Face to Face Matters: Communication Modality, Perceived Social Support, and Psychological Wellbeing

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Abstract

This study examines the relationship between psychological wellbeing and perceived social support received from friends, differentiating groups of friends based on the communication modality the individual uses to communicate with them. Three communication modalities were examined: friends that communicate 1) only face-to-face, 2) only through computer-mediated communication, or 3) both. Results from a survey ($N=$ 283) indicate that sociability, a dimension of extraversion, moderates the effect of communication modality on perceived social support. Social support—regardless of modality—increases positive affect, but only support from friends communicated with face-to-face is associated with lower levels of loneliness and higher levels of life satisfaction in comparison to support received from friends that only communicate through mediated means.

Author Keywords

Social support; psychological wellbeing; communication modality; sociability; computer-mediated communication

ACM Classification Keywords
H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

While there have been multiple studies on the relationship between online communication and psychological wellbeing [12,18], there have been fewer studies that examined more holistic communication patterns that include both face-to-face and mediated modalities. We define communication modality as the physical state that describes the vehicle or medium of communication; common modalities can be face-to-face (FTF) or computer-mediated.

Research into existing relationships with friends found that using a combination of mediated and FTF modalities is best for sustaining and even strengthening friendships [2,4,6]. While we know that using more modalities is associated with closeness [4,9,21], it is often the case that certain types of friendships do not lend themselves to multiple modalities. For example, one may have a social relationship with a barista, roommate, or college professor [8] that is exclusively FTF, or a bond with a friend that is solely mediated because they live far apart [e.g. 14]. It is unknown what types of, and how much, social support people derive from friendships confined to a single modality.

Modality and Social Support

Our first research question was to examine how different modalities of communication are related to social support among friends:

RQ1. What is the relationship between communication modality and perceived social support from friends?

We defined friends as existing acquaintances that one has interacted with face-to-face at least once and who are not relatives or co-workers. We looked at groups of friends based on their modality of communication. The three groups were: friends whom one communicates with only through mediated means (only CMC), friends whom one communicates with only face-to-face (only FTF), and friends with whom one communicates with using both CMC and FTF modalities. We then proceeded to investigate whether or not an individual's perceived social support from each of those groups was different. We examined two types of social support: emotional and instrumental [7]. Emotional support refers to the provision of care, love, and empathy, while instrumental support is a form of tangible aid.

Moderating Role of Sociability
Although mediated communication is very prevalent, especially via the Internet, face-to-face still remains the dominant communication modality for interpersonal relationships [3]. However, it could be that people who have difficulty in communicating face-to-face because of their personality traits (e.g. sociability) may be more comfortable with mediated communication. It is thus necessary to see whether the personality dimension of sociability plays a moderating role, especially since meta-analyses indicate that factors such as age, gender, and type of Internet use are not significant moderators [10].

Sociability is a dimension of extraversion and the one most often used in studies of extraversion, which also include dimensions such as aggressiveness and dominance [5]. Studies looking at the relationship between extraversion and mediated communication have found a "rich get richer" effect in that extroverts,

"who are highly sociable and have existing social support will get more social benefit from using the Internet" than introverts [12]. Other scholars [1,19] have framed mediated communication as advantageous to introverts, finding that mediated communication better enables expression and relationship development than face-to-face communication for introverts

RQ2. Is there a moderating role of sociability in perceived (a) instrumental and (b) emotional support from friends depending on communication modality?

Modality and Wellbeing
Finally, we are interested in how perceived social support from different groups of friends based on communication modality is associated with psychological wellbeing. Previous research concerning mediated communication and psychological wellbeing has been conflicting—the detachment from bodily constraints in cyberspace predicts increased loneliness and depression, but mediated communication should contribute to more happiness [11].

RQ3. What is the relationship between perceived social support from friendships of different communication modalities and psychological wellbeing?

METHODS
Students and staff at a large U.S. university in the Midwest were invited to participate in an online survey through emails randomly sent out through the registrar. Participants' ages ranged from 19 to 57 ($M = 28$) and 63% were female.

For questions about friends that one communicates only via CMC, we asked participants to "think about your actual friends whom you have met in person but ONLY communicated through MEDIATED means in the past six months," before answering questions related to their relationship with people in that group. For the only-FTF friends, we told participants to "think about your actual friends whom you have met in person and ONLY communicated face-to-face in the past six months." For both CMC and FTF, we asked, "Think of the people whom you have met in person and communicated BOTH face-to-face and through MEDIATED means in the past six months," before answering related questions. Reminders of which group of friends they should be thinking about were provided throughout the survey.

Perceived social support was based on two subscales in the collection of social provisions by Cutrona and Russell [7]. Emotional support was based on the "attachment" subscale and instrumental support was based on the "reliable alliance" subscale. Means, standard deviations, and reliabilities are in Tables 1,2.

Sociability (Cronbach's alpha= .71) was a five-item measure by Cheek and Buss [5] about propensity to interact with others. Sociability was divided into three equal groups based on the distribution of the mean. The lower 33.3 percentile for sociability ($M= 3.38$, $SD= .81$) was 3.00 and the 66.67 percentile was 3.8.

We examined four dimensions of psychological wellbeing. Loneliness ($M= 2.75$, $SD= .85$, $\alpha= .82$) was a shortened version of the UCLA loneliness scale [16] assessing how socially isolated the individual feels. Satisfaction with Life ($M= 4.98$, $SD= 1.27$, $\alpha= .90$) was a five-item scale [15] about how content the individual is with his or her current life situation. Negative affect

	Sociability	Mean (SD)
Only CMC (α= .95)	Low	3.60 (.93)
	Medium	3.60 (.86)
	High	3.80 (.92)
	Total	3.70 (.91)
Only FTF (α=.96)	Low	3.79 (.88)
	Medium	3.41 (.86)
	High	3.97 (.90)
	Total	3.75 (.91)
Both CMC & FTF (α= .96)	Low	4.17 (.71)
	Medium	4.23 (.60)
	High	4.56 (.50)
	Total	4.34 (.63)

Table 1. Perceived instrumental support based on communication modality and the individual's sociability level.

	Sociability	Mean (SD)
Only CMC (a= .85)	Low	3.30 (.79)
	Medium	3.35 (.85)
	High	3.46 (.80)
	Total	3.37 (.81)
Only FTF (a= .91)	Low	3.54 (.86)
	Medium	3.28 (.83)
	High	3.84 (.83)
	Total	3.58 (.87)
Both CMC & FTF (a= .87)	Low	3.98 (.66)
	Medium	4.12 (.61)
	High	4.31 (.54)
	Total	4.14 (.62)

Table 2. Perceived emotional support based on communication modality and the individual's sociability level

(M= 2.08, SD= .65, α= .85) and positive affect (M= 3.42, SD= .72, α=.90) were measured with PANAS [20].

Results

Perceived Social Support and Modality
RQ1 inquired into whether or not there are differences in perceived emotional and instrumental support among the three friend groups. We conducted a means comparison test using ANOVA with post-hoc comparisons.

Results showed that perceived instrumental support was significantly affected by communication modality, $F(1.75, 489.15) = 74.52, p < .001$. Pairwise comparisons with Bonferroni adjustment showed that perceived instrumental support was significantly higher for people who communicate through both CMC and FTF (M= 4.34, SD= .63) than for people who communicate only through CMC (M= 3.7, SD= .91) and only FTF (M= 3.75, SD= .91). There was no significant difference between the only-CMC and only-FTF groups (Mean difference= -.08, p = .75).

The same analysis was conducted for perceived emotional support, which was also significantly affected by communication modality, $F(1.81, 507.89) = 97.72, p < .001$.

Pairwise comparisons with Bonferoni adjustment showed that perceived emotional support was significantly different between all three friendship types.

Perceived emotional support was highest for friends that the participant communicates with both CMC and FTF (M= 4.14, SD= .62), followed by friends that

communicate with only FTF (M= 3.58, SD= .87), and friends that communicate only via CMC (M= 3.37, SD= .81). Means and standard deviations are reported in Table 2.
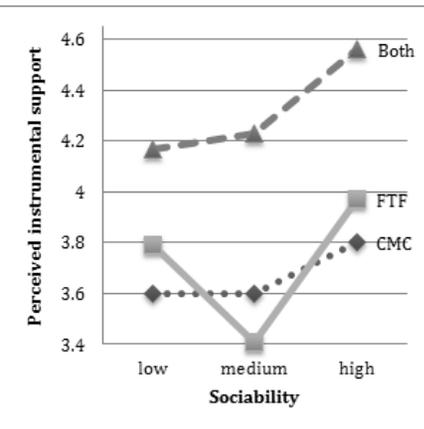
Moderating Effect of Sociability
RQ2 inquired about the moderating effect of sociability between communication modality and perceived social support. For instrumental support (RQ2a), there was an interaction effect between communication modality and sociability, $F(3.51, 489.15) = 3.17, p = .02$. For low and high sociable people, perceived instrumental support was lowest for friends that they only communicated through mediated means and highest for friends that they communicated with both CMC and FTF. However, for medium sociable people, perceived instrumental support from only-FTF friends was the lowest, followed by only mediated friends (see Figure 1).

For emotional support (RQ2b), there was also an interaction effect between communication modality and sociability, $F(3.63, 507.89) = 3.55, p = .01$. For people who were high or low in sociability, modality made a big difference in their perceived emotional support; perceived support was lowest from their CMC-only friends and highest from friends they communicated with through both FTF and CMC modalities. For people with medium levels of sociability, however, there was no significant difference between communicating with people through only CMC or only FTF (see Figure 2).

Perceived Social Support and Psychological Wellbeing
Finally, we examined how perceived social support from friends through different modalities is associated with an individual's psychological wellbeing (Table 3). In

Fig. 1. Perceived instrumental support based on communication modality and the individual's sociability level.

Fig. 2. Perceived emotional support based on communication modality and the individual's sociability level

Types of support based on modality of communication	Loneliness	Life Satisfaction	Positive Affect	Negative Affect
Only CMC: Emotional	-.11*	.05	.12*	.01
Only FTF: Emotional	-.11*	.15**	.20***	-.13*
Both CMC & FTF : Emotional	-.23***	.23***	.25***	.00
Only CMC : Instrumental	-.06	.06	.13*	-.01
Only FTF : Instrumental	-.16**	.22***	.22***	-.17**
Both CMC & FTF: Instrumental	-.22***	.24**	.26***	-.08

*p<.05, **p<.01, ***p<.001

Table 3. Correlation between perceived social support (by communication modality) and psychological wellbeing

general, all types of social support were positively related to positive affect. Negative affect, however, was negatively related only to social support from people whom one communicates with only FTF—the perceived emotional and instrumental support from FTF-only friends significantly lowered negative affect.

Life satisfaction was positively related with social support from friends that participants had some FTF contact with (only FTF and FTF + CMC conditions). Neither emotional nor instrumental support from friends who communicate only through CMC increased life satisfaction. Higher emotional and instrumental support were associated with lower loneliness, with the exception of instrumental support received from CMC-only friends.

Discussion

This study provides an explanation for why there have been conflicting findings on the effect of online communication on psychological health and presents

sociability as a possible key moderator. Perceived social support derived from friends depends on one's level of sociability. Our results largely support the rich get richer perspective for highly sociable people, who derived the most emotional and instrumental support from CMC-only friends. The difference in perceived social support from CMC-only friends between low and medium sociability was not statistically significant.

Our results do not fully support perspectives positioning CMC as a more advantageous modality than FTF for people with low sociability. While other works indicate that CMC better enables expression and relationship developments than a face-to-face modality, our results indicate that people with low sociability received less social support from their CMC-only friends compared to their FTF-only friends.

Interestingly, results show that for people with medium sociability, social support from CMC-only friends was the same or even higher than that from FTF-only friends. This suggests that communication with friends
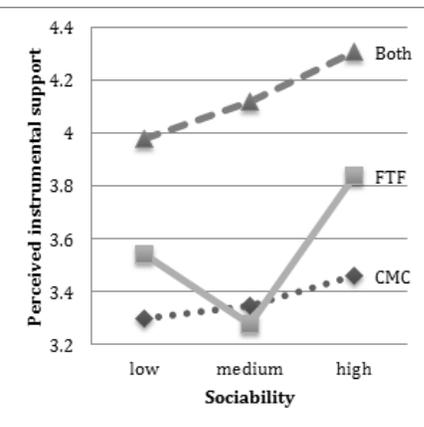
purely through CMC can still serve as an important source of social support for people with average sociability. Future research should further explore the social support people with average sociability derive from CMC-only friends, and why people with low and high sociability may not be experiencing the same level of support.

Regarding findings about psychological wellbeing, a notable discovery was the negative affect reduction associated with FTF-only friends. We can hypothesize why FTF-only friends are associated with lowered negative affect while friends that are communicated with using just CMC and both modalities are not. Perhaps these FTF-only friends are service workers (such as baristas, cashiers, or hairdressers) whose jobs are to provide a pleasurable interaction. Alternatively, other research has found that people most often confide secrets to people they are not emotionally attached to, but see regularly, such as women at a hair salon or other parents at a day care center (Small, 2013). Perhaps our participants in this study confided secrets to their FTF-only friends, which lowered negative affect. Such hypotheses represent future research.

Overall, social support from friends that one communicates with through both FTF and CMC modalities had the strongest correlation to psychological wellbeing. Social support from CMC-only friends can increase positive affect, but social support from such friends generally did not correlate with psychological wellbeing.

Limitations
It is important to note that in our study, we asked people to group their friends according to how they

communicate. Because of this, we do not know the causal relationship between the two variables. We also limited our definition of "friend" to exclude family and co-workers, meaning colleagues and relatives who are also friends were not included in the study's results.

Conclusion
This study adds to the existing literature on the relationship between CMC communication and wellbeing [13,17] by examining multiple communication modalities and using sociability as a moderator in the analyses. We asked individuals to group their friends according to how they communicate—only face-to-face (FTF), only computer-mediated (CMC) or both. We found that an individual's sociability plays a major role in how much perceived social support they receive from these different groups of friends. It also indicates that support received from the three friendship groups is associated with psychological wellbeing in different ways. While social support from all three friend groups is significantly associated with more positive affect, only support from friends that one communicates with solely FTF is significantly associated with negative affect. The results also imply that both FTF and CMC modalities matter when it comes to psychological wellbeing, but more so regarding friends that one communicates with at least partially FTF than CMC-only friends.

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