facebook.

A large network is supposed to afford higher level of social constraints than a small one (Burt, 2001; Izquierdo & Hanneman, 2006; Wasserman & Faust, 1994). The more audiences are, the more likely that individuals need to concern about the impression (Riley & Eckenrode, 1986; Leary & Kowalski, 1990). On one hand, a large network is likely to contain a variety of members ranging from close to distant friends, and distant friends are more sensitive to inappropriate behaviors than close friends (Buck et al., 1992). Stokes (1983) suggested that the overall satisfaction with social networking declined as one’s network became too large, because of the increasing stresses of managing self-images. On the other hand, the nature of broadcasting in a wide range of audience drives the disclosers to focus on self-presentation (Barasch & Berger, 2014). In a series of controlled experiments, Barasch and Berger (2014) found that large group of audience, compared to only one audience, would promote individuals to focus on self so as to keep a positive impression in front of the audience. In contrast, narrow communication to only one listener would draw the discloser’s focus to others and lessen the concern about self-image (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). Drawing on the two possibilities, network size is expected to positively correlate with the need for impression management, and increased need for impression management is thereby expected to promote positive disclosure and hinder negative disclosure.

Network density, serving as another structural property, is supposed to carry a different psychological meaning. Dense networks are usually thought to produce high social capital (Burt, 2001), that is, people receive more social support in a dense network (Wellman, Carrington, & Hall, 1997). Not only might members feel more
comfortable initiating disclosures, they might also be induced to reciprocate the disclosures they receive from other members (Cozby, 1973). In a dense network, individuals are expected to have a stronger need to share emotions to maintain interpersonal connection, and facilitate emotional support and trust (Rimé et al., 2011). Meanwhile, individuals in dense networks can establish bonding social capital in the form of social support and trust from each other (Kilburn, 2011; Lin, 1999). Indeed, dense networks are also found to be associated with high emotional well-being (Fischer, 1982; Liem & Liem, 1978), strong sense of belonging, and little loneliness (Stokes, 1985). A more nuanced view suggests that high density is supportive only in emergencies or for long-term assistance, while low density is conducive to providing companionship (Walker, Wasserman, & Wellman, 1994). Since social connections on Facebook are long-term based and the communication is spontaneous, a high density is supposed to conducive to social support. As the need for emotional expression concerns about reciprocal interaction and social attachment, it is likely to be induced in dense networks. With increasing need for emotional expression, disclosure of both positive emotions and negative emotions are expected.

To sum, the size of a network implies the width of broadcasting and density signifies social attachment; thus, the need for impression management is more likely to be elicited by network size while the need for emotional expression is more sensitive to network density. As an evidence to support such a speculation, a recent study shows that the amount of self-promotional contents is not related to individuals’ desire for social attachment on SNSs (Winter et al., 2014). As such, the need for impression management is less likely to derive from the connectedness within the audience; rather, it is closely related to the range of broadcasting (Barasch & Berger, 2014). As for the need for emotional expression, it concerns about the strength of social
connections rather than the broadcasting range (Rimé et al., 2011). Hence, it is more relevant to network density.

The Present Study

Despite of the theoretical construct of social motives in literature, clear operationalization and measures are still lacking. Researchers advocate to refine the concepts and specify how the concepts vary with social context (Jakobs et al., 2001; Timmers, Fischer, & Manstead, 1998). As reviewed above, a general association between network properties and emotional disclosure is expected, and the association is hypothesized to be variously mediated by the need for emotional expression and the need for impression management. Specifically, it is hypothesized that network size is positively associated with positive emotional disclosure and negatively associated with negative emotional disclosure because of the need for impression management. In contrast, network density is hypothesized to be positively associated with negative emotional disclosure and positive emotional disclosure because of the need for emotional expression.

Therefore, Study 2a is designed to establish the association between network properties and emotional disclosure. Study 2b investigates the dual-pathway hypothesis by testing the mediating roles of need for emotional expression and need for impression management in the association between network properties and emotional disclosure.

Study 2a

Method

Participants and Procedure. Participants were 101 undergraduate students (32 males; mean age = 20.93, SD = 1.77). To ensure participants included in the study had sufficient numbers of status updates and network connections, only those who had
been Facebook users for more than one year and had more than 50 Facebook friends were eligible to participate.

Measures.

Emotional words. With participants’ consent, their 100 most recent status updates were retrieved from Facebook API as in Study 1a. The frequency of positive emotions and negative emotional words were computed by LIWC (Pennebaker, Booth, & Francis, 2007).

Network properties. Participants granted permission to experimenters to install an application “NameWebGen” (Hogan, 2010a) that would generate a text file listing all of one’s Facebook contacts and the connections among these contacts. The application was removed right after the list was downloaded. Then, these text files were imported into a social network analysis software UCINET 6 (Borgatti, Everett, & Freeman, 2002). The software computes the egocentric network size and density based on the connections within a given social network.

Results

Table 1 presents the descriptive statistics and bivariate correlations between all the variables. Network size was positively correlated with use of positive emotional words ($r = .29, p = .007$), while network density was positively correlated with use of negative emotional words ($r = .22, p = .03$). Since size and density were moderately and negatively correlated ($r = -.54, p < .001$), the two variables were mean-centered firstly and then entered into the regression model to predict positive emotional words and negative emotions, respectively. The interaction term between mean-centered size and mean-centered density was also included in the regression models. As shown in Table 2, the frequency of positive emotional words was significantly and positively correlated with both network size ($\beta = .37, p = .001$) and network density ($\beta = .28, p =$...
No significant interaction effect was found between network size and density ($\beta = .22, p = .06$). The use of negative emotional words was significantly correlated only with network density ($\beta = .32, p = .02$). Neither network size ($\beta = .19, p = .11$) nor the interaction term ($\beta = .01, p = .97$) was significantly correlated with negative emotional words.

When gender was considered in predicting the disclosure of positive emotion, no significant effect was found on gender ($\beta = .03, p = .81$). The interaction between gender and network size ($\beta = -.22, p = .38$), gender and density ($\beta = -.18, p = .52$), or three-way interaction between gender, network size and density ($\beta = -.27, p = .21$) were not significant either. The results were similar when considering the gender effect on the disclosure of negative emotion: No significant effect was shown for gender ($\beta = .27, p = .06$), the interaction between gender and network size ($\beta = .20, p = .42$), gender and density ($\beta = .24, p = .40$), or three-way interaction between gender, network size, and density ($\beta = -.11, p = .63$).

**Discussion**

The results support the hypotheses that network size and density are related to emotional disclosure. When network density is controlled for, the larger a network is, the more positive emotional words are used. On the contrary, when controlling for network size, the denser a network is, the more likely people will be to use both positive emotional words and negative emotional words, suggesting a generally enhanced disclosure.

The interesting finding is that positive emotions are correlated with both network size and density. Notably, that network size has a larger effect than network density. It appears that the breadth of the broadcasting is an essential factor in promoting positive disclosure. This may occur because impression concern is mostly
heightened in large networks, causing individuals to display a more desirable image. 

Unexpectedly, negative emotions are not related to network size. It looks contradictory to the prediction of high impression concern in large networks. However, it is possible that the need for impression management is merely represented by enhancing positive disclosure. A follow-up study is desired to examine the underlying mechanisms. Nevertheless, network density accounts for the variation of disclosing negative emotions. It suggests that a dense network may offer a facilitative and supportive context for emotional expression, regardless of the emotion valence. Social barriers seem lesser in such a network, where individuals concern more about the expressive need.

A recent study on microblogging (i.e., Twitter) found a positive correlation between network size and emotional disclosure but a negative correlation between network density and emotional disclosure (Kivran-Swaine & Naaman, 2011). The different results are probably due to different contextual nature of social networking platforms. Social networks on Twitter include both unidirectional and directional connections (Ellison et al., 2007); the majority of connections are strangers (Huberman, Romero, & Wu, 2008), which may produce an extreme low density and much large network size. Moreover, there are a lot of direct conversations taking place on Twitter, targeting specific audience while visible to the public (Marwick & Boyd, 2011). Thus, it is not surprising that the emotional disclosure on Twitter shows a different pattern.

**Study 2b**

The present study is expected to test the roles of two proposed needs—need for expression and need for impression management—underlying the association between network properties and emotional disclosure. In Study 2a, the use of emotional words
was assessed to indicate emotional disclosure. However, the limitation of the text analysis is that it only captures emotional expression in status updates, which neglected disclosures that might have occurred on other features, such as comments and photos. Thus, in the current study, I used self-reported experiences to assess the intensity of emotional disclosure.

**Method**

**Participants.** Participants were from the same sample in Study 1b. Only those who provided completed social network data were included. This resulted in 164 undergraduate students (56 males; mean age = 21.09, SD = 1.65).

**Measures.**

*Emotional Disclosure.* The questions were identical to those in Study 1b, to measure the likelihood of disclosing positive or negative emotions on Facebook. The same questions with reference to real life were also included as a control for individual’s daily expressiveness.

*Network Properties.* The procedure used to assess network properties was identical to Study 2a. Participants’ friend list and connections among friends were obtained from their Facebook account upon their full consent.

*Need for Emotional Expression and Impression Management.* Scales were modified based on previous research, with reference to Facebook context.³ Seven items of need for emotional expression were adopted from Kring et al.’s (1994) survey on emotional expression (Cronbach’s α = .82; M = 2.60, SD = .68). Example questions were “I want friends on Facebook to be able to read my emotions” and “Even if I am feeling very emotional I don’t want to let others on Facebook know my feelings” (reversely scored). Ten items for impression management were adopted from Rioux and Penner’s (2001) scale on the motive of impression management.
(Cronbach’s $\alpha = .85 ; M = 2.79, SD = .69$). Example items included questions such as “I want to avoid looking bad on Facebook” and “I want compliments from others on Facebook”. Participants were required to indicate to what extent that they agreed with each item on a 5-point Likert Scale (1 = Strongly disagree, 5 = Strongly agree).

**Intensity of Facebook Use.** Considering that the intensity of emotional disclosure may also depend on the level of engagement on Facebook, the intensity of Facebook use was included as a control variable. It was measured as the same as in Study 1b (Cronbach’s $\alpha = .80; M = 4.83, SD = 3.60$).

**Results**

Table 3 shows the descriptive statistics and bivariate correlation of all the variables in the current study. Although the correlations between network properties and emotional disclosure were not statistically significant, I proceeded to test the mediation models. Researchers have suggested that mediation effect could occur without a significant direct effect in the cases of low statistic power or competing mediators (Hayes, 2009; Rucker, Derek, Preacher, & Kristopher, 2011). They contended that the size of the indirect effect, in lieu of the correlation between independent variable and dependent variable, is the key in evaluating a mediation effect. To estimate the indirect effect, Preacher and Hayes (2008) proposed a bootstrapping procedure. This procedure employs a nonparametric resampling approach using bias-corrected and accelerated (BCa) percentile confidence intervals. It is superior to traditional product-of-coefficients strategy (e.g., Sobel test), because no assumption of sampling distribution is required. More important, it enables the unique indirect effect to be tested while controlling for other mediators simultaneously. Therefore, the current analysis was performed using Preacher and Hayes’ INDIRECT.spd custom dialog (available at http://afhayes.com/spss-sas-and-
mplus-macros-and-code.html) on SPSS 21.0. Results were obtained by using 95% BCa confidence intervals (CIs) with 5,000 bootstrapping resamples.

To test the meditational hypotheses, multiple mediator analysis was conducted in which the two proposed mediators were entered simultaneously, being controlled for one another. First, for each type of emotional disclosure (positive vs. negative), two models were tested: one for the effect of network size and one for the effect of network density. Then, for each of the network properties, the other property was included as a covariate. Meanwhile, Facebook intensity and the corresponding emotional disclosure in offline contexts were also included in the model as covariates.

No gender differences were found on disclosure of positive emotion on Facebook, $t(162) = .64, p = .52$, or on disclosure of negative emotion on Facebook, $t(162) = .94, p = .35$. In addition, given study 2a did not show any gender effect, gender is not considered as a factor in the following analysis.

**Network properties and disclosing positive emotions.** Regarding disclosure of positive emotions, results showed that the *total effect* of network size ($\beta = .15, p = .05$) was marginally significant. As Figure 3 (Panel A) illustrates, the *direct effect* of network size on positive emotions was not significant ($\beta = .12, p = .13$). However, the *indirect effect* of network size on positive emotions through need for impression management was significant (indirect effect = .0002, BCa 95% CI [.0001, .0005], excluding zero), while the *indirect effect* through need for emotional expression was not statistically significant (indirect effect = 0, BCa 95% CI [−.0002, .0003], containing zero). The results qualified for a significant mediation effect (See Table 4 Panel A). The overall model was significant, $F(3, 160) = 7.74, p < .001, R^2 = .13$, adjusted $R^2 = .11$. Results remained when network density, Facebook intensity and positive emotional disclosure in real life were included as covariates ($p$’s > .05).

49
Concerning the relationship between network density and positive emotions, as Figure 3 (Panel B) shows, the total effect of network density ($\beta = .004, p = .96$) was not significant; neither was the direct effect ($\beta = -.03, p = .65$). Table 4 (Panel B) shows only the indirect effect through need for emotional expression was significant (indirect effect = 1.00, BCa 95% CI [.30, 2.09], excluding zero), while the effect through impression motive was not statistically significant (indirect effect = -.25, BCa 95% CI [-1.13, .21], containing zero). The overall model was significant, $F(3, 160) = 6.94, p < .001, R^2 = .12$, adjusted $R^2 = .10$. Results were unchanged when network size, Facebook intensity and positive emotional disclosure in real life were included as covariates ($p$’s $> .05$).

Consistent with Study 2a, the findings above showed that both network size and density were related to positive emotions. More important, the effect works through increasing need for impression management and increasing need for emotion expression respectively.

**Network properties and disclosing negative emotions.** As Figure 4 (Panel A) shows, the total effect of network size on negative emotional disclosure was not statistically significant ($\beta = .02, p = .76$), and direct effect was not statistically significant either ($\beta = .04, p = .54$). Moreover, Table 5 (Panel A) demonstrates the indirect effect through either need for emotional expression (indirect = .0001, BCa 95% CI [−.0005, .0007], containing zero) or need for impression management (indirect = -.0002, BCa 95% CI [−.0005, 0], containing zero) was not statistically significant, although the mediation model was significant, $F(3, 160) = 21.38, p < .001, R^2 = .29$, adjusted $R^2 = .27$. The results were unchanged when network density, Facebook intensity, and negative emotional disclosure in real life were added as covariates ($p$’s $> .05$).
Concerning the association between network density and negative emotions, as Figure 4 (Panel B) illustrates, the total effect of network density on negative emotional disclosure was not statistically significant ($\beta = .01, p = .95$), and direct effect was not statistically significant either ($\beta = -.09, p = .20$). However, as Table 5 (Panel B) shows, the indirect effect of network density was significant through need for emotional expression (indirect $= 2.36$, BCa 95% CI [.23, 4.38], excluding zero). The indirect effect of network density was not significant through need for impression management (indirect $= .18$, BCa 95% CI [-.13, .89], containing zero). Overall, the mediation model was significant, $F(3, 160) = 21.98, p < .001, R^2 = .29$, adjusted $R^2 = .28$. The patterns remained when network size, Facebook intensity, and negative emotional disclosure in real life were added as covariates ($p$’s $> .05$).

In short, the findings showed that only network density contributed to disclosure of negative emotions, which is consistent with the result in Study 2a. Moreover, the effect could be explained by increased need for emotional expression.

Discussion

The current study examines how the need for emotional expression and the need for impression management mediate the association between social network properties and emotional disclosure. Results revealed that the context influences disclosure behavior by shifting the relative force of two motivational needs. Specifically, the need for emotional expression mediates the association between network density and both disclosure of positive emotions and negative emotions, whereas the need for impression management only mediates the association between network size and disclosure of positive emotions.

As shown in Study 2a, network size is associated with positive emotional disclosure. Importantly, the current study found that the association is mediated by the
need for impression management. The larger the network is, the more likely that the individual will be to disclose emotion in support of a positive image, leading to increasing disclosure of positive emotions. It indicates that positive emotions are shared for the purpose of image construction and maintenance. It thus offers evidence for previous studies that claim that SNSs users selectively present favorable information as a strategy of impression management (e.g., Ellison, Heino, & Gibbs, 2006; Gibbs, 2006; Jung et al., 2007; Ong et al., 2011). On the other hand, the finding supports previous speculation that large networks enhance the concern about positive impressions (Barasch & Berger, 2014; Riley & Eckenrode, 1986). Need for impression management appears to derive from the width of the influence in a large environment, rather than the density of the network. This is consistent with previous study (Barasch & Berger, 2014), which shows that the motivation of impression management occurs when broadcasting to a large group of audience rather than when narrowcasting to only one person. The reason is that large audience size arouses the focus on self, so individuals put more weight on own interests. Although the influence of density is not stated in previous studies, the current research indicates that the connection among the audience is not a key factor in triggering impression management. Following the logic above, it seems that how interconnected the social network is does not enhance self-focus. Perhaps the density only signals social attachment and support, which is not the foundation for getting impression; or the density only concerns about deep relationships such as trust and commitment, which are not related to the focus of self-competence. In contrast, the large network size, which can make the disclosure achieve broad influence, is more likely to meet the need for impression management.

Concerning the coherence of audience, the focus on impression is replaced by
the expressive need. This is manifest in the association between network density and emotional disclosure, mediated by the need for emotional expression. No matter whether it is positive or negative emotions, the desire to express is enhanced in a dense network. It is likely that individuals are more personally attached to a dense network and more frequently engage in interactions with this group of friends. A possible reason is the mutual interaction in such a network is more likely to be anticipated, and the social attachment is more likely to be developed. Indeed, disclosure of emotion often takes place within intimates in real life (Rimé, 2009). It appears that the same rule is applicable to Facebook context. When the need for emotional expression is enhanced by the supportive context, the behavior of emotional disclosure is facilitated. This also supports previous assumption that social interaction is a strong motivation for emotional disclosure (Jakobs et al., 2001, 1999a, 1999b; Rimé, 2009; Rimé et al., 1998; Rimé et al., 2011).

Results also confirm an earlier speculation that the need for impression management is irrelevant to network density, whereas the need for emotional expression is not associated with network size. It illustrates that network size and network density are distinctive metrics that carry different psychological meaning. While network size is related to self-promotion, network density is important to social attachment.

Interestingly, the need for impression management is not related to less disclosure of negative emotions. It may indicate that impression motivation on Facebook is manifested in a positively enhancing rather than a negatively inhibiting manner. Literature has identified two distinct types of impression management in self-presentation, acquisitive and protective (Arkin, Lake, & Baumgardner, 1986). Acquisitive impression management refers to the action of gaining social approval by
presenting oneself in a favorable fashion (Brown, Collins, & Schmidt, 1988). In contrast, the protective type involves efforts to avoid social disapproval by distancing themselves from negative events and creating merely “safe” images (Arkin, Lake, & Baumgardner, 1986). The current result implies that impression management on Facebook is mainly adopted in an acquisitive manner (to approach positivity) instead of a protective manner (to avoid negativity). It reflects that Facebook users are willing to acquisitively seek the approval of others rather than protectively avoid disapproval of others. Supplementary analysis supports this explanation. Based on the scale of need for impression management, acquisitive statements (e.g., “I want compliment from others on Facebook”) and protective statements (e.g., I want to avoid a reprimand from others on Facebook) were summed up respectively. Mediation analysis showed that the mediation path from network size to positive emotions is only significant through acquisitive impression management (indirect effect = .0004, 95% CI [.0001, .0008]), confirming the role of acquisitive impression management.

The null effect of impression management motive on negative emotions needs a few more words. Past research suggests that individuals in everyday life engage in protective impression management more frequently than in acquisitive impression management (Baumeister et al., 2001). For example, the need for impression management leads to less negative expression because negative emotions such as crying is not an appropriate act in the presence of others (Fischer et al., 2003; Jakobs et al., 2001). Nevertheless, this seems not the case on Facebook. It is possible that the display rule on Facebook is somewhat different. While previous research presumes negative emotions are unacceptable in public, this assumption may not be necessary on Facebook. While positive emotions are still favorable, negative emotions are not as disliked as in real life. Probably, Facebook has fostered an environment that
encourages active engagement rather than conservative conversation, which can be inferred from the social information theory and uncertainty reduction theories as reviewed in Chapter 1. The tactic to maintain impression on Facebook may mainly rely on boosting positive side.

Although the current study suggests that social network structure is associated with psychological needs and the emotional disclosure pattern, no definite causal relationship is established. It is possible that network structure is an outcome of individuals’ psychological needs through individuals’ intentional selections. People who have greater need for emotional expression may develop denser network, and those who have greater need for impression management may tend to enlarge their networks. To test this alternative explanation, I compare the two casual models. I first tested the hypothesized model with the two network properties as independent variables, the two needs as mediators, and both disclosure of positive emotions and negative emotions as dependent variables. A path analysis was conducted with IBM SPSS AMOS 21.0. The paths were drawn according to the hypotheses. Results of the analysis revealed a satisfactory model fit to the data: $\chi^2 (8) = 6.42, p = .60$ and $\chi^2/df = .80$, less than the criteria of 3 (Kline, 2011). Further, the comparative fit index (CFI) = 1.00, the Goodness-of-Fit Index (GFI) = 0.99, adjusted goodness of fit index (AGFI) = 0.97, and normed fit index (NFI) = 0.94, all exceeded the critical value of 0.9 (Kline, 2011). The non-normed fit index (NNFI) = 1.03 was greater than 0.95, larger than the cutoff for a good model fit (Hu & Bentler, 1999). Root mean square error of approximation (RMSEA) = 0.00 meets the guideline of smaller than 0.05 (McDonald & Ho, 2002). Then, I tested the alternative model by reversing the original paths between the psychological needs and network properties. Results showed a poor model fit: $\chi^2 (8) = 75.52, \chi^2/df = 9.44 > 3; CFI = 0.32, GFI = 0.87, NFI = 0.34, AGFI =
0.67, NNFI = -.28, all are smaller than 0.9 and RMSEA = 0.24 > 0.05. In addition, the AIC for the alternative model (102.58) is much larger than that of the original model (AIC = 33.97), suggesting the alternative model is poorer. Statistically, the results rule out the possibility of reversed causal relationship and confirm the hypothesized path from network properties to psychological needs.

A caveat of this study is that the participants were a subsample of those in Study 1b. However, the two studies are supposed to address different research questions, with Study 1b aiming at comparing emotional disclosure between Facebook and real-life, and Study 2b focusing on the emotional disclosure on Facebook as a function of network structure. The data for the two studied were collected at the same time, but each study’s data was analyzed for a different purpose. The results of Study 1b do not intervene with that of Study 2b.

**General Discussion**

Taking a social network perspective, the current study examines the association between social network structure and emotional disclosure. It also disentangles the underlying motivations in terms of need for emotional expression and need for impression management. Suffice it to say, the two types of needs account for the association between social network properties and emotional disclosure in divergent ways.

First, network size and density are suggested to have differential associations with emotional disclosure. Although the bivariate correlations found in Study 2a are not replicated in Study 2b, the link between social network structure and emotional disclosure is confirmed by the indirect effect. The deficit in total effect could have occurred because of different measurements of emotional disclosure. In Study 2a, emotional disclosure was measured by linguistic markers, whereas it was measured by
self-reported likelihood in Study 2b. While linguistic analyses focus only on status updates, self-reports cover a wider range of activities on Facebook. Nonetheless, the mediation model reveals the indirect relationship between network structure and disclosure behaviors, which aligns with results of Study 2a. It is still reasonable to believe the association between network structure and emotional disclosure does exist.

More important, Study 2b implies that the likelihood of emotional disclosure on Facebook could be regarded as a function of motivational needs that are contingent on personal network properties. Note that the results should be interpreted with one property in consideration while the other is controlled. When network density is controlled and network size is concerned, the need for impression management becomes salient. As the audience size grows, the need to be perceived as popular and competent increases. To foster a positive image, individuals are inclined to display positive emotions. In a divergent aspect, network density contributes to the likelihood of disclosing negative emotions through enhancing the need for emotional expression. A denser network, in this sense, may form a safe harbor for less socially desirable emotions. The meaning of density is also translated to positive emotional disclosure by enhancing the need for emotional expression. Probably, a dense network can offer not only caring and understanding for distress expression, but also focused social attention and affirmation that are anticipated when sharing pleasure.

Some studies suggest that the larger the network is, the greater the likelihood is that the person can obtain resources and accumulate social capital (Burt, 2000). Seeman and Berkman (1988) measured the elderly’s social networks in daily life, and found that network size was positively correlated with availability of both instrumental and emotional aid. It appears that large networks are more supportive than small networks. In this regard, network size is also related to need for emotional expression.
However, the current study does not support such a claim. In fact, previous work focused on a specific and regional social network in real life, where the density is supposed to be relatively high. It is possible that the observed social capital and social support are rooted in the interconnection within the network rather than the size of community.

A dense network usually means a closed network, where people are likely to interconnect. Such networks tend to involve high surveillance, as the impression can be easily spread within the network (Coleman, 1988) and sanctions can be easily implemented (Burt, 2001, 2012). Dense networks are suggested to be stable because of coherent norms and strict social monitors (Granovetter, 1985). It is also shown that dense networks enhance prevention-focused regulation, which is supposed to relate to higher impression management (Zou, 2009). Although the current study could not exclude such a possibility, the seeming contradiction might be explained by the characteristics of Facebook. Previous studies are mostly based on offline network in a particular domain. For example, in Zou’s (2009) study, networks were measured in a professional organization, which included only connections at one’s workplace. In the case of Facebook, a network usually includes a more diverse composition, containing connections from not only workplace but also other circles, such as alumni, social communities, and remote acquaintances. This may result in a much lower density versus the workplace. Because of this, the social sanction in terms of closure of network may be too weak to observe.

While Study 1 shows that emotional disclosure differs across various disclosure channels, the current study offers an alternative perspective for understanding the results. Comparing Facebook with diary writing, the large audience size increases the need for impression management, which is supposed to lead to more
positive emotional disclosure. However, there is another variable differentiating Facebook from diary writing: Friends on Facebook have established social connections with the individual, but the “readers” of diary are unacquainted researchers. Therefore, the need for emotional expression is supposed to be greater on Facebook too, leading to more disclosure of both positive and negative emotions.

Comparing Facebook with real-life, one’s social network on Facebook is larger and sparser than that in real life. Thus, the need for impression management is higher on Facebook than in real life, yielding more emotions that are positive. In contrast, the need for emotional expression is evoked more intensively in real life, leading to more positive and negative emotional disclosure. The overall outcome is that greater emotional disclosure occurs in real life than on Facebook.

To summarize, Study 2a and 2b discuss the effects of social context in the light of a theoretical framework of social motive processes. The effects are straightforward for disclosing positive emotions, with network size triggering need for impression management and network density inducing need for emotional expression. In the case of disclosing negative emotions, the effect of network density is mediated by the need for emotional expression. The results also imply that disclosing positive emotions and disclosing negative emotions may serve different motivational needs. Disclosure of positive emotions may be conducive to both image enhancement and emotional expression. As for negative emotions, disclosure may be beneficial for the expressive need only. This speculation leads to the follow-up study on the relationship between emotional disclosure and need fulfillment.
CHAPTER 4: STUDY 3
EMOTIONAL DISCLOSURE AND WELL-BEING

Study 1 and 2 found that emotional disclosure is closely related to the context, and emotional disclosure was driven by the need for emotional expression and need for impression management in a particular social network. A related question is: What would be the consequence of emotional disclosure on Facebook? Although previous studies have demonstrated the associations between emotional disclosure and well-being, can emotional disclosure on Facebook yield the same association with well-being given the unique context of Facebook?

Recap the literature reviewed Chapter 1, disclosing positive emotions always brings along positive effect (Gable & Reis, 2010; Gable et al., 2004). The massive and collapsed context of Facebook allows individuals to broadcast their joy, thus capitalization might be enhanced in interpersonal interactions. Hence, it would be expected that disclosing positive emotions on Facebook could benefit well-being. With regards to negative emotional disclosure and well-being, there are conflicting findings in the literature. On one hand, disclosing negative emotions may have a cathartic effect (Pennebaker, 1997; Radcliffe et al., 2010; Sheese et al., 2004). It is possible that disclosure on Facebook can also be beneficial, with Facebook being an outlet for freely expressing negative emotions. On the other hand, sharing negative emotions is supposed to gain benefits from social support (Graham et al., 2008; Gross & John, 2003) and the effect of disclosing negative emotions requires cognitive reappraisal of the experience (Rimé, 2009). However, the brief and asynchronous communication on Facebook may not be able to allow for this process to occur. Meanwhile, replaying the memory of negative episodes could cause unpleasant experiences (Rimé et al., 1992). Especially on Facebook, as the disclosed content will
not disappear, it may repeatedly remind individuals of the unpleasant experiences. A negative effect on well-being may also likely accompany the disclosure of negative emotions on Facebook.

If emotional disclosure on Facebook is associated with well-being, how can the motivational needs identified in Study 2 shed light on this issue? As the results indicate that individuals expect that disclosing emotions would serve their needs, is it true that the behaviors do meet the needs? A relevant and important speculation would be this: Does the effect of emotional disclosure on well-being, if any, work by fulfilling the need for emotional expression, the need for impression management, or both?

The current study is conducted on above rationale. It aims to attest whether well-being is related to emotional disclosure on Facebook; furthermore, to examine the explainability of fulfillment of need for emotional expression and fulfillment of need for impression management in the relationship. To elaborate on the logic leading up to the hypothesis, I shall first review related theories of well-being from the perspective of needs fulfillment.

A Motivational Account for Well-being

As well-being is a multidimensional construct (Ryan & Deci, 2001), various indicators of well-being may lead to different findings. In the current study, I concentrate on two indicators that are most concerned in media research. One is life satisfaction, which comprises the cognitive processes concerning an overall life experiences (Diener, Suh, Lucas, & Smith, 1999; Pavot & Diener, 2009). It is a subjective evaluation of one’s quality of life based on self-defined criteria (Diener, Emmons, Larsen, & Griffin, 1985). A number of studies on media effect have referred to it as a central indicator of well-being (e.g., Burke et al., 2010; Kim, Chung, & Ahn,
For instance, Burke et al. (2010) correlated behavioral data on Facebook with life satisfaction and indicated how the activities on Facebook benefit individuals’ well-being. Kramer (2010) examined the association between emotional words and life satisfaction to illustrate the possibility of using Facebook status updates to predict national well-being. Lee et al. (2011) discussed how the number of Facebook friends affected individuals’ well-being by measuring life satisfaction.

In addition to psychological well-being that emphasizes personal functioning, social scientists also advocate investigating social well-being (Keyes, 1998). It is critical for a person to function well while involving others in the social contexts. As emotional disclosure is conceptualized as a social act, social well-being appears extremely relevant. For this reason, the second indicator—loneliness—is considered in the current study too. Loneliness refers to a feeling of unhappiness caused by being isolated from interpersonal relationships (Cacioppo & Patrick, 2008). It has received intensive attention in media research pertaining to well-being (e.g., Burke et al., 2010; große Deters & Mehl, 2013; Kraut et al., 2002; Kraut et al., 1998; Peter et al., 2006; Ryan & Xenos, 2011). For example, Kraut et al. (1998 & 2002) studied how using Internet was related to well-being, with loneliness as one of the indicators; Ryan and Xenos (2011) studied how Facebook users’ personality and loneliness related to their usage of Facebook; Burke et al. (2010) showed some individuals had low well-being on Facebook because the passive use pattern caused loneliness.

In the exploration of factors that could contribute to well-being, need fulfillment is considered a key reason that contributes to well-being (e.g., Church et al., 2013; Diener & Lucas, 2000; Ryan, 1995; Ryan & Deci, 2000; Tay & Diener, 2011). For instance, identification with a community can facilitate individuals’ well-
being by satisfying basic psychological needs (Molix & Nichols, 2013). Another study reveals that fulfillment of psychological needs could explain the effect of materialism on well-being (Chen, Yao, & Yan, 2013). A review of past studies proposed a mediation model to explain the relation between leisure and well-being (Newman, Tay, & Diener, 2013). In this model, a set of psychological mechanisms, including feelings of autonomy, affiliation, mastery, detachment from work, and understanding the meaning of life are posited as the psychological pathways through which engagement in leisure activities influences well-being. These studies have demonstrated the role of need fulfillment in accounting for the association between several antecedents and well-being. In a similar vein, it is plausible to expect the association between emotional disclosure and well-being to be mediated by fulfillment of specific motivational needs.

**Fulfillment of The Two Needs**

In Study 2b, the need for emotional expression drives both disclosure of positive emotions and disclosure of negative emotions. Therefore, it is conceivable that the need for emotional expression would be satisfied by emotional disclosure regardless of the valance. The need for emotional expression may be satisfied in two possible ways. First, disclosure of emotion, either positive or negative, is rewarded by the expression process itself (Tamir & Mitchell, 2012). Disclosing positive emotions often occurs with re-experiencing happiness brought by the positive experience (Gable & Reis, 2010; Maisel, Gable, & Strachman, 2008). Disclosing negative emotions can facilitate a healing process through the release of emotional distress (McCance, Nye, Wang, Jones, & Chiu, 2010). It suggests that the need for emotional expression may be met by the nature of the disclosure process itself. Second, the sense of sharing emotional experience with others enables the personal experience to be cared for and
understood (Moreno et al., 2011; Stone & Pennebaker, 2002). In Graham et al.’s (2008) experiment, participants showed higher tendency to help another person who explicitly expressed his or her negative emotions than to help a person who did not express negative emotions. In one way or another, disclosure of either positive emotions or negative emotions is suggested to satisfy the need for emotional expression.

Despite any relief or support that is expected, disclosure of emotion may not be able to alter the person’s overall state. Previous studies demonstrated that people generally reported emotional benefits in emotional disclosure, but actual recovery of emotion was rarely achieved (Rimé, 1998; Zech & Rimé, 2005). A meta-analysis found that disclosing emotion in a single session is insufficient to alleviate emotional burden (Van Emmerik, Kamphuis, Hulsbosch, & Emmelkamp, 2002). Emotional disclosure on Facebook is often spontaneous and brief, rather than systematic and continuous as in writing therapy. In addition, the feedback from others on Facebook is always brief and delayed, rather than elaborative and immediate. Thus, the satisfaction of expression may not bring actual benefit on the overall life satisfaction and interpersonal relationship. Therefore, it seems that need for emotional expression might be effectively met on the present pleasure or relief, but it may not contribute to long-term well-being.

Regarding the need for impression management, it may be fulfilled by the desirable images established on Facebook. Given results in Study 2b that need for impression management only accounted for disclosure of positive emotions, it is expected that the need for impression management would be mainly fulfilled by positive emotional disclosure. Indeed, disclosers can gain a sense of self-enhancement through audience’s responses to positive disclosure (Beals, Peplau, & Gable, 2009;
Thus, the need for impression management is likely to be fulfilled as the self-image is positively constructed in the sharing process. On Facebook, this need is even fulfilled by simply looking at own profiles, from which the established positive impression affirms the sense of self-competence (Toma, 2010; Toma & Hancock, 2013). As the perception of self-competence is a basic need for producing well-being (Ryan & Deci, 2001), fulfillment of need for impression management is likely to produce increased well-being.

The Present Study

As reviewed above, the relationship between emotional disclosure and well-being depends on the valance of emotion. Taking the need for emotional expression and need for impression management into account, the relationship may be partially accounted for by fulfillment of different needs. Given the features of Facebook, need for emotional expression is expected to be satisfied by disclosing positive emotions and negative emotion; however, it will not account for the association between emotional disclosure and well-being. Need for impression management is expected to be met by disclosing positive emotions, which will account for the positive association between disclosure of positive emotions and well-being.

Method

Participants and procedure

One hundred and thirty-six undergraduate students (53 males; mean age = 22.28, $SD = 1.59$) participated in the present study in exchange for course credit. They were required to answer the questionnaires about emotional disclosure on Facebook, fulfillment of needs by emotional disclosure on Facebook, life satisfaction, loneliness, and demographic information.
Measures

**Emotional disclosure.** The questions were identical to those used in Study 1b and 2b, that is about the likelihood to disclose positive and negative emotions on Facebook, on a 7-point Likert scale (1=very unlikely, 7=very likely).

**Need fulfillment on Facebook.** It was assessed by the extent to which emotional disclosure on Facebook fulfill the needs of emotional expression and impression management respectively (see Appendix C). Eight questions used in Study 2b were selected and modified to address the fulfillment of need for emotional expression (e.g., “by disclosing my emotion on Facebook, friends on Facebook can understand my feelings”) and fulfillment of need for impression management (e.g., “by disclosing my emotion on Facebook, I build an ideal self-image on Facebook”). Participants were asked to indicate to what extent they agreed with each statement on a 5-point Likert Scale with 1 as strongly disagree and 5 as strongly agree. The two scales were reliable (Fulfillment of need for emotional expression: \( M = 2.51, SD = .85 \), Cronbach’s \( \alpha = .87 \); Fulfillment of need for impression management: \( M = 2.67, SD = .82 \), Cronbach’s \( \alpha = .84 \)).

**Life satisfaction.** Life satisfaction was assessed by the Satisfaction with Life Scale (SWLS; Diener et al., 1985). The scale contains five items about global life satisfaction, such as “the conditions of my life are excellent” and “so far I have got the important things I want in life,” on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree; \( M = 4.54, SD = 1.09 \); Cronbach’s \( \alpha = .85 \)).

**Loneliness.** The UCLA Loneliness Scale (Russell, 1996) was used to assess the feelings of loneliness in past three months. Examples of questions include “how often do you feel that you are ‘in tune’ with the people around you” and “how often do you feel part of a group of friends,” with responses on a 4-point Likert Scale (1=...
never, 4 = always; \( M = 2.33, SD = .42 \), Cronbach’s \( \alpha = .91 \).

**Results**

Descriptive statistics and bivariate correlation are presented in Table 6. Disclosure of positive emotions was positively correlated with fulfillment of need for emotional expression \( (r = .26, p = .002) \) and fulfillment of need for impression management \( (r = .36, p < .001) \). Disclosure of negative emotions was positively correlated with fulfillment of need for emotional expression \( (r = .26, p = .002) \), and not significantly correlated with fulfillment of need for impression management \( (r = .16, p = .06) \). It suggested that need for emotional expression was satisfied by both positive and negative emotional disclosure, while need for impression management was satisfied by disclosure of positive emotions.

Regarding the relationship with well-being, disclosing positive emotions was not significantly correlated with either life satisfaction \( (r = -.03, p = .76) \) or loneliness \( (r = -.002, p = .98) \). Contrarily, disclosing negative emotions was positively correlated with loneliness \( (r = .23, p = .007) \) and negatively correlated with life satisfaction \( (r = -.20, p = .02) \). Next, multiple mediator models were performed by using Preacher and Hayes’ bootstrapping method (Preacher & Hayes, 2008) as in Study 2b. For each type of emotional disclosure (positive vs. negative), two separate models were tested on life satisfaction and loneliness, with fulfillment of need for emotional expression and fulfillment of need for impression management entered simultaneously as mediators. Because disclosing positive emotions was positively correlated with disclosing negative emotions \( (r = .56, p < .001) \), it is most likely that individuals who like disclosing positive emotions were also those who like disclosing negative emotions. To differentiate the effects between positive emotional disclosure and negative emotional disclosure, it is necessary to test the effect while controlling.
for one another. Thus in the second step of each model testing, the other type of emotional disclosure was included as a covariate.

**Effect of disclosing positive emotion**

The *total effect* of disclosing positive emotions was not statistically significant on life satisfaction ($\beta = -.03, p = .76$). The *direct effect* of disclosing positive emotions was not statistically significant either ($\beta = -.07, p = .46$). Nevertheless, as Table 7 (Panel A) shows, the *indirect effect* through fulfillment of need for emotional expression (indirect effect = -.04, BCa 95% CI [-.11, -.007], excluding zero) and satisfaction of the need for impression management (indirect effect = .03, BCa 95% CI [.02, .16], excluding zero) were significant. The whole model was significant, $F(3, 132) = 2.91, p = .04, R^2 = .06$, adjusted $R^2 = .04$. However, when disclosing negative emotions was included as a covariate, only the pathway through fulfillment of need for impression management remained (indirect effect = .03, BCa 95% CI [.02, .17], excluding zero). As shown in Figure 5 (Panel A), the *indirect effect* through fulfillment of need for emotional expression disappeared (indirect effect = -.02, BCa 95% CI [-.09, .001], containing zero).

Concerning the effect of disclosing positive emotions on loneliness, the mediation effect appeared despite the non-significant *total effect* ($\beta = -.002, p = .98$) and non-significant *direct effect* of disclosing positive emotions ($\beta = .07, p = .41$). The *indirect effect* showed the effect of disclosing positive emotions on loneliness was taken through the satisfaction of the need for emotional expression (indirect effect = -.02, BCa 95% CI [-.01, .05], excluding zero) and the fulfillment of need for impression management (indirect effect = -.04, BCa 95% CI [-.08, -.02], excluding zero), as shown in Table 7 (Panel B). The whole model was significant, $F(3, 132) = 5.65, p < .01, R^2 = .11$, adjusted $R^2 = .09$. However, only the pathway through fulfillment of
need for impression management remained when disclosing negative emotions was controlled as a covariate (indirect effect = −.04, BCa 95% CI [−.08, −.02], excluding zero). Fulfillment of need for emotional expression did not contribute to the association between disclosing positive emotions and loneliness (indirect effect = .01, BCa 95% CI [−.001, .03], containing zero) any more (see Figure 5 Panel B).

When including gender as a moderator in the meditational process, results showed neither significant effect of gender nor significant interaction effect between gender and disclosing positive emotion on the fulfillment of the two needs.

Henceforth, the two mediation models revealed that disclosure of positive emotions, when disclosure of negative emotions was controlled, was connected with increasing life satisfaction and decreasing loneliness because of satisfied need for impression management. The relationship between emotional disclosure and well-being could not be accounted for by the fulfillment of need for emotional expression.

**Effect of Disclosing Negative Emotion**

The total effect of disclosing negative emotions on life satisfaction was negative and significant (β = −.20, p = .02), and the direct effect showed the similar pattern (β = −.19, p = .03). Table 8 (Panel A) exhibits that the indirect effect was significant through both the fulfillment of need for emotional expression (indirect effect = −.04, BCa 95% CI [−.11, −.001], excluding zero) and the fulfillment of need for impression management (indirect effect = .34, BCa 95% CI [.004, .09], excluding zero). The whole model was significant, $F(3, 132) = 4.48$, $p = .005$, $R^2 = .09$, adjusted $R^2 = .07$. However, when including disclosing positive emotions as a covariate, the indirect effect through fulfillment of need for emotional expression (indirect effect = .01, BCa 95% CI [−.001, .03], containing zero) and the effect through fulfillment of need for impression management (indirect effect = .007, BCa 95% CI [−.001, .03].
containing zero) became non-significant (see Figure 6 Panel A).

With regard to the relationship between disclosing negative emotions and loneliness, the \textit{total effect} was positive and significant (\(\beta = .23, p = .007\)), and the \textit{direct effect} was significant too (\(\beta = .24, p = .004\)). The \textit{indirect effect} was significant through fulfillment of need for emotional expression (indirect effect = .02, BCa 95% CI [.01, .04], excluding zero) and through fulfillment of need for impression management was significant (indirect effect = –.02, BCa 95% CI [–.05, –.009], excluding zero), as shown in Table 8 (Panel B). The whole model was significant, \(F(3, 132) = 8.58, p < .001, R^2 = .16\), adjusted \(R^2 = .14\). As shown in Figure 6 (Panel B), when including disclosing positive emotions as a covariate, the \textit{indirect effect} became non-significant through either fulfillment of need for emotional expression (indirect effect = –.01, BCa 95% CI [–.09, .002], containing zero) or fulfillment of need for emotional expression (indirect effect = –.01, BCa 95% CI [–.07, .02], containing zero).

Again, considering gender as a moderator on the meditational process did change the findings: No significant effect of gender was found, neither were significant interaction effect between gender and disclosing negative emotion on the fulfillment of the two needs.

In short, the disclosure of negative emotions is negatively associated with well-being. However, the relationship could not be accounted for by either satisfaction of the need for emotional expression or need for impression management, when controlling for the likelihood of disclosing positive emotions. Despite a lack of significant mediation effect, it must be noted that the negative relationship between disclosing negative emotions and life satisfaction (\(\beta = –.26, p = .01\)) and the positive relationship with loneliness (\(\beta = .34, p = .001\)) remained, suggesting that disclosing
negative emotions was related to poorer well-being as expected. These findings suggested that disclosure of negative emotions could satisfy the need for emotional expression, but the need fulfillment is not related to well-being.

**Discussion**

Study 3 adds to Study 2 in two aspects. First, it extends the study on the two motivational needs—need for emotional expression and need for impression management—by examining the extent to which the actual behavior really fulfills the needs. Results indicate that emotional disclosure fulfills the need in both expressional and presentational aspects. Second, it moves forward from targeting the antecedents of behavior toward the consequences, in terms of subjective life satisfaction and loneliness. Although initial analyses show significant mediation effects, not all the effects hold as the covariate is controlled. The results support only the meditational hypothesis regarding fulfillment of need for impression management in the association between disclosure of positive emotions and well-being. Results show no mediation effect of need for impression management on negative emotions. The null mediation effect of fulfillment of need for emotional expression is as expected. Results suggest that the relationship between emotional disclosure on Facebook and well-being is explained by need fulfillment only in a limited way.

Regarding the bivariate correlation between emotional disclosure and need fulfillment, the result echoes the findings in Study 2b. As the need for emotional disclosure motivates disclosure of positive emotions and negative emotions, the actual disclosure fulfills the need in return. This supports the claim that the function of emotional disclosure is to gain social attention (Moreno et al., 2011; Stone & Pennebaker, 2002) and emotional pleasure (Gable & Reis, 2010; Maisel et al., 2008). In a similar vein, the need for impression management drives the action of disclosing
positive emotions; in return, the behavior of disclosure seems to meet the need. This aligns with previous finding that positive disclosure is an effective strategy of image construction (Newman et al., 2011; Walther, Heide et al., 2008). In addition, disclosing negative emotions yields no negative effect on impression management, which is consistent with findings in Study 2b that need for impression management was irrelevant to negative emotional disclosure. It again suggests that negative emotions may not be so undesirable on Facebook. Alternatively, the null effect of negative emotions may be attributed to the variations among specific emotions. Previous research shows that anger expression is perceived as an indicator of power and competence, leading to compliance and positive impression; sadness is perceived as weakness, resulting in poor impression (Tiedens, 2001). As the perception of negative emotions may vary, a significant pattern may not be found from the aggregate results.

Although the need for emotional expression is fulfilled by disclosing positive emotions and negative emotions, it renders no greater well-being. In fact, empirical studies showed that talking about negative emotions did not actually achieve emotional recovery, even though people always hold such a belief (Rimé et al., 2011). The disclosure may fulfill the need for emotional expression at once, but its subsequent impact on well-being may be detrimental and persistent. Usually, the therapeutic effect of disclosing negative emotions requires cognitive reappraisal of the experience (Rimé, 2009). Since the disclosure on Facebook is always on the fly and brief (Naaman et al., 2010), it may not be able to help disclosers with cognitive reappraisal. Meanwhile, replaying the memory of negative episodes could cause unpleasant experiences (Rimé et al., 1992). Especially on Facebook, as the disclosed content will not disappear, it may repeatedly remind individuals of the unpleasant
experiences. This may cause persistent and negative feelings. From an interpersonal perspective, the audience may be unwilling to hear about negative experience; or, they may provide helpless comments such as criticism and disagreement that could hurt the disclosers more (House, 1981). Considering the invisible audience and asynchronous communication on Facebook in particular, immediate and detailed responses may be limited. More support may be needed for lifting well-being, such as physical company, instrumental support, and in-depth conversation. For either possibility, the association between emotional disclosure and individuals’ well-being may rely on the responses from the audience. After all, emotional disclosure on SNSs is a practice based on interpersonal communication. The result reveals the discrepancies between individuals’ expectation and the actual outcome.

With respect to the role of need for impression management, results partially support the meditational hypothesis. While disclosure is not directly related to life satisfaction, greater disclosure of positive emotions nonetheless is associated with greater life satisfaction by way of fulfilling the need for impression management. Similarly, disclosing positive emotions connects to less loneliness through the same route. As the need for impression management is fulfilled, greater life satisfaction and less loneliness are anticipated. Conceptually, this type of need is very closed to one of the fundamental needs—competence—that are suggested to be critical for well-being (Ryan & Deci, 2001). In Leary and Kowalski’s (1990) theory, need for impression management fosters well-being by maximizing rewards from social relations, enhancing self-esteem and developing desired identities. Since Facebook affords rich social interactions, it is very possible for disclosers to gain these rewards from the public. Moreover, this occurs only in cases of disclosing positive emotions, as negative disclosure is not related to image construction. Compared to the null effect of
fulfillment of need for emotional expression, this fact highlights that one of the critical functions on Facebook is to gain positive impression from others. Moreover, such a benefit could be manifest in a long-term well-being.

It is noteworthy that the association between disclosing negative emotions and well-being was weaken once the disclosure of positive emotions is controlled. Since positive disclosure is significantly correlated with negative disclosure, it suggests that individuals who disclose positive emotions more are also likely to disclose negative emotions. The original effect of negative emotions through need fulfillment may be attributed to the overall intensity of emotional disclosure. That is why the effect disappeared when positive disclosure was taken into account. The pure effect of negative emotions disclosure on well-being cannot be explained by the need fulfillment.

Considering the significant total effect and direct effect of negative emotional disclosure on decreasing life satisfaction and increasing loneliness, the disclosure of negative emotions itself does not necessarily alleviate loneliness. The re-experiencing of negative emotions after posting negative experiences is one possible reason. An alternative explanation may be that disclosers who disclose negative emotions are poor at adjusting emotions (Lyubomirsky & Nolen-Hoeksema, 1995). Although the disclosure may bring emotional benefit at that moment, the disclosers may not be able to change the overall state. A similar paradox is presented in a recent study (Sheldon et al., 2011), which showed that people feeling disconnected with others used Facebook in the same fashion as people feeling connected. The underlying reason for disconnected people to engage in Facebook is to use Facebook for coping with the disconnectedness rather than for improving connectedness. In a similar vein, lonely persons may just tend to cope with loneliness by disclosing negative emotions rather
than to enhance connectedness.

Taken together, emotional disclosure on Facebook serves for the need for emotional expression and impression management; however, the function could not fully account for the association between emotional disclosure and well-being. While fulfillment of impression management by positive disclosure is an important part of fostering well-being, the fulfillment of emotional expression shows lack of lasting effect on well-being. Paradoxically, disclosing negative emotions is associated with poor well-being, suggesting Facebook might be an emotional outlet for people who are experiencing low well-being, but it cannot influence the overall well-being.
CHAPTER 5: GENERAL DISCUSSION

The overarching goal of this thesis is to understand emotional disclosure in the social context of Facebook. I started the attempt by asking how the novel context of Facebook makes it different from traditional disclosure channels, and then examined the underlying motivational processes that connected social network structure with emotional disclosure, and finally investigated the function of emotional disclosure in light of its association with well-being.

In Study 1, I found self-disclosure on Facebook contains more emotional words than semi-private writing, but fewer than real-life communication. The findings supported the notion that emotional disclosure is related to the social context. In addition, from the results it can be inferred that emotional disclosure on Facebook reflects both the motivation to let others know as well as the motivation to maintain positive impression. In Study 2, I testified this speculation with focus on the contextual variations within Facebook context. Specifically, I formulated the two motives as need for emotional expression and need for impression management. I investigated how they mediated the association between network structure and emotional disclosure. As expected, network size is associated with disclosure of positive emotions through need for impression management, while network density is associated with both disclosure of positive emotions and negative emotions because of the need for emotional expression. The results indicate that the two motivational needs separately account for the relationship between network properties and emotional disclosure. As an extension of this finding, Study 3 tested the fulfillment of need for emotional expression and need for impression management in explaining the association between emotional disclosure behavior and well-being. It turns out that emotional disclosure is positively associated with need fulfillment. However, only the
fulfillment of need for impression management accounts for the positive association between positive emotional disclosure and well-being.

Altogether, this research demonstrates that impression management is an important motivation in a large network context, and its fulfillment from disclosing positive emotions is related to greater well-being. In contrast, a dense network facilitates the need for emotional expression, but the fulfillment of need for emotional expression cannot contribute to well-being.

**Disclosure as a Contextual Behavior**

Facebook, a novel communication environment, offers an opportunity to study emotional disclosure that may be different from disclosure in traditional contexts. Results from Study 1 confirmed that Facebook context influences individuals’ emotional disclosure. Study 2 further identified the contextual correlates with one’s pattern of emotional disclosure.

Despite the evident link between social context and emotional disclosure, it is unlikely that individuals have a concrete map of their entire social network in mind. In reality, how exactly individuals conform with display rules depends on how they interpret the contexts (Hogan, 2010b). It is possible that they react in light of a group of salient individuals, which is merely a portion of the network that described in the present research. In other words, discrepancy might exist between an individuals’ actual network and his or her perceived audience. The discrepancy derives from the invisibility of the audience and asynchronicity of communication. There might be a silent audience that disclosers are unaware of and an audience that disclosers target but that overlooks the posts. Nevertheless, it is still reasonable to assume that the overall network structure reflects yet is not identical to the mental model group. When an individual has a dense network on Facebook, there is a low chance for the post to be
seen by very different social circles; likewise, for an individual have a large network, the number of viewers should be still relatively greater than that in a small network.\(^5\)

Despite significant associations between social network properties and emotional disclosure are found in this research, a definitive causal conclusion could not be drawn. Social network structure and behaviors are intertwined, each shaping the other (Golubović, 2009). Social network structure determines how individuals behave; it can also go the other way around; that is, individuals’ behaviors reinforce or modify the structure. It is still possible that an individual in a large network may disclose frequently in support of self-image; the frequent disclosure may attract more audience, and that further expands the person’s network. However, as shown by the model comparison in Study2b, the reversed cause-effect is not supported by the data in current study. Comparing the two possibilities, the effect from social network on behaviors might be stronger. Boyd (2007) contended that Facebook’s social etiquette enjoins that refusing a friend request as socially inappropriate and so such refusals are uncommon. Thus, a friend list is unlikely to be an intentional outcome; the formation of network on Facebook is more likely to be passive. Instead of customizing the audience, users are more likely to use a self-censorship strategy to decide things to share or not. In this regard, it appears more logical for a social environment to influence the motivations and behaviors of individuals inside the environment. Although the reversed relationship cannot be completely excluded, current research demonstrates the probable influence of social context on emotional disclosure. In particular, need for emotional expression and need for impression management are considered motivational processes that are elicited by a particular context and lead to following behaviors of emotional disclosure. Although the present research cannot completely exclude the reversed causal link, it mainly demonstrates the influence of
social context on emotional disclosure.

Another challenge to the social context account of emotional disclosure is the results might reflect attributes that are more fundamental rather than the social context. Individuals having a large social network are likely to be those who are inherently prone to disclose. A construct related to this concern is emotional expressivity, which refers to the trait of behaviorally (both verbally and nonverbally) reacting emotional experience (Gross & John, 1995; Kring et al., 1994). Indeed, there are individual differences in the innate propensity to express emotions (Trierweiler, Eid, & Lischetzke, 2002). For example, in the event of an accident, there could be some people crying out loudly while some others remaining calm. However, expressivity is a measure of generalized expressivity, without concerning the communication channel or valence of the emotion. It is an implicit propensity that may be independent of self-control. Expressivity is different from emotional disclosure, which is conceptualized as an act responding to the social environment in current research. In addition, past research suggests that the use of emotional words is related to personality traits, such as extraversion (e.g., Pennebaker & King, 1999; Qiu, Lin, Ramsay, & Yang, 2012). However, data in this research showed no significant correlations between personality traits and emotional disclosure, and only extraversion was correlated with network size. Additionally, the need for emotional expression and need for impression management were weakly related to personality, suggesting that personality would not be a strong factor in this research. This is consistent with Rimé’s (1998) finding that the tendency of sharing emotion is unrelated to the big five trait dimensions. Altogether, it suggests that the relationship between social context and emotional disclosure is a robust finding and is not attributed to personality.

Gender is another factor that may cause individual differences. A recent text
analysis on Facebook status updates found that women used more emotional words than men did (Schwartz et al., 2013). However, in the present research, analyses across all the three studies did not show significant contribution of gender to the results. To date, the gender effect on emotional disclosure is still in controversy. Women are always thought to be more emotional than men (LaFrance & Banaji, 1992) and they express their emotion more frequently than men (Kring et al., 1994). An analysis on a large corpus that combined various studies showed woman generally used more affect words than men did (Newman, Groom, Handelman, & Pennebaker, 2008). However, LaFrance and Banaji (1992) suggested that in some other circumstances, such as in private self-report or considering specific emotions, gender effects were nonexistent or inconsistent. For instance, men in management jobs may be more likely to express negative emotions such as anger, compared to women (Simpson & Stroh, 2004). A study on an online discussion platform found no gender difference in emoticon usage and suggested that males would adapt to the females style by using more emoticons to display emotions (Wolf, 2000). Another study about comments on MySpace found that woman expressed more positive emotions than men did, yet woman and men did not differ in expressing negative emotions (Thelwall, Wilkinson, & Uppal, 2010). Given these inconsistent findings, future studies are needed to better understand the gender differences on Facebook.

**Relate Emotional Disclosure to Well-being**

Recently, there is a widespread concern in social media research pertaining to the relationship between using SNSs and well-being (e.g., Burke et al., 2010; Chen & Lee, 2013; Ellison et al., 2007; große Deters & Mehl, 2013; Kalpidou et al., 2011; Kim & Lee, 2011; Lampe, Vitak, & Ellison, 2013). The present research contributes to this stream of research by focusing on how the emotional disclosure on Facebook is
related to well-being. Study 3 shows that disclosure of positive emotions is positively associated with well-being via fulfilling the need of impression management; whereas disclosure of negative emotions is negatively associated with well-being and the need fulfillment does not contribute to the relationship. It implies that emotional disclosure on Facebook is a double-edged sword and the Facebook context is not always supportive for well-being.

As shown in the present research, need fulfillment is not always predictive of greater well-being, especially with regards to the fulfillment of the need for emotional expression. A possible explanation is that fulfillment of need for emotional expression is temporal, taking place merely at the moment of disclosing. From the negative correlation between this fulfillment and well-being, it could be inferred that people who gain emotional relief on Facebook are those who persistently experience low well-being. The need may be fulfilled by the support from the audience, but this support cannot contribute to well-being in general. Moreover, past research suggests that some motivations are negatively associated with well-being, especially if the motivation points to external rewards (Sheldon, Ryan, Deci, & Kasser, 2004). In pursuit of the same goal, such as accomplishing a project, people who value internal rewards (e.g., personal growth, societal contribution) are more likely to attain greater well-being. On the contrary, people who value external benefits (e.g., wealth, fame) are likely to end up with poorer well-being. The underlying argument is that people with extrinsic motives always gravitate towards superficial benefit that is contingent and vulnerable. In dyadic communication, a “reciprocity norm” (Gouldner, 1960) is always expected. Individuals are likely to perform self-disclosure in response to the other who have disclosed. In an online setting such as Facebook, however, the relationship between recipients and disclosers becomes inequitable. Individuals may
put in more inputs (disclose a lot) than the audience’ inputs; the audience may respond by the means of mere clicking “likes” instead of actually revealing their thoughts. This may raise interpersonal tensions, which is harmful for well-being. As fulfillment of emotional expression might mainly rely on the responses from the audience, it would make individuals vulnerable and have a negative impact on well-being.

On the contrary, Facebook activity supports impression management in a more lasting and positive way that is beneficial to well-being. This is in congruence with previous research which suggests that Facebook increase individuals’ self-affirmation (Toma & Hancock, 2013), without concerning about real feedback from others. It is possible that the positive discourse itself provides a sense of self-competence to the discloser. Certainly, how exactly the two needs rely on extrinsic rewards require further investigation.

Besides the puzzle of negative influence on well-being, the concern about causality arises in the association between emotional disclosure and well-being as well. The relationship can be reciprocal too. It could be that lonely people are more likely to disclose negative emotions and less likely to engage in positive disclosure, whereas individuals with greater well-being are more likely to share positive emotions and have less negative emotions to disclose (Jin, 2013). Likewise, individuals disclose positive emotions that eventually support their self-images; but meanwhile, it could be that people are more likely to present positive emotions when they feel they are desirable. Nevertheless, well-being is always studied as the a consequence of using media (e.g., Mckenna & Bargh, 2009; Valkenburg & Peter, 2009). Specifically, the motivational theory emphasizes that the motivation is a proximal account for psychological outcome (Vallerand, 1997). Social factors as causes trigger need fulfillment that subsequently leads to psychological outcomes including affect,
cognition, and behavior. Hence, it is logically appropriate to regard well-being as an outcome in this research. Future studies using a longitudinal approach can shed more light on this debate.

Further, results in the present research showed that need fulfillment cannot fully explain the relationship between emotional disclosure and well-being. Other mechanisms may have not yet been covered in the current study. For example, coping stress or reliving past experience may be the mediators between disclosing negative emotions and well-being. In light of the facilitative mechanisms, close intimacy may increase and stress may decrease in the process of emotional disclosure (Collins & Miller, 1994; Gable et al., 2004; Graham et al., 2008; Mauss et al., 2011). Other psychological processes, such as trust and cognitive reappraisal, may also serve for the association between emotional disclosure and well-being and are worthy of further exploration.

**Revisit the Need for Emotional Expression and Need for Impression Management**

Throughout the three studies, a core concern is the roles of need for emotional expression and need for impression management, in terms of how their contingency on context is related to the disclosure behaviors and how their fulfillment is related to well-being. The two needs are proposed based on social motives that have been implied in previous research. Study 2 demonstrates that the need for emotional expression and the need for impression management are independent and divergent, and Study 3 shows the fulfilled need for impression management accounts for the positive correlation between positive emotional disclosure and greater well-being.

The two needs tap into different aspects of social motives in the process of emotional disclosure. They both root in the need for socialization, because only through the connection with others can the two needs be manifest. Put differently,
social connectedness is a potent source for emotional expression and impression management. From another perspective, the two needs may comprise both components of the self-regulatory systems—to approach rewards and to avoid threats (Elliot & Covington, 2001), yet do so with different targets. The need for emotional expression could contain a desire for seeking hedonism or an inclination to escape from negative feelings; the need for impression management may contain the propensity to gain positive evaluation as well as to avoid sanctions. Nevertheless, the two needs are distinct from each other. The need for emotional expression aims to signal an emotional attachment and trust; it is enhanced in dense networks, and it leads to greater emotional disclosure regardless of valence.

Results in current research suggest that the need for emotional expression motivates disclosure of both positive and negative emotions, suggesting the importance of need for emotional expression in disclosure behaviors. After all, self-disclosure is the behavior of broadcasting personal information (Forgas, 2011; Jourard & Lasakow, 1958). In return, disclosing emotion indeed meets the need. However, fulfillment of the need for emotional expression has no bearing on the relationship between the behavior of emotional disclosure and the psychological outcome on well-being. The astonishing paradox raises an important issue of the boundary of emotional disclosure on SNSs. Disclosure of negative emotions on Facebook appears not helpful for people to alter lasting state and lift well-being; it may serve only as a buffer for emotional expression in a short time frame.

The present research also demonstrates how impression management is manifest by emotional disclosure. As need for impression management has been frequently addressed in Facebook research as the reason for selective self-presentation (e.g., Siibak, 2009; Strano, 2008; Tong et al., 2008; Zhao et al., 2008), the results from
Study 2b provide direct evidence that positive disclosure is driven by need for impression management. Moreover, disclosing positive emotions indeed fulfills the need for impression management. The convergent results echo a previous claim that SNSs are ideal media for impression management (Ellison et al., 2006). In a social platform such as Facebook, the public creates constraints on individuals’ disclosure, but meanwhile, it offers affirmation for individuals. It implies that using Facebook for emotional disclosure may have instrumental effects on interpersonal impression, which in general benefits well-being.

Comparison between the two needs indicates that they did not conflict with each other. Both needs motivate greater emotional disclosure; there is no interaction effect between the two needs. The only difference is that need for impression management is not related to disclosure of negative emotions whereas need for emotional expression promotes it. Although the results should be interpreted with one network property taken into account and the other controlled, both needs may play their roles jointly in a given context. A question is which need plays a predominant role? Results from Study 2 showed that the need for impression management would increase with an expanding network, leading to greater disclosure of positive emotions. At the same time, as density decreases, the need for emotional expression is expected to reduce. As a result, negative emotions disclosure will decrease, but the change of positive emotions depends on the magnitude of density change. Similarly, as a network shrinks, density increases with size decreasing, the emotional disclosure of negative emotions and positive emotions would both increase as a result. Whether the overall disclosure of positive emotions decline or not depends on how the size changes the need for impression management. It is possible that in a very large network, emotional disclosure is mainly motivated by the need for impression
management. The context as such is less likely to provide attachment and care as anticipated by the need for emotional expression. In contrast, emotional disclosure in a very small and tight network may be mainly driven by the need for emotional expression, as the close relationship makes impression management less important, with the provision of social support being more available. Since a personal network on Facebook is often relatively large with diverse social connections, it is most likely that the impression management is more salient than the need for emotional expression.

According to Bargh and Chartrand’s (1999) theoretical model, the contextual cues could activate the pursuit of certain goals in an automatic fashion without conscious deliberation. If this is true, the decision of emotional disclosure in the context of SNSs appears to be made unconsciously. This might explain the low ratings on need for emotional expression and need for impression management, which were just around the midpoint. Fulfillment of the two needs showed similarly low ratings on average. It is possible that individuals are not fully aware of their needs. Probably, the dual pathways, in terms of need for emotion expression and need for impression management, may vary in the degree of conscious effort. The need for emotional expression could be more spontaneous and automatic, while the need for impression management is more deliberate, as it needs efforts to craft the information. Concerning the finding that need for expressing emotion increases with network density, it is reasonable for people to employ less conscious effort in a closed network and to be more expressive. It also makes sense that need for impression management increases with network size, because people may need more deliberation in a massive environment.
Implications

The findings have several theoretical implications. First, they contribute to existing literature on emotional disclosure by placing the issue in a novel and complex social environment. The results shed light on how emotional disclosure is governed by the massive and collapsed context on Facebook. Second, the study fills up some gaps in the research on emotional disclosure by explicitly and empirically addressing the underlying motives. In particular, need for emotional expression and need for impression management are highlighted and distinguished. It demonstrates which motivational needs promote emotional disclosure is contingent on the social context. Third, the study examines how motivational needs are translated into social networking practice and how they contribute to individuals’ well-being.

From a practical perspective, this research enriches the understanding of emotional disclosure as a strategy of emotional regulation. Gross (1998) emphasizes that emotional regulation, which consists of sustaining positive emotions and coping with negative emotions, is associated with social context. By examining how emotional disclosure is related to social network structure, this research indicates how individuals could harness Facebook for emotional regulation. Clinicians might use Facebook as a convenient social setting for group sessions, in combination with updating status as a tool for expression. According to the results, it is essential to carefully manage the size and density of such a group. However, the effect of leveraging SNSs for well-being may be limited and demands cautions.

For practitioners in the industry of social media, the findings offer insight in designing an engaging social network. Individuals have different needs under different social contexts. As an individual’s network expands, it appears that impression management would play a major role in hampering in-depth self-
disclosure. If individuals could freely switch between different social contexts and choose an appropriate context that supports a particular motivation, they would be more likely to engage in the platform.

**Limitations and Future Directions**

The present research has several limitations. First, it is limited by the samples. Participants in this research include only Singaporean college students. It is unclear to what extent that current findings can be generalized to other populations, especially because college students’ social networks might not be as diverse as those of adults.

Another issue open for exploration is the social network metrics. On one hand, although network size and density represent important properties of a network, there are other sophisticated metrics possibly playing a role. For example, a person’s centrality in the network and the homophily of the network may affect how and what an individual to say. Those properties may have additional implications about the social processes. Thus, much effort is needed to clarify psychological meanings of these network properties. On the other hand, to attain a more valid measurement of the actual audience is important in future study. The network can be assessed on a post-by-post basis, with disclosed contents corresponding to specific visibility settings. There is no doubt that a person’s social network would evolve with the use of Facebook, and the users’ communication strategy might change as well. Certainly, future study should investigate the dynamic changes of both network and emotional disclosure to uncover the causal relationship. Controlled experiments are also desirable to manipulate specific network structures, to clarify the causal relationship.

The measure of emotional disclosure is also a complicated issue. Choosing self-report or linguistic data entails a trade-off. Although social media provide a convenient database for studying natural language, the validity of the results is
restricted by the analytical approach. As for the self-report, it may be biased by
memory, introspection, and social desirability. The different correlations between
emotional disclosure and network structure as shown in Study 2a and 2b reveal the
differences of the two approaches. Thus, to develop a more valid measure is crucial in
the future.

Another issue concerns the categorization of emotion. The present research
categorizes emotion under two headings—positive and negative. This leaves some
particular emotions undistinguishable. For example, some instances of positive
emotions may be less desirable because it relies on another one’s pain. Meanwhile,
some negative emotions may be acceptable, such as guilty, that indicates a person’s
reflection and intention to be good. In addition, the targets involved in the emotional
experience are not taken into account. Emotional events involving interpersonal
relationship may be judged differently from those concerning only a single person’s
private issues. In the future, a finer categorization could refine the understanding of
emotional disclosure.

Even though this research is subject to above limitations, it opens a venue for
further exploration. It would be intriguing to test other psychological mechanisms for
a better understanding of the contextual contingency and well-being consequence of
emotional disclosure. Future studies could also consider potential moderators such as
the individuals’ interpersonal goals and dispositional expressivity, or the
responsiveness from the audience. Explorations on different media should help
researchers to establish a comprehensive framework for understanding emotional
disclosure.

**Conclusion**

The present research reveals that emotional disclosure on Facebook is
distinctive from disclosure under other settings. By considering emotional disclosure in a social network context, results indicate that emotional disclosure on Facebook is contingent on the structure of personal networks, with need for emotional expression and need for impression management as the underlying processes. The actual disclosure behavior meets the two types of needs, but only the fulfillment of need for impression management contributes to the association between positive emotional disclosure and greater well-being. Through three studies, the present research sheds light on the contextual antecedents and possible consequences of emotional disclosure on Facebook. It highlights the critical roles of motivational needs in the associations between emotional disclosure, social context, and well-being.
REFERENCES


Cameron, C. (2012). Millions have not reviewed Facebook privacy settings: Here's how [web log message]. Retrieved from http://www.welivesecurity.com/2012/05/15/millions-have-not-reviewed-Facebook-privacy-settings-heres-how/


Pronounced "luke" and other useful facts. In P. McCarthy & C. Boonthum (Eds.), *Applied natural language processing and content analysis: Identification, investigation, and resolution* (pp. 206-229). Hershey, PA: IGI Global.


Hackenbracht, J., & Gasper, K. (2013). I'm all ears: The need to belong motivates listening to emotional disclosure. *Journal of Experimental Social Psychology, 49*(5), 915-921. doi:10.1016/j.jesp.2013.03.014


Kawachi, S. V. Subramanian & D. Kim (Eds.), *Social capital and health* (pp. 63-81). New York: Springer.


doi:10.2224/sbp.2001.29.7.661


students on a social networking site. *Depression and Anxiety*, 28(6), 447-455. doi:10.1002/da.20805


Tamir, D. I., & Mitchell, J. P. (2012). Disclosing information about the self is


doi:10.1145/1753326.1753588

doi:10.1177/0146167212474694


6101.2007.00368.x


Walther, J. B. (2007). Selective self-presentation in computer-mediated communication: Hyperpersonal dimensions of technology, language, and


cross-cultural perspectives (pp. 29-46). Amsterdam and Philadelphia: John Benjamins.


The reason to make word count comparable is because LIWC takes the percentage of the word occurrence over the total word count. If the two samples have very different word count, the chance for the same word occurred in each sample will be quite different, resulting in biased results. Alternatively, it is also reasonable to control for the number of events to make it the same as diaries (2 events $\times$ 21 days $= 42$ entries). As I selected 42 messages, the sample size of Facebook reduced to 210, the average word count increased to 536, while the results remained: emotion valence still showed a significant main effect on word frequency, $F(1, 419) = 463.27, p < .001, \eta^2 = .53$, with participants disclosing more positive emotions ($M = 5.59, SD = 2.53$) than negative emotions in general ($M = 2.91, SD = 1.56$). The main effect of the disclosure channel showed that the emotional disclosure significantly differed between Facebook status updates ($M = 4.97, SD = 1.51$) and diary ($M = 3.53, SD = 1.73$), $F(1, 419) = 96.64, p < .001, \eta^2 = .19$. The interaction effect between emotion valence and disclosure channel was not statistically significant, $F(1, 419) = 1.86, p = .16, \eta^2 = .005$.

An independent-samples t-test showed no significant difference between the Facebook and diary samples regarding total word count, $t (439) = .28, p = .78$.

To first validate the two dimensions of motivational needs on Facebook, questions were tested in a pilot study with 91 participants (37 males; mean age = 21.98, $SD = 1.54$). A principal components analysis using Varimax rotation on the 18 items revealed two factors that together explained 50% of the variance (see Appendix B for items and loadings). The items for each factor were averaged to create two sub-scale scores: need for emotional expression ($M = 2.56, SD = .71, \alpha = .84$) and need for impression management ($M = 3.05, SD = .72, \alpha = .86$).
Concerning network density, past studies suggested that users have a looser network on Facebook than in real life. In a case study, Hogan (2008b) reported the personal Facebook network density of .05, which is much sparser than network density ranges from .13 in real life (Chua et al., 2011). In current research, it is about .09 in both Study 2a and 2b. It suggests Facebook network in a student sample is relatively denser, yet still looser than network in real life.

It is found that each post is reached to 35% of Facebook friends, and 61% over a one-month period (Bernstein, Bakshy, Burke, & Karrer, 2013).

In Study 1a, only weak correlation between conscientiousness and negative emotion words was found in the Facebook sample ($r = -.19, p = .01$) and agreeableness with positive emotion words in the diary sample ($r = .14, p = .03$). In Study 2a, among Big Five traits, only extraversion was found to be positively correlated with size ($r = .31, p = .002$) and negatively correlated with density ($r = -.23, p = .22$); there was no significant correlation between emotional words and traits. In Study 2b, extraversion was correlated with disclosure of positive emotions ($r = .29, p < .001$) and negative emotions ($r = .19, p = .01$) in real life. Neuroticism was correlated with negative emotional disclosure ($r = .20, p = .01$) in real life. No significant correlations between traits and emotional disclosure on Facebook were found. Personality was not measured in Study 3.

Data in Study 1 and Study 2 were collected between June 2011 and May 2012, while the feature of customizing visibility on Facebook was launched in the middle of study. I have reasons to believe that the majority of the users did not use the new settings to customize the visibility at that time. A study in 2011 revealed that 36% of contents on Facebook were open with the default setting, that is public (Liu, Gummadi, Krishnamurthy, & Mislove, 2011). A recent report based on 900 million Facebook
users (Cameron, 2012) showed that only 37% of users have customized the visibility of information to third parties. A similar pattern is identified in a recent study, too (Sleeper et al., 2013).
### Table 1.

*(Study 2a) Descriptive statistics and bivariate correlation between variables.*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network size</td>
<td>519.25</td>
<td>(192.64)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network density</td>
<td>–.54***</td>
<td>.09 (.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive emotions</td>
<td>.29**</td>
<td>–.03</td>
<td></td>
<td>.06 (.02)</td>
</tr>
<tr>
<td>Negative emotion</td>
<td>.02</td>
<td>.22*</td>
<td>.17</td>
<td>.03 (.01)</td>
</tr>
</tbody>
</table>

*Note.* Means are indicated in the main diagonal with standard deviations indicated in parentheses. *p < .05, **p < .01, ***p < .001.
Table 2.

*(Study 2a) Regress network properties on emotional words.*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Predicted</th>
<th>$t$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Positive emotion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network size</td>
<td>.37</td>
<td>3.29**</td>
</tr>
<tr>
<td>Network density</td>
<td>.28</td>
<td>2.21*</td>
</tr>
<tr>
<td>Network size × network density</td>
<td>.22</td>
<td>1.94</td>
</tr>
<tr>
<td><strong>Negative emotion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network size</td>
<td>.19</td>
<td>1.63</td>
</tr>
<tr>
<td>Network density</td>
<td>.32</td>
<td>2.44*</td>
</tr>
<tr>
<td>Network size × network density</td>
<td>.01</td>
<td>.04</td>
</tr>
</tbody>
</table>

*Note.* Network size and density are mean-centered. *$p < .05$, **$p < .01$.*
Table 3.

*(Study 2b) Descriptive statistics and bivariate correlation between variables.*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Network size</td>
<td>499.14</td>
<td>(202.2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Network density</td>
<td>-.36***</td>
<td>.09 (.05)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Need for emotional expression</td>
<td>.01</td>
<td>.16*</td>
<td>2.59 (.68)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Need for impression management</td>
<td>.20**</td>
<td>-.03</td>
<td>.08</td>
<td>2.79 (.68)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Positive emotions (Facebook)</td>
<td>.15</td>
<td>.00</td>
<td>.28***</td>
<td>.21**</td>
<td>5.12 (1.41)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Negative emotions (Facebook)</td>
<td>.02</td>
<td>.01</td>
<td>.52***</td>
<td>-.07</td>
<td>.17*</td>
<td>3.4 (1.67)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Positive emotions (real life)</td>
<td>.16*</td>
<td>-.09</td>
<td>-.18*</td>
<td>-.10</td>
<td>.09</td>
<td>-.06</td>
<td>5.96 (1.22)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Negative emotions (real life)</td>
<td>.03</td>
<td>-.17*</td>
<td>-.06</td>
<td>-.16*</td>
<td>.01</td>
<td>-.01</td>
<td>.38***</td>
<td>5.45 (1.56)</td>
<td></td>
</tr>
<tr>
<td>9. Facebook Intensity</td>
<td>.27***</td>
<td>-.18*</td>
<td>.27**</td>
<td>.38***</td>
<td>.25**</td>
<td>.21**</td>
<td>-.05</td>
<td>-.07</td>
<td>3.54 (.79)</td>
</tr>
</tbody>
</table>

*Note.* Means are indicated in the main diagonal with standard deviations indicated in parentheses. *p < .05, **p < .01, ***p < .01.
Table 4.

*(Study 2b) Indirect effects of network properties on positive emotional disclosure through proposed mediators.*

<table>
<thead>
<tr>
<th>Mediator</th>
<th>Bootstrap effect</th>
<th>Normal effect</th>
<th>Normal theory tests</th>
<th>Bias-corrected and accelerated CIs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>SE</td>
<td>Z</td>
</tr>
<tr>
<td>(A) Mediated effect of network size</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total effect</td>
<td>.0003</td>
<td>.0003</td>
<td>.0002</td>
<td>1.22</td>
</tr>
<tr>
<td>Need for emotional expression</td>
<td>.0000</td>
<td>.0000</td>
<td>.0001</td>
<td>.15</td>
</tr>
<tr>
<td>Need for impression management</td>
<td>.0002</td>
<td>.0002</td>
<td>.0001</td>
<td>1.67</td>
</tr>
<tr>
<td>(B) Mediated effect of network density</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total effect</td>
<td>.76</td>
<td>.95</td>
<td>.76</td>
<td>1.30</td>
</tr>
<tr>
<td>Need for emotional expression</td>
<td>1.00</td>
<td>1.11</td>
<td>.61</td>
<td>1.81</td>
</tr>
<tr>
<td>Need for impression management</td>
<td>−.25</td>
<td>−.16</td>
<td>.36</td>
<td>−.43</td>
</tr>
</tbody>
</table>

*Note.* CI = confidence interval.
Table 5.
(Study 2b) Indirect effects of network properties on negative emotional disclosure through proposed mediators.

<table>
<thead>
<tr>
<th>Mediator</th>
<th>Bootstrap effect</th>
<th>Normal effect</th>
<th>Normal theory tests</th>
<th>Bias-corrected and accelerated CIs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>SE</td>
<td>Z</td>
</tr>
<tr>
<td>(A) Mediated effect of network size</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total effect</td>
<td>-.0001</td>
<td>-.0002</td>
<td>.0004</td>
<td>-.41</td>
</tr>
<tr>
<td>Need for emotional expression</td>
<td>.0001</td>
<td>.0001</td>
<td>.0003</td>
<td>.15</td>
</tr>
<tr>
<td>Need for impression Management</td>
<td>-.0002</td>
<td>-.0002</td>
<td>.0001</td>
<td>-1.47</td>
</tr>
<tr>
<td>(B) Mediated effect of network density</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total effect</td>
<td>2.55</td>
<td>2.73</td>
<td>1.30</td>
<td>2.10</td>
</tr>
<tr>
<td>Need for emotional expression</td>
<td>2.36</td>
<td>2.61</td>
<td>1.29</td>
<td>2.02</td>
</tr>
<tr>
<td>Need for impression Management</td>
<td>.18</td>
<td>.12</td>
<td>.28</td>
<td>.42</td>
</tr>
</tbody>
</table>

*Note.* CI = confidence interval.
Table 6.

*(Study 3)* Descriptive statistics and bivariate correlation between variables.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Disclosure of positive emotion</td>
<td>2.82 (1.36)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Disclosure of negative emotion</td>
<td>.56***</td>
<td>2.13 (1.27)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Fulfillment of need for emotional expression</td>
<td>.26**</td>
<td>.26**</td>
<td>2.51 (.84)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Fulfillment of need for impression management</td>
<td>.36***</td>
<td>.16</td>
<td>.48**</td>
<td>2.67 (.82)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Loneliness</td>
<td>−.002</td>
<td>.23**</td>
<td>.08</td>
<td>−.25**</td>
<td>2.33 (.42)</td>
<td></td>
</tr>
<tr>
<td>6. Life satisfaction</td>
<td>−.03</td>
<td>−.20*</td>
<td>−.10</td>
<td>.15</td>
<td>−.61**</td>
<td>4.54 (1.09)</td>
</tr>
</tbody>
</table>

*Note.* Means are indicated in the main diagonal with standard deviations indicated in parentheses. *p < .05, **p < .01, ***p < .001
Table 7.

(Study 3) Indirect effects of disclosing positive emotions on well-being through proposed mediators.

<table>
<thead>
<tr>
<th>Mediator</th>
<th>Bootstrap effect</th>
<th>Normal effect</th>
<th>Normal theory tests</th>
<th>Bias-corrected and accelerated CIs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>SE</td>
<td></td>
</tr>
<tr>
<td>(A) Mediated effect on life satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total effect</td>
<td>-.001</td>
<td>-.03</td>
<td>.03</td>
<td>-0.13</td>
</tr>
<tr>
<td>Satisfaction of emotional expression</td>
<td>-.04</td>
<td>-.04</td>
<td>.02</td>
<td>-1.57</td>
</tr>
<tr>
<td>Satisfaction of impression management</td>
<td>.03</td>
<td>.04</td>
<td>.02</td>
<td>1.55</td>
</tr>
</tbody>
</table>

(B) Mediated effect on loneliness

| Total effect                          | -.02             | -.02          | .01                 | -1.69| .09   | -.06  | .004  |
| Satisfaction of emotional expression  | .02              | .02           | .01                 | 2.02 | .04   | .01   | .05   |
| Satisfaction of impression management | -.04             | -.04          | .01                 | -2.98| .003  | -.08  | -.02  |

*Note.* CI = confidence interval
Table 8.

(Study 3) *Indirect effects of disclosing negative emotions on well-being through proposed mediators.*

<table>
<thead>
<tr>
<th>Mediator</th>
<th>Bootstrap effect</th>
<th>Normal effect</th>
<th>Normal theory tests</th>
<th>Bias-corrected and accelerated CIs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>SE</td>
<td>Z</td>
</tr>
<tr>
<td>(A) Mediated effect on life satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total effect</td>
<td>-.01</td>
<td>-.003</td>
<td>.03</td>
<td>-.13</td>
</tr>
<tr>
<td>Satisfaction of emotional expression</td>
<td>-.04</td>
<td>-.04</td>
<td>.02</td>
<td>-1.57</td>
</tr>
<tr>
<td>Satisfaction of impression management</td>
<td>-.03</td>
<td>.04</td>
<td>.02</td>
<td>1.55</td>
</tr>
</tbody>
</table>

| (B) Mediated effect on loneliness     |                  |               |                     |          |           |       |        |
| Total effect                          | .003             | -.003         | .01                 | -.24     | .81       | -.03  | .02    |
| Satisfaction of emotional expression  | .02              | .02           | .01                 | 1.77     | .08       | .001  | .04    |
| Satisfaction of impression management | -.02             | -.02          | .01                 | -1.71    | .09       | -.05  | -.0009 |

*Note.* CI = confidence interval.
Figure 1. (Study 1a) Frequency of emotional words in Facebook status updates and diaries.
Figure 2. (Study 1b) Likelihood of disclosing positive emotions vs. negative emotions of Facebook and in real life.
Figure 3. (Study 2b) Coefficients representing effects of network size (Panel A) and network density (Panel B) on mediators and disclosure of positive emotions. * $p < .05$, ** $p < .01$, *** $p < .001$. 
Figure 4. (Study 2b) Coefficients representing effects of network size (Panel A) and network density (Panel B) on mediators and disclosure of negative emotions. * p < .05, ** p < .01, *** p < .001.
Figure 5. (Study 3) Coefficients representing effects of disclosing positive emotions on Life satisfaction (Panel A) and loneliness (Panel B) and proposed mediators. Disclosure of negative emotions was controlled. * p < .05, ** p < .01, *** p < .001.
Figure 6. (Study 3) Coefficients representing effects of disclosing negative emotions on Life satisfaction (Panel A) and loneliness (Panel B) and proposed mediators. Disclosure of positive emotions was controlled. * $p < .05$, ** $p < .01$, *** $p < .001$. 
## APPENDICES

### Appendix A

Replaced text emoticons with corresponding emotional words (Study 1a)

<table>
<thead>
<tr>
<th>Text</th>
<th>Expression Meaning</th>
<th>Replaced with</th>
</tr>
</thead>
<tbody>
<tr>
<td>:(</td>
<td>Angry</td>
<td>angry</td>
</tr>
<tr>
<td>&gt;:(</td>
<td>Angry</td>
<td>angry</td>
</tr>
<tr>
<td>&gt;..&lt;</td>
<td>angry, annoying</td>
<td>angry</td>
</tr>
<tr>
<td>:)</td>
<td>skeptical, annoyed</td>
<td>annoy</td>
</tr>
<tr>
<td>O.o</td>
<td>Confused</td>
<td>confuse</td>
</tr>
<tr>
<td>:((((((</td>
<td>Crying</td>
<td>cry</td>
</tr>
<tr>
<td>:'(</td>
<td>Crying</td>
<td>cry</td>
</tr>
<tr>
<td>T_T</td>
<td>crying</td>
<td>cry</td>
</tr>
<tr>
<td>x_x</td>
<td>dead or unconscious</td>
<td>dead</td>
</tr>
<tr>
<td>D:</td>
<td>horror/disgust</td>
<td>disgust</td>
</tr>
<tr>
<td>:-</td>
<td>flipping off</td>
<td>disgust</td>
</tr>
<tr>
<td>:</td>
<td></td>
<td>straight face/disgusted, grim</td>
</tr>
<tr>
<td>&amp;_&amp;</td>
<td>Eye roll</td>
<td>dizzy</td>
</tr>
<tr>
<td>:X</td>
<td>embarrassed</td>
<td>embarrass</td>
</tr>
<tr>
<td>&gt;:)</td>
<td>evil</td>
<td>evil</td>
</tr>
<tr>
<td>&gt;;)</td>
<td>evil</td>
<td>evil</td>
</tr>
<tr>
<td>&gt;::</td>
<td>frown</td>
<td>frown</td>
</tr>
<tr>
<td>&gt;:C</td>
<td>Frown</td>
<td>frown</td>
</tr>
<tr>
<td>:c</td>
<td>frown</td>
<td>frown</td>
</tr>
<tr>
<td>C:</td>
<td>frown</td>
<td>frown</td>
</tr>
<tr>
<td>:[</td>
<td>frown</td>
<td>frown</td>
</tr>
<tr>
<td>:&gt;</td>
<td>frown</td>
<td>frown</td>
</tr>
<tr>
<td>:D</td>
<td>Big Grin</td>
<td>grin</td>
</tr>
<tr>
<td>^^</td>
<td>blissful</td>
<td>happy</td>
</tr>
<tr>
<td>=)</td>
<td>Happy</td>
<td>happy</td>
</tr>
<tr>
<td>:3</td>
<td>happy face</td>
<td>happy</td>
</tr>
<tr>
<td>:/</td>
<td>Not Amused</td>
<td>unamused</td>
</tr>
<tr>
<td>-.^-</td>
<td>sweating, not amused</td>
<td>unamused</td>
</tr>
<tr>
<td>(^3^)</td>
<td>kiss</td>
<td>kiss</td>
</tr>
<tr>
<td>^o^</td>
<td>singing, laughing</td>
<td>laugh</td>
</tr>
<tr>
<td>:^D</td>
<td>Great! I like it</td>
<td>like</td>
</tr>
<tr>
<td>&lt;3</td>
<td>heart/love</td>
<td>love</td>
</tr>
<tr>
<td>:p</td>
<td>cheeky/playful</td>
<td>playful</td>
</tr>
<tr>
<td>=(</td>
<td>sad</td>
<td>sad</td>
</tr>
<tr>
<td><del>,-,</del></td>
<td>sleeping</td>
<td>sleep</td>
</tr>
<tr>
<td>:)</td>
<td>smile/happy face</td>
<td>smile</td>
</tr>
<tr>
<td>:)</td>
<td>smiley</td>
<td>smile</td>
</tr>
</tbody>
</table>

(table continues)
<table>
<thead>
<tr>
<th>Text</th>
<th>Expression Meaning</th>
<th>Replaced with</th>
</tr>
</thead>
<tbody>
<tr>
<td>=))</td>
<td>smiley</td>
<td>smile</td>
</tr>
<tr>
<td>^_^</td>
<td>smiley</td>
<td>smile</td>
</tr>
<tr>
<td>:Q</td>
<td>Smoking while talking</td>
<td>smoke</td>
</tr>
<tr>
<td><em>_</em></td>
<td>surprise, disbelief</td>
<td>surprise</td>
</tr>
<tr>
<td>:O</td>
<td>surprised</td>
<td>surprise</td>
</tr>
<tr>
<td>&gt;:O</td>
<td>surprise</td>
<td>surprise</td>
</tr>
<tr>
<td>(:</td>
<td>Happy</td>
<td>happy</td>
</tr>
<tr>
<td>((((</td>
<td>Tired</td>
<td>tired</td>
</tr>
<tr>
<td>-_-</td>
<td>upset</td>
<td>upset</td>
</tr>
<tr>
<td>:)</td>
<td>Angry</td>
<td>angry</td>
</tr>
<tr>
<td>:S</td>
<td>annoying</td>
<td>annoy</td>
</tr>
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</table>
Appendix B

Principal components analysis using varimax rotation (Study 2b)

<table>
<thead>
<tr>
<th>Factor 1: need for impression management</th>
<th>Factor 2: need for emotional expression</th>
</tr>
</thead>
<tbody>
<tr>
<td>I want compliment from others on Facebook.</td>
<td>I don’t like to let friends on Facebook see how I’m feeling.</td>
</tr>
<tr>
<td>I want to avoid a reprimand from others on Facebook.</td>
<td>I want to display my emotions to others on Facebook.</td>
</tr>
<tr>
<td>I want to impress my classmates/colleagues on Facebook.</td>
<td>I don’t want friends on Facebook to easily observe what I’m feelings.</td>
</tr>
<tr>
<td>I want to look better than my cohort on Facebook.</td>
<td>Even if I am feeling very emotional, I don’t want to let others on Facebook know my feelings.</td>
</tr>
<tr>
<td>I want to look like I am busy on Facebook.</td>
<td>I want friends on Facebook can read my emotions.</td>
</tr>
<tr>
<td>I want to avoid looking bad on Facebook.</td>
<td>I don’t want to hide the way I’m feeling on Facebook.</td>
</tr>
<tr>
<td>Rewards from others on Facebook are important to me.</td>
<td>I want to hold my feelings in on Facebook.</td>
</tr>
<tr>
<td>I want to stay out of trouble on Facebook.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standardized estimates</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eigenvalue</strong></td>
<td>4.82</td>
<td>3.69</td>
</tr>
<tr>
<td><strong>% of variance</strong></td>
<td>28.34</td>
<td>21.70</td>
</tr>
<tr>
<td><strong>Cronbach’s α</strong></td>
<td>.85</td>
<td>.82</td>
</tr>
</tbody>
</table>

Note. Loadings below .40 are not shown
Appendix C

Scale of need fulfillment on Facebook (Study 3)

Fulfillment of emotional expression
1. Friends on Facebook can understand my feelings.
2. Friends on Facebook know me better.
3. Friends on Facebook provide me emotional support.
4. I feel emotionally relieved.

Fulfillment of impression management
1. I appear popular on Facebook.
2. I get compliment from friends on Facebook.
3. I impress my friends on Facebook.
4. I build an ideal self-image on Facebook.