

# **A comparison of offline and online friendship qualities at different stages of relationship development**

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## ABSTRACT

The present study was designed to compare offline and online friendship qualities at different stages of relationship development. The sample consisted of 162 Hong Kong Internet users. They were asked to think of two friends, one they knew through face-to-face interactions and one they knew through the Internet, and then describe the qualities of their offline and online friendships. Results revealed that offline friendships involved more interdependence, breadth, depth, code change, understanding, commitment, and network convergence than online friendships. However, although the qualities of both online and offline friendships improved as the duration of the relationship increased, the differences between the two types of friendships diminished over time. Furthermore, contrary to the evidence typically found for offline friendships, the qualities of cross-sex online friendships were higher than that of same-sex online friendship. These results suggest that the influence of the structural and normative constraints typically found in face-to-face interaction may be different in the online setting.

**KEY WORDS:** friendship qualities • Hong Kong • Internet users • online versus offline friendships

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Friendship is one of the most common types of interpersonal relationship. It has long been a research focus for various disciplines and different definitions of friendship can be found in the literature. For instance, Hartup (1975) defined friends as those 'who spontaneously seek the company of one another; furthermore, they seek proximity in the absence of strong

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social pressures to do so' (p. 11). According to Wright (1984), friendship is 'a relationship involving voluntary or unconstrained interaction in which participants respond to one another personally . . .' (p. 119). Hays (1988) defined friendship as a 'voluntary interdependence between two persons over time, that is intended to facilitate social-emotional goals of the participants, and may involve varying types and degrees of companionship, intimacy, affection, and mutual assistance' (p. 395). All these definitions imply that friendship evolves through voluntary interaction between two persons over time. It typically develops through intimate, face-to-face interaction.

Recently, a new form of friendship, which we call online friendship, has emerged. This type of friendship initiates and develops through computer-mediated communication (CMC) in online social settings, such as chat-rooms, newsgroups, and websites. Although the use of CMC has become one of the most popular means of communication, only a handful of studies have examined the characteristics of online relationships (see Wood & Duck, 1995). In the present study, we focused on friendship, which was found to be the most common type of online interpersonal relationship (Parks & Roberts, 1998), and examined whether the qualities of online friendships are comparable to offline friendships at different stages of development. In addition, we also studied the differences, if any, between same-sex and cross-sex online friendships, with respect to their offline counterparts.

### **Current perspectives on online relationships**

According to social presence theory (see Short, Williams, & Christie, 1976), social presence refers to an individual's feeling that other people engage in personal communication and interaction. The degree of social presence depends on the number of channels or codes available within the communication medium. CMC is typically characterized as low in social presence because it typically allows little exchange of nonverbal cues. Similarly, Sproull and Kiesler's (1986) lack of social context cues hypothesis asserts that CMC has a narrower bandwidth and less information richness than face-to-face (FtF) interaction does.

In general, these two so-called 'cues-filtered-out' approaches note that the major difference between FtF interaction and CMC lies in the availability of social context cues, which are crucial to relationship development. CMC is characterized as lacking spatial features, personal appearance, and actors' dynamic nonverbal cues such as facial expression, posture and gesture (Kiesler, Siegel, & McGuire, 1984). In addition, it is likely to be constrained by lower physical availability and frequency of exposure, which are considered crucial for relationship development (Rawlins, 1994; Wilmot, 1994). According to these arguments, close relationships can hardly develop online (see also Lea & Spears, 1995). For instance, in a study by Parks and Roberts (1998), respondents were requested to recall and rate the qualities of one online and one offline relationship, respectively. Their results showed that the overall friendship quality ratings for

online relationships were significantly lower than those for offline relationships in measures such as interdependence, understanding, commitment, and network convergence.

However, the two 'cues-filtered-out' approaches seem to ignore the impact of the duration of relationship development on friendship quality. Taking the social information processing perspective, Walther (1992) suggested that the critical difference between FtF and CMC is the rate, but not the capability. Although the limited bandwidth of CMC offers less total information per exchange than does FtF exchange, relational communication of CMC can grow and become comparable to that of FtF, given sufficient time and message exchanges. Walther (1995) carried out an experimental observation on task-related groups of college students and compared the communication qualities of FtF and CMC groups. Specifically, the author was interested in the message dimensions that indicate how the participants defined and regarded their relationships with team members. The dimensions include immediacy/affection, similarity/depth, composure/relaxation, formality, dominance, receptivity/trust, and task/social orientation. Compared to FtF groups, in no case did the participants interacting through CMC express less intimacy at the third meeting, which took place in the fifth week of the study.

### **Friendship development over time**

While Walther's (1995) study provided evidence supporting the social information processing theory, we could not conclude from this study that online friendships are comparable to offline friendships over time because this study focused on measuring how the participants communicated through CMC versus FtF interaction, but not friendship qualities. To compare the development of online and offline friendships, we need to ask Internet users to report their online and offline friendships and take duration of friendship development into consideration.

Friendship development has received a considerable amount of attention in the area of interpersonal relationships. Numerous conceptual and empirical studies have been conducted to examine how friendship progresses. For instance, Knapp (1984) identified five stages of relationship development, namely, initiating, experimenting, intensifying, integrating, and bonding. Using a network analysis, Milardo (1982) found that college students' networks of mutual friends changed as a function of the degree of intimacy across stages of friendship development. Hays (1985) examined factors affecting same-sex friendship development of college students. Using a longitudinal design, he found that those dyads that became close friends after a 3-month period differed behaviorally and attitudinally from dyads that did not progress. Notice that all these studies focus on friendships developed through FtF interactions.

In the present study, we were interested in whether the qualities of offline and online friendships are comparable at different stages of development. We used the personal relationship scale developed by Parks and Floyd (1996) to measure friendship qualities. Based on social

psychological theories such as Altman and Taylor's (1973) social penetration theory and Kelley et al.'s work (1983) on close relationships, Parks and Floyd generated a list of items for measuring seven dimensions of interpersonal relationships: *interdependence*, *breadth*, *depth*, *code change*, *understanding*, *commitment*, and *network convergence*.

According to Parks (1997; Parks & Floyd, 1996), breadth, depth, and code change are related to the quality of communication between the two persons. The variety of topics, activities, and communication channels increases when a relationship develops over time. In addition, people tend to reveal more important and personal information when their relationship progresses. Relationship development is also characterized by communication code changes. For instance, partners may evolve specialized ways of communicating such as personal idioms, which allow them to express themselves more efficiently and reinforce their relational identity.

Understanding, interdependence, commitment, and network convergence all refer to how the two parties perceive the relationship. In most cases, a relationship develops over time as both parties come to depend on each other more deeply, become more committed to the relationship, and have a better understanding of the interaction (Parks, 1997). Also, network convergence occurs as the two sides develop a common social circle. That is, the partners introduce one another to each other's friends and family. These seven dimensions also capture the common qualities in relationships that researchers typically define as friendship.

Based on the earlier discussion on friendship quality and duration of development, we made the following predictions. First, according to Parks and Roberts's (1998) study, we expected that the overall qualities of offline friendships would be higher than those of online friendships. Second, the qualities of both online and offline friendships would improve over time. Third, according to the social information processing approach, the differences between offline and online friendships were expected to become smaller as the relationship progressed.

In terms of measuring friendship duration, previous longitudinal studies on changes in friendship quality varied in the way of categorizing friendship duration. For instance, Hays (1985) adopted a 3-week interval design to capture friendship development over a semester, whereas Griffin and Sparks (1990) carried out a 4-year longitudinal study to explore the development of friendship. In a recent longitudinal study on friendship development conducted by Yamanaka (1998), participants were asked to describe their friendship four times during a 3-month period. It is likely that these differences in categorization were due to constraints faced by individual researchers. It is also obvious that there is no consensus on how to quantify duration in friendship development. In the present study, we used a cross-sectional approach and divided our sample into three groups of duration, based on the intent to form comparable group sizes.

### **Same-sex and cross-sex friendships**

The issue of gender has long been a focus in the area of interpersonal relationships. Empirical research has been conducted to examine the differences between same-sex and cross-sex friendships in the offline cases (e.g., Griffin & Sparks, 1990; Roy, Benenson, & Lilly, 2000). It is generally believed that, compared to same-sex cases, cross-sex offline friendships are more difficult to develop because they are constrained by both structural and normative factors (Booth & Hess, 1974). Structural factors refer to the lack of opportunities for males and females to meet and interact continuously. For instance, cross-sex friendships in the workplace are difficult to develop because the concern for status is typically significant. Normative constraints refer to factors such as the social disapproval of the development of intimate cross-sex relationships for married individuals. Along a similar vein, O'Meara (1989) described four challenges to cross-sex friendships, including confronting the issue of sexuality, determining the type of emotional bond the pair will have, dealing with gender inequality in a relationship that values equality, and presenting the relationship to the public.

It would be interesting to see if such differences in the offline cases can be applied to online friendships. Parker and de Vries (1993) found that both males and females reported almost twice as many same-sex offline as cross-sex offline friendships. In contrast, Parks and Roberts (1998) reported that most online friendships were cross-sex. Parks and Roberts argued that the structural and normative constraints that inhibit the growth of cross-sex offline friendships are limited in the online setting. However, in their study, the potential differences in quality between online same-sex and cross-sex relationships were not addressed. The second objective of the current study was, thus, to investigate same-sex and cross-sex online friendships, with reference to the offline cases. In addition to the three predictions mentioned earlier, our fourth prediction was that the differences in quality between same-sex and cross-sex friendships that have been found in the offline cases would be less pronounced for the online cases.

## **Method**

### **Respondents**

Thirty-eight newsgroups, under the newsgroup name 'hk,' were randomly selected. In each newsgroup, it was stated that a questionnaire studying online friendships had been posted at a website, which was maintained by the authors. Responses from a total of 162 Hong Kong Internet users, 71 males and 91 females, were collected. Their ages ranged from 16 to 29 years ( $M = 20.67$ ,  $SD = 2.12$ ), with 89% of them between 18 and 23 years old.

According to the frequency distribution, we classified the 162 respondents into three groups of friendship duration, 1–4 months, 5–12 months, and over 1 year, to form comparable group sizes. Table 1 provides a breakdown of the cases. There were 52, 40, and 70 respondents in the three duration groups,

**TABLE 1**  
**Number of same-sex and cross-sex friendships in each duration category**

	Duration of development			Total
	1–4 months	5–12 months	Over 1 year	
Gender Composition				
Same-sex	20	16	26	62
Cross-sex	32	24	44	100
Total	52	40	70	162

respectively. In addition, 62 of the 162 cases were same-sex and 100 cases were cross-sex for both offline and online friendships (see Table 1).

### Procedure

On the first page of the website, we stated that participants must be Hong Kong residents who had friendships that were made online. For online friendships, we stated that their interaction with the online friend should solely take place in virtual settings. Also, respondents were told to fill out the questionnaire once only. The questionnaire was put on the second page of the website. In addition to their own age and sex, each respondent was asked to think of two friendships they had – one was an offline ‘physical life’ or ‘real-life’ friendship, and the other one initiating and developing online. The criteria were that these two relationships had to be developed for similar durations. Respondents were also asked to indicate the sex of their friends.

### Materials

The short form of the questionnaire used by Parks and Floyd (1996) and Parks and Roberts (1998) was used to measure friendship quality (see Table 2). Two to three items were used to capture each of the factors of friendship quality:

- 1 *Interdependence*, which refers to the feeling of mutual dependence and the degree to which the two parties influence one another, was captured by items such as ‘The two of us depend on each other.’
- 2 *Breadth*, which refers to the variety of conversational topics shared between the two parties, was captured by items such as ‘Our communication ranges over a wide variety of topics.’
- 3 *Depth* refers to the degree of self-disclosure and is the process-oriented and communicative aspect of intimacy. This dimension was measured by items such as ‘I feel I could confide in this person about almost anything.’
- 4 *Code change*, which refers to the change in linguistic forms and cultural codes used in a relationship, was measured by items such as ‘The two of us use private signals that communicate in ways outsiders would not understand.’
- 5 *Understanding* refers to the agreement about which behaviors are acceptable, the understanding of how each person’s actions can contribute to the relationship, and the expectation about which responses each is likely to have. A sample item is ‘I can accurately predict what this person’s attitudes are.’

**TABLE 2**  
**Items included in the questionnaire (a short form of the questionnaire used by Parks & Floyd, 1996)**

Dimension	Item
Interdependence ( $\alpha_{\text{offline}} = .65$ ; $\alpha_{\text{online}} = .63$ )	The two of us depend on each other We often influence each other's feelings toward the issues we're dealing with The two of us have little influence on each other's thoughts (R)
Breadth ( $\alpha_{\text{offline}} = .76$ ; $\alpha_{\text{online}} = .83$ )	Our communication is limited to just a few specific topics (R) Our communication ranges over a wide variety of topics
Depth ( $\alpha_{\text{offline}} = .65$ ; $\alpha_{\text{online}} = .77$ )	I usually tell this person exactly how I feel I feel I could confide in this person about almost anything I would never tell this person anything intimate or personal about myself (R)
Code Change ( $\alpha_{\text{offline}} = .63$ ; $\alpha_{\text{online}} = .79$ )	We have developed the ability to 'read between the lines' of each other's messages to figure out what is really on each other's mind The two of us use private signals that communicate in ways outsiders would not understand We have special nicknames that we just use with each other
Understanding ( $\alpha_{\text{offline}} = .68$ ; $\alpha_{\text{online}} = .64$ )	I can accurately predict what this person's attitudes are I do not know this person very well (R)
Commitment ( $\alpha_{\text{offline}} = .73$ ; $\alpha_{\text{online}} = .72$ )	This relationship is very important to me I would make a great effort to maintain my relationship with this person I do not expect this relationship to last very long (R)
Network Convergence ( $\alpha_{\text{offline}} = .63$ ; $\alpha_{\text{online}} = .61$ )	We have introduced each other to members of each other's circle of friends and family * This person and I do not know any of the same people (R)

*Notes.*  $\alpha_{\text{offline}}$  and  $\alpha_{\text{online}}$  represent the Cronbach's alpha of the measures for offline and online friendships, respectively. (R) indicates that the score was reversed.

\* This item was originally worded, 'We have introduced (face-to-face or otherwise) each other to members of each other's circle of friends and family', in Parks and Floyd (1996). Because our respondents were asked to recall an online friendship in which their interaction with the online friend should take place solely in the online setting, we deleted the phrase 'face-to-face or otherwise' in our questionnaire to avoid causing any confusion.

- 6 *Commitment*, which refers to the expectation that a relationship will continue and the feeling that a relationship ought to continue, was measured by items such as 'This relationship is very important to me.'
- 7 *Network convergence*, which refers to the overlapping of social networks of the two parties, was captured by items such as 'We have introduced each other to members of each other's circle of friends and family.'



A total of 18 items were used. They were all presented in Chinese, anchored by seven-point scales in which 1 represents *strongly disagree* and 7 represents *strongly agree*. Reliabilities, measured by Cronbach's alpha, ranged between .61 and .83 (Table 2).

### Analyses

A 2 (Friendship Type: offline vs. online)  $\times$  3 (Duration: 1–4 months vs. 5–12 months vs. over 1 year)  $\times$  2 (Gender Composition: same-sex vs. cross-sex friendship) MANOVA test was performed. Friendship Type was the within-subjects factor, and Duration and Gender Composition were between-subject factors. To recap, the Duration factor reflects how long the relationship had developed, and Gender Composition examines the differences between same-sex and cross-sex friendships. Measures of interdependence, breadth, depth, code change, understanding, commitment, and network convergence were the dependent variables.

### Results

With the use of Wilks' lambda criterion, the MANOVA test showed significant main effects for Friendship Type,  $\Lambda = .37$ ,  $F(7,150) = 37.10$ ,  $p < .001$ ; Duration,  $\Lambda = .72$ ,  $F(14,300) = 3.86$ ,  $p < .001$ ; and Gender Composition,  $\Lambda = .86$ ,  $F(7,150) = 3.42$ ,  $p < .01$ . However, all these main effects were qualified by significant interaction effects between Friendship Type by Duration,  $\Lambda = .81$ ,  $F(14,300) = 2.43$ ,  $p < .01$ , Friendship Type by Gender Composition,  $\Lambda = .75$ ,  $F(7,150) = 7.02$ ,  $p < .001$ , and Duration by Gender Composition,  $\Lambda = .82$ ,  $F(14,300) = 2.30$ ,  $p < .01$ .

In terms of the Friendship Type main effect, univariate test results show that the quality of offline friendships was higher than that of online friendships on all seven dependent measures (see Table 3): Interdependence,  $F(1,156) = 19.84$ ,  $p < .001$ ; Breadth,  $F(1,156) = 35.49$ ,  $p < .001$ ; Depth,  $F(1,156) = 94.13$ ,  $p < .001$ ; Code Change,  $F(1,156) = 75.23$ ,  $p < .001$ ; Understanding,  $F(1,156) = 35.25$ ,  $p < .001$ ; Commitment,  $F(1,156) = 234.15$ ,  $p < .001$ ; and Network Convergence,  $F(1,156) = 88.29$ ,  $p < .001$ . These results support our first prediction.

**TABLE 3**  
**Friendship Quality Ratings for Offline and Online Friendships**

Dimension	Offline		Online	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Interdependence***	4.09	1.39	3.60	1.30
Breadth***	5.31	1.44	4.75	1.61
Depth***	5.21	1.08	4.51	1.30
Code Change***	4.00	1.22	3.22	1.43
Understanding***	4.55	1.30	4.01	1.35
Commitment***	5.66	1.21	4.16	1.46
Network Convergence***	4.27	1.61	3.04	1.66

\*\*\*  $p < .001$ .



**TABLE 4**  
**Friendship quality ratings as a function of duration of development**

	Duration of Development					
	1–4 months		5–12 months		Over 1 year	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Interdependence	3.68	1.17	3.74	1.33	4.04	.96
Breadth***	4.45	1.56	4.96	.99	5.50	1.05
Depth*	4.61	1.15	4.71	1.17	5.13	.68
Code Change***	3.01	.74	3.49	.85	4.12	1.18
Understanding**	3.82	1.41	4.16	.92	4.69	.89
Commitment**	4.54	1.16	4.73	1.07	5.29	.99
Network Convergence***	3.13	1.21	3.64	1.28	4.06	1.37

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

**TABLE 5**  
**Friendship quality ratings as a function of gender composition**

	Gender Composition			
	Same-sex		Cross-sex	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Interdependence*	4.13	.99	3.68	1.19
Breadth*	5.32	.86	4.86	1.48
Depth	4.89	.72	4.84	1.15
Code Change	3.57	.90	3.64	1.19
Understanding	4.39	.90	4.21	1.28
Commitment	4.97	.78	4.88	1.28
Network Convergence**	4.08	1.12	3.40	1.42

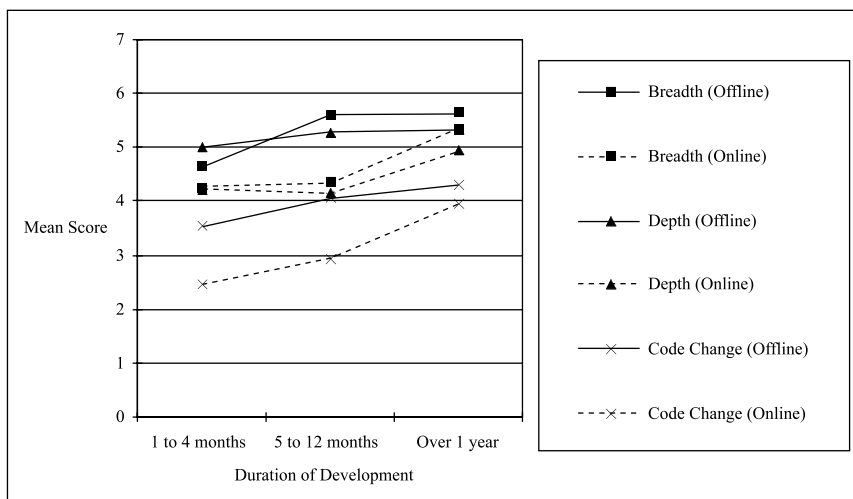
\*  $p < .05$ ; \*\*  $p < .01$ .

Univariate test results also showed a significant main effect of Duration on Breadth,  $F(2,156) = 8.06$ ,  $p < .001$ ; Depth,  $F(2,156) = 4.05$ ,  $p < .05$ ; Code Change,  $F(2,156) = 19.84$ ,  $p < .001$ ; Understanding,  $F(2,156) = 7.97$ ,  $p < .01$ ; Commitment,  $F(2,156) = 6.73$ ,  $p < .01$ ; and Network Convergence,  $F(2,156) = 8.35$ ,  $p < .001$  (see Table 4). Consistent with our second hypothesis, friendship qualities improved as the relationship developed over time.

In terms of the Gender Composition main effect, same-sex friendships were generally of higher quality than cross-sex friendships (see Table 5). Univariate test results revealed a significant effect on Interdependence,  $F(1,156) = 5.76$ ,  $p < .05$ ; Breadth,  $F(1,156) = 6.89$ ,  $p < .05$ ; and Network Convergence  $F(1,156) = 9.23$ ,  $p < .01$ .

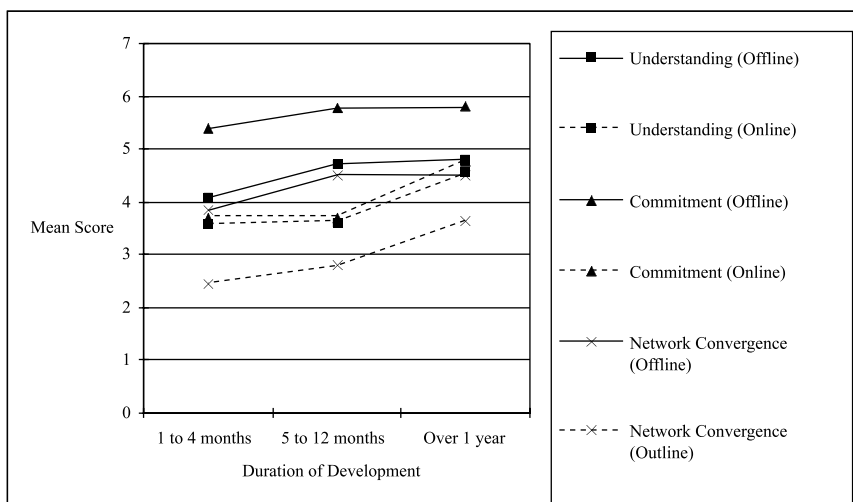
However, these main effects were qualified by three sets of interaction effects. A significant interaction between Friendship Type and Duration was

**FIGURE 1**  
**Means on breadth, depth, and code change for offline and online friendships across duration.**

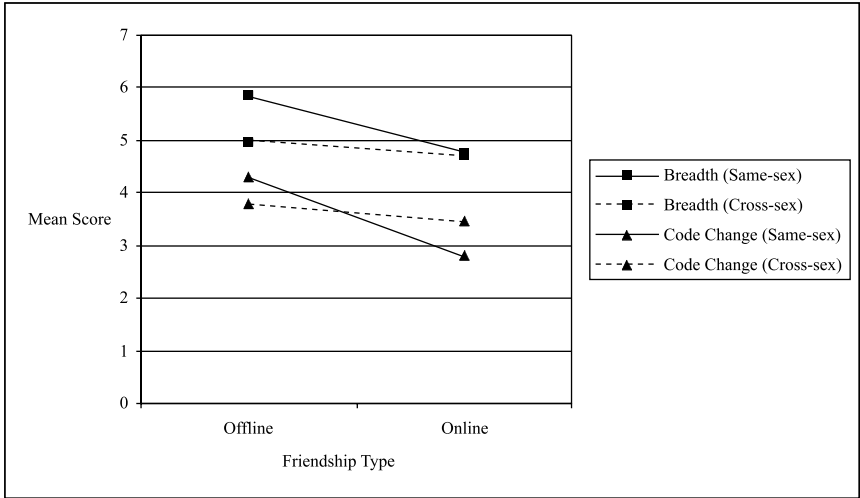


found on Breadth,  $F(2,156) = 4.42, p < .05$ ; Depth,  $F(2,156) = 4.32, p < .05$ ; Code Change,  $F(2,156) = 4.24, p < .05$ ; Understanding,  $F(2,156) = 4.60, p < .05$ ; Commitment  $F(2,156) = 6.99, p < .01$ ; and Network Convergence  $F(2,156) = 4.23, p < .05$ . The patterns of interaction were similar across the six

**FIGURE 2**  
**Means on understanding, commitment, and network convergence for offline and online friendships across duration.**

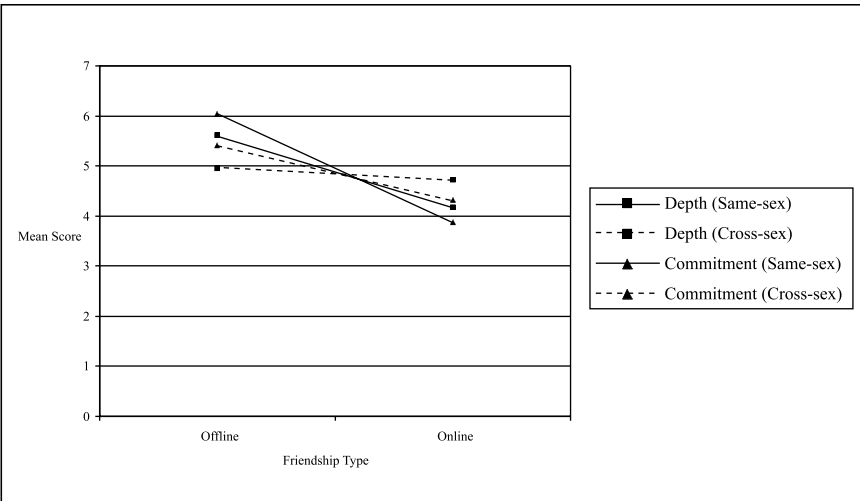


**FIGURE 3**  
**Means on breadth and code change for same-sex and cross-sex offline and online friendships.**



measures (see Figures 1 and 2). Specifically, although both offline and online friendships developed over time, the differences between the two types of friendships increased from the beginning to about a year of relationship development, and then diminished. In other words, these two types of

**FIGURE 4**  
**Means on depth and commitment for same-sex and cross-sex offline and online friendships.**



friendship qualities tend to converge over time. Consistent with Walther (1995), these results provide support for our third prediction.

Regarding the effects of Gender Composition, a significant interaction between Friendship Type and Gender Composition was found on Breadth,  $F(1,156) = 10.13$ ,  $p < .01$ ; Depth,  $F(1,156) = 39.12$ ,  $p < .001$ ; Code Change,  $F(1,156) = 22.21$ ,  $p < .001$ ; and Commitment,  $F(1,156) = 21.72$ ,  $p < .001$ . The interaction effects were similar across the four measures (see Figures 3 and 4). Specifically, the quality of cross-sex friendships was higher than that of same-sex friendships in the online cases, whereas same-sex offline friendships were of higher quality than cross-sex offline friendships. This finding is in line with our fourth prediction.

Univariate test results also revealed one significant Duration by Gender Composition interaction on one dependent variable, Breadth,  $F(2,156) = 9.02$ ,  $p < .001$ . At the early stage of relationship development, communication within same-sex friendships involved more breadth than that within cross-sex dyads. However, this difference diminished as the relationship developed.

## **Discussion**

Consistent with the general patterns of results reported by Parks and Roberts (1998), the significant main effect of friendship type indicates that our respondents also rated the quality of offline friendships as higher than that of their online friendships. Higher degrees of breadth, depth, code change, understanding, interdependence, commitment, and network convergence were found in offline friendships than online friendships. This piece of evidence seems to provide some support for the generalizability of this phenomenon to a Chinese sample.

The finding that the quality of offline friendships was higher than that of online friendships seems to confirm the prediction of the 'cues-filtered-out' approaches. For instance, both social presence theory and the lack of social context cues hypothesis suggest that the limitations of communication channels and the lack in social context cues in CMC make close relationships more difficult to develop online. However, these perspectives do not consider the duration of relationship development.

### **Development of online friendship over time**

Our results elucidate that the difference in quality between online and offline friendships is moderated by the duration of the relationship. Offline and online friendships seem to grow in different ways. According to our results, the quality of offline and online friendships diverged from the beginning to about a year of relationship development and then converged for relationships that lasted for more than a year. Specifically, the difference in quality between online and offline friendships was mainly found for relationships that lasted for up to about one year. For relationships that lasted for more than a year, the differences between the two types of friendship were minimal.

According to Knapp (1984), supportiveness, positiveness, and equality

are limited at the beginning of relationship development. Because people do not know each other well, they may not be able to empathize or orient to the needs of the other. In addition, the relationship is probably viewed as too temporary to be worth exerting significant effort to develop and maintain. With narrower bandwidth and less information richness, the quality of online friendships is even lower than that of offline friendships in the first few months of relationship development.

During the development of relationships, individuals think over what has happened and consider the desirability of continuing the relationship (Wood, 1982). As mentioned earlier, compared to offline friendships, online friendships are more likely to be constrained by factors such as lower frequency of exposure (Wilmot, 1994). Online friendships may thus be relatively more vulnerable and develop more slowly at the initial stage. Therefore, the differences between the two types of friendships were found to increase until about a year of relationship development. After passing a critical period (about 6 months to 1 year in our sample), online friendships grow quickly and the difference between these two types of relationships decrease after about a year of development. Perhaps this critical period is what Wood (1982) called the revising stage of relationship development.

The general trend that both online and offline friendships develop and their qualities converge over time provides support for the social information processing theory. Specifically, it suggests that while CMC offers less total information per exchange than does FtF exchange, this problem can be alleviated by allowing longer and more frequent interactions over time (Walther, 1992). 'Given sufficient time and message exchanges for interpersonal impression formation and relational development to accrue, and all other things being equal, relational (communication) in later periods of CMC and FtF communication will be the same' (p. 69). In other words, relationships developed online can also become personal, if given time, and relational partners can feel as intimate as they do in FtF interaction.

### **Same-sex and cross-sex online friendships**

With respect to the effect of gender composition, our results indicate that the quality of same-sex offline friendships was higher than that of cross-sex offline friendships. In contrast, cross-sex online friendships were of higher quality than same-sex online friendships.

While the results for the offline cases are consistent with past findings that cross-sex offline friendships are difficult to develop (e.g., Hacker, 1981; Monsour, Harris, & Kurtzweil, 1994; Rose, 1985), our results also reveal that, in online settings, cross-sex friendships seem to be less difficult to develop. As mentioned before, the Internet removes the structural and normative constraints existing in offline settings that impede the development of cross-sex offline friendships (Booth & Hess, 1974; see also Parks & Roberts, 1998). On the contrary, status differentials, such as age, race, and social class, which may inhibit initial interaction, are less readily apparent in CMC. Social cues, such as physical appearance and nonverbal

information, are also limited in online interaction. In addition, the Internet allows physical absence and anonymity and thus reduces the perception of risk that exists in cross-sex FtF interaction, such as unwanted sexual advances. It seems that the Internet provides alternative social venues for men and women to interact continuously, and may be perceived as a safe environment for people to initiate and develop cross-sex friendships with a lower degree of reticence and reservation.

### **Limitations and further directions**

As Parks and Roberts (1998) pointed out, individuals involved in online relationships might go on to use other communication media as the relationship develops, such as telephone, letters, or even face-to-face communication. One alternative explanation of the duration effect is that our respondents might in fact engage in face-to-face interactions with their online friends, resulting in the comparison between online and offline friendships of more than a year being meaningless. Even though our instructions stated explicitly that the online friendships recalled should refer to those taking place solely in the online settings, we obviously did not have any control over the modes of communication of our respondents' online friendships. Future studies may consider using an experimental approach.

Our findings also provide some implications for cross-cultural communication research. Numerous studies have been conducted to examine the impact of culture on interpersonal communication. Our results, however, seem to provide evidence of the generalizability of findings in the West to a Chinese sample. Specifically, the friendship type main effect and the patterns of online friendship development were all consistent with those found in the West. This partial replication seems to suggest that the cultural differences in communication typically found in the offline setting, such as Ting-Toomey's (1988) research on face work, may be less pronounced in the online setting. In other words, relationships developed through the Internet may in fact be less likely to be subject to the cultural influences reported in the literature, as these cultural differences are predominantly manifested in offline, face-to-face interactions. Cross-cultural studies should be conducted to examine this speculation.

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