

SNS as Intimacy Zone: Social Intimacy, Loneliness, and Self-disclosure on SNS

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Abstract

This study explores factors that may influence one's self-disclosure on SNS where one self-disclose information in the public eye. Social intimacy and loneliness as indicators of one's social relationship status are found to be both significantly, though contradictorily related to self-disclosure on SNS. Social intimacy and loneliness function are mediators in the direct effect of personality on self-disclosure on SNS. This study enhances the understanding of self-disclosure on SNS rather than interpersonal connections.

Key words: Self-disclosure, Social media, Personality

Introduction

The social media service has almost become an indispensable part of many people's lives. Besides the discussion on public issues on the Social network sites, people are posting their personal and mundane daily life events, thoughts, and emotions on SNS that are otherwise inaccessible for other people without social media. Observers of social media have argued that SNSs encapsulate people in an "ambient intimacy" environment since not only can we observe the personal thoughts, feelings, life experiences of our friends by reading their daily updates, but we can also subject our daily rhythm to our friends on SNS by disclosing ourselves. Self-disclosure is a fundamental human social behavior. It refers to people willingly communicating their personal thoughts, feelings, emotions, behaviors or experiences with others verbally (Derlega et al., 1993; Gibbs et al., 2006; Hollenbaugh & Ferris, 2014). Studies investigating self-disclosure online tend to agree that the computer-mediated environment encourages certain people, for instance, more lonely ones or people of insufficient social skills, to meet their expression needs online due to benefits such as anonymity and physical isolation (Baker, 2005; Leung, 2002; Walther, 2007, etc.). These previous studies, however, are mainly addressing self-disclosure within a one-to-one interpersonal

communication model (e.g. chatting messenger, telephone, instant message), but are less attentive to the one-to-many self-disclosure on social media, where people are posting their personal affairs to public audiences who are connected to the discloser at different levels of closeness. The authors situate this study in a communication context on social media and intend to explore what kinds of social media users are more willing to present their inner private world in the public eye. Psychological literatures on self-disclosure have identified a series of predictor of self-disclosure: cultural factors, motivational factors, features of the recipients, situational factors, etc. (Ignatius & Kokkonen, 2007). Among the found factors, this study is particularly focusing on one's social relationship status and personality. We are interested in whether and how their connections to surrounding social circles may correlate with their self-disclosing behaviors to social media audiences, and the mechanism of personality's impact in the process. This study surveyed SNS users in China. The most dominant SNSs include We Chat, Weibo, Renren and QQ. The survey subjects can be users of any one of the four SNSs. Weibo has over 500 million registered accounts and around 46.2 million daily active users by December 2012. We Chat came into Chinese people's lives in 2012 and already had over 300 million users by January, 2013. It is primarily an instant message app like whatsapp but rapidly evolved into an important social network service mainly on mobile phones. Renren, the Chinese copy of Facebook, initiated in 2005, is popular mainly among college students and teachers. It has around 160 million registered users and 31 million active monthly users by 2011. QQ was originally an instant message tool similar to ICQ, while the introduction of QQ photo wall makes it share characteristics with other SNSs. The following literature will, first, conceptualize self-disclosure in the context of social media as distinguished from interpersonal and offline communication. Secondly, we will review how the level of social intimacy and loneliness may have an impact on self-disclosure on social media. Finally, we introduce personality as another construct that has been proved to be influential on self-disclosure, social intimacy, and loneliness.

Literature review

Self-disclosure on social media

As social animals, human beings are believed to have the fundamental need to interact and share personal information with others. The most general definition of self-disclosure is revealing detailed personal information, ranging from one's identifying information such as age and gender to more private information, to others (Chelune, 1979; Cozby, 1973). In the studies of self-disclosure on SNSs, the concept is usually used in two different ways: one refers to information disclosed in personal profile (Chang & Heo, 2014); the other refers to disclosing personal life experiences, thoughts, feelings to the audiences (Hollenbaugh & Ferris, 2014). This study mainly follows the latter definition, so we do not care much about the profile information but focus on updates posted on the wall. Therefore, self-disclosure here does not include all verbal and non-verbal communication that reveals information about an individual (Wheless & Grotz, 1976). Instead, it specifically refers to people willingly communicating their personal thoughts, feelings, emotions, behaviors or experiences with others, while excluding purely forwarding behaviors, or informative announcement of

events, thoughts on public affairs, etc. (Derlega, Metts, Petronio, & Margulis, 1993; Gibbs, Ellison, & Heino, 2006). With the introduction of computer-mediated communication affordances, self-disclosure no longer has to be conducted in a limited time and space with a particular person or a group of close people (Leung, 2002). More and more people are extending work on self-disclosure to online platforms (Attrill, 2012), and considering the potential benefits provided by the technological features of Internet-mediated communication such as anonymity (Baker, 2005). For instance, people with high loneliness level may disclose themselves to others on ICQ without feeling embarrassed when rejected (Leung, 2002). Moreover, according to Walther's (2007) hyperpersonal model of computer-mediated communication, the physical isolation between the message sender and receiver masked any involuntary cues in communication. Walther (2007) also suggested that computer-mediated affordances enabled the user plenty of time to construct and refine a message with less social awkwardness prior to its utterance, thus encouraging more self-disclosure to people behind the screen. These studies mainly considered interpersonal self-disclosure in a computer-mediated environment.

Due to technological advancement, the context of self-disclosure online is changing, proliferating as well as diversifying. Unlike earlier online social platforms such as chat rooms that enabled anonymity, the most widely used platforms to self-disclose information are social media sites, such as Facebook and Twitter, which consist of acquaintances. On these social media sites, one is exposed to a variety of audiences, ranging from a person's closest friends, family members and lovers to acquaintances, such as workmates or classmates, or even people who are briefly encountered and are unknown audience. Even though the privacy settings enable one to disclose personal information and status updates to a certain group of people, we are still largely exposed to greater diversity than in offline interpersonal communication. Boyd (2007) conceptualized the audience on social media as an "imagined audience," capturing the sense that the social media "speaker" needs to envision what types of audience will be receiving the message when there are in fact more audiences than that. It is in such a context of one-to-many rather than one-to-one interpersonal communication, as well as a non-anonymous environment, that we set out to explore self-disclosure on social media.

Social intimacy, loneliness and self-disclosure on social media

Traditional psychological literatures using social penetration theory have substantially certified the positive relationship between self-disclosure and social intimacy (Altman, 1973). Social intimacy refers to high quality interactions and relationships with others, including closeness with spouse, friends, or family members, and it predicts mental health (Miller & Lefcourt, 1982). It involves the experience of closeness, warmth and communicative relationships with others (Hu et al., 2004; Laurenceau, Barrett, & Pietromonaco, 1998; Timmerman, 1991). In a more specific sense, intimacy is "the sharing of one's innermost being, or essence, such as strength and vulnerability, weakness and competence, with another person" (Hu et al., 2004). Previous researchers have found that people in intimate relationships tend to self-disclose information to each other about a wider breadth of topics and at a deeper level (Laurenceau et al., 1998; Marsden & Campbell, 1984).

Living in a communicational environment saturated with media, people in “strong-tie” relationships can influence their intimate others to engage in media networks so as to further information exchange. The closer the relationship is, the more media connection the communicators share (Haythornthwaite, 2005; Haythornthwaite & Wellman, 1998). Scholars have found significant positive relationship between self-disclosure mediated by telephone, or instant message, and the intimacy level between the communicators (Hu et al., 2004; Dimmick, 2007). Rau et al. (2008) extended the relationship between self-disclosure and social intimacy level to social media, and they found a strong positive relationship between verbal / affective intimacy on SNS interpersonal communication and public posting frequency, which means that the more intimate a relationship one has in SNS communities, the more likely it is that one will post statuses on SNS. Studies on self-disclosure and intimacy on social media like Rau et al.’s, however, assume that one is connected to everyone on social media at a similar level of closeness. As stated before, the audience on social media consists of a variety of group, and we may connect to some of them in a closer way while being less acquainted with some others. Under such circumstances, this study intends to explore whether the positive relationship between self-disclosure and social intimacy still persists on social media platforms. Thus, the authors propose the first hypothesis:

H1. Social intimacy has a significant relationship with self-disclosure.

Loneliness is another influential predictor of self-disclosure online that has been examined substantially but within one-to-one an interpersonal communication model (Leung, 2002; Ignatius & Kokkonen, 2007). Peplau et al. (1979) defined loneliness as a self-perceived state that a person’s network of relationship is either smaller or less satisfying than desired. There is no consensus on whether loneliness will increase or decrease self-disclosure. Some studies argue that loneliness decreases self-disclosure since lonely people devalue their interactional skills and are not willing to disclose personal affairs to others (Ginter, 1982).

Some other studies found that the need to get rid of loneliness will motivate people to disclose feelings, thoughts, emotions to others (Komarovsky, 1974). Lonely people may probably rely more on social media for self-expression, in addition to expanding social networks, treating SNSs as valves for repressed emotions, because for self-disclosure is not met in offline interpersonal relationships. Other studies reversed the direction and found that self-disclosure helped to reduce loneliness, or the lack of it exacerbated loneliness (Schwab, Scalise, Ginter, & Whipple, 1998). This study intends to explore whether one’s loneliness will influence self-disclosure to a range of acquainted audiences. As mentioned before, in a computer-mediated environment, there is less impedance of self-disclosing in that in-person embarrassment can be avoided (Walther, 2007). Therefore, this study raises a second hypothesis:

H2. Loneliness is positively related to self-disclosure on social media.

Personality and self-disclosure on social media

Literatures in self-disclosure have also identified personality as a predictor of self-disclosing behaviors (Archer, 1979; Cozby, 1973; Ignatimus & Kokkonen, 2007; Pedersen & Breglio, 1968). Appropriate self-

disclosure is found to be positively related to healthy personality attributes such as extraversion and positive emotional state (Cozby, 1973; Ignatius & Kokkonen, 2007), while it is negatively related to less healthy traits such as neuroticism and shyness (Ignatius & Kokkonen, 2007). For instance, neuroticism is associated with excessive or insufficient self-disclosure since neurotic people are less attentive to social situations (Chaikin & Derlega, 1974). In addition, less-extroverted people are inclined to reduce verbal exchange, particularly when facing less-acquainted people (Lawrence & Bennet, 1992). However, the relationship between personality traits and self-disclosing behaviors is not always consistent due to many reasons and some scholars had even argued that it is unrealistic to find specific personality-disclosure relationships (Berg & Derlega, 1987; Cozby, 1973). But, according to Cozby (1973), it is reasonable to explore this theme within a certain context of social relationships and settings. This study situates this exploration within the context of social media platforms where people socialize with known acquaintances a lot, rather than isolating the personality-disclosure relationship in a vacuum. In addition, previous works on social media have revealed that there is a link between personality attributes and different social media use, although they were not specifically addressing self-disclosure on social media. For instance, Ross et al. (2009) and Amichai-Hamburger and Vinitzky (2010) found that more neurotic people were reluctant to share personal information on Facebook, but they preferred posting on their walls to uploading photos. Therefore, it is reasonable to pose the following research question:

RQ1. How might personality influence one's self-disclosure on social media?

Personality, social intimacy and loneliness

Personality literatures have also identified the consequences of personality on social relationship status. Individuals possessing different personality dispositions are likely to develop different patterns of social connection with surrounding people. Many studies have found that certain personality traits are linked to loneliness (Cheng & Furnham, 2002; Ponzetti & Cate, 1988; Saklofske & Yackulic, 1989; Stokes, 1985; et al.). In terms of behavior, lonely people tend to be less expressive, less involved with others, and social situations, that is, more introverted and less open to novel experiences (Sloan & Solano, 1984). Scholars have proved statistically that extraversion negatively predicted loneliness, while neuroticism positively correlates with loneliness (Cheng & Furnham, 2002). Personality traits have also been found to affect the scope, quality, and strength of social relationship, which may tie in the concept of social intimacy (Lopes, Salovey & Straus, 2003;). Extraverted, agreeable and emotionally stable people are found to have wider social networks, higher quality relationships, higher satisfaction with their relationships, and are more likely to fall in love, whereas neurotic and shy people are likely to have lower relationship quality and satisfaction (Asendorpf & Wilpers, 1998; Neyer & Asendorpf, 2001; Ozer & Benet-Martinez, 2006). Based on these literatures and hypotheses stated above, this study poses the following research questions:

RQ2. How does social intimacy mediate the relationship between personality and self-disclosure?

RQ3. How does loneliness mediate the relationship between personality and self-disclosure?

Since previous literatures have proved that extraversion is a robust personality trait influencing one's social relationship status as well as self-disclosing behavior, we further hypothesize that:

H3. Social intimacy mediates the relationship between extraversion and self-disclosure.

H4. Loneliness mediates the relationship between extraversion and self-disclosure.

Method

Participants and Procedure

In this study, a total number of 272 respondents participated. This study employs both paper and online surveys to collect data. 122 first-year university students from one renowned Chinese university in Beijing, Mainland China responded to the paper form survey, and 150 people participated in online survey. The paper form survey was administered at the beginning of a regular scheduled class. Therefore, students did not take extra time beyond the class period to complete the survey. Prior to the study, a verbal explanation of the aim of the study was delivered to the whole class, and informed consent was reached. Participants completed the survey without talking to each other. Respondents did not receive any extra course credit by filling out the questionnaire, and they were free to decline or stop filling out the questionnaire. Therefore, participation was voluntary, and all collected information was confidential and anonymous. Each respondent will receive small survey gift after completing the questionnaire. The online format of the survey was put on "SO JUMP," a professional online survey software in China. From June 2014 to July 2014, a total of 150 surveys were completed. Written notification about the purpose of the survey and informed consent was specified. The incentive for online survey was a chance to receive a cover of an iPad mini. In general, after clearing data, this study finally included 259 respondents. With regard to clearing data, this study took the following approach: a participant's survey was discarded a) if there were too many missing values; b) if there was no variance in the response; or c) if the participant was an outlier. For those participants with one or two missing values, the median of that variable was input by the authors as a default. Approximately 33.6% of the sample was male and 66.4% of the sample was female. The average age of the participants was 23.9 years ($SD=4.802$). 63.3% of the sample was undergraduates, and 22.4% of the sample was graduates. The rest (about 15%) either had a pre-university degree or a post-graduate degree. Based on a variety of social network sites in Mainland China, this study also included a question to investigate the frequencies of using different SNSs. 60.8% participants used "We chat," and "20.8%" of the sample identified "Weibo" as their most frequently used SNS to disclose their personal life. The rest (15%) identified with other channels, such as QQ and Renren.

Measures

Self-disclosure on SNS

Four items measuring self-disclosure were selected and adapted from The Revised Self-disclosure Scale to serve the present study (Wheless & Grotz, 1976). Participants were asked to rate the

frequency and depth of posting their personal life on SNS platforms. For instance, to measure the frequency, they were asked to rate “I frequently post a status about my personal feelings, emotions, and thoughts”; “I frequently post what happened to myself in daily life”; “I frequently create my own posts”; “I deeply disclose my personal feelings, emotions and thoughts.” The items were answered on a 7-point Likert scale, ranging from 7 (agree a lot) to 1 (disagree a lot). The internal consistency of the subscale was very high (Cronbach’s $\alpha = 0.881$; $M = 15.94$, $SD = 5.73$).

Social Intimacy

Participants were asked to make ratings about their feelings about being with others (affective intimacy); participants’ perception of people they can share feelings with (possession intimacy) and verbal expression of close relationship with family members, colleagues, friends, and lovers (verbal intimacy). The items are adapted from measurements used by Blyth & Foster-Clard (1987), Buhrmester & Furman (1987), Hu et al. (2004), and the Miller Social Intimacy Scale (MSIS) (Miller & Lefcount, 1982). To serve the purpose of this study, items were re-worded. Participants were asked to rate “Concerning the relationship with my colleagues, I felt intimate and warm” based on a 7-Likert point scale. Similarly, the same set of questions included “concerning the relationship with my family members, I felt intimate and warm;” “concerning the relationship with my lovers and friends, I felt intimate and warm.” Each item was designed on a 7-Likert point scale, ranging from 7 (agree a lot) to 1 (disagree a lot). The internal consistency of the subscale of affective intimacy was very high (Cronbach’s $\alpha = 0.893$; $M = 10.87$, $SD = 2.34$). Participants were asked: “I have someone to share my thoughts and interests with;” “I have someone to share my personal feelings and affairs with;” “I have someone to feel intimate with where I live now.” Each item was designed on a 7-Likert point scale, ranging from 7 (agree a lot) to 1 (disagree a lot). The internal consistency of the possession intimacy was very high (Cronbach’s $\alpha = 0.826$; $M = 15.69$, $SD = 4.03$). Participants were asked: “I often tell them what happened in my daily life”; “I often share my intimate feelings with them”; “I often ask them for suggestions.” Each item was designed on a 7-Likert point scale, ranging from 7 (always) to 1 (never). The internal consistency of the verbal intimacy was very high (Cronbach’s $\alpha = 0.909$, $M = 14.97$, $SD = 4.23$). Social intimacy as an umbrella term also had a very high internal consistency (Cronbach’s $\alpha = 0.887$, $M = 41.52$, $SD = 8.80$).

Loneliness

The most widely used “revised UCLA loneliness scale” was employed in the present study (Russell, Peplau, & Cutrona, 1980; Russell, Peplau, & Ferguson, 1978). The participants were asked: “how often do you feel a lack of companionship?”; “How often do you feel you are isolated?”; “How often do you feel you are ignored?” Each item was designed on a 7-Likert point scale, ranging from 7 (always) to 1 (never). The internal consistency of the subscale was very high (Cronbach’s $\alpha = 0.856$, $M = 9.62$, $SD = 4.06$).

Personality

In terms of research interest of this study, we adapted the Ten-Item Personality Inventory (TIPI) - the brief version of Big-Five personality scale (Gosling et al., 2003). Although it is somewhat inferior to the comprehensive Big-Five personality scale, the 10- item instrument has proved to be valid and reliable.

Dimensions of personality did not fall under one construct. The present study regarded dimensions differently rather than discussing them all together. Participants were asked to indicate the extent to which they think that the personality attributes are applicable to them. For instance, to measure extraversion, participants were directly asked, “I am very extraverted and enthusiastic.” (M= 4.67, SD= 1.45). “I am very open to receive new information and complicated situations” to measure openness to experiences (M= 5.05, SD= 1.27). “I show sympathy and warmth to people” to measure agreeableness (M= 5.47, SD= 1.21). “I show reliability and self-discipline” to measure conscientiousness (M= 5.10, SD= 1.25). “I am calm and emotionally stable” to measure emotional stability (M= 4.57, SD= 1.29). Each item featured response scale ranging from 7 (strongly agree) to 1 (strongly disagree). Narcissism was measured by several questions with categorical answers. Then, each narcissism question was coded into a dummy variable, and the Narcissism index was produced to represent a participant’s extent of narcissism. Questions concerning narcissism included “I like to be the focus in the crowd,” “I like to show off my talent,” “I am a special person.” The internal consistency of the narcissism subscale was moderate (Cronbach’s α =0.70, M= 1.93, SD=1.67).

Reliability

This study used Cronbach’s alpha to measure internal consistency for each study variable. All values were above 0.7, which was the lowest acceptable value (Santos, 1999). The value was reported above after each measure. The following table summarized Cronbach’s alpha for each variable.

Results

Table 1 showed the inter correlation matrix for 8 independent variables and one dependent variable. As can be seen, five of eight correlations between the independent variable and the dependent variable were significant and in the expected direction. Social intimacy had a significant relationship with self-disclosure in a positive direction, although the correlation coefficient was relatively low ($r=.217^{**}$). Therefore, H1 was supported. As expected, loneliness was negatively related to social intimacy. Loneliness also significantly correlated with self-disclosure. Therefore, H2 was supported.

Table 1

Correlations between social intimacy, personality attributes, loneliness, and self-disclosure

Variable	1	2	3	4	5	6	7	8	9
Self-disclosure	—	.217**	.181*	.285*	.233	.257*	.102	.184*	.102
Social-intimacy		—	-.189**	.387*	.196*	.125*	.058	.111	.150*
Loneliness			—	-.224**	-.063	-.047	.038	.094	-.070

Extraversion				–	.200*	.244*	.114	.113	.167*
Agreeableness					–	.119	-.044	.157*	.192*
Narcissism						–	.052	.198*	.152*
Emotional stability							–	.187*	.335*
Openness to experiences								–	.077
Contentious-ness									–

Note. N=259. * $p < .1$. ** $p < .01$.

With regard to attributes of personality, it was obvious that most of them had significant correlations with self-disclosure, including extraversion, agreeableness, and narcissism. The correlation matrix partially answered RQ1 of this study. Three attributes of the personality had significant correlations with self-disclosure. In order to examine the exclusive contributions of personality attributes to the self-disclosure, Ordinary Least Squares (OLS) regression was also employed. In regression analysis, age, gender and education were control variables. Table 2 showed the influence of personality attributes on the dependent variable, self-disclosure. In the regression model, emotional stability, agreeableness, openness to experiences, contentionsness, extraversion and narcissism were entered together as independent variables based on the control variables of age, gender, and education. Agreeableness ($\beta=0.819$, $p < .01$), extraversion ($\beta=0.751$, $p < .01$), and Narcissism ($\beta=0.600$, $p < .01$) were significant explanations of self-disclosure on SNS platforms.

Table 2

The effects of personality attributes on the dependent variable, self-disclosure

	B (SE)	T
Constant	6.812 (3.125)	2.180
Gender	-.273 (.757)	-.361
Age	-.060 (.076)	-.795
Education	-.434 (.459)	-.945
Emotional Stability	.268 (.290)	.922
Agreeableness	.819 (.291)	2.812**
Openness to experiences	.407 (.283)	1.437

Conscientiousness	-.046 (.293)	-.155
Extraversion	.751 (.244)	3.082**
Narcissism	.600 (.212)	2.831**

Note. Age, education, and gender are control variables. * $p < .1$ ** $p < .01$. *** $p < .001$.

Therefore, participants who showed more agreeable people were more likely to self-disclose on SNS platforms; participants who were more extroverted and outgoing were more likely to have more disclosure on SNS platforms; and, not surprisingly, participants who showed more narcissistic characteristics were more likely to have self-disclosure on SNS platforms. In addition, Table 2 obviously showed that emotional stability, conscientiousness, and openness to experiences were not explicators of self-disclosure in the online context. Therefore, RQ1 was entirely answered. Some personality attributes, including extraversion, narcissism, and agreeableness had significant effects on self-disclosure on SNS platforms; whereas emotional stability, conscientiousness and open to experiences did not have significant influence on self-discourse. After examining the direct relationship between personality attributes and self-disclosure on SNS platforms, this study also examined the role of social intimacy as a mediator between personality attributes and self-disclosure. This study tested social intimacy as the mediator between personality attributes and self-disclosure. The linear regression model found that the result was significant, which indicated that social intimacy in general mediate the effect of extraversion, agreeableness, and narcissism on self-disclosure, $R = 0.405$, $R^2 = 0.164$, $F(1, 251) = 7.037$, $p < .000$. Therefore, RQ2 was answered. Table 3 showed that when social intimacy was added to the main effect model, the coefficient of extraversion decreased ($\beta = .791$, $\beta = .624$), the coefficient of agreeableness also reduced ($\beta = .85$, $\beta = .785$). Therefore, social intimacy impaired the direct positive effect of extraversion and agreeableness on self-disclosure. Social intimacy was part of the reason for the positive effect extraversion and agreeableness had on self-disclosure. In other words, social intimacy also explained more self-disclosure by the participants who had agreeableness and extraversion personality attributes. Thus, H3 was supported. The coefficient of narcissism, however, increased ($\beta = .656$, $\beta = .667$), after adding social intimacy to the main effect model. This implied that social intimacy strengthened the direct positive effect narcissism had on self-disclosure. After controlling social intimacy, narcissism was still a robust predictor of self-disclosure.

Table 3

The role of Social intimacy in the direct effect of extraversion, agreeableness, and narcissism on self-disclosure

	B (SE)	T
Main Effect Model		
Constant	9.679 (2.649)	3.654***
Education	-.460 (.457)	-1.005
Gender	-.337 (.738)	-0.457
Age	.067 (.075)	-0.89
Extraversion	.791 (.242)	3.274***
Agreeableness	.850 (.283)	3.006**
Narcissism	.656 (.208)	3.149**
Mediation Variable Model		
Constant	7.909 (2.825)	2.799**
Education	-.562 (.459)	-1.225
Gender	-.676 (.760)	-0.889
Age	-.054 (.075)	-0.722
Extraversion	.624 (.259)	2.413*
Agreeableness	.785 (.284)	2.763 **
Narcissism	.667 (.208)	3.209 **

Note. Age, education, and gender are control variables. * $p < .1$ ** $p < .01$. *** $p < .001$.

Although the correlation table (Table 1) showed that loneliness was directly related to self-disclosure in a positive direction, this study also examined the role of loneliness in the relationship between personality attributes and self-disclosure. Therefore, a mediation model was employed. Given the results shown in Table 2, only extraversion, agreeableness, and narcissism were included in the following regression models. The linear regression model found that the result was significant, in general, indicating that loneliness functioned as a mediator for the positive effect personality attributes had on self-disclosure, $R = .461$, $R^2 = .213$, $F(1, 251) = 9.703$, $p < .000$. Thus, RQ3 was answered. Table 4 demonstrated that when loneliness was added in the main effect model, the coefficient of agreeableness decreased ($\beta = .850$, $\beta = .840$), and the coefficient of narcissism reduced ($\beta = .656$, $\beta = .632$). Therefore, loneliness weakened the direct effect narcissism and agreeableness had on self-disclosure. Loneliness was part of the reason for the positive effect narcissism and agreeableness had on self-disclosure. In other words, the feelings of loneliness also explained more self-disclosure by the participants who had agreeable and narcissistic personality attributes. In addition, the obvious increase of the extraversion coefficient ($\beta = .791$, $\beta = 1.034$), after adding loneliness implied that after controlling loneliness, the positive relationship between extraversion and self-disclosure was enhanced. Therefore, H4 was rejected.

Table 4

The role of loneliness in the direct effect of extraversion, agreeableness, and narcissism on self- disclosure

	B (SE)	T
Main Effect Model		
Constant	9.679	2.649***
Education	-.460	.457
Gender	-.337	.738
Age	-.067	.075
Extraversion	.791	.242**
Agreeableness	.850	.283**
Narcissism	.656	.208**
Mediation Variable Model		

Discussion

Disclosing one’s inner feelings, thoughts, emotions, and experiences is used to be considered as a private behavior conducted between individuals in relatively close relationship. Previous research in this domain mainly focused more on one-to-one communication at an individual level in both online and offline, and mediated and non-mediated settings (Dimmick, 2007; Hu, 2004; Rau et al, 2008; Schwab, Scalise, Ginter, & Whipple, 1998; Walther, 1994). Social media, however, offers a platform that brings our private world to the public eyes. Self- disclosure or observing others’ self-disclosure on social network sites becomes a common experience for social media users. This study, building on previous literatures on social intimacy, loneliness and self- disclosure, found that one’s social relationship quality of significantly relates to one’s level of self-disclosure in one-to-many communication context on social media. People who feel socially intimate in real life tend to disclose more on social media. According to the accumulated evidences of the positive relationship between intimacy and self-disclosure (Altman, 1973; Laurenceau et al., 1998; Marsden & Campbell, 1984), one explanation of this statistical result is that one’s friend circle on social media overlaps their actual social network. That is, one’s social intimacy circle is transferred to social media. Even though one is disclosing self-information not only to their most close friends but also to other less relevant ones, the presence of the former is a strong impetus for one to expose one’s inner world. It is surprising at first to find out that loneliness – a seemingly contradictory construct to social intimacy

level – is also positively related to self-disclosure on social media. Explanations of this correlation can be drawn from extensive literatures on loneliness and online expression. For lonely people who have few friends to rely on in offline circumstances, social media is an ideal avenue to vent one's feelings. By disclosing self-information, such as posting updates, expressing personal feelings and thoughts, displaying one's experiences, lonely people find ways to communicate with others via extended network not constrained by immediate social circle (Walther, 1994). The statistical fact that loneliness and social intimacy two constructs that negatively related to each other are both positively related to self-disclosure, calls for attention here. Our interpretation is that the mechanism that social intimacy and loneliness effect on self- disclosure is different. Just as a wealthy person would make donation, so does a poor person. The amount of wealth between the rich and the poor is strikingly contradictory, but both of them make donations. The reason for the rich to make donation could be for building personal brand, while the poor may do that out of sympathy. Such logic can be applicable to explain the contradictory relation between loneliness and social intimacy to self-disclosure. The different mechanism that loneliness and social intimacy influence on self-disclosure is explained above.

In this study, personality attributes are also confirmed to be an influential predictor of self-disclosure on social media. In accordance with previous studies, extroversion was found to be a robust predicting personality trait for self-disclosing behavior (Cozby, 1973; Ignatimus & Kokkonen, 2007). Not surprisingly, people who are more extroverted are more willing to share thoughts and feelings with others. When extroverted people express themselves in an online situation, their passion does not decline. . In addition to extroversion, other personality traits that are proved to be important indicators of self-disclosure are agreeableness and narcissism are also found to be important indicators of self-disclosure on social media, which were less fully discussed in earlier literatures.

Narcissist people, being self-admired, have the intention to make what they treasure about themselves to be known by others. Social media, with its technological affordances and social networking function, provides a perfect platform for narcissist people to demonstrate the loved selves in front of a range of audiences. Social media has benefits for narcissist people compared to both offline and one-to-one communication context. Narcissist people cannot draw as much attention from immediate social circle as from social media, on which a larger scale of audiences can be reached at the same time without being constrained by spatial distances. In one-to-one communication either online or offline, narcissist people can only demonstrate himself or herself to one audience at a time. One reason that more agreeable people are disclosing more self-information could be that they have accumulated friendly social circle in real life. Their friends, be it close or less close, tend to interact more with them on social media such as commenting and liking their posts. According to the social contract theory, when people perceive benefits, they are more willingly to return (Chang & Heo, 2014). Therefore, when receiving more responses from the social network, agreeable people are then triggered to disclose more. In contrast, it is reasonable to argue that less agreeable people are less likely to draw audiences' interaction and thus impeding their desire to post more. One breakthrough of this study lies in the exploration of the roles social intimacy and loneliness as mediators in the relationship of

personality attributes and self-disclosure. The results show that if looking at relationship between social intimacy, loneliness, or personality on self-disclosure separately, they are correlated with or affect self-disclosure regardless of any intervention or disturbing factors. However, in reality, direct and strong relationships between two variables are extremely difficult to establish. Although research has been scarcer in delving into the mediating effect of the above-mentioned direct relationships, the connections between these concepts from previous studies still make it possible to examine mediating effects between personality and self-disclosure. This study explores how social intimacy and loneliness function as mediators in the direct effects personality attributes have on self-disclosure. The findings show that in general, social intimacy, and loneliness can function as mediators in this direct relationship. The findings have substantial implications for understanding the relationships between social intimacy, loneliness, personality, and self-disclosure. The result shows that, social intimacy and loneliness are part of the reasons why extroverted people are more likely to self-disclose. The mediating effect for extroverted people is the most obvious relative to people who have narcissistic and agreeable personality attributes. Thus, extroverted people are more likely to have high social intimacy ability, resulting in higher self-disclosure. Therefore, extroversion in people may not definitely lead to more online self-disclosure, but these people's high social intimacy ability allows them to display the extroverted characteristic of self-disclosure. By the same token, the feeling of loneliness triggers narcissistic people to disclose more on social media. For example, narcissistic people typically have a higher propensity to disclose themselves, but when they feel lonely in daily life, online self-disclosure is a suitable choice. Agreeable people are inclined to show passion and warmth to others. When they resort to online self-disclosure, their feelings of loneliness can partly explain this relationship. However, the findings also show that even the general mediation models are significant with regards to the mediations by social intimacy and loneliness. Some specific personality attributes are not mediated by either social intimacy or loneliness. After adding loneliness to the main effect extroversion has on self-disclosure, the beta coefficient for extroversion increases instead of decreasing. Therefore, after being controlled by loneliness, extroversion even has an even more robust effect on self-disclosure. This finding conforms to our common sense, that the feeling of loneliness is not a part of why more extroverted people have more self-disclosure. Similarly, the effect narcissism has on self-disclosure is not mediated by social intimacy. It is possible that narcissistic people with high social intimacy are more expected to disclose themselves in personal life rather than on social media.

Overall, this study represents an examination of the relationships between social intimacy, loneliness, personality, and self-disclosure. Theoretically, this study extends self-disclosure to a larger conceptualization due to the proliferation of SNS. On social media, self-disclosure is not limited to one-to-one in a private space, but rather in a public space with both acquaintances and strangers. In addition, this study highlights the mediation models, providing insights to explore the roles of social intimacy and loneliness play as mediators in the relationship of personality attributes and self-disclosure. This study reveals that social intimacy and loneliness are mediators, which share the direct effects of personality on self-disclosure, which makes a strong argument to question the

previous literature concerning direct effect personality has on self-disclosure. Although the conceptualization and operationalization are slightly different for self-disclosure in previous research, this study still provides a new approach to understand self-disclosure on social media.

Some limitations to this study lie in the incomprehensive measuring items of participants' personality attributes due to the length limit of survey questionnaire. Although the representative measuring item of each personality attribute is employed, construct validity problems still arise based on a single item measuring approach.. Another limitation is the small sample of participants. In general, the sample size is enough to test our hypotheses, and the results are expected. However, future research can have larger samples in order to validate the findings in this study, especially the proposed mediation models. Moreover, this study mainly focuses on the impact of one's social relationship status (loneliness and social intimacy level) but has not been able to examine other factors that may influence self- disclosure (Ignatius & Kokkonen, 2007).

Future studies may look into cultural factors by doing comparative studies. This study is conducted in the context of China, future studies can include more samples across different cultures and societies since cultural divergences are always important factors in influencing personalities and social intimacy (Hofsted, 2001). In addition, the factor of the recipient's characteristics is particularly worth exploring in the context of social media in that the communication model (one-to-many self-disclosure) in it is very different from self- disclosing via interpersonal communication tools such as telephone or instant messages.

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