



# Relational quality and media use in interpersonal relationships

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## Abstract

This study examines the relationship between relational quality and media use in relationships. In addition, the impacts of other potentially important variables such as the sex and relationship type of the participants and their partners are explored. College student participants focused on interaction experiences with an acquaintance, friend, romantic partner or family member. The results indicated that participant sex and partner sex did not affect reported media use, whereas relationship type had significant effects on the extent to which face-to-face and telephone communication were used. Relationships with acquaintances had the lowest relational quality and romantic relationships, while closer, were less satisfying than either family or friendship relationships. Same-sex relationships were perceived

as more satisfying than cross-sex relationships. Finally, media use did not predict relational closeness or satisfaction.

### **Key words**

media use • relational closeness • relational quality • relational satisfaction • relationship type • sex

## **With the proliferation of the internet and mobile phones,**

communication in interpersonal relationships is mediated increasingly by technology. Thus, questions about whether mediation enhances or detracts from relational quality are increasingly relevant. Although research findings have been mixed (e.g. Walther, 1996), both scholarly research and popular perception have held that computers are a non-verbally impoverished 'lean' medium (Daft and Lengel, 1984), which makes it challenging to create a sense of social presence (Short et al., 1976) and convey the interpersonal cues so important to creating and maintaining emotional closeness. Accordingly, much research focuses on communication technology and its potential for changing relationships.

As reviewed below, survey research has demonstrated how common interpersonal internet use has become and suggests that patterns of relational communication, such as who communicates with whom and how often, are changing as internet interactions are incorporated into daily relational life. A small body of survey and diary studies has tried to assess the quality of relationships mediated through the internet (e.g. Cummings et al., 2000; Parks and Floyd, 1996). Unfortunately, these studies are not directly comparable and their findings are inconsistent. The study reported here assesses the extent to which the media used to conduct specific interpersonal relationships are associated with the quality of those relationships. In contrast to previous studies, we examine media use within a broader context of factors known to affect relational quality, specifically relationship type, sex and partner sex. This combination of variables allows us to understand the magnitude of media effects relative to other potential factors and to identify the most likely users of media for the purpose of enacting their relationships. This study also contributes to our understanding of other factors that may affect relational quality.

## **POTENTIAL INFLUENCES ON RELATIONAL QUALITY**

### **Media use**

In the last decade or so, agencies and scholars have investigated the impact of internet and telephone use, as opposed to face-to-face communication, on various relational characteristics. For example, survey research has demonstrated that the internet is a popular interpersonal medium and that it is changing patterns of relational communication. Email has been shown to support and maintain meaningful relationships, especially in long-distance relationships and for those wherein relational partners lack the time to

achieve face-to-face contact (Stafford et al., 1999; Wellman and Gulia, 1999; see also the Pew Project on the Internet & American Life, 2000). A nationwide poll by the Pew Project on the Internet & American Life found that 'significant majorities of online Americans say their use of email has increased the amount of contact they have with family members and friends' (2000: 20). Another national study described the internet as 'a catalyst for creating and maintaining friendships and family relationships' (UCLA Center for Communication Policy, 2003). Although these surveys do not directly address relational quality, they demonstrate that email is leading to more communication in existing relationships, as well as to new relationships.

Parks and colleagues (e.g. Parks and Floyd, 1996; Parks and Roberts, 1998) surveyed people who had formed friendships through online public discussion spaces. Using scales that measure commitment in face-to-face relationships, they found that these online friendships were moderately committed. Parks and Roberts asked people to compare a relationship developed online to a specific relationship developed offline. Although offline relationships were slightly more developed and involved considerably more time spent together, there were no differences in the depth and breadth of interaction between offline and online relationships.

In contrast to the generally positive assessments of these studies, Cummings et al. (2000) argued that online relationships are of a lower quality than offline relationships. In their communication diary study, students recorded each communication episode in a brief time period and assessed how useful the medium employed was for relational maintenance (among other functions). They rated email lower than face-to-face or telephone interactions for maintaining relationships. In addition, the participants were asked how close the relationship was, how often they requested favors and advice from partners and how frequently they used each medium to communicate in the relationship. Relational closeness and seeking both favors and advice were combined into an index which Cummings et al. (2000) called 'relational strength'. The researchers found that face-to-face and telephone communication predicted 'strong' relationships better than email. Unfortunately, this focus on 'strong' relationships tends to conflate intimacy with relational quality, as weak-tie relationships that are not close and do not entail frequent favors and advice can be of high quality and important to quality of life (see Albrecht and Adelman, 1987). While we must acknowledge intimate relationships, we should not overemphasize them or exaggerate their importance to the extent that we exclude other relationships (Parks, 1982, 1995).

Cummings et al. (2000) conducted a second study which accessed the HomeNet project's data on new internet users (e.g. Kraut et al., 1998). The participants in this study were asked a series of questions about an 'internet partner' (i.e. the person outside their household to whom they sent the most email) and a 'non-internet partner' (i.e. the person outside their household

with whom they had the most communication regardless of modality). They found less frequent communication and less closeness with their internet partners. Frequency of communication predicted closeness for non-internet relationships, but not for internet relationships. However, Cummings et al.'s 'internet partners' conducted most of their interactions in other modalities (i.e. face-to-face and telephone) and their 'non-internet' partners used the internet for nearly 20 percent of their interactions.

When Baym et al. (2004) asked students to evaluate their most recent significant social interaction, while controlling for a variety of relationship types and media, they found that internet interactions were rated slightly lower in quality than face-to-face conversations and telephone calls (which did not differ significantly from one another). However, internet interactions were rated well above the midpoints in quality. Also, the type of relationship exhibited far greater influence on interaction quality than the medium employed for the interaction.

In sum, then, there is evidence that internet use is associated with increased communication in some friendships and families and that relationships formed online are of relatively high quality, as are online interactions. However, there is also evidence that the internet may not be perceived as suitable for relational maintenance and that its use is associated with less intimate relationships. The study reported here examines the extent to which the quality of relationships varies depending on the proportion of total relational communication that takes place online. However, as with Baym et al. (2004), we situate relational media use in the contexts of relationship type and the sexes of the relational partners.

### **Relationship type**

Baym et al.'s (2004) finding that interpersonal interaction quality depends on relationship type warrants the continued consideration of this variable in interpersonal communication research, as also suggested by Duck et al. (1991). Among the types of relationships differentiated in examinations of interaction (Knapp et al., 1980) are those involving family members, friends, romantic partners, co-workers/acquaintances and strangers (Rands and Levinger, 1979). Different types of relationships invoke different rules of communication, normative expectations of interaction and levels of relational satisfaction (Argyle and Henderson, 1985; Baxter, 1986; Berger et al., 1977). Berscheid et al. (1989) operationalized frequency of contact, diversity of activities and strength of influence as direct measures of relational closeness. Berscheid et al. found that romantic relationships were closer than both family relationships and friendships and that family relationships did not differ significantly from friendships. Other studies have shown that friends are more likely to use the internet with one another than family members (Chen et al., 2002; Dimmick et al., 2000; Wellman and Gulia, 1999). Thus, differences in

relational quality may be associated with relationship type as well as with media use.

### Sex of relational partners

Sex and partner sex are also important potential influences on relational quality which should be included when examining the effects of media use. Some research detects tendencies of men and women to exhibit small behavioral differences in how they understand and evaluate their personal relationships. Specifically, women tend to be more nurturant and relationship-focused, while men tend to be more instrumental and project-focused (see the reviews by Aries, 1996; Reis, 1998; Winstead, 1986). Other research finds that women tend to value their close relationships more than men (Aukett et al., 1988; Duck and Wright, 1993). In addition, women have been found to be more accurate receivers (Hall, 1998; Rosenthal et al., 1979) and senders (Buck et al., 1974; Hall, 1984) of non-verbal communication messages. Importantly, however, there is a growing literature in the fields of communication and personal relationships suggesting that when both within- and between-sex comparisons are made, sex similarities are as important – if not more important – than the differences between the sexes (see Aries, 1996; Canary and Hause, 1993; Duck and Wright, 1993; Kunkel and Burleson, 1998, 1999).

Relational quality may be influenced by one's partner's sex, especially in friendships, although not in obvious ways. Given the relational focus women may exhibit, relationships with women may be perceived as of higher quality than those with men, regardless of one's own sex. Relational quality may depend on whether a relationship is same-sex or cross-sex, especially in friendships. Research comparing same-sex versus cross-sex friendships suggests that, although cross-sex friendships may be more challenging (Monsour et al., 1994; O'Meara, 1989; Werking, 1997), they offer distinct rewards. Arnold's (1995) study of participants' narratives revealed that cross-sex friendships constantly present the difficulties that accompany jealousy, sexual tension, communication differences and the struggle to control outside judgment of the relationship. Same-sex friendships do not provoke such questions or manifest the sexual tension of cross-sex friendships (Egland et al., 1996; Rawlins, 1992; Werking, 1997).

Despite the difficulties reported in cross-sex friendships, there are benefits to such alliances. For example, some research suggests that men seek out cross-sex friendships with women as an emotional outlet (Aukett et al., 1988; Buhrke and Fuqua, 1987). Thus, cross-sex friendships may be more satisfying for males than for females because of their higher levels of intimacy, self-disclosure and trust (Duck et al., 1991; Reis, 1998). Finally, some research suggests that both men and women see advantages to cross-sex friendships because they can gain insights about members of the opposite sex (the 'romance adviser' phenomenon) (Canary and Emmers-Sommer, 1997).

Same-sex friendships may offer benefits besides ease of maintenance (Arnold, 1995). Research finds that men's same-sex friendships offer opportunities for the pursuit of desirable activities (Aukett et al., 1988; Mazur and Olver, 1987; Strikwerda and May, 1992). In contrast, women's friendships with other women tend to be characterized by high levels of emotional intimacy, personal self-disclosure and social support (Arliss and Borisoff, 1993; Bruess and Pearson, 1996; O'Connor, 1992). Although little research comparing cross-sex and same-sex relationships within the context of internet communication exists, Parks and Roberts (1998) found that cross-sex friendships were more likely to develop in online groups than in face-to-face contexts.

Sex also seems to influence perceptions and use of the internet for relational communication. Generally, women have been shown to be more likely than men to use the internet for relational communication (Boneva and Kraut, 2002; Parks and Floyd, 1996; Pew Project on the Internet & American Life, 2000, 2002). Data from the Pew Internet & American Life surveys (2000, 2002) demonstrate that women are more likely than men to email friends or family daily, to anticipate emails and to communicate weighty subject matter online. Women often assume the role of maintaining long-distance contact with family via email (Boneva et al., 2001) and have a stronger sense of online connection with kin than men (Chen et al., 2002).

## RESEARCH QUESTIONS

In short, it is important to situate the use of media to conduct relationships within the contexts of sex, partner sex and relationship type. One goal of this study is to explore further the extent to which different media are used across relationships in accordance with these variables. It is also likely that relational quality is associated with each of these variables in some way, particularly with regard to sex. Furthermore, there could be interaction effects among these variables so that, for example, the quality of friendships between women who use the internet for many of their interactions could differ from the quality of relationships between male family members who do the same. Given the review of literature and our identification of potentially important factors, the following research questions are posed:

RQ1: Does the extent to which a medium is used (i.e. face-to-face, telephone and internet communication) to conduct relationships vary depending on the sex of the participants, the sex of their partners and their relationship types (i.e. acquaintance, friend, romantic relationship, family)?

RQ2: Does the perceived level of relational quality (i.e. relational satisfaction and relational closeness) vary depending on the sex of the participants, the sex of their partners and their relationship types (i.e. acquaintance, friend, romantic relationship, family)?

RQ3: When the sex of the participants, the sex of their partners and their relationship types are controlled for, does the extent to which a medium is used

(i.e. face-to-face, telephone or internet interaction) to conduct relationships predict the perceived relational quality (i.e. relational satisfaction and relational closeness) of those relationships?

## METHOD

### Participants

In order to fulfill a research requirement or to receive extra credit, 496 college students ( $M$  age = 20.67,  $SD$  = 1.63) were recruited from communication studies courses at a large, residential midwestern university. In order to participate in the study, each participant had to meet the minimal criterion of identifying himself or herself as someone who 'socializes over the internet'. Among the 496 participants, there were 40.9 percent ( $N$  = 203) males and 59.1 percent ( $N$  = 293) females. The majority of the participants identified themselves as white ( $N$  = 424), 24 as Asian/Pacific Islanders, 20 as African American, 11 as Hispanic/Mexican Americans, four as Native American and 13 as 'other'. Participants reported an average of 7.37 years of experience in using computers ( $SD$  = 2.81) and 5.33 years of experience using the internet ( $SD$  = 1.72).

### Materials and procedures

The participants were asked to answer questions about their interaction experiences with a partner with whom they had interacted recently. The study controlled for relationship type (four types: acquaintances, friends, romantic partners and family members) and the medium of the interaction (three types: face-to-face, telephone and internet). Thus, there were 12 versions of the survey; participants were randomly assigned to one of the versions (e.g. a face-to-face interaction with a friend, a telephone conversation with a family member, an internet interaction with a romantic partner). This design facilitated randomization in the participants' selection of interaction partner. Of the participants, 125 (25.2%) reported on an acquaintance, 122 (24.6%) on a friend, 126 (25.4%) on a romantic partner and 123 (24.8%) on a family member. Participants also reported the sex of this partner.

One of the major variables in this study was the participants' total communication with this partner through three media (i.e. face-to-face, telephone and internet). This variable was assessed with the question: 'Please estimate the percentage of your total interactions with this person that are conducted in each of the following ways in general'. Participants answered this question by providing a number, in percentage format (range 0–100), for each medium. This allowed for assessment of the overall distribution of media use within relationships that may use multiple media. We regard these estimates to be relatively accurate, so that those who estimated higher proportions of internet use within relationships probably do use the internet more within those relationships than those who estimated a lower percentage

of internet communication in their relationships. In some cases, the participants overestimated the proportion of these three media so that their combined percentages totaled more than 100 percent. Since this seemed to indicate misunderstanding of the question, these surveys were excluded ( $N = 88$ ). Thus, the sample was reduced to 408 for the relevant analyses (i.e. those pertaining to RQ1 and RQ3).

Participants were asked to evaluate the quality of their relationships on two dimensions: relational satisfaction and relational closeness. The relational satisfaction dimension was measured on a semantic differential scale of 1 to 5, whereby participants were asked to indicate 'the extent to which this relationship is generally' 1 = 'dissatisfying' to 5 = 'satisfying'. Relational closeness with the partner was also measured using a semantic differential scale of 1 to 5, whereby participants were asked to indicate 'the extent to which this relationship is generally' 1 = 'distant' to 5 = 'close'. The results indicated that the relational satisfaction item and the relational closeness item were not highly correlated ( $r = .67$ ), suggesting that these two items may assess different aspects of quality of relationship. Therefore, these two items were treated as two separate variables in the analysis.

## RESULTS

### Research question 1

The first research question examined whether the extent to which a medium is used to conduct relationships varied depending on the sex of the participants, the sex of their partners and their relationship types. A 2 (participant sex)  $\times$  2 (partner sex)  $\times$  4 (relationship type) multivariate analysis of variance (MANOVA) was conducted with the three media use estimates (proportions) as the dependent measures. The results revealed a significant multivariate main effect for relationship type ( $F(9, 942) = 4.78, p < .001, \eta^2 = .04$ ) and a significant participant sex by relationship type interaction effect ( $F(9, 942) = 2.03, p < .05, \eta^2 = .02$ ). There were no significant main effects detected for participant sex and partner sex. Univariate analyses of variance (ANOVA) on each dependent variable were conducted as follow-up tests to the MANOVA. Using the Bonferroni method, each ANOVA was tested at the .017 level ( $.05/3 = .017$ ) (Green and Salkind, 2003).

Univariate tests showed that the relationship type main effect was significant for face-to-face ( $F(3, 389) = 4.24, p < .01, \eta^2 = .03$ ) and telephone conversations ( $F(3, 389) = 10.54, p < .001, \eta^2 = .08$ ), but was not significant for internet interaction. A Tukey post-hoc test revealed that participants reported a significantly lower proportion of face-to-face interaction with their family members than with their friends, romantic partners and acquaintances (see Table 1). The results also showed that participants reported a significantly higher proportion of telephone interaction with their family members than with their friends, romantic partners and acquaintances (see Table 1).



• Table 1 Means and standard deviations for media use by relationship type (n=408)

MEDIA USE	RELATIONSHIP TYPE							
	FRIEND		FAMILY MEMBER		ROMANTIC PARTNER		ACQUAINTANCE	
	M	SD	M	SD	M	SD	M	SD
Face-to-face	48.99 <sup>a</sup>	31.83	35.16 <sup>b</sup>	28.27	58.56 <sup>a</sup>	29.27	49.18 <sup>a</sup>	37.91
Telephone	27.30 <sup>a</sup>	21.64	38.03 <sup>b</sup>	27.89	26.48 <sup>a</sup>	21.29	17.72 <sup>a</sup>	23.87
Internet	20.82	25.90	18.70	24.02	12.32	20.15	24.11	32.76

Note. Means with different superscripts in rows differ significantly at  $p < .017$ .

To decompose and interpret the significant two-way interaction between participant sex and relationship type, a series of ANOVAs was conducted. Each of these was performed to determine the effect of one of the variables tested within each level of the other (moderator) variable. Using the Bonferroni method, each ANOVA was tested at the .003 level ( $.017/6 = .003$ ) (Green and Salkind, 2003). Although the two-way sex by relationship type interaction was significant, the univariate tests did not reveal any significant results, hence the interaction effect was not pursued further.

## Research question 2

RQ2 examined whether the perceived level of relational quality (i.e. relational satisfaction and relational closeness) varied depending on the sex of the participants, the sex of their partners and their relationship types (i.e. acquaintance, friend, romantic relationship and family). A 2 (participant sex)  $\times$  2 (partner sex)  $\times$  4 (relationship type) multivariate analysis of variance (MANOVA) was conducted with the two relational quality measures (satisfaction and closeness) as the dependent measures. The results revealed a significant multivariate main effect for relationship type ( $F(6, 932) = 16.09$ ,  $p < .001$ ,  $\eta^2 = .09$ ), a significant two-way participant sex by partner sex interaction effect ( $F(2, 466) = 4.90$ ,  $p < .01$ ,  $\eta^2 = .02$ ) and a three-way significant interaction between participant sex, partner sex and relationship type ( $F(6, 932) = 2.59$ ,  $p < .05$ ,  $\eta^2 = .02$ ). There were no other significant multivariate effects. Univariate analyses of variance (ANOVA) on each dependent variable were conducted as follow-up tests to each of the three significant MANOVA effects. Using the Bonferroni method, each ANOVA was tested at the .025 level ( $.05/2 = .025$ ) (Green and Salkind, 2003).

Univariate tests showed that the relationship type main effect was significant for relational satisfaction ( $F(3, 467) = 19.85$ ,  $p < .001$ ,  $\eta^2 < .11$ ) and closeness ( $F(3, 467) = 28.46$ ,  $p < .001$ ,  $\eta^2 = .16$ ). A Tukey post-hoc test revealed that acquaintance relationships ( $M = 3.66$ ) were reported as less satisfying than friend ( $M = 4.30$ ), romantic ( $M = 4.27$ ) and family ( $M = 4.47$ ) relationships.

The results also indicated that friend ( $M = 4.30$ ) and family ( $M = 4.47$ ) relationships were reported as more satisfying than romantic relationships ( $M = 4.27$ ). In addition, a Tukey post-hoc test revealed that acquaintance relationships ( $M = 2.58$ ) were reported as less close than friend ( $M = 3.52$ ), romantic ( $M = 3.79$ ) and family ( $M = 3.66$ ) relationships. Further, the results indicated that romantic relationships ( $M = 3.79$ ) were reported as more close than friend relationships ( $M = 3.52$ ).

Univariate tests showed that the significant two-way interaction between participant sex and partner sex was significant for relational satisfaction ( $F(1, 467) = 6.28, p < .01, \eta^2 = .02$ ), but not for relational closeness ( $F(1, 467) = .49, p > .05, \eta^2 = .00$ ). In addition, although the three-way interaction between participant sex, partner sex and relationship type was significant, the univariate tests did not reveal any significant results, hence the three-way interaction effect was not pursued further.

To decompose and interpret the significant two-way interaction between participant sex and partner sex on relational satisfaction, two ANOVAs were conducted. Each of these was performed to determine the effect of one of the variables tested within each level of the other (moderator) variable. Using the Bonferroni method, each ANOVA was tested at the .0125 level ( $.025/2 = .0125$ ) (Green and Salkind, 2003). Thus partner sex was determined to have a significant main effect on male participants ( $F(1, 199) = 6.88, p < .01, \eta^2 = .03$ ), so that relational satisfaction was greater with male partners ( $M = 4.26$ ) than with female partners ( $M = 3.91$ ). Partner sex was also determined to have a significant main effect on female participants ( $F(1, 289) = 7.11, p < .01, \eta^2 = .02$ ), so that relational satisfaction was greater with female partners ( $M = 4.34$ ) than with male partners ( $M = 4.06$ ). Although participant sex was not significant on relational satisfaction with male partners, it was determined to have a significant main effect on relational satisfaction with female partners ( $F(1, 272) = 16.15, p < .001, \eta^2 = .06$ ), so that female participants were more satisfied ( $M = 4.34$ ) in their relationships with women than male participants ( $M = 3.91$ ).

### Research question 3

RQ3 examined the extent to which a medium that is used to conduct relationships (predictor variables: face-to-face, phone and internet) predicts the perceived relational quality (criterion measures: relational satisfaction and relational closeness) when the demographic variables (participant sex, partner sex and relationship type) are controlled. Two hierarchical regression analyses were conducted on each of the two criterion measures of relational quality. Demographic variables were dummy coded and entered in the first stage (model 1), followed by three predictor variables (entered simultaneously in model 2)<sup>1</sup> for predicting each criterion variable. The set of demographic

variables significantly predicted variance in relational satisfaction ( $R = .39$ , Adjusted  $R^2 = .14$ ,  $F(5, 397) = 13.81$ ,  $p < .001$ ) and relational closeness ( $R = .49$ , Adjusted  $R^2 = .23$ ,  $F(5, 394) = 25.13$ ,  $p < .001$ ). We focus this analysis on the results in model 2, therefore the effects of the individual predictors in model 1 are not reported here.

When the effects of demographic variables were controlled for, the three media use variables did not predict significant variance in relational satisfaction ( $R^2$  change = .01,  $F$  change (3, 394) = 1.91,  $p > .05$ ; face-to-face,  $t = 1.27$ ,  $\beta = .13$ ,  $pr^2 = .00$ ,  $p > .05$ ; telephone,  $t = .63$ ,  $\beta = .05$ ,  $pr^2 = .00$ ,  $p > .05$ ; and internet,  $t = -.04$ ,  $\beta = .00$ ,  $pr^2 = .00$ ,  $p > .05$ ) and relational closeness ( $R^2$  change = .01,  $F$  change (3, 391) = 2.41,  $p > .05$ ; face-to-face,  $t = 1.44$ ,  $\beta = .14$ ,  $pr^2 = .00$ ,  $p > .05$ ; telephone,  $t = .90$ ,  $\beta = .07$ ,  $pr^2 = .00$ ,  $p > .05$ ; and internet,  $t = -.05$ ,  $\beta = .00$ ,  $pr^2 = .00$ ,  $p > .05$ ). In other words, participants' estimated proportion of face-to-face, phone and internet communication with their partners did not affect relational quality.

## DISCUSSION

Three research questions were proposed to examine the relationships among three sets of variables: the sexes and relationship types of participants and their relational partners, their media use and their relational quality. RQ1 asked whether participant sex, partner sex and relationship type were associated with the extent to which face-to-face, telephone and internet communication were used relative to one another. It was found that the sex of neither the participants nor their partners was associated with relational media use. In other words, women did not differ from men in the *proportion* of their relational communication that they conducted online relative to face-to-face and telephone interaction. This would seem to contradict other studies' findings that women were more likely than men to use the internet for relational communication (Boneva and Kraut, 2002; Pew Project on the Internet & American Life, 2000). One explanation may be that college students are fairly homogeneous regarding availability of media, financial situation and lifestyle, so the differences which might appear in other populations may not appear in this one. If the sample were drawn from a middle-aged population, for example, where there is a wider range of employment status and lifestyle between women and men than college students (Rosenthal, 1985), this finding may have differed.

In the replication of this and similar studies, researchers should consider carefully whether to tap the frequency of communication conducted online, the proportion of communication conducted online, or both. The findings here suggest that, at least among the college students that were surveyed, women and men do not differ in the way that they distribute their relational communication across media. The reason that women use the internet more for

relational communication than men may be that women engage in more relational communication across all media. According to Boneva and Kraut, 'the different role obligations men and women have in personal relationship maintenance and the different value they place on personal relationships may account for these differences in email use' (2002: 397). In other words, if women are more likely to engage in relational communication in the first place, then what appears to be an internet-related finding actually may be a finding about sex and relational communication that holds across media. Of course, the findings of the present study regarding the lack of sex differences in media use may differ from other studies for methodological reasons. Both Boneva and Kraut (2002) and the Pew study (Pew Project on the Internet & American Life, 2000) examined differences in the *frequency* of relational communication conducted online. In contrast, our method assessed the *proportion* of relational communication.

Relationship type had significant effects on the extent that face-to-face and telephone communication were used, but relationship type was not associated with the proportion of internet communication in a relationship. Face-to-face communication was used least with family members and the telephone was used most with family members. This likely reflects the fact that many college students are proximally separated from their families. That the proportion of internet use did not vary among relationship types is an intriguing contrast to other studies, which found that friends are more likely to use the internet to communicate than family members (Chen et al., 2002; Quan-Haase et al., 2002). This may be due to differences in populations, as other studies utilized large diverse international samples, but also suggests a need for research across populations regarding the extent to which the internet is used in different relationship types.

RQ2 examined whether relational quality (i.e. relational satisfaction and relational closeness) depended upon participant sex, partner sex and relationship type. Not surprisingly, for all participants and across the sex/partner sex combinations, relationships with acquaintances were found to have the lowest relational quality. This result is consistent with Baym et al. (2004), who found that interactions with acquaintances were perceived as lower in quality than those with friends, romantic partners and family members.

Analyses addressing RQ2 portrayed a complex picture regarding the quality of romantic relationships. Romantic relationships were perceived to be closer than friendships. Similarly, Berscheid et al. (1989) found that romantic relationships were closer than family relationships and friendships. On the other hand, in the present study, romantic relationships were perceived to be less satisfying than friendships and family relationships. It may be the case that, as the closest type of relationship partners, the romantic tend to be more attached (Steinberg, 1986, 1987) and to invest more time, emotional energy and commitment to developing and maintaining their relationships. Hence, romantic partners may

have higher expectations with regard to the quality of these relationships. Indeed, for example, friends are less concerned with issues related to investment than romantic partners (Monsour et al., 1997). Consequently, a satisfying romantic relationship may be more difficult to achieve.

In regard to sex, we found that same-sex relationships were perceived as more satisfying than cross-sex relationships, across all relationship types (i.e. acquaintance, friend, romance and family). We also found an absence of significant findings contrasting the quality of men's versus women's relationships or relationships with men versus those with women. Indeed, these findings align with the inherent challenges posed by cross-sex relationships, especially cross-sex friendships (e.g. Monsour et al., 1994; Werking, 1997). Moreover, as stated previously, men may find relationships with other men to be more satisfying as they provide desired activity partners (e.g. Aukett et al., 1988; Mazur and Olver, 1987), whereas women may find relationships with other women to be more satisfying as they feature high levels of emotional intimacy, self-disclosure and support (e.g. Arliss and Borisoff, 1993; Bruess and Pearson, 1996). The results of the present study are consistent with some of the work on homophily, which looks at the tendency of people in groups and organizations to form friendships with others who are similar (in characteristics such as sex, ethnicity and education; see McPherson and Smith-Lovin, 1987; McPherson et al., 2001). Interestingly, however, the finding that men and women were more satisfied with their same-sex relationships is mildly surprising, as many studies find that in times of emotional stress, both men and women prefer women as conversational partners (Kunkel and Burleson, 1999; MacGeorge et al., 2004; Reis et al., 1985). Of course, in this study, we investigated more general forms of relationship quality.

RQ3 asked whether there is an association between the extent to which a medium is used to conduct a relationship and the quality of that relationship, when one controls for the factors of relationship type (which we have shown to be associated with relational quality) and sex/partner sex (which are associated with quality in this study). However, the proportion of face-to-face, telephone and internet communication in a relationship did not predict relational quality. This suggests that mediation neither improves nor detracts from relational satisfaction and closeness. These findings are inconsistent with Cummings et al. (2000), who found that online relationships are of a lower quality than offline relationships. Overall, the findings of the present study demonstrate that the extent to which a relationship is conducted online or by telephone may have little to do with the quality of that relationship. Hence, rather than replacing, revolutionizing or reversing the impacts of other interpersonal communication modes, communication technologies may be appropriated to supplement these means of meeting the goals of personal relationships (Katz and Rice, 2002; Kavanaugh and Patterson, 2002). In general, the present study demonstrates the importance of contextualizing

communication technologies vis-à-vis more traditional means of accomplishing the same ends.

## CONCLUSION

In closing, we note the difficulty of comparing studies which examine different aspects of the relational context and that implement varied measures of them. The resulting differences in findings give rise to a wide range of interpretations. As we begin to make sense of the role of mediation in interpersonal communication, we would be wise to explain our measures clearly, to corroborate the findings of others and, perhaps most importantly, to refrain from overgeneralization. For example, samples of American college students enrolled in communication studies courses may be somewhat atypical of the American and global, population. Moreover, while our focus on the proportion of communication rather than the frequency or amount of communication creates more specific comprehension, it also complicates comparison with the findings of other researchers. Thus we remain a long way from either broad or fully refined understandings of how mediation affects interpersonal relationships, or how specific features of relationships may have an impact on the use of particular communication modalities. Our hope is that future research will attend to these concerns by implementing multiple measures of media use and various methodological approaches (e.g. interviews, participant observation) to study diverse populations. Thus, we may come to understand better how mediation shapes our relational experiences.

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## Note

- 1 We also conducted regression analyses by entering each of the three media use variables separately in the second model for concerns of multicollinearity among the variables. Patterns of results remained the same as when the three media use variables were entered simultaneously in the same model. In addition, the tolerance indices were good (varying from .93 to .97; Cohen, 2001); hence, we reported the regression results containing the three media use variables in the same model.

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