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Hong Kong Adolescents' Use of MSN vs. ICQ for Developing Friendships Online:  
Considering Media Richness and Presentational Control

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Abstract

Grounded in the concepts of media richness and presentational control, two popular free instant messengers (IMs), ICQ and MSN, were compared via a snowball sample of 180 Hong Kong adolescents who anonymously completed a questionnaire. Respondents using both MSN and ICQ perceived MSN as a richer IM that offered greater control than did ICQ. MSN's greater richness and control relative to ICQ's resulted in teenager users' spending more time and discussing various topics more frequently on MSN than via ICQ. Such relative richness and control, too, lead to better friendship quality on the MSN than via ICQ, but made no difference in friendship quantity. Media richness and presentational control appear to be viable concepts in explaining IM use behavior.

Key Words: instant messenger, friendship development, media richness, self-presentation, user control, interpersonal communication.

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Communications technology has fundamentally changed the way people interact, socialize, and form relationships with one another. The Internet has become a popular medium for developing interpersonal relationships (Henderson & Gilding, 2004; Hu, Wood, Smith, & Westbrook, 2004; Wong & Xia, 2008). Many teenagers, as much as 87% of them, use the internet for a variety of purposes (Lenhart, Madden, & Hitlin, 2005; Lo & Leung, 2008; Wang, Bianchi, & Raley, 2005). Making friends and forming social circles are a most frequently cited reason for Internet use among teens (Boyd, 2008; Kang & Yang, 2006; Peter, Valkenburg, & Schouten, 2005). Particularly, instant messengers (IMs) are a trendy means adolescents adopt to make friends online (Chan & Cheuk, 2009). Further, instant messaging as a form of interpersonal communication is playing an increasingly important role among Chinese young adults (Huang & Chow, 2008).

In Hong Kong, over 1.2 million people are IM users (20% of the total population) and 85% of the users are young people (PCCW, 2005, cited in Lee, 2007). IM is playing an ever-more important role in Hong Kong teenagers' life (Lee, 2007). The rapid growth of IM service such as ICQ has influenced the development of Hong Kong adolescents (Leung, 2004). Chan and Cheuk (2009) discovered that IM was used to present certain images and develop, enhance friendships among teenagers in Hong Kong. An examination of teens' online friendship development is particularly important due to the fact that adolescence is a special period of human development, in which, concerns with interpersonal relationships are most acute (Allison & Schultz, 2001).

The important role of IM in online friendship development has sparked many studies that examined mainly the impact of features of early instant messengers, namely anonymous, synchronous exchange of text messages (e.g., Green, Hilken, Friedman, et al., 2005; Henderson & Gilding, 2004; Qian & Scott, 2007). The current versions of instant messengers, however, offer much more. They are loaded with many advanced features that provide audio and visual cues. A few studies then examined overall use (but not individual feature use) of “new” IMs. For example, Kim, Kim, Park, and Rice (2007) compared overall IM use with other media (e.g., email, face-to-face interaction, and mobile phone). Chung and Nam (2007) explored self-efficacy-related predictors of overall IM use.

MSN and ICQ, two of the feature-laden free messengers, most popular among Hong Kong teenagers (e.g., Wong & Xia, 2008; Lee, 2007), are similar in some ways but markedly different in others. As the current versions of IMs are loaded with many advanced features that provide audio and visual cues in addition to text messaging (Boswell, 2008), an in-depth examination of IM use can reflect how adolescents might differently exploit individual features in building online friendships.

The concepts of media richness and presentational control are evoked to explain how features of MSN and ICQ might differ in serving as venues for teenagers to develop friendships. Due to the lack of better alternatives, media richness theory has continued to provide a foundation for understanding how media’s inherent characteristics may influence human behavior in online communication (Carlson & Zmud 1999; Kahai & Cooper, 2003; Kock, 2004). Presentational control is highly relevant to effective image management, necessary for the development of online interpersonal relationships. Specifically, the current purposes were to (1) compare ICQ and MSN’s media richness and presentational control functions via analyzing

their features, (2) examine how media richness and presentational control respectively relate to IM usage and online communication, and then to friendship development (in quality and quantity), and (3) probe how IM usage and communication relate to friendship development.

### *Media Richness*

The concept of media richness was originated in Daft and Lengel's (1984, 1986) media richness theory (MRT) designed to guide effective managerial communication. MRT classifies communication media along a continuum of "richness" (or information carrying capacity), which is comprised of four aspects: (1) the availability of instant feedback, which allows questions to be asked and corrections to be made; (2) the use of multiple cues, such as physical presence, voice inflection, body gestures, words, numbers, and graphic symbols; (3) the use of natural language, which can be used to convey an understanding of a broad set of concepts and ideas; and (4) the personal focus of the medium. The more a medium displays these attributes, the richer it is. When a medium carries none or few of these attributes, it is lean.

Based on the assumption that users strive for efficiency in choosing media, Daft and Lengel further theorize that communication efficiency is the greatest when message complexity is matched up with media richness: Rich media for complex tasks and the lean for simple messages. Therefore, face-to-face (FTF) is the "richest" medium because it has the capacity for immediate feedback, carries multiple cues, and uses natural language; whereas written documents are the leanest. Rich media, approximating to FTF communication, are better than lean media for conveying complex messages. On the other hand, simple messages (e.g., meeting announcement) can be efficiently conveyed via lean media (e.g., bulletin board).

Unlike clear-cut information relay, social interactions, on- or off-line, are no simple tasks; as feelings, between-line meanings, nonverbal expressions are hard to transmit efficiently via lean media. The richest face-to-face medium thus has the highest potential for conveying complex personal information needed to facilitate friendship building. Kock (2004) argues that humans are most accustomed to “natural” characteristics inherent in face-to-face communication processes for social interactions, implying that FTF could be the most advantageous channel for friendship building. Logically, new media, equipped with more rich features should allow expressions of various emotions and feelings and provide *potentially* more conducive social contexts for interpersonal relationship development than would media without such rich features. Whittaker (2002) predicts that the closer the set of modes offered by a technology that resembles FTF interaction, the greater efficiency of the communication. Then, an instant messenger, that offers both rich and lean features designed to meet users’ various interaction needs at different relationship stages, likely maximizes efficiency for facilitating friendship formation.

#### *Presentational Control*

In addition to media richness, presentational control is a function highly relevant to online interpersonal relationships. Hiltz and Turoff (1993) were among the first to discuss the importance of one’s ability to control communication through text and asynchronous media.

Asynchronicity, as opposed to instantaneity, often releases pressure and stress, which can be a problem for simultaneous FTF interactions (Kim, Kim, Gwang, Park, & Rice, 2007; Walther, 1996). Reduced anxiety could translate into more effective interpersonal interactions. However, the control capacity of the current instant messengers, loaded with FTF-like features, go beyond asynchronicity. Presentational

control, pertaining to regulating and filtering information in order to project the most desirable images of self, then should include an IM's ability to allow users to manage communication pace, the length of interaction time, response timing, and using and switching among features.

This type of control of information content, amount, and delivery is especially important as self-presentation, a basic ingredient in interpersonal communication, does not always require a maximum revelation of personal information. Social actors may wish to withhold information about self, that can be interpreted negatively in front of an individual of interest (Author & Weigold, 1995). The need to manage one's image prompts an individual to regulate and filter information, so he/she can be judged in the most desirable light before an important audience. Walther (1996) argues that computer-mediated communication provides opportunities for selective self presentation, idealization, and reciprocation (see also Cummings, Lee, & Kraut, 2006). Effective use and control of media's information carrying capacity can affect the effectiveness of self-disclosure, whereby influencing reciprocity and trust (Henderson & Gilding 2004). For example, if a medium allows a user to disclose his/her physical attributes and visualize emotions, he/she might be able to solicit the like information from the person on the other end of the internet

As self-presentation is a mindful effort by social actors to project a desirable image in front of a potential friend online, message control becomes a key element of media functionality. Greater control of message can maximize the efficiency of self-presentation. The concepts of richness and control reviewed thus far serve as the foundation for analyzing and comparing MSN and ICQ, the two widely available, and perhaps the most popular, free instant messengers among Hong Kong teenagers (Wong, Xia, & Li, 2006).



*Media Richness and Presentational Control: MSN vs. ICQ*

ICQ, short for “I Seek You,” was the world’s first free global instant messenger. The number of registered users could easily top 200 million (ICQ, 2007). MSN, owned by Microsoft, had caught on fairly rapidly. Due to the launch of webcam in 2003, MSN in 2006 was hailed as the most popular IM in the world, enjoying 200 million unique users (comScore, 2006, Softpedia, 2007), those each sport a unique combination of an IPA (Internet Protocol Address) and a registration ID. Currently, MSN was named Windows Live Messenger (WLM) in 2006 due to its constantly upgraded multi-media features (Chou & Chen, 2009).

*Media richness.* ICQ and MSN messengers are both loaded with advanced features. According to ICQ Inc. (2007) and Microsoft Online Services (2007), the traditional text messengers now let users change background colors and insert icons. Both now have forums, chat rooms, and instant gaming. The MSN messenger has a few additional features such as webcam, animation, and PC to PC calling. For the free features used by teenagers, ICQ and MSN both offer people search, contact list, messaging, color change, and icon insertion, while MSN tenders additional webcam, animation, and avatar (Author, 2007). ICQ has a longer existence, whereas MSN offers features that enable users to communicate with instant visual and audio cues of the real person. MSN may be perceived as the richer IM than ICQ. RQ1 was asked.

RQ1: Do Hong Kong teenage users perceive MSN as having greater media richness functions than ICQ?

*Presentational control.* Many forms of electronic media, instant messengers included, provide individuals with greater message control than does FTF contact over timing, pace of interactions, the types of cues, and amount of information (Green, Hilken, Friedman, et al., 2005). The asynchronic features of mediated communication

likely release pressure and stress which otherwise can result from the simultaneity of FTF interaction (Walther, 1996); this can translate into more efficient interpersonal interactions. Users can choose the person to message with. If one is unpleasant, a user can move on and try new ones without having to be embarrassed or apologize for stopping the communication. Of course, one may not do so when communicating with someone already known. Many electronic media also allow a user to withhold the true identity, which decreases risks that may result from self-disclosure (Henderson & Gilding, 2004, Peter, Valkenburg, & Schouten, 2005). Even when a user makes a faux pas, he/she is able to re-enter an online community with a new screen name. Thus, an instant messenger that offers greater message control should facilitate self-presentation and friendship development, particularly in the initial "stranger-to-friend" stage.

Although ICQ is possibly the leaner medium and MSN, the richer, an assessment as to which one offers better control has to be boiled down to the ease afforded to users in choosing and switching communication modes (e.g., audio, visual, or text), using graphics, presenting the types of cues, and managing timing. Rich media features such as webcam or video conferencing that approximate FTF interaction without much control mechanism (e.g., managing viewing angle and close-up size) might give away too much uncensored personal information not completely desired by the user, who, in turn, may experience anxiety. Users unable to project the good image of self may have their relational goals compromised. However, rich features with high controllability (e.g., free control and conveyance of own image thorough viewing angle, muting, or scene switch) could facilitate self-presentation and future relationship development. Nonetheless, the relevant literature has not

offered much information on control. Thus RQ2 was asked regarding MSN and ICQ's control-related functions.

RQ2: Which IM, MSN or ICQ, offers better presentational control?

*Relative Richness and Control, and Relative IM Usage and Online Discussion*

A central claim of the communication discipline asserts that communication is the basic ingredient in the developmental process of any interpersonal relationships, friendship included (Gamble, 2005). The amount of interaction time and the substance of communication/discussion are two important aspects routinely examined in interpersonal communication research (Gamble, 2005). Consistent with the efficiency-driven assumption of media richness theory, teenagers, who can access both MSN and ICQ, probably will spend longer time using the more efficient IM (i.e., greater in media richness and presentational control) for friendship development. The idea of relative richness and relative control can succinctly explain how teenagers use IMs. For MSN and ICQ, the one with a relative advantage in richness and control probably attracts teens to use it more. Hence, H1 and H2:

H1: The relative media richness between MSN and ICQ relates positively to the relative usage of the two instant messengers.

H2: The relative presentational control between MSN and ICQ relates positively to the relative usage of the two instant messengers.

In addition to the time spent on an IM, communication substance, the disclosure of the sensitive self or personal information, particularly aids relationship development (Laurencau, Barrett, & Pietromonaco, 1998; McCown, Fischer, Page, & Homan, 2001; Reis & Shaver, 1988). Teenagers discuss with online friends various topics from casual to serious, private exchanges as self-disclosure at various stages of a relationship (Shiu & Lenhart, 2004). An IM loaded with rich features has great

capacity of conveying information by enabling users to give visual or audio cues; which can translate into convenience or efficiency for self-disclosure. Convenience can lead to more frequent discussions of various topics. MSN and ICQ considered, the richer, compared to the leaner, likely results in more frequent online personal discussions. To be more accurate, H3 was proposed.

H3: The relative media richness of MSN and ICQ relates positively to the relative average discussion frequency of various topics on the two instant messengers.

However, disclosing personal information can pose risks such as ridicule and rejection. Those risks could be reduced on the internet due to anonymity and users' ability to control communication (McKenna, Green, & Gleason, 2002). Thus, an IM that offers great presentational control can safeguard sensitive disclosure and alleviate users' anxiety from possible risks to identity; which likely motivates users to engage in more constant discussions of various topics, particularly those of personal nature. Between MSN and ICQ, the one that gives more control likely spurs more frequent online discussions. H4 was proposed to examine the relationship between the differential in presentational control and that in teenagers' online discussion frequencies.

H4: The relative presentational control of MSN and ICQ relates positively to the relative average discussion frequency of various topics on the two instant messengers.

*Relative IM Usage and Discussion, and Relative Friendship in Quantity and Quality*

Online friendship can be understood in terms of quantity and quality. Although several indicators for quantity exist, a standardized measure takes precedence over the un-standardized. For example, friends made per year, standardized over IM longevity, is a superior indicator to the un-standardized total

number of friends on the contact list, which could easily be explained by the longevity of an IM rather than by the media characteristics (e.g., media richness and control).

ICQ, in existence seven years longer than MSN, likely boasts a larger total number of friends in comparison to MSN's; yet a newer IM like MSN may have better technological advantages that enable users to make friends more quickly in a given time period. Thus, friends made per year is used as the quantity indicator for friendship formation in the current study.

Interpersonal relationship qualities typically include similarity, inclusion, influence, trust, long-term prospect, and communication satisfaction (Author & Fung, 2007). First, similarity often is the basis for interpersonal compatibility (Byrne, 1997). Offering the convenience of straightforward communication without much risk to identity, the internet is regarded as a more convenient avenue than FTF interaction for building friendships, based on similar interests or commonalities (McKenna, Green, & Gleason, 2002). Second, the relationship with online friends can also be assessed based on how connected one is to the online community, which is termed "inclusion" or the perception of being included in a group(s) (Henderson & Gilding, 2004). Third, influence and trust are regarded as the basic traits of interpersonal relationships (Sztompka, 1999), thus both were examined in this study. Fourth, relationship quality can also be evaluated based on anticipation of future prospect, a concept similar to yet more appropriate than relational commitment in the current context, as serious relationships are not a focus here. Finally, communication satisfaction, as an aspect of on-going relationship, is an indicator of relationship quality.

In order to make friends of quality online, one must first spend time on an IM(s) and then engage in discussions to gauge interest. Presumably, the more time one spends on an IM, the more friends he/she can potentially make; and through trial

and error, he/she should be able to select and maintain quality ones from the many friends made online. Further, Discussions of various topics increase mutual understanding and attract people with similar interests (Schmidt & Cornelius, 1987). With more information exchanged, individuals can gradually establish trust and then experience satisfaction (Byers & Demmons, 1999; Canary & Cody, 1994). To analyze how the differential in MSN and ICQ's usage and online discussions by teenagers may influence their friendship quantity and quality, H5 and H6 are stated as follows:

H5: The relative usage of MSN and ICQ relates positively to the relative quantity and quality of friends made on the two instant messengers.

H6: The relative average discussion frequency on MSN and ICQ relates positively to the relative quantity and quality of friends made on the two instant messengers.

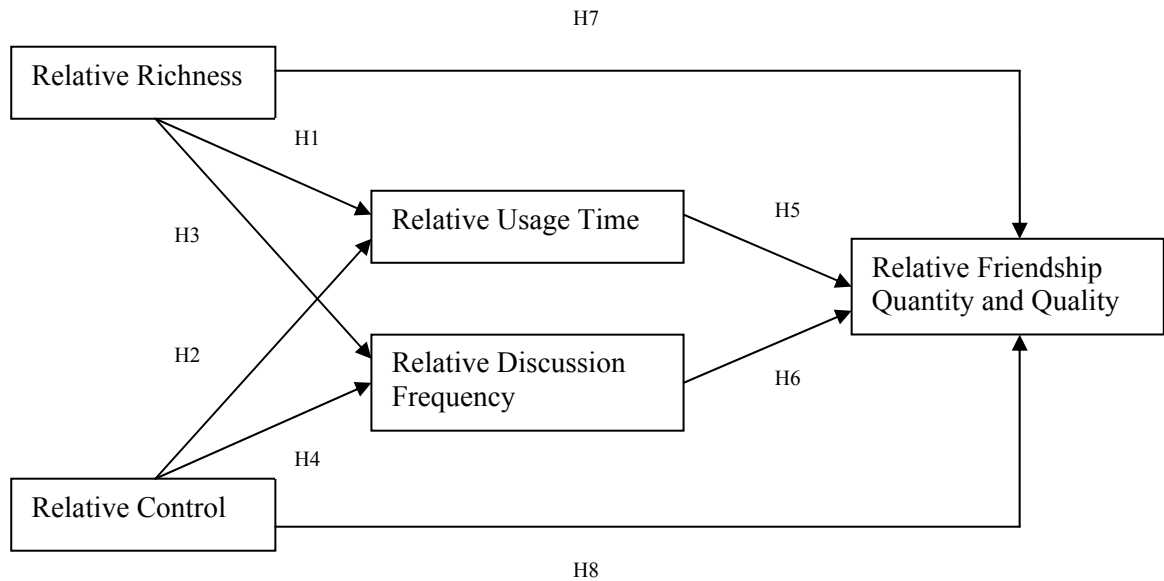
*Relative Richness and Control, and Relative Friendship in Quantity and Quality*

Great media richness affords larger information carrying capacity; whereas high presentational control gives users opportunities to effectively disclose information desirable for image management and relationship development. Both enhance communication efficiency, which likely leads to greater number of friends made per year on an IM. By the same token, richness-and-control-related communication efficiency facilitates users in attracting similar others, fostering mutual understanding, nurturing trust, and enhancing satisfaction, which cumulatively add to relationship quality. The reasoning thus far leads to H7 and H8.

H7: The relative media richness of MSN and ICQ relates positively to the relative quantity and quality of friends made on the two instant messengers.

H8: The relative presentational control of MSN and ICQ relates positively to the relative quantity and quality of friends made on the two instant messengers.

All hypotheses are summarized in the diagram below for easy reference.



## Methods

### *Sample and Procedures*

One hundred eighty-five adolescents enrolled in middle and high schools in Hong Kong, were recruited through a snowball method in the summer of 2006. Their participation was anonymous and voluntary. The researcher's two undergraduate students gave out questionnaires to their high school siblings, the two key contacts, who then passed the questionnaires to peers and peers' friends who were using both ICQ and MSN. Through communication relays, participants were instructed to recruit peers who were using both ICQ and MSN. An introductory paragraph on the first page of the questionnaire further clarified that only those who were using both ICQ and MSN should complete the questionnaire. In the same paragraph, participants were told to do the survey independently without discussions with others. Of the 200 questionnaires distributed, 185 were returned. Five questionnaires with massive missing data were discarded. The final sample size was 180, which should be

adequate for within-sample comparisons. Respondents had a mean age of 16.73 and a range of 14-19. Eighty-six of them were males and 94 females. About 50% (i.e., 49.7%) were from middle schools and the other half from senior high schools. All of them had used ICQ and MSN at home, 35% also used them at school, 15.2% at public libraries, 7.2% at friends' homes, and 5.7% at internet cafes. Respondents reported having used ICQ for an average of 61.38 months and MSN 27.38 months.

#### *Questionnaire and Measurement*

The questionnaire was written in English and then translated into Chinese for data collection. The translated questionnaire was pre-tested for translation accuracy by two bilingual graduate students who independently checked all items and then worked out a few discrepancies via rounds of back and forth translations. Then, the Chinese questionnaire was assessed for readability by using eight high school students who did not participate in the survey. A few minor improvements were made. The final questionnaire consisted of three parts: a) demographics (i.e., gender and age), b) uses and perceptions of ICQ and its features and functions, and c) MSN items that mirrored those of ICQ with a few additional items on MSN's unique rich features. With questionnaires randomly stacked in the actual data collection process, half of the respondents answered the ICQ items first and the other half MSN first. Unless otherwise indicated, items were created based on the literature review.

*Media richness functions.* Four richness functions, capability to approximate FTF interaction, were listed below. The rating scale ranged from 1 (very untrue) to 7 (very true). The richness-relevant functions were :

- (1) On ICQ/MSN, I can express my feelings fully,
- (2) On ICQ/MSN, I can freely say what I intend to say,
- (3) On ICQ/MSN, I can explain complex ideas well, and



(4) On ICQ/MSN, I feel very much like talking face to face with my online friends.

As media richness is a perceptual construct, reliability analysis of its operationalized items was conducted. ICQ's four media richness items reached a Cronbach's alpha of .73; MSN's was .88.

*Presentational control functions.* With the same rating scale, the two presentational functions were:

- (1) There is less risk communicating through ICQ/MSN than through face-to-face contact, and
- (2) I feel I have more control in what I want to say through ICQ/MSN than in a face-to-face encounter.

Being a conceptual construct, the presentational control items, too, warranted reliability analysis. The Cronbach's alpha for the two ICQ control items was .71, and .88 for MSN's.

*IM usage time.* Answer to the following question constituted IM use time, "In the past month, how many hours per week did you spend using ICQ/MSN?"

*Average discussion frequency of various topics.* Six categories, generated in an early pilot study (Author, 2007), spelled boyfriend/girlfriend, schoolwork, family/personal problems, fashion, sports, and hobbies. An "Other (Specify)" option was included in case the six categories did not quite cover the usual online topics. The question was "how often do you discuss the following topics when you use ICQ/MSN?" The rating scale was from 1 (rarely) to 7 (frequently). Only seven respondents or 3.87% chose and rated "Other(specify)" but did not actually specify new topics. Thus, the six topics included in the survey likely captured the major content categories discussed online. Because the frequencies of discussing various

topics were actual behaviors, rather than conceptual items, no reliability was calculated. ICQ and MSN's average/composite discussion frequency of various topics was simply the sum of the six discussion frequencies divided by 6.

*Friendship quantity.* The literature review has established that friends made per year, standardized over time, is an appropriate quantity measure. Respondents were first asked, "How many online friends have you made so far through ICQ?/MSN?" Then they reported total years of using ICQ/MSN. Friendship quantity was obtained via dividing the total number of friends by years of corresponding uses of ICQ and MSN. Additionally, respondents were asked to estimate the percentage of strangers, acquaintances, and friends on the that list.

*Online friendship quality* was evaluated via six aspects, adopted from an early study (Author & Fung, 2007). Similarity was measured by "I feel my online friends are quite similar to me," inclusion by "I feel I am included in the group," influence by "My friends and I have a lot of influence on each other," trust by "My friends and I can trust each other," communication satisfaction by "I am satisfied with the way I communicate with friends online," and anticipation of long-term prospect by "I probably will keep in touch with my online friends for a long, long time." The rating scale was 1 (very untrue) through 7 (very true). ICQ's six items yielded a Cronbach's alpha of .73, and MSN's did .87.

## Results

Results are organized in the order of RQs and Hs. Then additional information is reported to add to the depth of understanding.

### *Media Richness and Presentational Control: MSN vs. ICQ (RQ1 & RQ2)*

Paired *t*-tests were computed to answer RQ1 and RQ2. Results indicated that (1) MSN was rated higher on richness ( $M = 4.34$ ,  $SD = .64$ ) than was ICQ ( $M = 2.80$ ,

$SD = .51$ ),  $t = 26.07$ ,  $df = 179$ , and  $p < .001$ ; and (2) MSN was also rated higher on presentational control ( $M = 3.39$ ,  $SD = .72$ ) than was ICQ ( $M = 2.59$ ,  $SD = .63$ ),  $t = 11.88$ ,  $df = 179$ , and  $p < .001$ .

*Richness, Control, and IM Usage: MSN Relative to ICQ (H1 & H2)*

MSN and ICQ's relative richness, control, and usage time were calculated by subtracting ICQ's means from the corresponding MSN's. With the demographics (i.e., gender and age) controlled for, the Pearson's  $R$  (partial) between relative richness and IM usage time was  $.18$  ( $df = 175$ , two-tailed  $p < .05$ ); which statistically supported H1. With the same demographics controlled for, relative control and relative IM use time showed a Pearson's  $R$  of  $.20$  ( $df = 175$ , two-tailed  $p < .05$ ); which supported H2.

Further, relative richness and control were "entered" for the dependent variable of usage time (with the demographics controlled for), a multiple regression procedure yielded a model that included both relative richness ( $\beta = .11$ ) and relative control ( $\beta = .15$ ),  $R^2 = .05$ ,  $F(2, 179) = 4.68$ , and  $p < .01$ . The significant regression coefficients indicated that both richness and control contributed to relative IM usage, lending further support to H1 and H2.

*Relative Richness and Control, and Relative Discussion Frequency (H3 & H4)*

The relative discussion frequency was calculated by subtracting ICQ's composite discussion frequency from MSN's. With the demographics (i.e., gender and age) controlled for, the Pearson's  $R$  between relative richness and relative discussion frequency was  $.30$  ( $df = 175$ , two-tailed  $p < .001$ ); which statistically supported H3. With the same demographics controlled for, relative control and relative IM use time usage showed a Pearson's  $R$  of  $.44$  ( $df = 175$ , two-tailed  $p < .001$ ); which supported H4.

Then, relative richness and control were “entered” for the dependent variable of relative discussion frequency with (the demographics controlled for), a multiple regression procedure produced a model with relative richness ( $\beta = .27$ ) and relative control ( $\beta = .06$ ),  $R^2 = .09$ ,  $F(2, 179) = 8.77$ , and  $p < .001$ . The results indicated that richness exerted greater influence on relative discussion frequency.

*Relative IM Usage and Online Discussion, and Relative Friendship Quantity and Quality (H5 & H6)*

Relative friendship quantity was obtained by subtracting ICQ’s friends made per year from MSN’s; relative quality was gleaned via the same procedure with ICQ’s and MSN’s friendship quality. With the demographics controlled for, relative time usage showed a Pearson’s R of .18 ( $df = 175$ , two-tailed  $p < .05$ ) with relative friendship quality, but had no significant relationship with friendship quantity. H5 was only partially supported. Further, relative discussion frequency was correlated with relative friendship quality ( $R = .23$ ,  $df = 175$ , two-tailed  $p < .01$ ), but showed no significant relationship with relative friendship quantity. H6 was, too, only partially supported.

To explore, percentage of friends on MSN’s contact list relative to ICQ’s was used as the friendship quantity indicator; yet, still, no statistically significant correlations with IM use time and discussion frequency were obtained.

*Relative Richness, Control, and Relative Friendship Quantity and Quality (H7 & H8)*

The demographics being controlled for, relative richness yielded a positive correlation with relative friendship quality ( $R = .47$ ,  $df = 175$ , two-tailed  $p < .001$ ), but no relationship with relative friendship quantity. H7 was only partially supported. Further, relative control, too, had a positive correlation with relative friendship quality

( $R = .33$ ,  $df = 175$ , two-tailed  $p < .01$ ), but not quantity. H8 was only partially supported.

For exploration, percentage of friends on MSN's contact list relative to ICQ's was used as the friendship quantity indicator, no statistically significant correlation with richness or control was found.

#### *Cumulative Multiple Regression Analysis*

Of the two friendship outcome variables, quantity showed insignificant statistical relationships with each of all of its four presumed predictors (i.e., relative richness, control, IM usage time, and discussion frequency), and was not further analyzed cumulatively. To determine whether the four predictors had an impact on friendship quality, an "enter" multiple regression procedure, with the demographics controlled for, was used. The output showed only two significant coefficients in relative richness ( $\beta = .37$ ,  $t = 4.86$ ,  $p < .0001$ ) and relative control ( $\beta = .14$ ,  $t = 1.84$ ,  $p < .05$ ),  $R^2 = .25$ ,  $F(2, 179) = 27.56$ , and  $p < .001$ .

#### *Descriptive Information on Contact Lists*

Information regarding teen users' contact lists was collected to offer some insight into friendship development. Respondents reported that the ICQ list consisted of 14.08% of strangers, 51.64% of acquaintances, and 34.33% friends, which corresponded to the MSN list's 9.39%, 47.28%, and 43.31% respectively.

### Discussion

The concepts of media richness (i.e., information-carrying capacity) and presentational control guided the current investigation into how teenage users may have perceived and used MSN and ICQ differently for online friendship development.

#### *Media Richness and Presentational Control:*

ICQ and MSN, at the time of the data collection, shared a few similar features used by Hong Kong teens to make friends. MSN was ranked higher than ICQ on media richness functions. Interestingly, MSN's presentational control functions were rated higher than ICQ's as well. Initially, this seemed a bit counter-intuitive or inconsistent with the common sentiment in the extent literature that lean media features, compared to natural social interactions, give users greater control, minimize physical appearance, lower personal risks, and reduce communication anxiety (e.g., McKenna, Green, & Gleason, 2002; Walther, Anderson, & Park, 1994). MSN's rich, "face-to-face-like" features, however, did not appear to increase such personal risks. A careful examination of presentational control should reveal that such control does not necessarily mean deliberately giving only lean information. Rather, control is about choosing information (rich or lean) and the most appropriate media features. Naturally, personal appearances enabled by rich features cause no risk perceptions when one feels comfortable about his/her images or is ready to give such personal information to further a relationship. Current rich features, like the ones on MSN, give the option of sending images and voices when users choose to, and thus provide better message choice *and* control than without such features. On the other hand, ICQ, without those audio and visual capabilities, afforded lower presentational potential, which can hinder users' image and voice disclosure needs.

Further, relative friendship quality was a combined effect of media richness and user presentational control, as the cumulative multiple regression findings clearly showed that *both* relative richness *and* control positively predicted relative friendship quality. That is, friends made on MSN were of higher quality than those on ICQ.

*Richness and Control, and IM Use and Interpersonal Discussion*

As predicted, teenagers spent more time per week and discussed various personal and other topics on MSN more frequently than via ICQ. MSN was the richer and more controllable IM, as it gave users more feature options to choose from and offered them more control on communication content and mode. Such advantages likely attracted teenagers to spend more time and engaged in more discussions of various topics (general, personal, and sensitive ones). MSN appeared to be a superior IM to ICQ in facilitating interpersonal disclosure.

*Richness, Control, IM Use, and Discussion as Predictors of Friendship Quality and Quantity*

The ultimate indicators of friendship development are perhaps the quantity and quality of friends made online. Richness, control, IM use, and discussion frequency each alone helped enhance friendship quality. That is, respondents perceived that friends made on MSN, relative to those of ICQ, as being more similar, more including, and more mutually trusting and influential to each other, and that they experienced greater communication satisfaction and anticipated long-term relationships more highly. When the four predictors all considered, the multiple regression showed that the influence of relative richness and control overshadowed relative IM use time and discussion frequency; further implicating that richness and control, which positively contributed to IM use and discussion frequency, were the primary source of influence on friendship quality.

Surprisingly, none were able to predict friendship quantity. That is, the relative difference between MSN and ICQ in richness, control, IM use time, and discussion frequency did not result in relative difference in friends made per year. Possibly, teenage users, attracted by an IM's richness and control capability, spent time discussing various topics (e.g., family/personal problems, boy/girlfriend, hobbies,

fashion, and etc.) mostly with “already” friends to further friendship than with “not-so-familiar” ones to become friends. After all, either contact list, with only 9.39% strangers on MSN and 14.08% on ICQ, suggests that teen users were generally quite familiar with the listed people; which possibly narrowed friendship development to enhancing the quality. This interpretation is consistent with Nardi, Whittaker, and Schwarz’s (2002) suggestion that IM is generally used to maintain a small network of fellow IM users rather than to connect to new others.

Equally possible, the label of “a friend” may mean different things to different users. The implicit understanding gauged from current responses could entail at least three types of friendship development: (1) strangers who were first met online, (2) schoolmates or acquaintances who were first met offline, and (3) already friends who continued interactions on and off line. This limitation may have resulted in friendship quantity being unpredictable.

### *Theoretical Implications*

In media richness theory, richness was originally confined in the task-driven, instrumental managerial situations, in which managers choose media to convey messages most efficiently. The current findings point to the fact that richness, too, is applicable in social situations involving choices of media and their features. Further, control, in the context of computer-mediated communication was generally referred to as the ability to manage asynchronic interaction. With a basis in the need for self-presentation, the current study extends control to near-spontaneous, rich online interactions. Control then becomes a process involving managing the use of various rich and lean technical features, and timing and pace of communication. Future theoretical development can center on how richness and control may be used to



classify the ever-advancing media features and then explain online communication across various contexts, from task accomplishment to social interaction.

### *Practical Implications*

The overwhelming preference for MSN sheds light on how instant messengers continue to evolve and advance for effective online communication. First, MSN has set an example that enhancing *both* richness and control functions, vital for online chatting, is possible. Richness does not necessarily hurt control as long as users are given options to choose and switch among the features as needed. Second, rich multi-media features are important as MSN's rich features of webcam and animation (which ICQ did not have) made a difference in help teenagers develop friendships efficiently. For IMs that do not yet offer users such features will probably need to. Third, as the defining feature of an IM, messaging was most frequently used feature in the current study. Any new additions of multi-media features will need to connect to the central feature of messaging, meaning users do not have to quit one feature in order to use another. This would allow users to timely pick and choose the most appropriate communication among the available secondary features. Flexible control is key.

### *An Explanation for Recent IM Evolution*

Since the data collection in 2006, ICQ and MSN's popularities have changed in different directions. ICQ sported 110 million users in 2004 (Chan & Cheuk, 2009), which was predicted to increase to 200 million in 2007 (ICQ, 2007). Since then, ICQ no longer publishes its total user numbers. MSN already had 200 million users in 2006, and its now renamed Windows Live Messenger has registered 330 million active users (WLM, 2009). In Hong Kong, ICQ users, primarily adolescents, have been migrating to MSN (HKSJU, 2009). The current findings provide an explanation for ICQ's decline in popularity. Specifically, the slow up-grading of rich multi-media

features may have driven users away to MSN. As a matter of fact, MSN (aka WLM) in 2006 was rated by experts the top IM with the best features, while ICQ did not make to the top-three (Blackwell, 2006). The current findings about teenage users converge with the expert ratings.

#### *Limitations and Future Research*

Like any others, this study manifests a few limitations, which could serve as bases for future research to overcome. First, the sample was neither representative nor probabilistic of Hong Kong's teenagers. Thus, the findings may not be generalizable to all Hong Kong teenagers. Second, although respondents were told not to discuss with any other person. The snowball method used, however, could not control such actions, which made the design vulnerable for artificial correlations and error variance. For future research, respondents can be invited to complete questionnaires in monitored situations such as in classrooms. Third, presentational control could be further developed into a scale to include its specific aspects (e.g., control over pace, image projection, and switching among features). Fourth, the concept of online friendship will need further clarification in future research. A commonly accepted definition should be provided so that respondents have a common reference in reporting friendship quantity. Fifth, the questionnaire did not include open-ended questions that could tap additional reasons as to why teenage users preferred MSN. Follow-up studies can focus on qualitative information regarding social, economic, and interpersonal reasons behind the use and choice of IM. Sixth, as the overwhelming empirical evidence suggests that teenagers are the age-based segment that display similar media consumption behaviors globally (Schiffman & Kanuk, 2007), this study understandably did not look for cultural specificities. However, a more in-depth analysis can profitably probe possible cultural impact on the link

between IM use and friendship development, the latter of which tends to be culture-laden. Last, future research can examine sequential use of media such as how a teenager may change mode of communication as a friendship develops, evolves, or disintegrates.

### *Conclusion*

Rapid technology advancement can render ICQ and MSN quite different from what they were when the data were collected. Thus, MSN's edge over ICQ or other IMs in media richness and presentational control may not always hold. However, the criteria used for evaluating information-carrying capacity and presentational control should hold for an IM with newer features. Media richness and presentational control are viable concepts for analyzing the types of media features that help online social interactions. A friendship-conducive IM must have rich features *and* afford users control of messages. MSN with both richer features *and* greater presentational control was the superior instant messenger to ICQ for friendship development among teenage users in the current study. This finding may in part explains why ICQ has waned while MSN is taking a leading role in IM development. Future technology development for instant messengers must continue to enhance the functionality in both richness and control.

## References

- Allison, B., & Schultz, J. B. (2001). Interpersonal identity formation during adolescence. *Adolescence*, 36, 509-523.
- Blackwell, L (2006). *Instant messengers grow up and go to work*. Retrieved from <http://video-chat-im-software-review.toptenreviews.com/icq-review.html>
- Boswell, W. (2008). *Find a good and free instant messenger program*. Retrieved from <http://websearch.about.com/od/dailywebsearchtips/qt/dnt0701.htm>.
- Boyd, D. (2008). None of this is real: Identity and participation in Friendster. In J. Karaganis (Ed.), *Structures of participation in digital culture* (pp. 88–110). New York: Social Science.
- Byrne, D. (1997). An overview (and underview) of research and theory within the attraction paradigm. *Journal of Social and Personal Relationships*, 14, 417-431.
- Byers, S. E., & Demmons, S. (1999). Sexual satisfaction and sexual self-disclosure within dating relationships. *Journal of Sex Research*, 36, 180-189.
- Canary, D. J., & Cody, M. J. (1994). *Interpersonal communication: A goals-based approach*. New York: St. Martin.
- Carlson, J. R., & Zmud, R. W. (1999). Channel expansion theory and the experiential nature of media richness perceptions. *Academy of Management Journal*, 42(2). 153-170.
- Chan, Z. C. Y., & Cheuk, Chan. W. (2009). An exploratory study on adolescents' experiences of using ICQ (I Seek You). *The Qualitative Report*, 14, 1-19.

- Chou, P. N., & Chen, W. F. (2009). Name-display feature for self-disclosure in an instant messenger program: A qualitative study in Taiwan. *Issues in Informing Science and Information Technology*, 6, 113- 126.
- Chung, D., & Nam, C. S. (2007). An analysis of the variables predicting instant messenger use. *New Media & Society*, 9(2), 212-234.
- comScore (2006). *Most popular IM client and instant messenger service*. Retrieved from <http://www.mydigitallife.info/2007/04/30/most-popular-im-client-and-instant-messenger-service/>
- Cummings, J., Lee, J., & Kraut, R. (2006). Communication technology and friendship during the transition from high school to college. In R. Kraut, M. Brynin, & S. Kiesler (Eds.), *Computers, phones and the Internet: Domesticating information technology* (pp. 265–278). NY: Oxford University Press.
- Daft, R. L., & Lengel, R. H. (1984). Information richness: a new approach to managerial behavior and organizational design. In B. Staw & L. L. Cummings (Eds). *Research in Organizational Behavior*, V. 6, (pp.191-233). Greenwich, CT: JAI.
- Daft, R. L., & Lengel, R. H. (1986). Organizational information requirements: Media richness and structural design. *Management Science*, 32, 554-571.
- Gamble, T. K. (2005). *Contacts : Interpersonal communication in theory, practice, and context*. Boston, MA: Houghton Mifflin Co.
- Green, M. C ., Hilken, J., Friedman, H., Grossman, K., Gasiewski, J., Adler, R., & Sabini, J. (2005). Communication via instant messenger: Short- and Long-term effects. *Journal of Applied Social Psychology*, 35, 445-462.

- Henderson, S., Gilding, M. (2004). "I've never clicked this much with anyone in my life": Trust and hyper-personal communication in online friendships. *New Media & Society*, 6(4). 487-506
- Hiltz, S. R., & Turoff, M. (1993). *The network nation: Human communication via computer*. Cambridge, Mass. : MIT Press.
- HKSYU (2009). Instant messaging. Retrieved from [http://hknews.hksyu.edu/index.php/Instant\\_Messaging](http://hknews.hksyu.edu/index.php/Instant_Messaging).
- Hu, Y, Wood, J, Smith, V., & Westbrook, N. (2004). Friendship through IM: Examining the relationship between instant messaging and intimacy. *Journal of Computer-Mediated Communication*, 10(1), article 6.
- Huang, H., & Chow, C. (2008, August). *Instant messenger addiction among teenagers: Shyness, alienation, and academic performance decrements*. Paper presented at the annual meeting of the Association for Education in Journalism and Mass Communication, Chicago, IL, USA
- ICQ Inc. (2007). *The ICQ Story*. Retrieved from <http://www.icq.com/info/icqstory.html>.
- Kahai, S. S., & Cooper. R. B. (2003). Exploring the core concepts of media richness theory: The impact of cue multiplicity and feedback immediacy on decision quality. *Journal of Management Information Systems*, 20(1), 263-281.
- Kang, H. S., & Yang, H. D. (2006). The visual characteristics of avatars in computer-mediated communication: Comparisons of internet replay chat and instant messenger as of 2003. *International Journal of Human-Computer Studies*, 12, 1173-1183.

- Kim, H., Kim, Gwang, J., Park, H. W., & Rice, R. E. (2007). Configurations of relationships in different media: FtF, email, instant messenger, mobile phone, and SMS. *Journal of Computer-Mediated Communication*, 12, Article 4.
- Kock, N. (2004). The psychobiological model: Towards a new theory of computer-mediated communication based on Darwinian evolution. *Organization Science*, 15 (3), 327-349.
- Lee, C. K. (2007). Affordances and text-making practices in online instant messaging. *Written Communication*, 24(3), 223-249.
- Lenhart, A. Madden, A., & Hitlin, P. (2005). *Teens and technology: Youth are leading the transition to a fully wired and mobile nation*. Retrieved from <http://www.pewinternet.org>.
- Leung, L. (2004). Net-generation attributes and seductive properties of the internet as predictors of online activities and internet addiction. *Cyber Psychology & Behavior*, 7, 333-348.
- Lo, O. W. Y., & Leung, L. (2008). Effects of gratification-opportunities and gratification-obtained on preference of instant messaging and email among college students. *Teleatics and Informatics*, 26(2), 156-166.
- Lurenccau, J. P., Barrett, L. E., & Pietromonaco, P. R. (1998). Intimacy as an interpersonal process: The importance of self-disclosure, partner disclosure, and perceived partner responsiveness in interpersonal exchanges. *Journal of personality and Social Psychology*, 74, 1238-1251.
- McCown, J. A., Fischer, D., Page, R., & Homan, M. T. (2001). Internet relationships: People who meet people, *Cyber Psychology & Behavior*, 4(5), 593-596.
- McKenna, K. Y. A., Green, A. S., & Gleason, M. E. J. (2002). Relationship formation on the Internet: What's the big attraction? *Journal of Social Issues*, 58(1), 9-31.

- Microsoft Online Services (2007). *MSN features*. Retrieved June 8, 2007, from <http://join.msn.com/messenger/features>
- Nardi, B. (2005). Beyond bandwidth: Dimensions of connection in interpersonal communication. *Computer-Supported Cooperative Work, 14*, 91–130.
- Peter, J., Valkenburg, P., & Schouten, A. (2005). Developing a model of adolescent friendship formation on the Internet. *Cyber Psychology & Behavior, 8*, 423-430.
- Qian H., & Scott, C. R. (2007). Anonymity and self-disclosure on weblogs. *Journal of Computer-Mediated Communication, 12*(4), 1428-1451.
- Reis, H. T., & Shaver, P. (1988). Intimacy as an interpersonal process. In S. Duck, D. Hay., S. E. Hobfoll, W. Ickcs, & B. M. Montgomery (Eds.). *Handbook of personal relationships: Theory, research and interventions* (pp. 367-389). Chichester, UK: John Wiley & Sons.
- Schiffman, L. G., & Kanuk, L. L. (9<sup>th</sup> ed) (2007). *Consumer Behavior*. Publisher: Pearson.
- Author. (2007, April). ICQ versus MSN: Which interface helps teenagers make more friends?. Presented, Hong Kong-Korea Communication Conference, Hong Kong.
- Author., & Fung, K. F. (2007) Can email communication enhance professor-student relationship and student evaluation of professor?: Some empirical evidence. *Journal of Educational Computing Research, 37*, 287-304.
- Shiu, E., & Lenhart, A. (2004, September). *How Americans use instant messaging*. Retrieved May 26 2006, from <http://www.pewinternet.org>.
- Short, J., E. Williams, B. & Christie. (1976). *The social psychology of telecommunications*. John Wiley, London, England.



- Schmidt T. & Cornelius, R. (1987). Self-disclosure in everyday life. *Journal of Social & Personal Relationships*, 4, 365-373.
- Softpedia. (2007). *Connect and share instant on the world's most popular IM network*. Retrieved from <http://www.softpedia.com/get/Internet/Chat/Instant-Messaging/MSN-Messenger-8.shtml>.
- Sztompka, P. (1999) *Trust: a sociological Theory*. Cambridge: Cambridge University Press.
- Trevino, L. K., Lengel, R.H., & Daft, R. L. (1987). Media symbolism, media richness, and media choice in organizations: a symbolic interactionist perspective. *Communication Research*, 14, 553-574.
- Walther, J. B. (1996). Computer-mediated communication: Impersonal, interpersonal and hyperpersonal interaction. *Communication Research*, 23, 3-43.
- Walther, J. B., Anderson, J. F., & Park, D. W. (1994). Interpersonal effects in computer mediated interaction. *Communication Research*, 21, 460-487.
- Wang R., Bianchi, S. M, & Raley, S. B. (2005). Teenagers' Internet use and family rules: A research note. *Journal of Marriage and Family*, 67, 1249-1258.
- Wong, K. F., & Xia, Y. Q. (2008). Normalization of Chinese chat language. *Language Resources and Evaluation*, 42, 219-242.
- Wong, K. F., Xia, Y. Y Q., & Li, W. J (2006). Linguistic and behavioural studies of Chinese chat language. *International Journal of Computer Processing of Oriental Languages*, 9(2-3), 133-152.
- Whittaker, S. (2002). Theories and methods in mediated communication. In a. Graesser, M. Gernsbacher, and S. Goldman (Eds.), *The Handbook of Discourse Processes* (pp. 243-286), Erlbaum, NJ.

WLM (2009). *Share your favorite personal Windows Live Messenger story with the world!* Retrieved from

<http://messengersays.spaces.live.com/Blog/cns!5B410F7FD930829E!73591.entry>