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THE INTERNET AND SOCIAL LIFE

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■ **Abstract** The Internet is the latest in a series of technological breakthroughs in interpersonal communication, following the telegraph, telephone, radio, and television. It combines innovative features of its predecessors, such as bridging great distances and reaching a mass audience. However, the Internet has novel features as well, most critically the relative anonymity afforded to users and the provision of group venues in which to meet others with similar interests and values. We place the Internet in its historical context, and then examine the effects of Internet use on the user's psychological well-being, the formation and maintenance of personal relationships, group memberships and social identity, the workplace, and community involvement. The evidence suggests that while these effects are largely dependent on the particular goals that users bring to the interaction—such as self-expression, affiliation, or competition—they also interact in important ways with the unique qualities of the Internet communication situation.

CONTENTS

INTRODUCTION

It is interactive: Like the telephone and the telegraph (and unlike radio or television), people can overcome great distances to communicate with others almost instantaneously. It is a mass medium: Like radio and television (and unlike the telephone or telegraph), content and advertising can reach millions of people at the same time. It has been vilified as a powerful new tool for the devil, awash in

pornography, causing users to be addicted to hours each day of "surfing"—hours during which they are away from their family and friends, resulting in depression and loneliness for the individual user, and further weakening neighborhood and community ties. It has been hailed by two U.S. presidents as the ultimate weapon in the battle against totalitarianism and tyranny, and credited by Federal Reserve Board Chairman Alan Greenspan with creating a "new economy." It was denounced by the head of the Miss France committee as "an uncontrolled medium where rumormongers, pedophiles, prostitutes, and criminals could go about their business with impunity" after it facilitated the worldwide spread of rumors that the reigning Miss France was, in fact, a man (Reuters 2001). "I'm terrified by this type of media," she said.

"It," of course, is the Internet. Although some welcome it as a panacea while others fear it as a curse, all would agree that it is quite capable of transforming society. Hard-nosed and dispassionate observers have recently concluded that the Internet and its related technologies

> ". . . will change almost every aspect of our lives—private, social, cultural, economic and political . . . because [they] deal with the very essence of human society: communication between people. Earlier technologies, from printing to the telegraph . . . have wrought big changes over time. But the social changes over the coming decades are likely to be much more extensive, and to happen much faster, than any in the past, because the technologies driving them are continuing to develop at a breakneck pace. More importantly, they look as if together they will be as pervasive and ubiquitous as electricity." (Manasian 2003, p. 4)

The Internet is fast becoming a natural, background part of everyday life. In 2002, more than 600 million people worldwide had access to it (Manasian 2003). Children now grow up with the Internet; they and future generations will take it for granted just as they now do television and the telephone (Turow & Kavanaugh 2003). In California, 13-year-olds use their home computer as essentially another telephone to chat and exchange "instant messages" with their school friends (Gross et al. 2002). Toronto suburbanites use it as another means of contacting friends and family, especially when distance makes in-person and telephone communication difficult (Hampton & Wellman 2001). And people routinely turn to the Internet to quickly find needed information, such as about health conditions and remedies, as well as weather forecasts, sports scores, and stock prices.

This is not to say that Internet technology has now penetrated the entire planet to a similar extent. For example, in 2001 only 1 in 250 people in Africa was an Internet user, compared with a world average of 1 in 35, and 1 in 3 for North America and Europe. But the trend is clearly for ever-greater availability: The coming wireless technology (see Geer 2000, p. 11) will enable people in developing countries, who lag behind the rest of the world in hardwired infrastructure, to leapfrog technological stages and so come on-line much sooner than they would otherwise have been able to—much as eastern Europe in the 1990s, lacking extensive

hardwire telephone infrastructure, leapfrogged directly to cell phones (Markoff 2002, *Economist* 2003a).

The main reason people use the Internet is to communicate with other people over e-mail—and the principal reason why people send e-mail messages to others is to maintain interpersonal relationships (Hampton & Wellman 2001, Howard et al. 2001, McKenna & Bargh 2000, Stafford et al. 1999). As Kang (2000, p. 1150) put it, "the 'killer application' of the internet turns out to be other human beings." But this was not so obvious to the early investors in the Internet—in the 1990s telecom companies invested (and lost) billions of dollars in interactive television and in delivering movies and video over the Internet. (Interestingly, the original supposed "killer app" of the telephone also was to broadcast content such as music, news, and stock prices—and its use in this manner persisted in Europe up to World War II.)

No one today disputes that the Internet is likely to have a significant impact on social life; but there remains substantial disagreement as to the nature and value of this impact. Several scholars have contended that Internet communication is an impoverished and sterile form of social exchange compared to traditional face-to-face interactions, and will therefore produce negative outcomes (loneliness and depression) for its users as well as weaken neighborhood and community ties. Media reporting of the effects of Internet use over the years has consistently emphasized this negative view (see McKenna & Bargh 2000) to the point that, as a result, a substantial minority of (mainly older) adults refuses to use the Internet at all (Hafner 2003). Others believe that the Internet affords a new and different avenue of social interaction that enables groups and relationships to form that otherwise would not be able to, thereby increasing and enhancing social connectivity. In this review, we examine the evidence bearing on these questions, both from contemporary research as well as the historical record.

THE INTERNET IN HISTORICAL CONTEXT

The Internet is but the latest in a series of technological advances that have changed the world in fundamental ways. In order to gauge the coming impact of the Internet on everyday life, and to help separate reality from hyperbole in that regard, it is instructive to review how people initially reacted to and then made use of those earlier technological breakthroughs.

First, each new technological advance in communications of the past 200 years—the telegraph, telephone, radio, motion pictures, television, and most recently the Internet—was met with concerns about its potential to weaken community ties (Katz et al. 2001, p. 406). The *telegraph*, by eliminating physical distance as an obstacle to communication between individuals, had a profound effect on life in the nineteenth century (Standage 1998). The world of 1830 was still very much the local one it had always been: No message could travel faster than a human being could travel (that is, by hand, horse, or ship). All this changed in two decades because of Samuel Morse's telegraph. Suddenly, a message from

London to New York could be sent and received in just minutes (Spar 2001, p. 60), and people could learn of events in distant parts of the world within hours or days instead of weeks or months. There was great enthusiasm: The connection of Europe and America in 1858 through the transatlantic cable was hailed as "the event of the century" and was met with incredible fanfare. Books proclaimed that soon the entire globe would be wired together and that this would create world peace. According to one newspaper editorial, "it is impossible that old prejudices and hostilities should longer exist, while such an instrument has been created for the exchange of thought between all the nations of the earth" (Standage 1998, pp. 82–83). At the same time, however, governments feared the potential of such immediate communication between individual citizens. Tsar Nicholas I of Russia, for example, banned the telegraph as an "instrument of subversion" (Spar 2001, p. 31). Similar raptures and fears have often been expressed, in our time, about the Internet as well.

The closest parallel to today's Internet users were the telegraph operators, an "on-line" community numbering in the thousands who spent their working lives communicating with each other over the wires but who rarely met face to face. They tended to use low-traffic periods to communicate with each other, sharing stories, news, and gossip. Many of these working relationships blossomed into romances and even marriages. For example, Thomas Edison, who began his career as a telegraph operator, proposed to his wife Mina over the telegraph (Standage 1998, pp. 129–142). And today, worldwide, people send each other more than a billion text messages each day from their mobile phones (*Economist* 2003b), in a form of communication conceptually indistinguishable from the old telegraph.

The telephone—invented accidentally by Alexander Graham Bell in the 1880s while he was working on a multichannel telegraph—transformed the telegraph into a point-to-point communication device anyone could use, not only a handful of trained operators working in code. The effect was to increase regular contact between family, friends, and business associates, especially those who lived too far away to be visited easily in person, and this had the overall effect of strengthening local ties (Matei & Ball-Rokeach 2001). Nevertheless, concerns continued to be raised that the telephone would harm the family, hurt relationships, and isolate people—magazines of the time featured articles such as "Does the telephone break up home life and the old practice of visiting friends?" (Fischer 1992).

The next breakthrough, radio, fared no differently. Like the wireless Internet emerging today, radio freed communication from the restriction of hard-wired connections, and was especially valuable where wires could not go, such as for ship-to-shore and ship-to-ship communication. However, its broadcast capability of reaching many people at once—thousands, even millions—was a frightening prospect for governments of the time. When Marconi got off the ship in England to demonstrate his new invention to the British, customs officials smashed his prototype radio as soon as he crossed the border, "fearing that it would inspire violence and revolution" (Spar 2001, p. 7). Eventually, however, radio brought the world into everyone's living room and so eliminated distance as a factor in news

dissemination like never before. And indeed, it did soon prove to be a powerful propaganda tool for dictators and democratically elected leaders alike.

But television had the greatest actual (as opposed to feared) impact on community life, because individuals and families could stay at home for their evening entertainment instead of going to the theater or to the local pub or social club. Sociologist Robert Putnam (2000) has documented the dramatic decrease in community involvement (such as memberships in fraternal organizations and bowling leagues) since the introduction of television in the 1950s (see also DiMaggio et al. 2001). This negative effect of television viewing on the individual's degree of involvement in other, especially community, activities has been the basis for contemporary worries that Internet use might displace time formerly spent with family and friends (e.g., Nie & Erbring 2000).

The Internet combines, for the first time in history, many of these breakthrough features in a single communication medium. Like the telegraph and telephone, it can be used for person-to-person communication (e.g., e-mail, text messages); like radio and television, it can operate as a mass medium. And it can serve as a fabulous global library as well—fully 73% of American college students now use the Internet more than their university library for researching term papers (Jones 2002). As DiMaggio et al. (2001, p. 327) note, the variety of functions that the Internet can serve for the individual user makes it "unprecedentedly malleable" to the user's current needs and purposes.

However, the Internet is not merely the Swiss army knife of communications media. It has other critical differences from previously available communication media and settings (see, e.g., McKenna & Bargh 2000), and two of these differences especially have been the focus of most psychological and human-computer interaction research on the Internet. First, it is possible to be relatively anonymous on the Internet, especially when participating in electronic group venues such as chat rooms or newsgroups. This turns out to have important consequences for relationship development and group participation. Second, computer-mediated communication (CMC) is not conducted face-to-face but in the absence of nonverbal features of communication such as tone of voice, facial expressions, and potentially influential interpersonal features such as physical attractiveness, skin color, gender, and so on. Much of the extant computer science and communications research has explored how the absence of these features affects the process and outcome of social interactions.

EFFECTS ON INTERPERSONAL INTERACTION

A good example of that approach is Sproull & Kiesler's (1985) "filter model" of CMC, which focuses on the technological or engineering features of e-mail and other forms of computer-based communications. According to this perspective, CMC limits the "bandwidth" of social communication, compared to traditional face-to-face communication settings (or to telephone interaction, which at least

occurs in real time and includes important nonverbal features of speech). Sproull & Kiesler (1985) considered CMC to be an impoverished communication experience, with the reduction of available social cues resulting in a greater sense or feeling of anonymity. This in turn is said to have a deindividuating effect on the individuals involved, producing behavior that is more self-centered and less socially regulated than usual. This reduced-information model of Internet communication assumes further that the reduction of social cues, compared to richer face-to-face situations, must necessarily have negative effects on social interaction (i.e., a weaker, relatively impoverished social interaction). Note also that this engineering or bandwidth model assumes that the "channel" effects of Internet communication are the same for all users and across all contexts—in other words, it predicts a main effect of communication channel.

Spears et al. (2002) contrasted the engineering model with the "social science" perspective on the Internet, which assumes instead that personal goals and needs are the sole determinant of its effects. [In the domain of communications research, Blumler & Katz's (1974) "uses and gratifications" theory is an influential version of this approach.] According to this viewpoint, the particular purposes of the individuals within the communication setting determine the outcome of the interaction, regardless of the particular features of the communication channel in which the interaction takes place.

The third and most recent approach has been to focus on the interaction between features of the Internet communication setting and the particular goals and needs of the communicators, as well as the social context of the interaction setting (see Bargh 2002, McKenna & Bargh 2000, Spears et al. 2002). According to this perspective, the special qualities of Internet social interaction do have an impact on the interaction and its outcomes, but this effect can be quite different depending on the social context. With these three guiding models in mind, we turn to a review of the relevant research.

In the Workplace

In the 1980s—before the Internet per se even existed—Sara Kiesler and her colleagues (e.g., Kiesler et al. 1984) pioneered research on the interpersonal effects of e-mail communication within organizations and the workplace. Consistent with their "limited bandwidth" model, one conclusion from their studies was that the deindividuating nature of CMC produced an increase in aggressive and hostile exchanges between communication partners and a reduction in the usual inhibitions that operate when interacting with one's superiors. However, subsequent meta-analytic reviews of the CMC literature on this point by Walther et al. (1994) and Postmes & Spears (1998) concluded that there was no overall main effect of CMC to produce greater hostility and aggressiveness among communicants. Walther et al. (1994) concluded that insults, name calling, and swearing in CMC were "over-reported activities," and a study by Straus (1997) comparing 36 CMC and 36 face-to-face three-person work groups similarly concluded that "the incidence

of personal attacks in groups in either communication mode was exceedingly small and was not associated with cohesiveness or satisfaction, suggesting further that the impact of this behavior was trivial" (p. 255).

From the perspective of social identity theory, Spears and colleagues (e.g., Reicher et al. 1995, Spears et al. 2002) have argued that CMC is not so much deindividuating as it is depersonalizing—that the decreased salience of personal accountability and identity makes group-level social identities all the more important, so that the real effect of CMC is to increase conformity to those local group norms. Thus, whether the depersonalizing effect of CMC leads to more negative or more positive behavior relative to face-to-face interactions is said to depend on the particular content of those group norms (Postmes & Spears 1998).

Two recent surveys of U.S. college students are relevant here: Cummings et al. (2002, p. 104) found that e-mail was considered as useful as face-to-face interactions for getting work done and building school-related relationships; in the Jones (2002) nationwide survey, 60% of college students reported that the Internet (mainly e-mail) had been beneficial to their relationships with classmates, compared with just 4% who believed it had had a negative impact on those relationships.

An important use of CMC in the corporate world and elsewhere has been to conduct negotiations between parties who are separated by physical distance (see Carnevale & Probst 1997). Thompson and her colleagues (see Thompson & Nadler 2002 for a review) have conducted extensive research on the process and outcomes of such negotiations, compared to those of traditional face-to-face negotiations, and have noted several pitfalls and traps to watch out for. The main problem with such "e-gotiation," according to these researchers, is the implicit assumptions people have concerning time delays in hearing back from their adversaries as well as about the motivations of those adversaries. For example, people tend to assume that the other party to the negotiation reads and is aware of the content of the e-mail message one just sent to them as soon as that message is sent—thus any delays in hearing back are attributed to stalling or intentional disrespect by the other party. These findings of greater distrust over CMC compared to face-to-face negotiations are the opposite of what is found in the domain of relationship formation on the Internet (see next section), and therefore serve as an instructive example of how the interpersonal effects of the Internet vary as a function of the social context.

Thompson and colleagues also report an intervention that seems to ameliorate the negative, distrust-evoking nature of electronic negotiation: having the two parties talk on the telephone prior to the start of the negotiations (Thompson & Nadler 2002). Other studies also point to the transforming nature of telephone interaction, as if the telephone were a bridge between the "virtual" and the "real." The Cummings et al. (2002) survey comparing on-line (Internet) with off-line modes of communication grouped the telephone together with face-to-face as off-line, and found that international bankers and college students alike considered off-line communication more beneficial to establishing close social (as opposed to work) relationships. Nie & Erbring (2000) similarly considered interacting over the telephone to be "real" whereas Internet interaction was not; hence substituting

e-mail for telephone contact was described as a "loss of contact with the social environment." And in the survey by McKenna et al. (2002, Study 1; see next section) on close relationship formation among Internet newsgroup members, all of those who eventually moved their Internet relationships to "real life" (face-to-face) had first interacted with their partner on the telephone—no one went directly from the Internet to a face-to-face meeting without first talking on the phone.

Personal (Close) Relationships

EFFECTS OF INTERNET USE ON EXISTING RELATIONSHIPS On no issue has research on the social effects of the Internet been more contentious than as to its effect on close relationships, such as those with family and friends. Two studies that received considerable media attention were the HomeNet project by Kraut et al. (1998) and the large-scale survey reported by Nie & Erbring (2000; also Nie 2001). Both reports concluded that Internet use led to negative outcomes for the individual user, such as increases in depression and loneliness, and neglect of existing close relationships. However, nearly all other relevant studies and surveys—including a follow up of the HomeNet sample by Kraut and his colleagues—reached the opposite conclusion.

Kraut et al. (1998) followed a convenience sample of Pittsburgh residents and their families who as of the mid 1990s did not yet have a computer in the home. The researchers gave these families a computer and Internet access, and then found after a two-year period a reliable but small increase in reported depression and loneliness as a function of the amount of Internet use. However, a later follow-up study of the same sample (Kraut et al. 2002) revealed that these negative effects had disappeared, and instead across nearly all measures of individual adjustment and involvement with family, friends, and community, greater Internet use was associated with positive psychological and social outcomes. For example, the more hours the average respondent spent on the Internet, the more (not less) time he or she also spent face-to-face with family and friends.

In their press release, Nie & Erbring (2000) reported data from a U.S. nationwide survey of approximately 4000 people, and concluded from those data that heavy Internet use resulted in less time spent with one's family and friends. On the surface, this would seem to contradict the Kraut et al. (2002) conclusions (and those of the studies reviewed below), but a closer look at the actual findings removes the apparent contradiction. These reveal that over 95% of Nie & Erbring's (2000) total sample did not report spending any less time with family and friends because of their Internet use; moreover, even among the heaviest users, 88% reported no change in time spent with close others.

Several other national surveys have found either that Internet users are no less likely than nonusers to visit or call friends on the phone, or that Internet users actually have the larger social networks (DiMaggio et al. 2001, p. 316). Howard et al. (2001) concluded from their large random-sample survey "the Internet allows people to stay in touch with family and friends and, in many cases, extend their

social networks. A sizeable majority of those who send e-mail messages to relatives say it increases the level of communication between family members . . . these survey results suggest that on-line tools are more likely to extend social contact than detract from it" (p. 399). Wellman et al. (2001) similarly concluded from their review that heavy users of the Internet do not use e-mail as a substitute for face-to-face and telephone contact, but instead use it to help maintain longer distance relationships (Wellman et al. 2001, p. 450).

Nie (2001) has responded to his critics by arguing that time is a limited commodity, so that the hours spent on the Internet must come at a cost to other activities. "We would expect that all those spending more than the average of 10 hours a week on the Internet would report substantially fewer hours socializing with family members, friends, and neighbors. It is simply a matter of time" (p. 425). However, in the Nie & Erbring (2000) results, the real and substantial decrease associated with heavy Internet use was in watching television and reading newspapers, not in social interaction with friends and family.

RELATIONSHIP FORMATION ON THE INTERNET In the original study in this research domain, Parks & Floyd (1995) administered a questionnaire concerning friendship formation to people participating in Internet newsgroups (electronic bulletin boards devoted to special interest topics). Results showed that on-line relationships are highly similar to those developed in person, in terms of their breadth, depth, and quality. In another study, McKenna et al. (2002) surveyed nearly 600 members of randomly selected popular newsgroups devoted to various topics such as politics, fashion, health, astronomy, history, and computer languages. A substantial proportion of respondents reported having formed a close relationship with someone they had met originally on the Internet; in addition, more than 50% of these participants had moved an Internet relationship to the "real-life" or face-to-face realm. Many of these on-line relationships had become quite close—22% of respondents reported that they had either married, become engaged to, or were living with someone they initially met on the Internet. In addition, a two-year follow up of these respondents showed that these close relationships were just as stable over time as were traditional relationships (e.g., Attridge et al. 1995, Hill et al. 1976).

Follow-up laboratory experiments by McKenna et al. (2002) and Bargh et al. (2002) focused on the underlying reasons for the formation of close relationships on the Internet. In these studies, pairs of previously unacquainted male and female college students met each other for the first time either in an Internet chat room or face-to-face. Those who met first on the Internet liked each other more than those who met first face-to-face—even when, unbeknownst to the participants, it was the same partner both times (McKenna et al. 2002). Moreover, the studies revealed that (*a*) people were better able to express their "true" selves (those self-aspects they felt were important but which they were usually unable to present in public) to their partner over the Internet than when face-to-face, and (*b*) when Internet partners liked each other, they tended (more than did the face-to-face group) to project qualities of their ideal friends onto each other (Bargh et al. 2002). The authors

argued that both of these phenomena contribute to close relationship formation over the Internet. For example, related research on long-distance relationships (Rohlfing 1995, Stafford & Reske 1990) finds that tendencies to idealize one's often-absent partner causes long-distance couples to report higher relationship satisfaction compared with geographically close relationships (see also Murray et al. 1996).

The relative anonymity of the Internet can also contribute to close relationship formation through reducing the risks inherent in self-disclosure. Because self-disclosure contributes to a sense of intimacy, making self-disclosure easier should facilitate relationship formation. In this regard Internet communication resembles the "strangers on a train" phenomenon described by Rubin (1975; also Derlega & Chaikin 1977). As Kang (2000, p. 1161) noted, "Cyberspace makes talking with strangers easier. The fundamental point of many cyber-realms, such as chat rooms, is to make new acquaintances. By contrast, in most urban settings, few environments encourage us to walk up to strangers and start chatting. In many cities, doing so would amount to a physical threat."

Overall, then, the evidence suggests that rather than being an isolating, personally and socially maladaptive activity, communicating with others over the Internet not only helps to maintain close ties with one's family and friends, but also, if the individual is so inclined, facilitates the formation of close and meaningful new relationships within a relatively safe environment.

Group Membership and Social Support

One of the novel aspects of the Internet for social life is the wide variety of special interest newsgroups available; there are tens of thousands of newsgroups devoted to everything from Indian cooking to dinosaurs to raincoat fetishes. There are also e-mail "listservs" in which group members can post messages to all other members, and of course websites specializing in about every topic imaginable. These virtual groups can be fertile territory for the formation of friendships and even close relationships because of the shared interests and values of the members (see McKenna et al. 2002)—perceptions of similarity and shared beliefs (in addition to the shared strong topical interests) are known to contribute to attraction between individuals (Byrne 1971). And especially for important aspects of one's identity for which there is no equivalent off-line group, membership and participation in a relevant virtual group can become a central (and very real) part of one's social life. Two main types of virtual group membership that fit this bill have been studied thus far: those devoted to stigmatized social identities, and those chartered explicitly to provide social support for debilitating or life-threatening illnesses.

STIGMATIZED IDENTITIES McKenna & Bargh (1998) reasoned that people with stigmatized social identities (see Frable 1993, Jones et al. 1984), such as homosexuality or fringe political beliefs, should be motivated to join and participate in Internet groups devoted to that identity, because of the relative anonymity and thus

safety of Internet (compared to face-to-face) participation and the scarcity of such groups in "real life." Moreover, because it is their only venue in which to share and discuss this aspect of their identity, membership in the group should be quite important to these people, and so the norms of such groups should exert a stronger than usual influence over members' behavior. This prediction was confirmed by an archival and observational study of the frequency with which stigmatized-group members posted messages to (i.e., participated in) the group: Unlike in other Internet groups, participation increased when there was positive feedback from the other group members and decreased following negative feedback (McKenna & Bargh 1998, Study 1).

Moreover, according to Deaux's (1993) model of social identity, members of stigmatized-identity Internet groups should, because of the importance of that identity to them, incorporate their virtual-group membership into their self-concepts. If so, we would expect members of these groups to want to make this new and important aspect of identity a social reality (Gollwitzer 1986) by sharing it with significant others. Structural modeling analyses of survey responses were consistent with these predictions, across two replications focusing on quite different types of stigmatized social identities, thereby demonstrating the self-transformational power of participation in Internet groups. The average respondent was in his or her mid 30s, so that many respondents, directly because of their Internet group participation, had "come out" to their family and friends about this stigmatized aspect of themselves for the first time in their lives.

Such results support the view that membership and participation in Internet groups can have powerful effects on one's self and identity. Note here also that, as Spears et al. (2002) have argued, group processes and effects unfold over the Internet in much the same way as they do in traditional venues. Predictions about on-line group behavior and its consequences were generated from theories (social identity theory, self-completion theory) that were developed based on research on off-line, face-to-face groups.

ON-LINE SUPPORT In harmony with these conclusions, Davison et al. (2000) studied the provision and seeking of social support on-line by those with grave illnesses, and found that people used Internet support groups particularly for embarrassing, stigmatized illnesses such as AIDS and prostate cancer (and also, understandably, for those illnesses that limit mobility such as multiple sclerosis). The authors point out that because of the anxiety and uncertainty they are feeling, patients are highly motivated by social comparison needs to seek out others with the same illness (p. 213), but prefer to do this on-line when the illness is an embarrassing, disfiguring, or otherwise stigmatized one, because of the anonymity afforded by Internet groups (p. 215).

This is not to say that on-line social support groups are only helpful for stigmatized illnesses, only that they are especially valuable to those sufferers. McKay et al. (2002), for example, found that diabetes self-management and peer support over the Internet led to just as much improvement in physiologic, behavioral, and

mental health—especially in dietary control—as did conventional diabetes management. And Wright (2000) showed that among older adults using SeniorNet and other on-line support websites for the elderly, greater participation in the on-line community was correlated with lower perceived life stress. Just as with the need to express important aspects of one's identity, then, people will be especially likely to turn to Internet groups when embarrassment or lack of mobility makes participation in traditional group settings problematic.

IMPLICATIONS FOR RACISM AND PREJUDICE Certainly, being a member of a minority or ethnic social group constitutes a stigma in many social situations (e.g., Crocker & Major 1989). Racial, gender, or age-related features are easily identifiable (e.g., Brewer 1988) and therefore not easily concealable within traditional venues. However, they are much more concealable over the Internet. Accordingly, Kang (2000) has argued that one potential social benefit of the Internet is to disrupt the reflexive operation of racial stereotypes, as racial anonymity is much easier to maintain on-line than off-line. For example, studies have found that African Americans and Hispanics pay more than do white consumers for the same car, but these price differences disappear if the car is instead purchased on-line (Scott Morton et al. 2003). However, the continuing racial divide on the Internet (DiMaggio et al. 2001, Hoffman & Novak 1998), in terms of the lower proportion of minority versus majority group members who have on-line access, can only attenuate the impact of any such positive, race-blind interpersonal effects on society.

Yet racism itself is socially stigmatized—especially when it comes to extreme forms such as advocacy of white supremacy and racial violence (see McKenna & Bargh 1998, Study 3). Thus the cloak of relative anonymity afforded by the Internet can also be used as a cover for racial hate groups, especially for those members who are concerned about public disapproval of their beliefs; hence today there are more than 3000 websites containing racial hatred, agendas for violence, and even bomb-making instructions (Lee & Leets 2002). Glaser et al. (2002) infiltrated such a group and provide telling examples of the support and encouragement given by group members to each other to act on their hatreds. All things considered, then, we don't know yet whether the overall effect of the Internet will be a positive or a negative one where racial and ethnic divisions are concerned.

Community Involvement

As noted above, Nie & Erbring (2000) argued that the Internet was creating a "lonely crowd" in cyberspace, because Internet use "necessarily" takes time away from family and friends. However, the evidence very consistently points in the opposite direction concerning the effect of Internet use on off-line community involvement. A random national survey by Katz et al. (2001) showed that the more time Internet users spent on-line, the more likely they were to belong to off-line religious, leisure, and community organizations, compared to nonusers (p. 412). Use of the Internet also was not associated with different levels of awareness of and knowledge about one's neighbors (p. 414).

In the Gross et al. (2002) study of California teenagers (described above), even the regular Internet users in their sample continued to spend most of their after-school time on traditional activities, many of which involved peer interaction (participating in clubs or sports, hanging out with friends). A 1998 survey of nearly 40,000 visitors to the National Geographic website similarly found that heavy Internet use was associated with greater levels of participation in voluntary organizations and politics (Wellman et al 2001, p. 436). Finally, Kavanaugh & Patterson (2001) concluded from the Blacksburg (Virginia) Electronic Village study "the longer people are on the Internet, the more likely they are to use the Internet to engage in social-capital-building activities" (p. 507). Thus, contrary to some well-publicized claims, Internet use does not appear to weaken the fabric of neighborhoods and communities.

THE MODERATING ROLE OF TRUST

In important ways, using the Internet involves a leap of faith. We type in our credit card numbers and other personal information in order to make purchases over the Internet and trust that this information will not be used in unauthorized or fraudulent ways. We write frank and confidential messages to our close colleagues and friends and trust that they won't circulate these messages to others. We trust anonymous fellow chat room and newsgroup members with our private thoughts and dreams, and because of the intimacy such self-disclosure creates, come to trust them enough to give them our phone numbers.

Or we don't.

Just as in close relationships (Wieselquist et al. 1999), whether we are motivated to trust or not to trust our interaction partners or website operators is an important moderator of how we respond to the "limited bandwidth" and relative lack of information over the Internet, compared to traditional social interaction and business transaction settings. As we have seen, negotiators over the Internet react to the lack of information and cues they have regarding their opponents by assuming the worst, and so interpret ambiguous data such as delays in e-mail responses as evidence of sinister motives (Thompson & Nadler 2002). Yet after initial liking is established while meeting a new acquaintance over the Internet, people tend next to idealize that person—that is, assuming the best about them (McKenna et al. 2002). The difference between the two situations is not the Internet, because its characteristics as a communication channel are the same in both cases; the difference is in the social contexts and the different interpersonal motivations and goals that are associated with the two contexts.

Trust turns out even to moderate differences in the rate of Internet adoption across countries. Keser et al. (2002) correlated data on Internet adoption rates (proportion of homes with Internet access) with answers to a question on the World Values Survey: "Can people generally be trusted, or is it that you can't be too careful in dealing with people?" The degree of trust within a country, indexed by the percentage of respondents who gave the former instead of the latter answer to the values question, explained nearly two-thirds of the national

differences in Internet adoption rate, and this relation holds after other possibly relevant variables, such as number of computers in the country, are statistically controlled.

This is why "spam"—unsolicited junk e-mail with usually fake return addresses and often fraudulent claims—is a real threat to the social life of the Internet: It threatens to undermine that important sense of trust for many people (Gleick 2003). Today, spam constitutes nearly half of all e-mail traffic, turning the most common activity on the Internet into an annoyance and chore as users must sort through and delete the unwanted mail from their inboxes (*Economist* 2003c). Fortunately, government and corporations appear finally to be recognizing the problem and taking action to reduce and regulate junk e-mail (Hansell 2003). Here again, the Internet appears to be following in the footsteps of its technological predecessors, which also saw their utility threatened early on by unregulated, self-interested use. For example, amateur radio enthusiasts filled the public airwaves with chatter in the early twentieth century, thus making them unlistenable for the home audience, before governments finally stepped in to regulate the new medium (Spar 2001). The spam problem and its attempted resolution illustrates that it is not a matter of *whether* governments will attempt to regulate and police the Internet, but of *how* and *how much* they will do so.

CONCLUSIONS

People are not passively affected by technology, but actively shape its use and influence (Fischer 1992, Hughes & Hans 2001). The Internet has unique, even transformational qualities as a communication channel, including relative anonymity and the ability to easily link with others who have similar interests, values, and beliefs. Research has found that the relative anonymity aspect encourages self-expression, and the relative absence of physical and nonverbal interaction cues (e.g., attractiveness) facilitates the formation of relationships on other, deeper bases such as shared values and beliefs. At the same time, however, these "limited bandwidth" features of Internet communication also tend to leave a lot unsaid and unspecified, and open to inference and interpretation. Not surprisingly, then, one's own desires and goals regarding the people with whom one interacts has been found to make a dramatic difference in the assumptions and attributions one makes within that informational void.

Despite past media headlines to the contrary, the Internet does not make its users depressed or lonely, and it does not seem to be a threat to community life—quite the opposite, in fact. If anything, the Internet, mainly through e-mail, has facilitated communication and thus close ties between family and friends, especially those too far away to visit in person on a regular basis. The Internet can be fertile territory for the formation of new relationships as well, especially those based on shared values and interests as opposed to attractiveness and physical appearance as is the norm in the off-line world (see Hatfield & Sprecher 1986). And in any event, when these Internet-formed relationships get close enough (i.e., when sufficient trust has been

established), people tend to bring them into their "real world"—that is, the traditional face-to-face and telephone interaction sphere. This means nearly all of the typical person's close friends will be in touch with them in "real life"—on the phone or in person—and not so much over the Internet, which gives the lie to the media stereotype of the Internet as drawing people away from their "real-life" friends.

Still, the advent of the Internet is likely to produce dramatic changes in our daily lives. For example, together with high-speed computing and encryption technology it already plays a significant role in crime and terrorism by enabling private communication across any distance without being detected (Ballard et al. 2002, p. 1010). And we quite rightly have been warned that repressive regimes may harness the Internet and all of the data banks that connect to it to increase their power over the population (Manasian 2003, p. 23; Shapiro 1999). A step in this direction is the 2001 "Patriot Act," (enacted in the United States following the September 11 attacks) which called for the technology to monitor the content of Internet traffic to be built into the Internet's very infrastructure. However, these important issues concerning the Internet lie outside of our purview in this chapter.

We emphasize, in closing, one potentially great benefit of the Internet for social-psychological research and theorizing: by providing a contrasting alternative to the usual face-to-face interaction environment. As Lea & Spears (1995) and O'Sullivan (1996) have noted, studying how relationships form and are maintained on the Internet brings into focus the implicit assumptions and biases of our traditional (face-to-face) relationship and communication research literatures (see Cathcart & Gumpert 1983)—most especially the assumptions that face-to-face interactions, physical proximity, and nonverbal communication are necessary and essential to the processes of relating to each other effectively. By providing an alternative interaction setting in which interactions and relationships play by somewhat different rules, and have somewhat different outcomes, the Internet sheds light on those aspects of face-to-face interaction that we may have missed all along. Tyler (2002), for example, reacting to the research findings on Internet interaction, wonders whether it is the presence of physical features that makes face-to-face interaction what it is, or is it instead the immediacy of responses (compared to e-mail)? That's a question we never knew to ask before.

Our review has revealed many cases and situations in which social interaction over the Internet is preferred and leads to better outcomes than in traditional interaction venues, as well as those in which it doesn't. As the Internet becomes ever more a part of our daily lives, the trick for us will be to know the difference. But it is reassuring that the evidence thus far shows people to be adapting pretty well to the brave new wired (and soon to be wireless) social world.

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CONTENTS