A Nation of Strangers?

Stories of friendships found and forged on the Internet appear in headlines every day. These stories may not always have happy endings, but as a recent survey illustrates, there are definite patterns of friendship and community involvement among Internet users.

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Readers of New York tabloid newspapers may have been shocked earlier this year by a front-page photograph showing a local computer expert being led away in handcuffs, having been arrested on charges of raping a woman he had met via the Internet. But troubles with Internet acquaintances are by no means unique. Stories appear in the news media with disturbing frequency about young boys or girls running away from their homes with adults they met through computer bulletin boards or chat groups. In one of the more bizarre events in America's experience with cyberspace, a Virginia woman met a man through the Internet, and after several dates and visits decided to get married. Only later did the Virginia woman discover that she had actually married another woman who through various ruses had tricked her into believing that she was a he. Consequently she is suing the former "husband" for a variety of harms. As similar stories arise about Internet friendships going awry, or even of these "friendships" being malicious cons in the first place, concerns over the Internet's social impact will increase. Of course the concern is by no means limited to the one-on-one level of interpersonal friendships. National and international bodies are grappling with questions about what to do about various extremist political or religious groups who are aiming to suborn or recruit large groups of people. The mass suicide of the Heaven's Gate cult, which had a presence on the Internet, was a ready target for those who fear the way the Internet is changing society.

But the Internet situation is not unique. Every new technology finds dour critics (as well as ebullient proponents). Communication technologies in particular can be seen as opening the doors to all varieties of social ills. When the telegraph, telephone and the automobile were in their infancy, each of these three earlier "communication" technologies found vitriolic critics who said these "instruments of the devil" would drastically alter society (which they did) with disastrous consequences for the quality of life and the moral order (readers may judge for themselves about this point) [1, 3, 5]. The Internet is no exception to this rule. Indeed, it has stimulated so many commentators that not even the most indefatigable reader can stay abreast of the flood of speculation and opinion. Yet, as might be expected in light of the conflicts, dif-

Table 1. Membership in organizations by type and frequency

Internet Status of Respondent	Percent belonging to group by type of group									(Number of respondents)
	Religious			Leisure			Community			
	None	1	2+	None	1	2+	None	1	2+	
Non-user not aware	33	57	10	75	11	13	72	16	12	(355,322,323)
Non-user aware	36	56	9	60	21	19	63	23	14	(1570,1494,1493)
Former user	44	49	7	51	21	28	62	24	14	(174,173,173)
Recent current user	40	53	7	51	24	25	69	19	12	(102,102,99)
Longtime current user	33	64	4	47	24	29	51	27	22	(85,86,85)
	Chi square = 10.9, sig. = 0.2 (with 8 df)			Chi square = 51.8, sig. <0.001 (with 8 df)			Chi square = 20.5, sig. = 0.008 (with 8 df)			

ficulties, and tragedies associated with the Internet mentioned previously, one area in particular has been singled out for comment: the way the Internet affects social relationships generally and participation in community life in particular [11]. Among those who have criticized the Internet are MIT's Sherry Turkle [10], who claims that it leads to the destruction of meaningful community and social integration, and Berkeley's Cliff Stoll [9], who says it reduces people's commitment to and enjoyment of real friendships. In addition, the Internet is accused of being a dangerous medium, replete with pedophiles and seducers, exploiters and pornographers, who can lead the vulnerable, particularly young people, astray [8]. These critical views of the Internet have converged with a much older debate over the seeming decline in civic participation by Americans. Although concerns over declining participation are not new—Benjamin Franklin, Thomas Jefferson, and John Quincy Adams all spoke about it two hundred years ago—the intensity of the debate has recently escalated, most notably via the work of Harvard's R.D. Putnam [6], who has identified computer-supported entertainment as among the culprits.

By contrast, optimists argue that genuinely meaningful communities can be established in cyberspace, and indeed even fostered via online communications. Rheingold [7] holds that since virtual interfacing obscures social categories we ordinarily use to sift our relationships (race, sex, age, location), the possibility of new relationships and hence new communities is multiplied. An even more utopian argument is that new, powerful communities will arise in cyberspace, supplanting physical ones of the past, and becoming to an unprecedented extent cohesive, democratic, and meaningful for its members. Indeed, Internet pioneer and Lotus Corporation cofounder Mitch Kapor sees virtual communities ringing in at last the Jeffersonian ideal of community. "Life in cyberspace seems to be shaping up exactly like Thomas Jefferson would have wanted: founded on the primacy of individual liberty and a commitment to pluralism, diversity, and community" [2].

But all these theories have been based on personal impressions, anecdotal evidence or case studies rather than systematic investigation. We wanted to get a broader, more objective picture of what is going on in terms of friendship formation and community involvement for the denizens of the Internet. (We use the term Internet to encompass such aspects of cyberspace as networked computers, computer bulletin boards, and email.) Hence in late 1995 we carried out a national random telephone survey which had among its objectives to: compare "real-world" participation for Internet users and non-users, and to examine friendship creation via the Internet.

Our approach was to consider the perspectives of five different Internet awareness/usage groups:

- Those not aware of the Internet,
- Non-users who were aware of the Internet,
- Former users,
- Recent users—those who started using the Internet in 1995,
- Longtime users—those who started using the Internet prior to 1995.

By comparing those who were on the Internet versus those who were not, and controlling statistically for demonstrable demographic differences among user categories [4], we would be in a position to see if, on average, Internet users were less likely to belong to various voluntary organizations, thus strengthening

the hand of those who see the Internet as socially pernicious. Of course if they belonged to more organizations than their non-Internet-using counterparts, the celebrationists would be supported. Likewise, by getting a representative sample of Internet users to speak about their experiences with friendship formation, we would also have some more reliable views of what the typical or majority experiences have been in this regard, without having our understanding biased by a few extraordinary reports.

Our October 1995 survey yielded 2,500 respondents—8% reported being Internet users, 8% reported being former Internet users, 68% reported being aware of the Internet but not being users, and 16% reported not being aware of the Internet. The sample of Internet users was augmented by a national random telephone sample of 400 Internet users. Of the total of 600 Internet users, 49% reported being longtime Internet users. As a whole, our survey of 2,500 respondents closely matches socioeconomic patterns of the U.S. population on key variables: compared to 1990/91 U.S. Census data, our sample reflects national averages in gender, ethnic mix, and age, and is slightly wealthier and better educated.

No Evidence of Internet Users Dropping Out of Real Life

We explored respondents' community involvement in the real world by asking them how many religious, leisure, and community organizations they belonged to.

Religious organizations: Our survey showed no statistically significant differences across the five awareness/usage categories in membership rates of religious organizations. Fifty-six percent of respondents reported belonging to one religious organization, while a further 8% reported belonging to two or more religious organizations. Statistically controlling for demographic differences, such as age, education, gender, race and income, still showed no differences in religious organization membership rates among awareness/usage groups.

Leisure organizations: Here we found that non-users reported belonging to fewer organizations than users, both former and current. Non-users who were not aware of the Internet reported being members of fewest leisure organizations—11% reported belonging to one leisure organization and a further 13% belonged to two or more leisure organizations. Non-users who were aware of the Internet reported belonging to significantly more leisure organizations—21% reported belonging to one leisure organization and a further 19% belonged to two or more leisure organizations.

Reported membership rates for former and current users were much higher—21% of former users reported belonging to one leisure organization and 28% to two or more; 24% of recent users reported belonging to one leisure organization and 25% to two or more; and 24% of longtime users reported belonging to one leisure organization and 29% to two or more. However when we statistically controlled for demographic variables, these differences disappeared.

Community organizations: The aggregate responses to the question about membership of community organizations did not appear to display a pattern relating to the awareness/usage categories. Those

Table 2. Multivariate logit models of organization membership

	Membership of Religious Organizations					Membership of Leisure Organizations					Membership of Community Organizations				
Effect	Est	Stan Error	DF	Chi-Square	Prob	Est	Stan Error	DF	Chi-Square	Prob	Est	Stan Error	DF	Chi-Square	Prob
Intercept	–0.75	0.11	1	44.86	0.0000	0.32	0.11	1	8.57	0.0034	0.39	0.11	1	11.92	0.0006
Education*	0.11	0.06	1	3.16	0.0753	0.18	0.06	1	8.28	0.0040	0.34	0.06	1	30.49	0.0000
Hh. Income*	0.03	0.06	1	0.17	0.6766	0.26	0.06	1	17.58	0.0000	0.18	0.06	1	7.65	0.0057
Age*	0.21	0.05	1	15.13	0.0001	–0.13	0.05	1	5.36	0.0206	0.22	0.06	1	16.21	0.0001
Order*	–0.15	0.05	1	7.83	0.0051	0.05	0.05	1	1.01	0.3150	–0.03	0.06	1	0.31	0.5774
Race*	0.17	0.08	1	4.86	0.0275	–0.19	0.08	1	5.35	0.0207	–0.04	0.08	1	0.24	0.6258
Internet Usage*	–0.02	0.09	1	0.06	0.8101	0.09	0.09	1	0.89	0.3444	0.03	0.09	1	0.08	0.7799
Likelihood Ratio			49	52.32	0.3465			50	70.48	0.0297			50	62.14	0.1163
	Populations = 56 Observations = 1649					Populations = 57 Observations = 1572					Populations = 57 Observations = 1568				

*Definition of independent variables: (i) Education – up to college (level 1) and college degree or better (level 2); (ii) Household income – up to $49,000 (level 1) and above $50,000 (level 2); (iii) Age – up to 39 (level 1) and above 40 (level 2); (iv) Gender – female (level 1) and male (level 2); (v) Race – White/Asian (level 1) and Black/Hispanic (level 2); and (vi) Internet usage – non-user (level 1) and user (level 2).

Table 3. Amount of contact with family members via Internet

Have you ever contacted family members over the Internet (in percent)?	Several times /week or more	Several times /month	Several times /year	Once or twice only	Never	(Number of respondents)
Recent Internet user	6	11	5	10	69	100 *(308)*
Longtime Internet user	16	19	13	8	44	100 *(293)*

Chi square = 50.8, sig. <0.001 (with 4 df)

Table 4. Proportion of people known only through Internet by expertise level

Percent who know people only through Internet that are considered friends *(number of respondents)*	Self-assessed expertise level			
	Novice	Average	Above average	Excellent
Yes	9	13	22	27
No	91	87	78	73
Number of respondents	100 *(248)*	100 *(222)*	100 *(87)*	100 *(44)*

Chi square = 16.1, sig. = 0.001 (with 3 df)

Table 5. Number of Internet friendships made by time first joined Internet

Number of Internet friendships made *(number of respondents)*	Pre-1993	1993	1994	1995
1 – 5	41	27	73	61
6 or more	59	73	27	39
Subtotal of respondents making friends	100 *(17)*	100 *(11)*	100 *(22)*	100 *(31)*
Percent of respondents making friendships	21	14	17	10
Total number of respondents in sample	*(82)*	*(78)*	*(132)*	*(308)*

Chi square = 8.0, sig. = 0.05 (with 3 df)

who were not aware of the Internet and recent users appeared to belong to the fewest community organizations. Of the first group, 16% reported belonging to one community organization and a further 12% belonged to two or more community organizations; of recent users, 19% reported belonging to one community organization and 12% to two or more organizations.

Non-users who were aware of the Internet and former users belonged to more community organizations. Of the non-users who were aware of the Internet group, 23% reported belonging to one community organization and 14% belonged to two or more community organizations; of former users, 24% reported belonging to one community organization and 14% to two or more organizations.

Longtime Internet users reported belonging to most community organizations—27% reported belonging to one organization and a further 22% to two or more. Overall, the survey results provide no evidence that Internet users belong to fewer community organizations (see Table 1).

Controlling for demographic effects: Membership rates of religious, leisure and community organizations are known to relate to demographic factors such as age, household income and educational level, and so our reported membership rates need to be interpreted in the light of the differences in demographic characteristics of the five awareness/usage groups [4] (see Table 2). Using statistical (logit) models to control for the important demographic effects and excluding former users, we found that there was no difference in the membership rates of religious, leisure and community organizations by users and non-users of the Internet at the 0.05 level. (Using SAS's categorical model program, we did find that longtime users were slightly more likely to belong to "real-world" community organizations than recent users, but only at the 0.08 level of significance.)

The Internet is Augmenting Involvement in Existing Communities

Our survey of social involvement asked current users about the extent they used the Internet to contact family members, their participation in Internet communities, and the impact of Internet usage on the time they spent with friends and family either face-to-face or by phone.

Contact with family members: An area where the Internet appeared to have a significant impact on social involvement was communications with family members where just under half the users reported contacting family members at least once or twice. Longtime users reported contacting family members more often than recent members. Thirty-five percent of longtime users reported contacting family members at least several times a month, twice the proportion of recent users (see Table 3).

Participation in Internet communities: We also asked users the extent they participated in Internet

communities. Again we found a significant degree of participation—31% of longtime users and 17% of recent users reported doing so. The distribution of the number of communities belonged to for both longtime and recent users was not statistically different (Chi square = 3.6, sig. = 0.6, with 5 degrees of freedom). Of those who reported participating in various Internet communities, 58% participated in one or two communities, 28% participated in three or four communities, and 14% participated in five or more communities.

Change in face-to-face/phone communications: For the vast majority of both longtime and recent users, use of the Internet did not appear to have much impact on the time spent with friends and family. The two groups' views were not statistically different. Eighty-eight percent of users reported that the time spent with friends and family face-to-face or by phone since they started using Internet had not changed. The same proportions (6%) of users reported they spent more time with friends and family face-to-face or by phone, as those who spent less time.

The Internet Is Emerging as a Medium for Friendship Creation

Friendship formation: As part of our survey, we asked Internet users whether they knew people only through the Internet whom they considered their friends. Of our 601 Internet users, a significant minority (82 respondents, 14% of our sample of Internet users) reported knowing people in this way.

Propensity to form friendships through the Internet appeared to relate more strongly to general measures of Internet usage and experience, rather than demographic variables. For example, those with self-identified higher Internet skill levels appeared more likely to make Internet friends. Nine percent of novices, 13% of those with average skill levels, 22% of those with above average skill levels, and 27% of those with excellent skill levels reported making Internet friendships.

Somewhat surprisingly, we found no statistical relationships between propensity to make friends and a wide range of measures of traditional forms of social connectedness and measures of personality attributes (see Table 4). This perhaps points to the Internet de-emphasizing the importance of sociability and personality differences.

Internet skills appear to be the most important determinant of friendship formation, eclipsing personality characteristics such as sociability, extroversion, and willingness to take risks.

Number of friendships formed: For the 81 users who reported establishing friendships via the Internet, a substantial proportion said they had made numerous friendships. Thirty percent of the group (24 respondents) reported having established friendships with 1 to 3 people, 40% (32 respondents) with 4 to 10 people, 22% (18 respondents) with 11 to 30 people, and 9% (7 respondents) with 31 or more people. The best predictor of the number of friends made was again a general measure of Internet usage. Longtime users reported making more friends. In our sample, 59% of the pre-1993 group and 73% of the 1993 group reported establishing 6 or more friendships through the Internet, as compared to only 27% of the 1994 group and 39% of the 1995 group (see Table 5).

Internet friendships leading to meetings: A majority of people who reported making friends through the Internet met one or more of them. Of the

81 respondents who reported making friends via the Internet, 60% reported meeting one or more of these friends. Those reporting higher numbers of Internet friends were more likely to have met at least one of them. Of those with 1–4 Internet friends, only 29% reported meeting at least one of their Internet friends, whereas 74% of those with 5–12 Internet friends and 79% of those with more than 12 Internet friends reported meeting at least one of them in person.

Number of friends met: For the 49 users who reported meeting Internet friends, a substantial number of meetings were reported. Thirty-seven percent of the group (18 respondents) reported meeting with 1 to 3 Internet friends, 29% (14 respondents) with 4 to 10 Internet friends, 22% (11 respondents) with 11 to 30 Internet friends, and 12% (6 respondents) met with 31 or more Internet friends. Excluding one user who reported meeting 50 of his/her 500 Internet friends, the proportions of friends met to friends known was nearly 65%. This proportion appeared to be completely independent of the number of Internet friends known.

Although it is always dangerous to extrapolate, we will do so nonetheless. Based on the data, it would be our guess that perhaps two million new face-to-face meetings have taken place due to participation on the Internet. We do not know, since we did not ask, what the purpose of these meetings might have been (dating services, support groups, hobbyists, political activism?). We hope to explore questions along these lines in our future work.

Pessimism for Pessimistic Theories

Based on our national snapshot, we found no support for the pessimistic theories of the effects of cyberspace on community involvement. When controlling for demographic differences between users and non-users, we found no statistical differences in participation rates in religious, leisure, and community organizations.

Moreover, the Internet appeared to augment existing traditional social connectivity. Just under half of Internet users reported contacting family members at least once or twice via the Internet. A significant minority of users also reported participating in Internet communities. In addition, the vast majority of both longtime and recent users reported that time spent with friends and family in face-to-face contact or by phone had not changed since they started using the Internet.

Further, our survey suggests that the Internet is emerging as a medium for cultivating friendships which, in a majority of cases, lead to meetings in the real world. The Internet is currently a medium where Internet skills appear to be the most important determinant of friendship formation, eclipsing personality characteristics such as sociability, extroversion, and willingness to take risks.

Like any other communication technology, people can (and will) use the Internet for both constructive and destructive purposes. There will inevitably be more "bad outcome" stories about social contacts made through the Internet. But we found in our survey a huge proportion of face-to-face meetings that presumably had no disastrous outcomes like the examples cited in the beginning of this article. We also found—due to people's Internet activities, the formation of many new friendships, the creation of senses of community, and reports of voluminous contact with family members. In sum, although the "Jeffersonian ideal" may not be realized, a high proportion of Internet users are engaging in lots of social contact and communication with friends and family. Many family members are keeping in touch and new friendships are being formed. Far from creating a nation of strangers, the Internet is creating a nation richer in friendships and social relationships. C

References

1. Berger, M.L. *The Devil Wagon in God's Country: The Automobile and Social Change in Rural America 1893–1929.* Archon Books, CT, 1979.
2. Kapor, M. Where is the digital highway really heading? *Wired* (July/August 1993), 53–59.
3. Katz, J. Caller-ID, privacy, and social processes. *Telecommunications Policy.* (Oct. 1990), 372–411.
4. Katz, J. and Aspden, P. Motives, hurdles and dropouts. *Commun. ACM 40*, 4 (Apr. 1997).
5. Marvin, C. *When Old Technologies Were New: Thinking about Electric Communication in the Late Nineteenth Century.* Oxford University Press, U.K., 1988.
6. Putnam, R.D. The strange disappearance of civic America. *The American Prospect 24* (1996), 34–46.
7. Rheingold, H. *The Virtual Community: Homesteading on the Electronic Frontier.* Addison Wesley, Reading, MA, 1993.
8. Rice H.D. Fighting the "most deviant and vile form of pornography." *Salon* (an Internet-based magazine or "e-zine"), December 2, 1995. http://www.salon1999.com/02dec1995/features/taranto.html.
9. Stoll, C. *Silicon Snake Oil.* Doubleday, NY, 1995.
10. Turkle, S. Virtuality and its discontents: Searching for community in cyberspace. *The American Prospect. 24*, (Winter 1996), 50–57.
11. Wellman, B. and Gulia, M. Net surfers don't ride alone. In P. Kollock and P. Smith, Eds., *Communities in Cyberspace.* University of California Press, Berkeley, 1997.

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