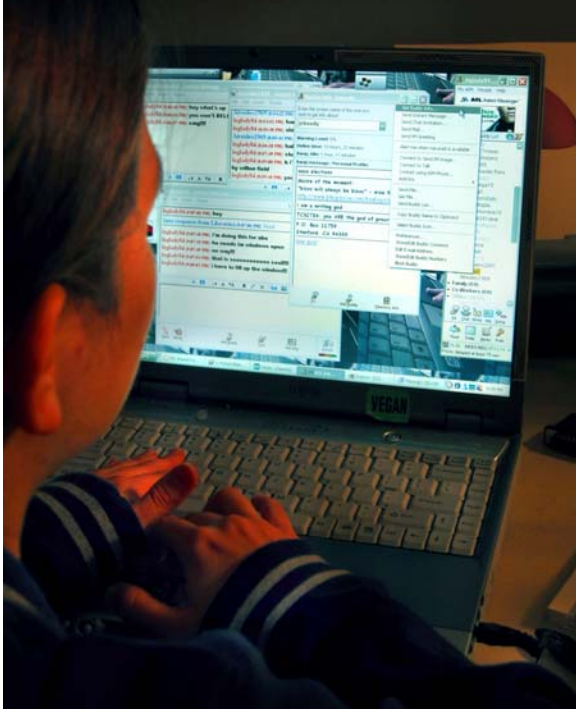


The Mercury Project for Instant Messaging Studies



A Vast Weave of Threads: How Instant Messaging Facilitates Inter- dormitory Network Communities Among Undergraduates at Stanford University

By Allen Cheung

INTRODUCTION

We live in a world where electronic communication is rapidly shortening great distances. As computer technology and the Internet transform some of the basic structures of society, its effects on people's psychological well-being and interpersonal relationships remain uncertain. Various studies have concluded that computer mediated communication (CMC) has a positive, neutral, or negative effect on social networks; that it increases loneliness or helps maintain valuable relationships. This study will analyze the effects of one form of CMC, instant messaging (IM), which has become extremely popular with the younger (16-19 years old) generation, and what role it plays in a specific, somewhat contained group of people: undergraduate students and especially freshmen attending Stanford University.

For incoming freshmen, the Stanford campus can be an intimidating place. Cast for the most part randomly into one of six main dorm complexes spread across the campus, freshmen face the daunting task of building community with mostly complete strangers. Upperclassmen too participate in communities outside of their draw group.ⁱ Where do they find this community? The individual dorm itself is a strong source of community, each with its own theme and unique culture. So much so that at times it can seem isolated from the other residences. Nevertheless,

through shared classes, activities, and random meetings, students inevitably form inter-dormitory network communities. Because most students use IM to communicate with others, IM has the potential to play an important role in these social networks. Although in some situations it may depersonalize relationships, by providing a casual, immediate, and less personal means of communication, IM plays a significant role in the facilitation of inter-dormitory network communities. It is a forum where students can meet and share when face-to-face (FtF) contact is difficult or impossible.

RESEARCH METHODOLOGY

For this study, I used a general survey on IM, which was also used by four other researchers studying topics ranging from friendship to language and away messages. For the complete survey, see Appendix A. Fifty-four respondents were polled. I divided the pool of respondents into two parts, based on sharp differences in the data collected: frequent users (2 or more hours on IM per week) and infrequent users (less than 2 hours on IM per week). There were 32 frequent users, 18 infrequent users, and 4 who did not use IM. To organize my data, I divided the survey into three parts. Part One asked for general background information. Part Two, which I label IM Utilization, listed a number of communicative functions, such as giving good news or gossiping and asked respondents to mark which media they would most likely use for that purpose. In the case of a tie, respondents were allowed to mark more than one. Part Three, Agreement, presented a variety of statements and asked respondents to agree or disagree on a one to five scale with five being strongly agree and 1 being strongly disagree. I took the average of the scores for each statement to determine whether students generally agree (greater than 3.5), are neutral (2.5 to 3.5), or disagree (less than 2.5) with the statement.

LINKING INDIVIDUALS WITHIN SOCIAL NETWORKS AT STANFORD

What comprises an inter-dormitory network community? For such networks at Stanford, I identify two different types: casual networks and formal networks. Casual networks describe the free-flowing web of social links between individuals in different dorms: close friends and acquaintances. In contrast, formal networks are more structured organizations, such as Intervarsity Christian Fellowship, Math 53 Lecture 06, and the Stanford Republicans. Their members are linked through association with the formal community, although they may very well be friends.

In fact, the two types are overlapping. Members of a club such as Intervarsity are likely to form numerous casual links with others in the group. Due to the one-on-one nature of IM communication, this study will focus on its effects on building community by developing individual relationships. For the purposes of analyzing IM, we can treat both groups almost the same. In an article for the Pew Internet & American Life Project, John Horrigan writes that internet users liked to communicate with members of their online community because “they liked discussing issues with others and creating and maintaining personal relationships with other group members” (2001, p.12). It is not unreasonable to suspect that online communication between group members at Stanford is similar. In order to measure the effect of IM communication on inter-dorm communities, we need a set of criteria to determine how communication affects interpersonal relationships.

BRIDGING DISTANCE, BUILDING NETWORKS

There is a reason why you see so many bikes at Stanford. Major residence areas are scattered across a relatively large campus; each one has its own dining hall and local culture. Faced with classes, activities, meetings, daily chores, research papers, problem sets, students

have little time to visit friends in other dorms. The scattering of the residences across campus means that FtF contact with students in other dorms must be intentional; outside of common areas like the Quad and White Plaza, students in different dorm complexes will rarely meet randomly in dining halls or around their rooms. This can tend towards isolating the dorm community. It was not until halfway through the year that I visited Florence Moore Hall, not because it was so far away but because I had not met anybody in that dorm and gotten to know them well enough to consider visiting them. But pure distance too can be a factor. Upon hearing of a party at Freshman Sophomore College, a residence across campus, a friend of mine laughed scornfully and said, “Sure, we can just jog over there. It’ll only take twenty minutes.” IM provides a forum for the casual meeting place where students can get to know each other. Provided students know each others’ screennames, which they can exchange quickly, they can go online and randomly find their friends. By providing a convenient method of communication, IM bridges between dorms to facilitate social networks.

The results of the study show that IM mainly affected inter-dormitory networks as opposed to those within the dormitory; moreover, it appeared to have a positive effect on those networks. Frequent users agreed that they communicated with friends in other dorms more because of IM (3.75 was the average of all agreement scores, see Research Methodology), while disagreeing for friends in the dorm (2.44). They were a high neutral (3.44) for “Without IM, my relationships with friends in other residences would be weaker,” but they disagreed for friends in their dorm (2.17). Infrequent user results had a similar pattern with the numbers slightly lower in general. All users agreed that physical distance was an obstacle in their relationships with friends in other residences (3.72, 3.78). Thus, IM use was linked to distance between users, even when both were part of the bounded community of Stanford University.

The primary difference between dorm communities and network communities is that the dorm community is geographically bounded, and it is formed from a mostly random drawing of the student body. With the exception of ethnic theme houses and SLE dorms,ⁱⁱ freshmen in a dorm are a microcosm of the freshman class. Although upperclassmen have the option of drawing together, groups are limited to eight and the rest of the dorm will probably be random. What ties the geographical community together at first is the frequency of interaction between group members. Although common interest will likely tie people together, that does not bind the whole community. In fact, common interest may fragment the group; my experience in Soto House this year is that cliques and divergent interests have stifled any sense of total community.

In contrast, inter-dormitory networks allow the members to pick and choose their associations. Members associate with each other on the basis of common values, activities, and interests. Casual networks link friends who at the very least are linked by enjoyment in each other's company. Formal networks may be organized specifically around certain values, activities and interests. Horrigan writes,

“For millions, use of the Internet cuts two ways in their social lives: It helps them find others who share their passions or lifestyles or professional interests. It also helps them feel more connected to groups or people they already know” (2001, p. 17).

Like people elsewhere, students at Stanford naturally form connections with others, but to do so they need to reach beyond their dorm. Inter-dorm networks themselves allow students to find others who share their passions; they don't need the Internet. But IM helps them stay connected between dorms.

IM's effects on interpersonal relationships strengthen social networks at Stanford. Freshman Elianna, a member of FICS (Fellowship in Christ at Stanford), reports that she uses IM to stay in touch with fellow FICS members and that she talks to them quite a bit.

Junior Peter and freshman Otar, both members of IVCF (InterVarsity Christian Fellowship), said that although they did not talk a lot on IM, they used it to set up meetings and social events with other members of their group. Thus, in these formal networks, IM enhances both communicative and time together aspects of interpersonal relationships. If IM mainly affects interpersonal relationships, then Christian fellowships and other groups, which are especially devoted to building community and relationships, would more likely be affected by IM than groups based solely around an activity. For example, sophomore Jimmy, a member of Stanford Wushu, reported that he does not use IM very much to talk to other club members. Likewise, freshman Talia, in the Stanford Band also does not use IM to talk to fellow band members. But IM is not limited to fellowships. Freshman Jane in an a capella group (name withheld on request) says that she uses IM to talk to one friend in her group regularly but also found out practice times from others over IM. IM then seems to play a positive role among certain network communities in bringing people together and facilitating community. How do we measure that role and its effects on interpersonal relationships?

MEASURING THE INTERPERSONAL RELATIONSHIP AND IM EFFECTS

One night during the fall quarter of my freshman year, at a not so happening and less-than-wild dorm party, I happened across several girls I knew. We had met during freshman orientation and run into each other once or twice afterwards, but being in separate dorms, had rarely talked much. This time, however, we exchanged IM screennames and began to talk. Later, I asked one of them to go with me to Frosh Formal, a freshman dance—through IM. As unromantic as this may seem, IM is widely used among Stanford undergraduates to communicate

with people in other dorms. The question is, what role does it play in inter-dormitory interpersonal relationships and thus in community building at Stanford.

To answer this question, we develop a set of criteria by which we can measure this effect. In the *Journal of Personality and Social Psychology*, Duane Buhrmester of UCLA breaks down the interactions of college students into five domains of interpersonal competence: initiation, negative assertion, disclosure, emotional support, and conflict management. Marianne Dainton in *Maintaining Relationships Through Communication* writes that “adolescence and young adulthood represents a time of high contact with friends” (2003, p. 95). She identifies four main strategies of friendship maintenance: time together, openness, support, and avoidance. Both reports give us a set of criteria that measure IM’s impact on network relationships at Stanford: time together; openness and sharing; and emotional support.ⁱⁱⁱ

But specific maintenance strategies are not all; communication in and of itself helps to maintain a relationship. Michael Rabby, in *Maintaining Relationships Through Communication* writes “the simple act of sending a message helps keep the relationship in existence” (2003, p. 153). He also identifies the narrative as an important element of interpersonal relationships and suggests “that these day-to-day, banal conversations bind relationships together” (2003, p. 154). Telling the stories of one’s life is an important part of a relationship and helps explain the popularity of weblogs^{iv}. Thus, perhaps more than a maintenance role, IM may play a “behind-the-scenes” role, affecting relationships by facilitating often seemingly pointless chatter.

In a study on emails, Rabby found that messages most contained elements of openness and then narratives. It is not unreasonable to suspect similar results for IM.

So how does IM fit into this model?

Most Used Activities on IM (50 students total)

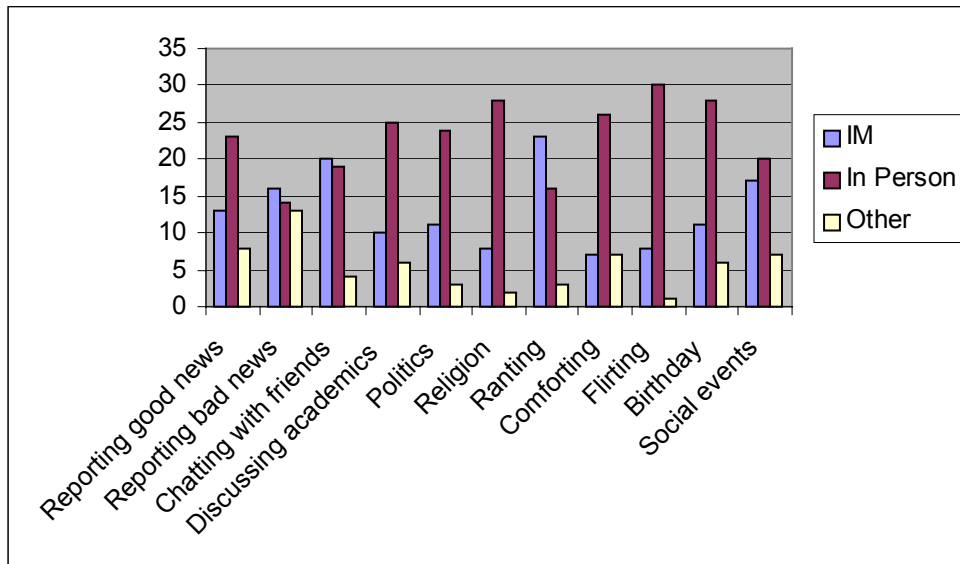
Frequent Users (2 hours or more per week)	Infrequent Users (less than 2 hours per
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	<i>week)</i>
Ranting/Complaining (23)	Setting up Social Events (8)
Chatting/Gossiping (20)	Chatting/Gossiping (6)
Setting up Social Events (17)	Wishing Happy Birthday (6)
Telling Good News (16)	Ranting/Complaining (5)
Telling Bad News (13)	Telling Good News (5)

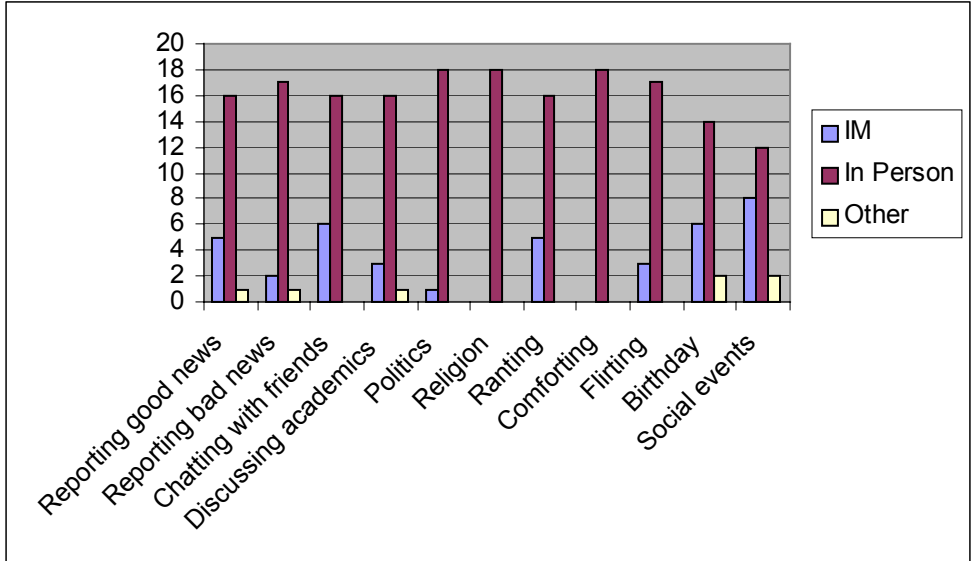
Twenty-three respondents said they were *most likely use IM* for complaining. Unfortunately, the survey did not record how many people total were willing to use IM; it is not unreasonable to suspect that more people use IM for these purposes.

GRAPHS OF IM UTILIZATION

Frequent Users:



Infrequent Users:



TABLES OF AGREEMENT

Frequent Users

	Strongly Agree	Neutral	Disagree	Strongly Disagree	Total	Score
I am more comfortable online than I am in person	2	10	13	6	32	3.1875
It is easy to make new friends online	1	10	5	8	32	2.625
It is easy to make new friends in person	8	17	4	3	32	3.9375
It is easy to keep in touch with friends via IM	14	15	2	1	32	4.3125
It is easy to keep in touch with friends in person		9	7	14	32	2.77419
Physical distance is an obstacle in my relationship with friends in other residences	4	19	5	4	32	3.71875
I communicate with friends in other residences more often because of IM	7	17	2	5	32	3.75
I communicate with friends in my dorm more often because of IM	1	3	8	17	32	2.4375
IM time detracts from time to interact on a face-to-face level	2	15	7	7	32	3.3125
I feel as if I am included in my dorm community	7	17	3	5	32	3.8125
Without IM my relationships with friends in other residences would be weaker	2	16	9	4	32	3.4375
Without IM my relationships with friends in my dorm would be weaker	1	3	3	18	32	2.15625
Im are less intimate than face-to-face interactions	9	18	4		32	4.16129

Infrequent Users

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Never	Total	Score
I am more comfortable online than I am in person		5	3	7	2	1	18	2.647059
It is easy to make new friends online		5	4	6	3		18	2.611111
It is easy to make new friends in person	2	11	3	2			18	3.722222
It is easy to keep in touch with friends via IM	3	11	3	1			18	3.888888
It is easy to keep in touch with friends in person	1	6	6	3		2	18	3.3125
Physical distance is an obstacle in my relationship with friends in other residences	1	14	1	2			18	3.777777
I communicate with friends in other residences more often because of IM	2	7	3	6			18	3.277777
I communicate with friends in my dorm more often because of IM			6	9	3		18	2.166666
IM time detracts from time to interact on a face-to-face level		6	6	4	1	1	18	3
I feel as if I am included in my dorm community	5	8	3	1		1	18	3.117647
Without IM my relationships with friends in other residences would be weaker	2	3	8	3	1	1	18	3.117647
Without IM my relationships with friends in my dorm would be weaker			3	11	3	1	18	2
IMs are less intimate than face-to-face interactions	7	7	2	1		1	18	4.17647

For everyday chatter, IM provides a more convenient means of communication. Both infrequent (less than two hours per week) and frequent users agreed that it is easy to keep in touch with people over IM (4.31, 3.89). Frequent users agreed that they communicated with students in other residences more often because of IM (3.75).

In addition, as my dance anecdote suggests, IM can be an important tool in the facilitation of FtF interactions. As the chart suggests, 50% of all students who use IM are most likely to set up social events on IM.

At a certain level, IM allows students to share feelings of frustration or annoyance, which they may not have the chance to do or may not wish to do in person. For frequent users, IM was more likely to be used than FtF conversation for complaining, chatting, and reporting bad news.

In terms of emotional support, IM was not widely used. Few frequent users (7) and none of the infrequent users were most likely to comfort someone over IM. 86% of all users agreed or strongly agreed that IM was less intimate than FtF (4.16, 4.18).

The results show that IM does play a significant role in interpersonal relationships at Stanford. Students are likely to share their daily lives, humor, gossip, frustrations, and complaints over IM. They are likely to set up times and places to meet with their friends. But they are unlikely to feel empathy for or comfort their friends. These results are expected. IM software allows for convenient, instant communication between parties. Unlike the telephone, “buddies” are available at all times they are signed on, and multiple conversations can occur. Students take advantage of this convenience to communicate more often and share more in their daily lives. In a sense it replaces the random meeting that may or may not occur on campus, allowing students in different dorms to throw out the casual hello and keep in contact with each other. Freshman Elisha in IVCF states that IM allows students who don’t know each other very well to communicate when visiting each other might be awkward. These students may feel liberated to vent their frustrations. Nevertheless, IM communication trades intimacy for convenience. Students are unlikely to use IM to comfort others who may be venting. It may be easier to express oneself over IM than to receive and respond to another’s feelings. Through

these effects, IM communication ties together individuals within different residences, offering a convenient means of chatting that takes the place of daily contact.

TREADING SHALLOW WATERS: THE ARGUMENT FOR LONELINESS IN CMC

There are several buddies on my list, who I do not talk to. They are Stanford students in other residences. I met one at Admit Weekend^v and the other from a fall quarter section. Jean-Francois Coget, in *IT&Society* presents five hypotheses which essentially state that CMC time (IM time included) replaces FtF interaction and FtF interaction builds deeper friendships than CMC (2002).^{vi} Relationships are like a bucket of water; the wider they are spread, the shallower they get. Eighty-six percent of all respondents overwhelmingly agreed that IMs are less intimate than FtF interaction (4.16, 4.18). Only 46% of students polled agreed that IM time detracts from time in person, but for frequent users, the number climbs to 53% (3.31, 3.00). Although IM seems to bring people together, IM may also lead to shallower relationships.

So how do we measure these conflicting effects of IM? To say that CMC in general has a positive or negative effect on social networks is an oversimplification. The proper question is, under what conditions does CMC positively aid social networks and under what conditions does it foster loneliness?

If we accept the idea that in person communication builds stronger relationships than CMC, then social networks that are heavily grounded in FtF interaction will benefit from the use of IM. In particular, formal networks, which usually meet once or twice a week, stand to benefit from IM use. Freshman Mary, in *Campus Crusade*, said she talked to other members, but especially those in her small group. The relationships IM affects most in that example are the ones most rooted in intimate FtF time. IM, by allowing users to communicate between FtF meetings can strengthen or facilitate relationships within the group. The situation is not as clear

in casual networks. Shallow relationships exist in both casual and formal networks. Does IM lessen the value of relationships? In my experience, relationships solely or primarily based on IM fall apart eventually. If we accept that emotional support is a crucial part of a healthy relationship, the fact that hardly any students prefer to comfort others through IM seems to suggest that FtF interaction is necessary. Under circumstances where IM conversation is a supplement to regular and meaningful FtF interaction, IM draws social networks together by increasing communication frequency in interpersonal relationships.

CONCLUSION

It is tempting to draw generalizations and find a unified theory on IM and CMC in general. The truth is rarely that simple. I quote Andreina Mandelli in her abstract in *IT&Society*^{vii}, who puts it very nicely:

“[Her results] are used to outline the need for a better understanding of sociability dynamics in complex network societies—beyond the simplification proposed by both techno-pessimists and techno-optimists, but also by the first ideas of the Internet as a neutral medium” (2002, p. 251)

While I hesitate to label IM a neutral medium, the better question is not whether but how and under what circumstances does IM hurt or help network communities. I analyze the Stanford community as a whole and identify several particular networks and network characteristics that likely benefit from IM. Christian fellowships and perhaps to a lesser extent clubs, activity groups, and casual friends may benefit from IM use. These networks are based on regular FtF interaction. Their members generally want to develop meaningful relationships with other members. IM does this by creating a virtual space where students can meet randomly, chatter, and arrange to meet in person. But these results are quite specific. Additional analysis of the Stanford community, focusing specifically on casual friends, romantic relationships, and activity

groups, would be interesting to compare with these findings. Comparison with findings from other college campuses would highlight general trends. Nevertheless, this study offers one perspective on how IM can affect interpersonal relationships in network communities.

ⁱ The Draw is a lottery process by which students choose housing for the next year. Students have the option of drawing as a group (maximum of eight people), whereby they will receive the same draw number and have a much greater chance of living together.

ⁱⁱ The Structured Liberal Education program is a special liberal arts program for freshmen. Students who choose to do it live in the same dorms and often have classes meeting as part of the dorm structure. These students thus have a common interest (or at least a class) linking them together in the creation of a community.

ⁱⁱⁱ Unfortunately, the questions did not address the categories of negative assertion, conflict management, or avoidance or to fully explore the topic of initiation.

^{iv} Weblogs are online journals, which are posted on a site and accessible to anyone. Generally, they are used to tell stories of what is happening in the user's life to anyone who knows the "blogger." Freshman Elisha in IVCF states that weblogs are a useful tool in letting other people know what is going on in one's life. This paper will attempt to determine to what extent IM functions in that role for students at Stanford.

^v Admit Weekend is a weekend in April where prospective freshmen are encouraged to visit Stanford. Special programs and schedules are designed for the whole weekend to attract Students to Stanford and let them know what student life is like.

^{vi} The five hypotheses explaining why CMC causes loneliness are: time displacement, creation of weak ties, destruction of strong ties, positive impact of social interaction on loneliness, and the importance of depth vs. breadth in reducing loneliness. Coget attempts to rebuff them, while Nie argues that they are true (see Nie, 2002, 275-283). I choose to cite Coget, because he summarizes them more succinctly. Regardless of whether the hypotheses are true or not (which is a generalization that may not hold for all circumstances), I will attempt to show that even if they are true, IM can play a positive role in inter-dormitory communities at Stanford. For more information, see Coget, 2002, p. 185-186.

^{vii} Her article analyzes the costs and intangible resources in digital networks. Focusing on a different aspect of network community, her ideas nevertheless are an interesting way of looking at networks, which I also explore. For more information, see Mandelli, 2002, p. 251-274.