CYBERPSYCHOLOGY, BEHAVIOR, AND SOCIAL NETWORKING
Volume 14, Number 12, 2011

DOI: 10.1089/cyber.2010.0042

Gratifications, Collective Self-Esteem, Online Emotional Openness, and Traitlike Communication Apprehension as Predictors of Facebook Uses

Yin Zhang, M.A.,[1] Leo Shing-Tung Tang, B.A.,[1] and Louis Leung, Ph.D.[1,2]

Abstract

This study explores whether and how gratifications and psychological traits impact people's Facebook use. First, a factor analysis of an online survey ($N = 437$) outlined a unique set of gratifications obtained from the use of Facebook. Six aspects of gratifications (i.e., social surveillance, entertainment, recognition, emotional support, network extension, and maintenance) were identified. Results from regression analyses showed that psychological traits (i.e., collective self-esteem, online emotional openness, and traitlike communication apprehension) were strong predictors of most Facebook gratifications. Additionally, gratifications and, to a lesser extent, psychological traits significantly predicted Facebook usage, both in perceived importance and different indicators in the level of Facebook use.

Introduction

FACEBOOK, THE SOCIAL NETWORKING SITE (SNS), has gained increasing popularity worldwide and now has millions of active users.[1] Since 2006, Facebook has jumped from 60th to 2nd in traffic ranking based on a combined measure of page views and users.[2] Typical users spend approximately 20 minutes per day on the site, and two-thirds of them log in every day.[3]

Increasing attention has been paid to the mass adoption of SNSs. It is worthy to understand the uses and influences of Facebook from the socio-psychological perspectives. Why do people, especially the young, become so obsessed with these sites? Some studies found that certain motives and satisfactions were associated with greater usage.[4,5] SNSs constitute a rich field for researchers interested in social networks because of their "heavy usage patterns and technological capacities that bridge online and offline connections." [6]

This article identifies potential gratifications obtained from Facebook; exploring the possible relationships between psychological traits, such as collective self-esteem (CSE), online emotional openness (OEO), and traitlike communication apprehension (CA), and the identified gratifications; and examines the predictive power of these variables of Facebook use.

Literature Review

Uses and gratifications theory

Theorists believe that the uses and gratifications (U&G) framework is suitable for Internet studies because of the media-like characteristics and interactive nature of the Internet.[7–10] The U&G approach concerns "the social and psychological origins of needs, which generate expectations of the [mass] media or other sources, which lead to differential patterns of media exposure, resulting in need gratifications and other consequences."[11] The U&G theory assumes that audience members actively seek out the mass media, fulfill expectations, and actively select media and media content to satisfy individual needs. The most important assumption of this approach is that the audience is active and media use is goal-directed. It is suggested that certain basic needs interact with personal characteristics and the social environment of the individual produces different motives and gratification behaviors that can come from using the media or other activities. Past research found that motivations and satisfactions from Internet usage included interpersonal utility, social bonding, social identity, entertainment, relaxation, and social recognition.[12–14] Grounded in the U&G framework,[9,15,16] this study seeks to expand previous research by addressing an important question:

An earlier manuscript of this paper was presented at the 2009 convention of the Association for Education in Journalism and Mass Communication (AEJMC) in Boston, MA. It was the winner of the Moeller Student Paper Competition in the Mass Communication & Society Division.

[1]School of Journalism and Communication and [2]Center for Communication Research, The Chinese University of Hong Kong, Hong Kong.

RQ_1: What specific gratifications do users obtain from Facebook use?

Collective self-esteem

The concept of collective self-esteem (CSE) reflects the relative value that an individual places on his or her social group and better embodies a user's psychological status of being a member within the community. There are four dimensions of CSE: (1) membership self-esteem, (2) private CSE, (3) public CSE, and (4) importance to identity,[17] which covers from one's personal and perceived judgment of how worthy he or she is within a group to how important membership is to one's identity or self-concept.

Active members of a social group tend to score higher in CSE evaluations than less active members do. Past research has found that the self-esteem and well-being of individuals have indirect effects on SNS usage.[18] Gangadharbatla[4] indicated that CSE had positive effects, yet partial mediation, on attitudes toward SNSs. Users with low self-esteem and low life satisfaction can obtain greater psychological well-being by using SNSs.[6] People tend to participate in online interactions because of their need to belong, whereas SNS usage also enhances their senses of membership and group involvement. Thus, we hypothesize:

$H_{1.1}$: Users with a higher degree of CSE will find Facebook experiences more gratifying.

$H_{1.2}$: Users with a higher degree of CSE will exhibit higher levels of Facebook usage.

Online emotional openness

Online emotional openness (OEO) refers to the psychological trait of a person who is "confident and assertive in the expression of his or her feelings and does not attempt to hide emotion or avoid discussion."[19–22] OEO has received extensive research attention ranging from the level of particular groups to that of an individual.[23–25] Leung examined OEO specifically as an attribute to predict Internet activities by "net-geners" and found that heavy Internet users were motivated by the ability to show affection through the Internet.[12]

As a cyber community designed to enhance social interaction, Facebook allows users to express emotions openly via a wide range of interactions, which include indications of literary or entertainment interests.[26,27] For instance, specific Facebook applications, like "gift" or "poke," provide users with interactive means to give and receive social support. In addition, users are able to create and join groups without geographic restrictions, which fulfill people's yearning for popularity, attraction, love, and understanding. Those who believed they were better at expressing themselves offline were more likely to form close relationships with others they met online or to become more devoted in such relationships.[28] Hence, we predict that:

$H_{2.1}$: Users with a higher degree of OEO will find Facebook experiences more gratifying.

$H_{2.2}$: Users with a higher degree of OEO will exhibit higher levels of Facebook usage.

Traitlike communication apprehension

McCroskey defined communication apprehension (CA) as "an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons."[29] Every individual possesses a high, moderate, or low degree of apprehension in communication. A high level of CA suggested a potential inhibitor of communication while a low level of CA was seen as a facilitator.[30–33]

CA permeates every aspect of an individual's life (e.g., school, work, interpersonal relationships). McCroskey and Richmond identified four types of CA: traitlike, context-based, receiver-based, and situational.[34] These form the four points in the continuum of CA, ranging "from the extreme trait pole to the extreme state pole."[35] Among the four types, traitlike CA, which refers to "a relatively enduring, personality-type orientation toward a given mode of communication across a wide variety of contexts," is the most appropriate for this study as it gives a general measure of CA of individuals across time, receivers, and context.

Individuals within the normal range of traitlike CA may respond differently in various situations. One important difference between typical Internet communication and face-to-face interaction is the uniqueness of computer-mediated communication that the Internet incorporates, which significantly reduces levels of anxiety experienced during interaction. Computer-mediated communication facilitates self-expression with nonverbal and environmental cues filter-out and low social presence.[36] With a mediated platform, such as Facebook, it is possible that individuals with high traitlike CA will use SNSs to compensate for their social deficiency, which may alleviate anxiety they encounter in a daily face-to-face context. However, unlike other online social media, such as BBS (bulletin board system), the lack of anonymity on Facebook may inversely raise the level of anxiety experienced by high CA individuals and prohibit them from online communication. To explore the relationship between Facebook gratifications and the user's level of CA, we ask:

$RQ_{2.1}$: How does traitlike CA relate to Facebook gratifications?

$RQ_{2.2}$: How would traitlike CA affect the degree of Facebook use?

This study also explored significant predictors in a multivariate fashion of (1) gratifications obtained from Facebook use and (2) usage of Facebook in diverse indicators (e.g., perceived importance of use, time spent per day, number of friends, number of groups, number of applications, and log in frequency). Thus, we ask:

RQ_3: How can CSE, OEO, traitlike CA, and user demographics predict the level of gratifications obtained from Facebook usage?

RQ_4: To what degree can user demographics, CSE, OEO, traitlike CA, and gratifications predict the usage of Facebook?

Methods

Sample and sampling procedure

A self-administered online survey was hosted on My3q (www.my3q.com) from late November to early December

2008. Invitations (via email) were sent to a sample of Facebook users in Hong Kong through a snowball sampling technique. Respondents were asked to forward the invitations to 2–3 friends on the randomly shown friend list on their Facebook profile. A total of 459 questionnaires were received and 437 were confirmed as valid questionnaires for data analyses.

Closely resembling the demographics of Facebook users in previous studies,[12,37] 72 percent of the respondents were aged 21–30 and 57.7 percent were females. Unlike previous studies, which mostly focused on university students, the present study included respondents from various occupational backgrounds. We considered online survey method an appropriate and efficient way to conduct a study on SNSs because respondents could conveniently login to retrieve necessary information (e.g., number of friends, groups, and applications they have used), which increased the accuracy of their responses.

Measures

To outline a specific set of gratifications obtained from Facebook usage, focus groups were conducted to collect users' opinions on new gratification items and to refine existing ones found in past studies. Three groups with 17 users in total were invited. Then a pilot test on a group of 63 Facebook users was held to ensure clarity and quality of the instrument. Some items were refined or deleted. The final questionnaire consisted of 28 gratification statements.

CSE was measured with Luhtanen and Crocker's short-form scale.[22] Participants were asked to respond on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree) to eight items (e.g., "I am a worthy member of …"; "I feel good about the social groups I belong …"). The scale was very reliable ($\alpha = 0.94$).

OEO was measured by the scale adapted from Leung's study.[13] Participants responded to seven items (e.g., "I find it easier to expose my inner thoughts online" and "I often talk about myself"). Reliability alpha was acceptable at 0.74.

Traitlike CA was measured using eight items (e.g., "I dislike participating in group discussions"; "Usually I am very tense and nervous in conversations") from the *Personal Report Communication Apprehension*.[33] The scale yielded a Cronbach alpha of 0.89.

The concept of Facebook usage contained self-reported assessments of both the attitudinal measure of perceived importance of Facebook use, adapted from the study of Ellison *et al.*,[6] as well as five behavioral measures (e.g., time spent per day in minutes, number of friends, number of groups, number of applications, and log in frequency). Participants responded to six items to assess the attitudinal dimension perceived importance of Facebook with a 5-point Likert scale (1 = "strongly disagree" and 5 = "strongly agree"). Sample items for perceived importance of Facebook use included "Facebook is part of my everyday activity"; "I am proud to tell people I'm on Facebook"; "I feel out of touch when I haven't logged onto Facebook for a while"; and "I would be sorry if Facebook shut down." The scale was reliable with a Cronbach alpha of 0.87.

Results

Gratification obtained from Facebook usage

A principal components factor analysis with varimax rotation was run to confirm the potential groupings of the 28 Facebook gratifications items. The five items with low communalities and those that failed to load on any factors were removed (acceptable minimum factor loading was 0.50). The analysis yielded six factors with an eigenvalue greater than 1.0, explaining 70.04 percent of the variance (Table 1). The results showed that gratifications obtained in using Facebook include social surveillance ($\alpha = 0.93$), recognition ($\alpha = 0.78$), emotional support ($\alpha = 0.83$), network extension ($\alpha = 0.77$), entertainment ($\alpha = 0.71$), and network maintenance ($\alpha = 0.66$).

Hypotheses testing

Bivariate results in Table 2 showed that CSE was significantly and positively correlated with the six Facebook gratification dimensions. Thus, $H_{1.1}$ was fully supported. CSE was also significantly and positively correlated with the perceived importance of Facebook and number of friends. Therefore, $H_{1.2}$ received some support. As for $H_{2.1}$, OEO was significantly and positively correlated to six Facebook gratification factors. Therefore, $H_{2.1}$ was fully supported. Similarly, OEO was significantly and positively correlated only with perceived importance of Facebook, number of groups, and number of applications in Facebook use. Thus, $H_{2.2}$ was only partially supported.

Relating traitlike CA and gratifications obtained and Facebook usage

Results in Table 2 also showed that traitlike CA was significantly but negatively correlated with social surveillance, network extension, network maintenance, and number of friends. This reveals that the level of anxiety in communication still had a negative effect on one's Facebook engagement.

Predicting Facebook gratifications

Regression results in Table 3 showed that CSE and OEO were significant predictors for social surveillance; OEO and traitlike CA (negative) were for recognition and network extension gratifications. High levels of CSE and OEO were predictive of emotional support for females. Similarly, high levels CSE and OEO were predictive of entertainment for young females. Finally, females with high CSE, OEO, and low traitlike CA tended to be significantly linked to network maintenance gratifications in Facebook use. The variances explained for gratifications obtained by psychological traits and demographics ranged from 11 to 34 percent.

Predicting Facebook usage

Hierarchical regression analyses were applied to answer the question on how user demographics, the three psychological traits, and gratifications predict patterns of Facebook usage (Table 4). Social surveillance, recognition, entertainment, and network maintenance were found to be significant predictors for perceived importance of Facebook at the final stage of regression entry, which indicate that the more the respondents found Facebook gratifying, the more they perceived Facebook to be important in their lives.

Heavy users of Facebook (in minutes per day) tended to be in lower education level and were more motivated by entertainment than infrequent users of Facebook. Facebook

Table 1. Factor Analysis of Gratifications Obtained from Facebook Use

Items	Mean	SD	Factor 1	2	3	4	5	6
Social surveillance								
1. Without alerting others, I know more about them (e.g., viewing their photos, videos, or notes).	3.74	1.02	0.88					
2. Without alerting others, I look for friends' social networks (e.g., mutual friends or friends of friends).	3.61	0.99	0.86					
3. Without alerting others, I know relevant and updated events in my social network.	3.63	0.94	0.86					
4. I look for friends' social networks (e.g., mutual friends or friends of friends).	3.66	0.93	0.79					
5. I know more about others (e.g., viewing their photos, videos, or notes).	3.87	1.01	0.77					
6. I know relevant and updated events in my social network.	3.66	0.94	0.76					
7. I have fun by viewing my friends' photos, videos, or text.	3.60	0.99	0.68					
Recognition								
8. I enhance my sense of belonging by creating or joining groups.	2.72	1.14		0.80				
9. I am recognized as trendy and tech-savvy.	2.78	1.05		0.68				
10. I'm not isolated from my friends who use it.	2.86	1.11		0.63	0.41			
11. I join groups to express my position, opinion, and personal values.	3.08	1.08		0.58				
Emotional support								
12. I give and receive emotional support by sending greetings (e.g., with the help of the birthday reminder application).	3.13	1.17			0.82			
13. I give and receive emotional support by sending a virtual gift, a kiss, hug, etc.	2.76	1.20			0.81			
14. I give and receive emotional support by leaving messages for others.	3.32	1.06	0.40		0.65			
Network extension								
15. I make new friends (e.g., simply adding friends or meeting new friends via joining groups).	3.11	1.15				0.80		
16. I make friends with people who I am interested in but am too shy to talk to.	2.83	1.12				0.78		
17. I make friends with people who I am interested in but have no chance to meet in person.	3.21	1.14				0.76		
Entertainment								
18. I use it to kill time.	3.15	1.22					0.81	
19. I use it to escape from work or pressure.	2.69	1.24					0.72	
20. I have fun by playing its games or applications.	3.16	1.17					0.67	
Network maintenance								
21. I search for or interact with old or forgotten friends.	3.71	1.08	0.43					0.71
22. I keep in contact or interact with my friends (e.g., write on friends' walls/photos).	3.44	1.07						0.70
23. I create events and ask others to join.	2.72	1.13						0.56
Eigenvalue			8.12	2.82	1.65	1.35	1.14	1.02
Variance explained (percent)			35.52	12.26	7.24	5.78	4.88	4.36
Cronbach's alpha			0.93	0.78	0.83	0.77	0.71	0.66

Note: Scale used (presented by item means): 1 = strongly disagree, 2 = disagree, 3 = neutral or undecided, 4 = agree, and 5 = strongly agree.

with more friends tended to be young males, people with a higher education and income and a low traitlike CA, and people more motivated by recognition and network maintenance and less by network extension. Similarly, Facebook users who registered in more groups and used more applications tended to be older, less educated, and largely motivated by entertainment. It is also interesting to note that Facebook users engaged in a large number of groups tended to be more emotionally open online than those that avoided groups. Finally, the more times Facebook users logged in, the more they were motivated by recognition. As indicated in Table 4, the amount of variances explained among these six equations ranged from 4 to 43 percent.

Discussion and Conclusions

An important question that this exploratory research tries to answer is why people participate in SNSs and interact intensively with one another on such cyber platforms. Results from this study demonstrate that the functionally integrative nature and the networking ability of Facebook is the core reason why the site is increasingly gaining popularity. In particular, the study revealed that users adopted Facebook to seek social information, get recognition and support from others, maintain and extend social connections, and pursue entertainment. In varying degrees, the above gratifications had a significant impact on the users' perceived importance

Table 2. Summary of the Correlation Results Between Psychological Traits and Gratification Items and Facebook Usage

	Psychological traits		
	Collective self-esteem	*Online emotional openness*	*Traitlike CA*
Gratifications-obtained			
Social surveillance	0.55***	0.24***	−0.20***
Recognition	0.16**	0.36***	−0.10#
Emotional support	0.22***	0.29***	−0.05
Network extension	0.14**	0.34***	−0.11*
Entertainment	0.15**	0.29***	0.06
Network maintenance	0.44***	0.19***	−0.27***
Facebook usage			
Perceived importance	0.27***	0.26***	−0.03
Time spend per day	0.06	0.08	0.00
Number of friends	0.14**	0.03	−0.20***
Number of groups	0.05	0.12*	−0.01
Number of applications	0.05	0.10*	−0.01
Log in frequency	0.05	0.08	−0.05

Note: #$p < 0.08$, *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.
CA, communication apprehension.

of Facebook in their lives, as well as on their actual behavioral usage patterns. It is interesting to note that people who found Facebook gratifying for social surveillance, recognition, entertainment, and network maintenance were those who would feel regretful if Facebook were to shut down tomorrow and would feel out of touch if they had not logged on for a while. This shows that Facebook can be addictive and users can become very reliant on it. However, emotional support and network extension gratifications had no influence on such perception. This suggests that Facebook may be a good channel for relationship building, professional networking, and recognition, but not an ideal place, as previously argued, for intimate exchange or seeking emotional support.

Beyond examining how the U&G theory can be used as a framework to explain Facebook use, this study added value to the existing literature by exploring the relationships between three psychological traits (i.e., CSE, OEO, and traitlike CA) and the level of gratifications obtained, as well as the variables' predictive power on Facebook use. First, this study found that individuals who were confident and assertive enough to express feelings and emotions online found Facebook gratifying in all dimensions of gratifications obtained. This seems logical as individuals who are good at expressing themselves openly value the capability of Facebook to allow them to add friends, be added, and create and join groups with no geographic restrictions, which fulfill their desire for network expansion and social compensation. Second, the strong linkages between CSE and gratifications, especially social surveillance and network maintenance, from Facebook usage suggest that individuals who feel membership to a social group is important to one's identity or self-concept are more gratified in Facebook participation. Without alerting others in Facebook, they can acquire and disseminate personal updates, search, contact, and interact with friends.

Table 3. Effect of Collective Self-Esteem, Online Emotional Openness, Traitlike Communication Apprehension and Demographics on Gratifications Obtained from Facebook

Predictor variables	*Social surveillance β*	*Recognition β*	*Emotional support β*	*Network extension β*	*Entertainment β*	*Network maintenance β*
Demographics						
Gender ($F = 0$)	−0.04	−0.03	−0.20***	−.02	−.12*	−.10*
Age	−0.07	−0.02	0.06	.06	−.14*	−.02
Education level	0.05	−0.03	−0.06	.05	−.05	.04
Personal income	0.01	−0.02	−0.02	−.11	.10	.05
Psychological traits						
Collective self-esteem	0.52***	0.06	0.15**	.02	.13*	.34***
Online emotional openness	0.20***	0.38***	0.31***	0.35***	0.26***	0.20***
Traitlike CA	−0.03	−0.11*	−0.02	−0.16**	0.08	−0.15**
ANOVA result (F)	28.34***	9.95***	9.68***	9.16***	7.97***	16.13***
R^2	0.35	0.16	0.15	0.14	0.13	.23
Adjusted R^2	0.34	0.14	0.14	0.12	0.11	.22

Note. Figures are standardized beta coefficients.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

Table 4. Hierarchical Regression of Demographics, Collective Self-Esteem, Online Emotional Openness, Traitlike Communication Apprehension, and Gratifications on Usage of Facebook Use

	Facebook usage					
Predictor variables	*Perceived importance β*	*Time Spend per day β*	*Number of friends β*	*Number of groups β*	*Number of applications β*	*Log in frequency β*
Block 1: *Demographics*						
Gender (F = 0)	0.09	−0.05	0.12*	0.05	0.02	0.04
Age	−0.09*	0.05	−0.24***	0.20***	0.21***	−0.03
Education level	−0.03	−0.15**	0.11*	−0.12*	−0.12*	−0.01
Personal income	0.05	0.04	0.22***	0.06	0.06	−0.01
(ΔR^2)	(0.02*)	(0.03*)	(0.08***)	(0.04**)	(0.05**)	(0.00)
Block 2: *Psychological traits*						
Collective self-esteem						
Online emotional openness	0.02	0.01	0.00	0.11*	0.08	0.01
Traitlike CA	0.05	−0.02	−0.11*	−0.03	−0.03	0.02
(ΔR^2)	(0.11***)	(0.02)	(0.02*)	(0.02#)	(0.01)	(0.00)
Block 3: *Gratifications*						
Social surveillance	0.19**	0.09	0.06	0.07	0.08	0.08
Recognition	0.18**	0.00	0.16**	0.06	0.04	0.20***
Emotional support	0.04	0.01	−0.10	−0.04	−0.03	−0.11
Network extension	−0.07	0.07	−0.17**	0.07	0.07	−0.01
Entertainment	0.27***	0.26***	0.01	0.11*	0.13*	0.04
Network maintenance	0.25***	−0.08	0.21***	−0.08	−0.09	0.07
(ΔR^2)	(0.31***)	(0.07***)	(0.08***)	(0.01*)	(0.02*)	(0.04**)
R^2	0.44	0.12	0.18	0.07	0.08	0.04
Adjusted R^2	0.43	0.08	0.16	0.06	0.06	0.04

Note. Figures are standardized beta coefficients in the last step of hierarchical regression.
#$p < 0.08$, *$p < 0.05$, **$p < 0.01$,***$p < 0.001$.

Third, it is interesting to note the negative correlations between traitlike CA and the gratifications from recognition and social network extension and maintenance. This indicates that the lack of anonymity in Facebook may actually inhibit individuals with high CA, resulting in them becoming even more socially passive in Facebook. This finding confirms that people who are not willing to communicate in daily life tend to maintain their inhibitive communicating style on Facebook.

The present study also shows that Facebook uses were primarily motivated by its interactive and playful functions. Entertainment was the strongest predictor of perceived importance of Facebook in people' lives, as well as the time they actually spent on the site. As expected, gratifications, such as network maintenance, social surveillance, and recognition, also increased one's Facebook usage, especially in time spent per day, number of friends, groups joined, and login frequency. Besides entertainment, recognition seems to be the second most powerful predictor influencing Facebook use. One possible practical implication of such a finding is that future development of Facebook should further strengthen the entertainment features and include new and effective means for self-promotion and recognition.

In the early stages of the hierarchical regression, both CSE and OEO were found to be significantly and positively correlated with Facebook usage. This suggests that the sense of belonging to one's social network and users' confidence and assertiveness in online expression motivated them to adopt Facebook. The feedback from focus group interviews also supported such findings (i.e., peer influence was a frequently mentioned reason for joining an online social network in the early adoption stage). However, their effects on Facebook use diminished greatly when stronger predictors (i.e., Facebook gratifications) were entered. This suggests that potential mediation effects are operating and that the gratifications obtained may mediate one's psychological traits to his or her Facebook use.[38] Further analyses are encouraged to investigate such possible mediating inference.

Disclosure Statement

No competing financial interests exist.

References

1. Facebook: Press Room. (2010) Company statistics. www.facebook.com/press/releases.php?p=63948#!/press/info.php?statistics (accessed Mar. 8, 2010).
2. Alexa: traffic rankings. (2010) Traffic History Graph for Facebook.com. www.alexa.com/data/details/traffic_details/Facebook.com (accessed Mar. 8, 2010).
3. Cassidy J. Me media. The New Yorker 2006; 82:50–59.
4. Gangadharbatla H. Facebook me: collective self-esteem, need to belong, and internet self-efficacy as predictors of the igeneration's attitudes toward social networking sites. Journal of Interactive Advertising 2008; 8:1–28.
5. Lampe C, Ellison N, Steinfield C. (2006) A face(book) in the crowd: social searching vs. social browsing. In *Proceedings of ACM Special Interest Group on Computer-Supported Cooperative Work.* New York: ACM Press, pp. 167–170.

6. Ellison NB, Steinfield C, Lampe C. The benefits of facebook friends: social capital and college students' use of online social network sites. Journal of Computer-Mediated Communication 2007; 12:1143–1168.
7. Johnson TJ, Kaye BK. Around the world wide web in 80 ways. Social Science Computer Review 2003; 21:304–325.
8. Lin C. Online service adoption likelihood. Journal of Advertising Research 1999; 39:79–89.
9. Stafford T, Stafford M, Schkade L. Determining uses and gratifications for the Internet. Decision Science 2004; 35: 259–288.
10. Weiser EB. The Functions of Internet use and their social and psychological consequence. CyberPsychology & Behavior 2001; 4:723–743.
11. McGuire WJ. (1974) Psychological motives and communication gratification. In Blunder J, Katz E, eds. *The uses of mass communications: current perspectives on gratifications research*. Beverly Hills, CA: Sage, pp. 167–196.
12. Leung L. Impacts of net-generation attributes, seductive properties of the Internet, and gratifications-obtained on Internet use. Telematics and Informatics 2003; 20:107–129.
13. Papacharissi Z, Rubin AM. Predictors of Internet use. Journal of Broadcasting & Electronic Media 1983; 44:175–196.
14. Leung L. Stressful life events, motives for Internet use, and social support among digital kids. CyberPsychology & Behavior 2007; 10:204–214.
15. Joinson AN. "Looking at" "Looking up" or "Keeping up" with people? Motives and uses of facebook. Paper presented at the Twenty-Sixth Annual SIGCHI Conference on Human Factors in Computing Systems; 2008 April 5–10; Florence, Italy.
16. Raacke J, Bonds-Raacke J. MySpace and Facebook: applying the uses and gratifications theory to exploring friend-networking sites. CyberPsychology & Behavior 2008; 11: 169–174.
17. Luhtanen R, Crocker J. A collective self-esteem scale: self-evaluation of one's social identity. Personality and Social Psychology Bulletin 1992; 18:302–318.
18. Valkenburg PM, Peter J, Schouten AP. Friend networking sites and their relationship to adolescents' well-being and social self-esteem. CyberPsychology & Behavior 2006; 9: 584–590.
19. Arieti S, Bemporad JR. (1978) *Severe and mild depression: the psychotherapeutic approach*. New York: Basic Books, Inc.
20. Arieti S, Bemporad JR. The Psychological Organization of Depression. American Journal of Psychiatry 1980; 137: 1360–1365.
21. Beck ET. Self-disclosure and the commitment to social change. Women's Studies International Forum 1983; 6:159–163.
22. Freud S. (1961) Mourning and melancholia. In Stranchey J, ed. *The standard edition of the complete psychological work of Sigmund Freud* (*Vol. 14)*. London: Hogarth Press, pp. 243–258.
23. Komiya N, Good GE, Sherrod NB. Emotional openness as a predictor of college students' attitudes toward seeking psychological help. Journal of Counseling Psychology 2000; 47:138–143.
24. Lutz WJ, Hock E, Kang MJ. Children's communication about distressing events: the role of emotional openness and psychological attributes of family members. American Journal of Orthopsychiatry 2007; 77:86–94.
25. Underhill J, Wakeling HC, Mann R, Webster SD. Male sexual offenders' emotional openness with men and women. Criminal Justice and Behavior 2008; 35:1156–1173.
26. Gross R, Acquisti A. Information revelation and privacy in online social networks. Paper presented at the Workshop on Privacy in the Electronic Society; 2005 Nov 7; Alexandria, VA.
27. Stutzman F. An evaluation of identity-sharing behavior in social network communities. Paper presented at the iDMAa and IMS Code Conference; 2006 April 5–8; Oxford, OH.
28. McKenna KY, Green AS, Gleason MEJ. Relationship formation on the Internet: what's the big attraction? Journal of Social Issues 2002; 58:9–31.
29. McCroskey JC. (1993) *An introduction to rhetorical communication.* 6th ed. Englewood Cliffs, NJ: Prentice-Hall.
30. Bippus A, Daly JA. What do people think causes stage fright? Naïve attributions about the reasons for public speaking anxiety. Communication Education 1999; 48:63–72.
31. Beatty MJ. Communication apprehension as a determinant of avoidance, withdrawal, and performance anxiety. Communication Quarterly 1987; 35:202–217.
32. Devito JA. (2001) *The interpersonal communication book.* 9th ed. New York: Longman.
33. McCroskey JC. (1982) Oral communication apprehension: a reconceptualization. In Burgoon M, ed. *Communication yearbook 6.* Beverly Hills, CA: Sage, pp. 136–170.
34. McCroskey JC, Richmond VP. (1987) Willingness to communicate. In McCroskey JC, Daly JA, eds. *Personality and interpersonal communication*. London: Sage Publications, Inc., pp. 129–156.
35. McCroskey JC. (1984) The communication apprehension perspective. In Daly JA, McCroskey JC, eds. *Avoiding communication: shyness, reticence, and communication apprehension*. Beverly Hills, CA: Sage, pp. 13–38.
36. Bargh JA, McKenna KY, Fitzsimons GM. Can you see the real me? Activation and expression of the "true self" on the Internet. Journal of Social Issues 2002; 58:33–48.
37. Stuk SP. (2009) User behaviors in online social network applications: present untapped marketing advantage. Blinq Media. www.blinqmedia.com/research.php?lc=2K15M954JE (accessed April 10, 2009).
38. Baron RM, Kenny DA. The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology 1986; 51:1173–1182.

Address correspondence to:
Mr. Nick Yin Zhang
School of Journalism and Communication
The Chinese University of Hong Kong
Shatin, NT
Hong Kong

E-mail: zhangyin@cuhk.edu.hk