

Primary Issues in Internet Use: Access, Civic and Community Involvement, and Social Interaction and Expression

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The Internet is being used by large numbers of the US population, and that usage is growing quickly. The Internet took seven years to achieve the same level of diffusion into US households – 30 per cent – that it took the telephone 38 years and the television 17 years to accomplish. The mid 2000 AOL national survey (based on a representative national telephone survey of those 18 or older who have online access in their homes) found that 76 million people (39 per cent of the US population) used the Internet, up from 45 million in 1998 (AOL, 2000). A study by UCLA in November 2000 reported that 66.9 per cent of Americans used the Internet; in the first quarter of 2000, approximately 55,000 people each day became new Internet users (UCLA, 2000). In December 2000, a Pew Institute report indicated that 56 per cent of the US population over 18, or 104 million, had access to the Internet (Yahoo!News, 2001). About 75 per cent of students older than 12, and 29 per cent of those under 12, had access to the Internet; 56 per cent of all users went online every day. Just a few months later, a Nielsen/NetRatings (2001) report found 60 per cent of US citizens, or a total of 168 million, used the Internet from home, work or both.

This rapid adoption of a new way to seek and distribute information, communicate with others, and sell goods and services naturally raises a vast range of enduring as well as new social and policy issues. This chapter reviews relevant research on three primary issues: (1) access, (2) civic, political

and community involvement, and (3) social interaction and forms of expression. Rheingold (1993) identified three main consequences of the Internet and online communities similar to the second and third main issues: supporting citizen activity in politics and power, increased interactivity with diverse others, and a new vocabulary and form of communication. The following sections review these three research issues by grouping arguments and results into pessimistic and optimistic perspectives.

ACCESS

The first fundamental concern is access, including: who has or does not have access to the Internet; what motivates people to use the Internet; what barriers there are to usage; and what characterizes those who stop using the Internet (Katz and Aspden, 1997a; 1997b; 1997c). New technologies in general may bridge gaps between rich and poor, powerful and powerless, haves and have nots (for example, Downing, 1989; ECRL, 1999; Freire, 1969; Furlong, 1989; Greenberger and Puffer, 1989; NTIA, 1999; Pfaffenberger, 1990; Schon et al., 1999). New technologies may enhance or hinder access to information in a democracy (Deetz, 1989a; 1989b; Dervin, 1980; Dervin and Shields, 1990; Lievrouw, 1994; Murdock and Golding, 1989), in the workplace (Deetz, 1990;

Garson, 1988; Kraut, 1989; US Congress, 1987; Zuboff, 1988) or in broader social or cultural contexts (Bourque and Warren, 1987; Dervin and Shields, 1990; Krendl et al., 1989; Larose and Mettler, 1989; Mulgan, 1991; Pool, 1983; US Congress, 1990; Weinberg, 1987). While new communication technologies can provide new ways of participating and interacting, they may also widen existing gaps, further blocking access to those already without access (Gillespie and Robins, 1989; Hudson, 1988; Jansen, 1989; Rubinyi, 1989; Schiller, 1996; Wresch, 1996).

Access is the major public policy area for those who see the Internet as a universal service and a significant influence on political and economic equity (McCreadie and Rice, 1999a; 1999b; Rice et al., 2001). The usual term for this differential access to and use of the Internet according to gender, income, race and location is 'the digital divide' (Cooper and Kimmelman, 1999; Hoffman and Novak, 1998; Hoffman et al., 1996; McConaughy and Lader, 1998).

While on the one hand the Internet and other communication and information technologies can increase human capital by providing better access to education and training, on the other hand those who do not have sufficient resources or experience will be further excluded from human and social capital (McNutt, 1998). Information labour markets will prefer individuals who have both current and prior access to, experience with, and skills necessary for communication networks. New applications, software and technologies require a good understanding of the Internet and existing communication protocols that are already in place, so even if those currently without access become users, they will still be disadvantaged (Carrier, 1998). Long-term disadvantages stemming from having no or delayed access accrue in less obvious ways, too. Bikson and Panis (1999: 156) discovered that employees who used computers in their jobs are paid 10 to 15 per cent more than non-computer users who hold similar positions. Besides economic benefits, communication technologies have greatly increased participation in communication activities such as decision-making and discussions at the workplace (Carrier, 1998). Individuals with communication and information access are generally better informed about their employers. They are aware of corporate decisions, and are usually more prepared to participate in decision-making processes. So there are major social and economic rationales for investing in increased access to all citizens, such as through community networks (McNutt, 1998). For example, Neu et al. (1999) provide examples of how e-mail can provide access and general citizen information to the elderly and governmental information to social security beneficiaries.

Pessimistic Perspective

Access to Computers and the Internet

Many studies show that minorities such as blacks and non-white Hispanics are much less likely to possess home computers and have less access to networks than whites and Asians and therefore miss the opportunity to participate in Internet activities (Neu et al., 1999). For example, Bikson and Panis (1999) summarize results from the 'Current Population Survey' conducted by the Bureau of the Census in 1993 (143, 129 respondents) and 1997 (123, 249 respondents). Concerning network services, in 1997, 7 per cent of individuals over age 60 and 11 per cent under age 20 used them, compared with 33 per cent between ages 20 and 59, all higher than in 1993. When socioeconomic variables were controlled, the gap between the under-20 users and 20–59 users decreased significantly. Controlling for other characteristics, the two younger groups have quite similar usage levels, but usage levels of older adults are still significantly lower. Usage of network services by those in the lowest income quartile (around \$20,000) rose from 3 per cent in 1993 to 7 per cent in 1997, while usage by those in the highest quartile (above \$60,000 per year) rose from 23 per cent to 45 per cent. Thus the gap associated with income rose over those four years, even after controlling for other variables, representing approximately a two-year time lag in adoption of online services between the bottom and top quartiles (1999: 12). Gaps in use of network services by educational level also rose, with usage in 1993 by 1 per cent of those without high school diplomas and 34 per cent by college graduates, rising to 5 per cent and 56 per cent in 1997 (these differences are statistically significant even after controlling for other factors). Concerning differences by race/ethnicity, usage by whites (13 per cent to 28 per cent) and Asians (10 per cent to 25 per cent) jumped between 1993 and 1997, while the growth rate for blacks, Hispanics and native Americans was fairly steady, again showing a widening gap, again controlling for other variables. Differences in network access by gender were very slight (approximately 2.5 per cent more by men) yet still remain after statistically controlling for other influences. Finally, 15 per cent of rural people and 25 per cent of urban people used network services in 1997, up from approximately 7 per cent and 12 per cent in 1993, representing a growing gap. These differences were significant even when socioeconomic variables were controlled.

A recently started, ambitious study by the UCLA Center for Community Policy (UCLA, 2000) is analysing a panel of 2096 representative households across time, comparing Internet users with

non-users and with non-users who become users later on. It is part of a group of similar projects in other countries. The study found that while only 31.2 per cent of those who had not graduated from high school used the Internet in the fall of 2000, 86.3 per cent of those with at least a college degree did; 53.1 per cent of high school graduates and 70.2 per cent of those with some college used the Internet. At the youngest ages (12–15), use of the Internet is nearly universal (91.6 per cent) among American females; the only other age range where they exceed male use is 46–55 years (74.3 per cent compared to 66.1 per cent). After that, the gender gap widens considerably (at 66+, rates are 18.4 per cent for females and 40.4 per cent for males).

A study published by the non-profit Consumer Federation of America (Cooper, 2000) collected responses from a single statistically balanced panel ($n = 1902$) measured at two time periods (February 1999 and June 2000) drawn from respondents agreeing to participate in a large-scale 'Life Styles Study'. The overall conclusion is that 'the disconnected are, in fact, disadvantaged and disenfranchised' (2000: 1). In particular, they compare the *fully* connected (36 per cent of the population, with Internet service providers or high-speed Internet access at home), the *partially* connected (17 per cent, with basic Internet or e-mail service at home), the *potentially* connected (21 per cent, no home Internet service, but do have home computer or cell phone), and the *disconnected* (26 per cent, without Internet service, computer or cell phone). The disconnected earn less than half the income of the fully connected (\$25,500 versus \$45,200), are much less likely to have a college degree (13 versus 46 per cent), and are more likely to be black (12 versus 7 per cent), be older (53 versus 44 years) and have smaller households (2.1 versus 2.8). Each of these significantly predicts differences across the four levels of connectedness, with income being the most powerful predictor. Overall, the study concludes that there is about a three- to five-year lag in penetration between those with above-median and below-median incomes. Cooper (2000: 1) agrees with the argument held by Castells and others that such differential timing in access to power and information – even if the later adopters catch up after several years – is itself a significant source of social inequality and unequal participation.

Moreover, 40 per cent of those who are disconnected or partially connected do not expect to be connected four years hence; of the current disconnected about 92 per cent feel this way. The UCLA (2000) study also notes that 58.6 per cent of current non-users (32.1 per cent) are somewhat likely or very likely to not gain access within a year, and this worsens for older respondents. Further, it also reports that in mid 2000, 10.3 per cent of non-users are actually Internet dropouts (formerly used the

Internet at least once a month, but no longer); Katz et al. (2001) report that this 10 per cent figure is fairly consistent in surveys they conducted in 1995, 1996, 1997 and 2000. So widespread, full connection is unlikely any time soon. Here, income, age and education predict intentions to connect in the future, while race does not. There are few differences between the partially and fully connected in percentage of respondents indicating they have engaged in various activities online (consuming, gathering information, visiting government or politician websites, sending e-mails to a newspaper or discussing politics online), but there are significant dropoffs for potentially connected and even more so for the disconnected. That is, simply having access, independent of the quality or speed of the connection, is the crucial distinction.

Barriers, Influences and Consequences

Clearly, there are many physical and socioeconomic barriers to equal access. Barriers to using the Internet reported by the UCLA (2000) study respondents include: no computer or terminal available (37.7 per cent), no interest (33.3 per cent), do not know how to use (18.9 per cent), too expensive (9.1 per cent) (and then various other factors). Within the United States in 1997, '65 per cent of public schools had access to the Internet, but schools with richer student populations were still 25 per cent more likely to be connected than schools with poorer student populations' (Tapscott, 1997: 260). And even within those schools, 'more than 74 per cent of schools have computers, but only 10 per cent of students say they have used a computer at school in the past week' (1997: 266). Van Dijk (1999) identifies four general obstacles that appear to prevent people from using new media: (1) people, especially the elderly and unskilled, are intimidated by new technology or had a bad first experience with it, (2) no or difficult access to computers or networks, (3) lack of user friendliness and unattractive usage style, and (4) lack of significant usage opportunities. A perhaps more pervasive and less tangible obstacle is the growing primacy of commercial motivations for the Internet over access *per se*: 'Calling the Internet the Great Equalizer helps to sell more computers. The metaphor masquerades as a quick fix to social inequality while ignoring the factors that lead to inequality' (Wolf, 1998: 26).

Neu et al. (1999) report that the network use gap between whites and Hispanics and blacks of similar socioeconomic status widened from 1993 to 1997, implying that some of the digital divide may be due to differences in interests and priorities. A more invisible factor in this digital divide may be embedded distinctions: 'the design of new media techniques carries the imprint of the social-cultural

characteristics of its producers; predominantly male, well-educated, English speaking, and members of the ethnic majority in a particular country' (van Dijk, 1999: 152). This style does not appeal to most women, less educated people and ethnic minorities. There is also a 'usage gap in which well-educated people use computers for work, private business, education and other reasons whereas those with less education and the young use computers for entertainment and/or computer games followed by education' (1999: 153). The learning process, as well as resistance to change, may be dominating factors in minimal Internet access by older age groups (Neu et al., 1999: Chapter 6). Further, differences in access become more pronounced for some variables when comparing having general access with having online access from the home (Corrado, 2000: 5). Home access is associated with using the Internet regularly by whites with higher education and incomes. Thus, in reality, there is no simple two-tiered digital divide: 'A better representation would be a continuum or spectrum of differentiated positions across the population with the "information elite" at the top and a group of "excluded people" at the bottom' (van Dijk, 1999: 155).

Indeed, cultural, rather than strict economic, educational and racial differences are receiving increased attention, from both government and commercial studies. The Cultural Access Group (2001) conducted an online marketing survey of 2205 users (766 African-Americans, 1439 Hispanics) of ethnic websites, and 1294 general market respondents, via an online banner that connected interested users to an online survey. Clearly, this is an extremely biased sample: African-Americans who responded to this survey were more highly educated (83 per cent had some college) and more female (76 per cent) than the general market respondents (79 per cent and 35 per cent, respectively). African-Americans and Hispanics in this sample have lower in-home access than the general market respondents, indicate that cost was the major deterrent to in-home access, have been online for fewer years, and spend less time online than the general market. African-Americans were, however, more likely to use the Internet for getting information on family/relationship issues (34, 25, 13 per cent), getting information on health issues (44, 40, 31 per cent) and chatting online (26, 26, 12 per cent) than Hispanics or the general market. Curiously, Hispanics were more likely than African-Americans or the general market to agree that the Internet has improved society overall (73, 50, 55 per cent), created opportunities for all people (80, 69, 70 per cent), broken down racial barriers (60, 27, 33 per cent) or broken down economic barriers (48, 29, 29 per cent). This may be partially explained by the fact that African-Americans, compared with Hispanics and the general market, agree that people of colour have unique

needs on the Internet (52, 16, 14 per cent), but only 37 per cent of African-American, compared with 64 per cent of Hispanic, respondents felt that there was adequate Internet content for their ethnic group.

Rojas et al. (in press) go further in identifying other factors contributing to the digital divide, such as the interrelations among economic capital, cultural capital, ethnicity, gender and age. Their in-depth study of 12 families in Austin, Texas identified a variety of dispositions toward computer technology, influenced by 'practices [such as family histories of technology and media use and habits], perceptions and attitudes, technical education, awareness of technology [especially relating to economic mobility], desires for information, job requirements, social relations with community members and community organizations, and geographical location'. Often, particular individuals reside in a crossfire of competing and contrasting influences (such as family and peers, cultural and social capital, educational and consumer motivations, and early gender roles) on computer and online technology. Similarly, Haddon (2001) argues that 'social exclusion' is context-dependent (neither necessarily economically based nor equivalent across all domains of a person's life), involves not only political and civic involvement but also people's ability to occupy social roles, and may also involve rejection of or lack of interest in new technologies. So, for example, his ethnographic study of 20 single-parent and 20 elderly households, using time-budget diaries and interviews, found a wide variety of influences on interest in such new media: economic constraints, need to keep in touch with children, limited conceptualizations of how these media could be used (because of the respondents' experiences of surviving in low-income situations), low priorities compared with pressing issues such as day care, smaller or less available social networks (and thus less reason to use communication media) because of not working, lowered symbolic value of used or cheaper technologies, greater resistance by the elderly to innovations or to consumerism in general, little exposure by the now elderly to new technologies in their former workplaces, a greater awareness by the elderly of how they were spending their money owing to their earlier experience of austere economic times, and simply greater familiarity with more traditional media such as the telephone and the television.

Other Divides

The digital divide occurs at the international level as well. 'Young and well educated people with a high income living in rich Western countries and regions have increased their lead on elderly people, less educated people, and people with lower income and from poorer countries and regions ... There is only one exception to this increase in relative

differences in access to computers and networks: the gap between males and females is decreasing though this is happening much faster in Northern America than in Europe' (van Dijk, 1999: 150). However, he points out that this is a familiar pattern in the adoption of new media, similar to that of the telephone, the radio, the television and the VCR. Nonetheless, 'the information gap between have and have-not countries is growing. According to Jupiter Communications, of the 23.4 million households connected to the Net in 1996, 66 per cent were in North America, 16 per cent in Europe, and 14 per cent in the Asian Pacific. The gap is not just one of developed countries versus under-developed countries' (Wellman, 2000); see http://www.nua.ie/surveys/how_many_online/index.html for statistics on the geographic distribution of users. However, mobile/wireless communication will likely help developing areas that currently have no or inadequate telephone infrastructure to gain faster and more pervasive access to the Internet.

There are other aspects of access than just equal distribution across demographic and national boundaries. People who have hearing, sight, movement and other disabilities may also be disadvantaged by limitations on their ability to access information, contacts and opportunities for expression on the Internet.

Optimistic Perspective

Recent studies (ECRL, 1999; Katz et al., 2001) have been finding that at least racial and gender differences in Internet access disappear after other variables are taken into account statistically. It is possible that as the CPS research was conducted before the WWW and browser-based Internet usage had diffused widely, the 'network services' referred to in 1993 and 1997 did truly require exceptional technical resources and skills. Once browsers, modems, bandwidth, popular and commercial Internet resources, and connectivity became more user-friendly and widespread, various digital divides could then diminish. A Pew Institute study (Yahoo!News, 2001) found that by the end of 2000, 58 per cent of men and 54 per cent of women were Internet users; figures for Hispanics were 47 per cent and for blacks 43 per cent. However, while 82 per cent of those with incomes greater than \$75,000 had access, only 3 per cent of those with annual incomes less than \$30,000 did so; and while 75 per cent of those 18–29 years of age had access, only 15 per cent of those older than 75 did. According to the AOL (2000) survey, more women (53 per cent) started Internet use in 2000 than did men; overall, 49 per cent of Internet users were women. The proportion of men grew as users had been online for more years; Katz et al. (2001) found similar trends. The AOL survey found that 33 per cent of those

starting Internet use in 2000 had high school education (overall US 51 per cent) compared with 22 per cent in 1999. Of starters, 24 per cent had household incomes of less than \$35,000 (overall US 34 per cent) compared with 11 per cent in 1999. Education and income were noticeably greater as users had more years online. Also, the more years online, the more days and hours spent online per week.

There are efforts to overcome some of the limitations on access that are due to disabilities. In 1990, the government searched for a way to provide universal service and include persons with disabilities. In 1990, Title IV of the Americans with Disabilities Act addressed disability issues by requiring all service carriers to provide communication access for hearing-impaired American citizens (Borchert, 1998: 56). And 'Section 255 of the Telecommunications Act requires that telecommunication services and equipment providers make their goods and services accessible to individuals with disabilities' (1998: 60). A good example of this is the recent Windows operating systems, which offer program and application shortcuts for people with disabilities. Through communication networks which offer full duplex voice, data transmission, graphics and video communication, there is the potential for people with disabilities to overcome these limitations.

CIVIC AND COMMUNITY INVOLVEMENT

The second fundamental issue is whether the Internet will decrease or increase political participation and community involvement, fostering more diverse and better informed citizens, and mediated communities with greater social capital.

Civic and Political Involvement

Pessimistic Perspective

Even if the Internet represents the potential for greater political involvement, the unequal access to Internet resources by various groups in society, relative to traditional outlets such as newspapers, radio and TV, should paradoxically narrow the basis of political participation and government legitimacy (White, 1997; see also Bentivegna, this volume). Hill and Hughes report that 'Internet users and activists (those who use it for political reasons) are considerably younger than the general public, with Internet activists averaging a very young 32.8 years' (1998: 29). This age may be even lower, as the survey only counted those over age 18. Males were the majority of Internet users and activists (72 per cent). There actually seems to be a higher

percentage of non-white Internet activists, so 'there is no great "ethnic gap" in Internet activism'. However, Internet users and activists do have much more education than the general public, with 53 per cent and 56 per cent, respectively, having college degrees. Internet activists 'are not more partisan but they are more Democratic than the general public' (1998: 33). These users are more involved in information gathering and more knowledgeable about current political events than is the general public (1998: 35). On Usenet's political newsgroups 'most threads are neutral but with clear right-wing anti-government overtones', possibly because right-wing people may not feel represented by the media – but they also might just be more active in posting to newsgroups (1998: 73). Chat rooms are heavily right-wing owing to greater activity by those members, and not because of a greater number of right-wing participants *per se* (1998: 128). Hill and Hughes find about an equal amount of left-wing and right-wing websites, but conservative sites are more in-depth and have 'higher production values'.

Others argue that the Internet could weaken the legitimacy of the governing process, by encouraging the spread of small, 'net-savvy' special interest communities who could pursue their own narrow agenda at the cost of the public commonweal (Starobin, 1996). The quality and validity of material reported on the Internet are also increasingly problematical, leading to concerns about the corruption or debasement of elections, and a consequent reduction in political participation. There has been concern about a possible reduction in the objectivity of traditional media if these media were to lose their status and impact as a result of the growth of Internet usage (Symposium, 1995; van Alstyne, 1995). Some theorists have argued that the Internet is destroying community groups and voluntary associations that are necessary for the democratic process to succeed (Putnam, 1996; Turkle, 1996). Other critics fear that the Internet will absorb and dissipate the energy of the citizenry away from traditional political processes (Carpini, 1996; Rash, 1997). Van Dijk locates a central tension: 'Some would argue that *freedom*, for example the freedom of choice for consumers, will increase because of the interactivity offered by this technology. Others paint a more pessimistic picture, and predict that freedom will be endangered by a decrease in privacy for the individual as a registered citizen, a "transparent" employee and a consumer screened for every personal characteristic, and by the growing opportunities for central control' (1999: 2).

According to Hill and Hughes (1998), pessimists believe that electronic voting is problematic, because it doesn't involve debating or discussion and allows a voter to be more passive. Van Dijk (1999) believes that there will be so much information

on the Internet that it would be hard to figure out what was valid, and thus will lead to faulty decision-making. The Internet also often removes one layer of filtering of political information – that done by gatekeepers of the mainstream media. Democracy can be strengthened when citizens become politically more informed and involved in government through the Internet, but increasingly the Internet 'is susceptible to control from above' (1999: 2). Further, self-selection plays a large role: those who were previously politically interested are those who make up the population of Internet users who utilize the web for political reasons (1999: 183).

Free speech can be both promoted and inhibited by the Internet. Theoretically, anyone can design a website and post any opinion on it. However, Shapiro and Leone (1999) suggest that free speech may actually suffer with the development of the Internet, because of both exposure and access issues. First, people may have a hard time finding an audience to reach because others may not be willing to listen. People will not feel like responding to solicitations describing the opinions of others or they may filter their information so they only receive what directly interests them. Filtering and personalization of news via software agents can lead to narrow-mindedness and social fragmentation. Therefore, views that contradict or question any particular person's opinions may never reach that person, allowing that individual to remain ignorant of opposing perspectives. Second, not everyone will have the resources to pay for advertising one's opinions – in addition to the by now familiar access constraints such as technology and technological knowledge – thus limiting some people's right to free speech.

Overall, Hill and Hughes find little evidence supporting the claim that the 'Internet changes people's minds politically ... Rather, reading Web pages seems to be an act of self-selection; people go on-line to find out more information about a subject, not to be transformed' (1998: 183). Indeed, the UCLA (2000) study shows that while 45.6 per cent of Internet users (versus 28.1 per cent of non-users) feel that the Internet helps people to better understand politics, only 29.3 per cent of users and 16.8 per cent of non-users feel that Internet use leads to people having greater political power. 'Likewise, debate and information-based discussion in the Usenet newsgroups and political chat rooms serves to reinforce pre-existing ideological positions, not to change them.' They also conclude that the Internet won't necessarily bring worldwide tolerance. 'Simply because people can talk to each other regardless of distance does not mean they will cooperate.' For example, alt.politics.french is a newsgroup which often includes 'insults hurled back and forth across the English Channel between people in Britain and France.' Rash (1997) and

others note that the Internet easily supports hate groups and conspiracy theorists in the political process.

Fallows (2000) argues that most of the predicted impacts of the Internet on politics have not (yet) appeared: bypassing mass media and other gate-keeping intermediaries (Morris, 2000), circumventing centralized authority, freeing politicians from having to constantly raise money, facilitating new and diverse candidates, fostering virtual issues constituencies and reducing the influence of particular states or political blocs. However, two changes are already significant. The first is a reduced time for shifts in prevailing opinion and media narratives. The second is that the network economy has stimulated more and more concentrated media conglomerates using convergent bandwidth, as multinationals attempt to gain control over delivery channels of multimedia content. Fallows (2000), Hundt (2000) and McChesney (2000) all argue that this concentration of media reduces diversity in perspectives and opinions, and reinforces particular kinds of coverage and programming, leading to a much more powerful effect on political knowledge, participation and voting than any supposed consequence of extended Internet use by individuals and groups. And the inherent structural and power constraints of the political system are likely to limit the possibilities of the Internet for extensive political change (Margolis and Resnick, 2000).

Optimistic Perspective

Others strongly argue that the Internet may very well foster political involvement: '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' (Kapor, 1993: 53). Users are not necessarily social isolates, unaware of civic and political issues: in mid 2000, the online users in the AOL survey were particularly politically involved, as 84 per cent were registered to vote and 45 per cent intended to go online to get presidential candidate information (and 39 per cent for state candidate, 32 per cent for local candidate). Of the young people (between 9 and 17 years of age) in the companion AOL youth study (based on 505 young people in homes with online access), 41 per cent reported a greater interest in current events owing to being online (55 per cent reporting no difference). And they clearly feel that being online has had a much more positive influence on them than has television (57 versus 39 per cent).

Hill and Hughes (1998) summarize the perspectives of some optimists concerning the role of the Internet in citizen activism. Rheingold (1993)

believes people will become more involved in the democratic process, such as through increased online debate, and Rash (1997) states that the Internet will open up the opportunity for new parties and ideas to develop. Shapiro and Leone (1999) associate the Internet with 'the control revolution', whereby control is being transferred from large institutions to individuals. This is due to six core features of the Internet that can enhance individual control. The first four already exist: (1) many-to-many interactivity, (2) digital content, making communication flexible 'in terms of how it can be stored, used, and manipulated' (1999: 16), (3) the design of the Internet as a distributed, packet-based network, and (4) the interoperability of the Internet, so that information can flow freely throughout a network without bottlenecks or barriers. The next two must be achieved in order to foster individual control: (5) broadband capacity and (6) universal access.

Certainly the Internet has already become a powerful political tool for political parties, non-governmental organizations, congressional campaigns and local activist groups (Browning and Weitzner, 1996; Corrado, 2000; Davis, 1999; Rash, 1997). It allows political actors to monitor voting records, assess campaign contributions and financing, conduct online focus groups, increase voter access, keep up with recent and distant news, obtain campaign donations more quickly and efficiently (such as through online credit card payment), file contribution disclosure reports online, create and support mailing lists, get voters to the polling place, and more. Rash (1997), in particular, suggests that the impact of the Internet in the 1996 US presidential election was comparable to the role of television in the 1960 election.

The Consumer Federation of America study (Cooper, 2000) emphasizes that comparing non-online civic activities (reading newspaper, reading news magazine, contacting local public official, writing letter to editor, circulating a petition, attending a political rally), their categories of 'disconnected' and 'potentially connected' (defined earlier in the 'access' section) are fairly similar to 'partially' and 'fully connected'. This implies that non-users are fairly equal to users in their connections in physical space, but that users have the additional advantage of online activities and access. That is, 'the problem is not that the disconnected do not participate in physical space, it is that they cannot participate in cyberspace' (2000: 17). Further, those currently connected and those planning to gain access within four years have very similar attitudes about the importance of technology and computers. However, those not planning to gain access have considerably less positive attitudes about the importance of computers and Internet access. Cooper (2000) reported that while non-users are more likely to attend rallies, Internet users are more likely

to engage a bit more (an additional 5 to 25 per cent) in civic, political and media activities than non-users. Internet users in the UCLA (2000) study, compared with non-users, were slightly more likely to exercise and to participate in clubs/organizations, were slightly less likely to socialize with household members or to know neighbours by name, and had the same levels of socializing with friends, time spent sleeping, and number of friends outside their households. Further, users held fairly similar attitudes about various personal values, having slightly higher preference for visiting with friends, but slightly lower preference for attending religious services and for contributing to efforts to protect the environment. Non-users reported slightly higher levels of life dissatisfaction, interaction anxiety, powerlessness and loneliness (all about 0.2 to 0.3 difference on a 1–5 scale). Users in the Katz et al. (2001) study were more likely to participate in community and leisure organizations, but not religious organizations.

However, Davis (1999) concludes that citizens will not take significant advantage of the potential, and that dominant political actors will be the primary beneficiaries, supporting the status quo. For example, even though governmental representatives do receive e-mail from those who wish to 'express views on topics of current interest ... e-mail is rarely the medium through which individuals carry out personalized transactions with government agencies'. People 'may express personal opinions regarding public issues in e-mail to their congressmen, but electronic queries or filings regarding their own personal circumstances, needs, or activities are still rare' (Neu et al., 1999: 3). However, there is tremendous potential for this form of citizen–government communication, for many of the usual reasons such as decreased costs, errors and delays. While this form of communication is growing, several obstacles still have to be overcome, such as security (using a trusted intermediary and electronic signatures) and privacy issues, as well as technology implementation and personnel training. Because the Internet is becoming transparently integrated into existing cultural forms, and provides potentially easy access to information, it can increase the democratic franchise (Sobchack, 1996). However, a major problem lies with knowing how to use the computer properly and being able to access specific information.

To some extent, the question of whether the Internet can foster political activism and knowledge of governance is somewhat simplistic, considering that the Internet itself involves considerable political, governmental, regulatory and economic institutions, and requires complex governance and even debates over what kinds of governance are appropriate and possible (Loader, 1997; Margolis and Resnick, 2000).

Community Involvement

Pessimistic Perspective

Simply put, some argue that cyberspace cannot be a source of real community and/or detracts from meaningful real-world communities (Baudrillard, 1983; Beniger, 1988; Gergen, 1991; Kiesler et al., 1984; Nunes, 1995; Stoll, 1995; Turkle, 1996; see also Jankowski, and Baym, this volume). Schement distinguishes two key elements of communities: primary and secondary relationships. Internet communities 'are really made up of secondary relationships' in which people only know each other in 'a single, or only a few, dimensions' in contrast to primary relationships in which people know each other in multiple dimensions (reported in Bollier, 1995: 10). John Seely Brown believes that 'it is not always clear where accountability and responsibility reside in virtual communities' because the lack of primary relationships may induce 'careless, irresponsible, and even anti-social' behaviour (Bollier, 1995: 12). The use of online systems to communicate with more distant others may reduce the vitality and integration of physical communities (Calhoun, 1986). Somewhat more grandiosely, virtual communities may become 'a counter-hegemonic movement in which socially or politically marginalized groups find expressive space on the Internet in which to locate like-minded others, speak freely, and forge solidarity' (Lindlof and Shatzer, 1998: 174).

Shapiro and Leone warn that careless use of the Internet may lead to three fundamental problems: (1) overpersonalization, that is the use of information about users to target messages, products and control, and the use of filters and focused discussion groups to keep us from being exposed to diverse perspectives; (2) disintermediation, which may get out of hand as we forget the value of liaisons and gatekeepers in not only selecting but also verifying news, commerce and politics; and (3) the danger that 'we may rely too much on market based solutions to problems such as protecting privacy' (1999: 104). 'With fewer shared experiences and information sources, citizens may feel less of a connection with, and less of an obligation toward, one another' (1999: 120). Both Shapiro and Leone (1999) and Rice (1987a) point out that online ties are likely to be more ephemeral, less sustainable and more easily exitable compared with physical community relations. Along with the increased choice that online media provide comes an increased ability to 'disengage with little or no consequence' (Jones, 1999: 220).

Computer-mediated communication (CMC) 'may yet be the clearest evidence of Beniger's (1988) "pseudo-community", part of the "reversal" of a centuries-old trend from organic community based on interpersonal relationships to impersonal association integrated by mass means' (Jones, 1999: 369). 'The new mass media have an especially char-

acteristic ability to create an illusion of apparently intimate face-to-face communication between a presenter and an individual viewer', thus creating what other researchers have called 'parasocial interaction' (Jensen, 1999). Further, differential access to and knowledge of these technologies create powerful boundaries between potential community members, and reinforce certain kinds of roles, statuses and social networks.

There's a subtle paradox involved in this issue of shared interests in online communities. What van Dijk (1999) calls an 'organic community' (comprising face-to-face interactions) is made up of a relatively homogeneous group of people because they have several interests in common, whereas a virtual community is relatively heterogeneous since only one interest links them. Therefore, an organic community has a better chance of building and maintaining its own culture and identity than a virtual community. Virtual communities can't replace organic communities since they are limited, but perhaps they can supplement and strengthen organic communities.

More community-oriented issues include just exactly how identity can be formed, maintained and accessed by others when the individuals cannot be seen, and may be constantly changing; what social processes are available for organizing, coordinating and controlling online (especially deviant) behaviours in ways that promote the community; how online communities change over time and what's necessary to maintain them; and how online communities might support collective action and social capital (Smith and Kollock, 1998; Surratt, 1998).

The Nature of 'Real' Community

One interesting response to this position that current, richly human physical communities are threatened by new media such as the Internet is to question the very nature of communities (see Jankowski in this volume). Wellman (2000) emphasizes that traditional communities were controlled by social class, management of labour power, access to resources, fixed capital, limited mobility and a few powerful gatekeepers, all embedded in a primary network. Revolutionary challenges to these community networks were associated with changes in media and transportation: horses, railroads, automobiles and airplanes, books, telegraph, telephone, radio and television. The 'huge increase in speed [associated first with the telegraph] has made door-to-door communications residual, and made most communications place-to-place or person-to-person. The length of the message is a more salient limiting factor than the distance that the message has to travel' (Wellman, 2001).

Thus, paradoxically, because media have allowed community to move inside the home or the office by means of the telephone or other media, most North Americans have little interpersonal

connection with their neighbourhood or the social control of a neighbourhood group. 'Most of the major innovations of the past hundred years have made it progressively easier to avoid contact – and particularly conversation – with people who aren't colleagues, or family, or friends' (Johnson, 1997: 69); the cinema, car, telephone and television are particularly implicated.

'For example, the percentage of Americans regularly socializing with neighbours has been steadily declining for at least 25 years. In 1999, only 20 per cent spent a social evening with neighbours several times per week as compared with 30 per cent in 1974. Similarly regularly socializing in pubs has declined from 11 per cent to 8 per cent' (Smith, 1999; cited in Wellman, 2000).

Putnam (1995; 2000) argues that community has been significantly declining in the United States, and Skocpol (2000) shows that interest groups with local constituencies and interaction have declined in general in the US, creating a vacuum filled by disconnected people committed to little more than commercialism. Putnam (2000) documents that while membership in community organizations has not really declined so much, active involvement and participation have. Further, many new voluntary organizations are lobbying and direct-mail offices with no real membership activity. People entertain less frequently in their homes, donations in terms of constant dollars have declined, voting and trust in government are low, and church attendance continues its drop.

Further, rather than finding community in tightly interconnected groups, 'Most people operate in multiple, thinly-connected, partial communities as they deal with networks of kin, neighbours, friends, workmates and organizational ties. Rather than fitting into the same group as those around them, each person has his/her own "personal community"' (Wellman, 2000). In a seminar reported by Bollier (1995: 7), Firestone notes that 'A lot of people have very superficial relationships with their geographic neighbors even though they see them all the time, yet have very close relationships with professional colleagues who they may only see occasionally.'

Optimistic Perspective

Considering these alternative views of community, it can be argued that because of new communication possibilities, people are no longer forced to interact with specific, physically proximate others in order to participate in community. People now tend to choose physical neighbourhoods for reasons of safety, schooling and medical services (Dear et al., 1996). A related consequence is that actual network ties leap over physically linked areas, so that the overall social geography corresponds much less to physical geography. We may best think of

Internet communities as a supplement to physical communities rather than as complete substitutes. Cerulo (1997), somewhat rejecting Beniger's (1988) critique of the pseudo-community created by digital mass media, argues that we need to reconceptualize community owing to the rise of new communication technologies, based on evidence about social interaction and social bonding (see also Rice, 1987a). First, pervasive examples of parasocial interaction with mediated personalities, call-in radio shows, and emotional support in online discussion groups argue for a wider concept of social interaction that does not presume that mediated relations are necessarily fleeting, impersonal or deceptive. Second, while there are many concerns about the superficiality or isolation associated with online relations, new media are perhaps better characterized as 'changing the nature and character of social bonds' (Cerulo, 1997: 53).

A more forceful optimistic argument is that cyberspace involvement can create alternative communities that are as valuable and useful as our familiar, physically located communities (Pool, 1983; Rheingold, 1993). Network ties may exist in cyberspace but they still represent places where people connect concerning shared interests, support, sociability and identity (Wellman, 2000). This potential is largely due to a combination of several factors: increased bandwidth, continuous access, wireless portability, globalized connectivity and personalization (such as collaborative filtering and content associated by shared users, individual e-mail profiles and web portals, and online communities of interests). People may use online communities to bypass constraints and inequity in unmediated interactions (Stone, 1991). Rather than being seen as disconnected from a group or a locale, these communities transcend these constraints, shifting from door-to-door relations to person-to-person and role-to-role interactions.

CMC 'brings us a form of efficient social contact'; it is a 'technology, medium, and engine of social relations', allowing us to move in terms of 'status, class, social role[s], and character' (Jones, 1999: 224-5). The vastly increased ability to share information is a crucial factor in community formation. Jones emphasizes that new media facilitate increased choice: the 'information highway' will allow us to 'forge our own places from among the many that exist, not by creating new places but by simply choosing from the menu of those available' (1999: 220). Johnson echoes this argument: 'Instead of being a medium for shut-ins and introverts, the digital computer turns out to be the first major technology of the twentieth century that brings strangers closer together, rather than pushing them farther apart' (1997: 69). For example, the soc.culture hierarchy on Usenet includes over 150 newsgroups whose memberships include nearly all of the ethnic and national cultural communities in

the world. The Cultural Access Group's (2001) study of ethnic differences among online users reported that 59 per cent of their African-American and 73 per cent of their Hispanic respondents said that the Internet keeps them connected to their ethnic community, and that the content on African-American (79 per cent) or Hispanic (69 per cent) websites is meaningful to them.

Turkle disputes the argument that Internet communities promote only secondary relationships, as suggested by Schement and Bollier (reported in Bollier, 1995: 10-12). She gives the example of one SeniorNet member who received dozens of calls and cards from her cyberfriends as she lay dying in the hospital. Further, Turkle claims that MOOs and MUDs 'honor people's desires to connect and not to be lonely, and to form community' (Bollier, 1995: 27). Paradoxically, the rapid growth of the Internet may be the single strongest indicator of people's desire for a 'more connected way of living', a greater affiliation among fellow humans (Shapiro and Leone, 1999: 208).

Shapiro and Leone also reject the notion of 'cyberspace ... as elsewhere': 'our actions online have ... a real impact on the lives of other human beings' (1999: 38). Shapiro and Leone provide a good example of how the Internet helps connect those with similar political interests, activities and goals. Htun Aung Gyaw is a Burmese dissident fighting the military government that rules his homeland Myanmar; he is currently a student at Cornell University but uses the Internet to communicate with other Burmese democracy activists around the world. Stacey Horn's (1998) account of ECHO, the New-York-based virtual salon, reinforces the idea that online behaviours, relations and concerns are essentially the same as those of physical communities. This case shows how online communities can reinforce and complement, even create and foster, physical communities and interest in local culture. As with the WELL in Berkeley, ECHO participants get together at different New York settings for social gatherings, and conversation and relations blend together their online and offline lives. Cherny's (1999) study of a MUD also reinforces the notion that online communities can develop cohesion, unity, shared history and close relationships using only appropriately varied forms of online, text-based language.

Other research shows that people interact happily and fruitfully online (for the most part) and in ways similar to face-to-face contact (Wellman and Gulia, 1999b). Further, it is misleading to represent online relationships as mutually exclusive with offline ones; they often support and complement each other. Wellman (2000) concludes that 'The shift to a personalized, wireless world affords truly *personal communities* that supply support, sociability, information and a sense of belonging separately to each individual.' For example, Hampton

and Wellman (2000) found, in their study of a leading-edge, broadband wired suburb near Toronto called 'Netville', that online users are more active neighbours (knowing about 25 neighbours) than are non-users (about eight), and they range more widely throughout the neighbourhood. They also found that once the learning curve was overcome, family members helped each other with the computers and shared their online discoveries, rather than watching television. Hampton (2000) found increased social network, social capital and local community involvement associated with the Netville online infrastructure. Nearly two-thirds of the 109 homes were connected. The study compared those who bought homes and were planning to move into Netville, those 45 not connected, and those who were connected. After the service provider established a neighbourhood e-mail list (NET-L), residents quickly used it for neighbourhood interaction, organizing activities, online introductions, and increased knowledge of local events, service and opinions; it provided common conversational topics and personalized initial interactions. The density of the social network based on the ability to recognize other community members by name was 31 per cent among wired households but only 7 per cent among non-wired ones. The stronger criterion of 'talk with on a regular basis' revealed a density of 11 per cent in the wired households and only 3 per cent in the non-wired households. From a community action perspective, the system allowed Netville members to react to the local housing developer about housing problems, through faster organizing and a greater number of active members. This allowed them to achieve greater concessions from the developer and blocked a second development.

Shapiro and Leone (1999) describe the effectiveness of a supplemental community network in Blacksburg, Virginia, where over 60 per cent of the citizens participate. Parents and teachers communicate online and citizens participate in surveys regarding municipal government. They also describe the development of a community network in a London neighbourhood in which neighbours were given computers and Internet access. Those neighbours participated in debates over local parking rules and came to know each other better. One participant said, 'I used to know maybe 5 or 6 people on the street, now I know at least 40 per cent of them quite well and some very closely' (1999: 211). Other studies of community networks point out a variety of advantages, challenges and developments (Gurstein, 2000; Kahin and Keller, 1995; Schon et al., 1999; Schuler, 1996; Tsagarousianou et al., 1998). While much attention is paid to the exotic and social aspects of online communities, they also represent consequential social policy issues, such as supporting neighbourhood and community relations, local school systems, and public access to government

services and information (Doheny-Farina, 1998), especially health information and services (Rice and Katz, 2001).

Rheingold says:

My direct observations of online behavior around the world over the past ten years have led me to conclude that whenever CMC technology becomes available to people anywhere, they inevitably build virtual communities with it, just as microorganisms inevitably create colonies ... I suspect that one of the explanations for this phenomenon is the hunger for community that grows in the breasts of people around the world as more and more informal public spaces disappear from our real lives. I also suspect that these new media attract colonies of enthusiasts because CMC enables people to do things with each other in new ways, and to do altogether new kinds of things – just as the telegraph, telephone, and television did. (1993: 6)

Indeed, he concludes that the Internet, Usenet and e-mail allow for people to access and transmit information that may not be allowed to surface in other communities. Johnson agrees: 'If the depth of shared experience is the yardstick by which you ultimately measure your community ... then I must admit that I have a hard time imagining a better platform for community building than the traditional, text-based bulletin board system utilized by ECHO and the Well (along with many Web sites)' (1997: 70). For example, Slack and Williams (2000) studied the Craigmillar Community Information Service (CCIS), developed for a town outside Edinburgh where many citizens are poor and underemployed. Countering positions that argue that online networks will foster isolated, inequitable and ahistorical societies, they argue that 'The growth and uptake of ICTs provides a point of contact at which the local and global intersect, wherein there is a potential for each to influence the other' (2000: 321). Before the CCIS, Craigmillar exhibited no sense of community feeling, showed no motivation to socialize, and offered no social or cultural activities. By means of the CCIS, however, 'Craigmillar has ... developed a strategy of self-presentation that counters external representations and which works by being grounded in the highly spatialized notion of a tightly knit community' (2000: 322).

A Broader Question of Impacts

Some are skeptical that the Internet represents major change in political and community involvement at all (Davis, 1999; Jonscher, 1999; Stoll, 1999; Valovic, 2000; Webster, 1995), protesting that the concept of the information society, and the Internet, are overhyped by wildly optimistic claims fostered by media, corporate and techie beneficiaries, and that computers can only support pre-existing human needs for social relations, not replace them.

Fischer (1997) concludes that the effects of new communication technologies in general on community (networks of social relations) are modest, varying across technologies, and complex, indirect and contradictory. He notes that even with the telephone, a truly discontinuous technology, only a few truly notable changes can be identified (greater ability to organize, conduct and maintain social relations over distances, especially by women – essentially, being able to conduct normal social relations more effectively). He notes that concerns about threats to community were also raised for the telephone, automobile, radio and television. Further, he shows that residential mobility has generally declined since World War II, that local news has become increasingly more important, and that telecommuting has so far had limited effects.

With respect to variations across media technologies, Fischer distinguishes between point-to-point and broadcast media, and the associated difference in a public or private setting. After the diffusion of cinema, there was much greater sociability before, during and after going to the movies (especially among children and women): 'It appears that movies enabled considerable social interaction, and attendance reinforced social ties' (1997: 115). However, there was probably an opposite effect for television, after the social novelty wore off, as evidenced by declines in movie attendance, social visiting and physical activity. Finally, effects are often contradictory: the use of a particular technology – simultaneously by the same user, or in opposite ways by different users – may cancel out large-scale changes. For example, during the initial stages, the automobile increased sociability (especially for women and even more so for farm women), while the more modern period associates the automobile with the rise of suburban sprawl and increased distances between homes (and thus female homemakers). There are many recent examples of other technology triggers, such as canals, railroads, automobiles, highways, aviation, telegraph, telephone, radio, television and satellites (Stefik, 1999). 'Technologies of connection' represent boundaries and points of resistance, often creating 'conflict between global and local values' (1999: 3). Legal and economic systems are not ready initially, the effects are not usually evident initially, and the form and application of the technology are not initially fixed. For example, one of the early uses of phonographs was to play recorded political speeches in public auditoriums, introducing voters to the voices of politicians. Initial goals for technologies both 'limit and shape their opportunities' (1999: 19).

Fischer (1997) argues that the primary source of major changes in community may be other social factors, such as family size, increased age of solitary seniors, later marriage, cross-ethnic marriages, sexual relations before marriage, social

security, longevity, etc. And, while indeed homes are more widely scattered, and professions involve interaction with others across greater distances, transportation, culturalties and telecommunications facilitate increased communication across these obstacles. He concludes that, in general, we should think about 'these technologies as tools people use to pursue their social ends [rather] than as forces that control people's actions' (1997: 115).

Winner (1999) also argues that we have continually transformed ourselves as a society as technology has changed. He proposes six questions to ask to see if these new technologies are creating 'conditions that sustain selfhood and civic culture':

'(1) Around these instruments, what kinds of bonds, attachments, and obligations are in the making? (2) To whom or to what are people connected or dependent upon? (3) Do ordinary people see themselves as having a crucial role in what is taking shape? (4) Do people see themselves as competent, able to make decisions? (5) Do they feel that their voices matter in making decisions that will affect family, workplace, community, nation? And (6) Do they feel themselves to be fairly treated?' (1999: 208). Unlike Fischer, Winner is not sanguine about the consequences.

Not only because 'power over the most important decisions about how technologies were introduced was far from evenly distributed' (1999: 211) but also because 'during the middle decades of the 20th century, virtues appropriate to the development of machines – productive order, efficiency, control, forward looking dynamics – became prevailing social virtues as well'. He sees a shift from those prior values to 'mobility, flexibility, entrepreneurialism, expendability, and a willingness to dissolve social bonds in the pursuit of material gain'.

SOCIAL INTERACTION AND EXPRESSION

Although the actual architecture, and initial intention, of the Internet is to connect computers, one of its major social uses and consequences is as a complex medium of communication, neither completely interpersonal nor a mass medium. Thus the third issue is whether the Internet will hinder or foster social interaction, expression and new forms of identity (Baron, 1984; Gergen, 1991; Hiltz and Turoff, 1995; Parks and Floyd, 1996; Turkle, 1996; Wynn and Katz, 1997; see Baym, this volume). Can online social activity and creativity translate into meaningful friendships and relationships? There are of course many different domains of involvement and expression. Jordan (1999), for example, proposes that power on and with the Internet occurs at the individual level (even at the simple level of reinforcing our sense of identity each time we log on), the community level

(determined to some extent by the capabilities and constraints of technology and virtual communities) and the collective imagination level (contrasting, for example, online immortality or constant surveillance, and different applications of virtual reality).

Pessimistic Perspective

This perspective holds that CMC technology is too inherently antithetical to the nature of human life, and too limited technologically for meaningful relationships to form (Stoll, 1995). Thus, cyberspace cannot be a source of meaningful friendships (Baudrillard, 1983; Beniger, 1988; Nunes, 1995). Many have argued for the socially isolating and psychologically depressing effect of (at least extreme) Internet use (Heim, 1993; Kraut et al., 1998; Kroker and Weinstein, 1994; Nie and Erbring, 2000; Stoll, 1995; Turkle, reported in Bollier, 1995). Online relationships may involve lower interdependence, commitment and permanence (Parks and Roberts, 1998; Rice, 1987a). Computer-mediated communication can foster 'experimentation' (such as lying to others who cannot immediately know what the truth is) about one's identity and qualities. Such an atmosphere can be dominated by trickery, lechery, manipulation, emotional swindles. So much posturing, 'gender switching' and faking of identities can take place that it is extremely difficult for any real relationships to be created and maintained (Turkle, 1996). For example, online chat room discussions often remind Johnson of graffiti of the worst kind: 'isolated declarations of selfhood, failed conversations, slogans, and tag lines. You don't see a community in these exchanges; you see a group of individuals all talking past one another, and talking in an abbreviated, almost unintelligible code' (1997: 70).

Kraut et al.'s (1998) 'HomeNet' study analysed 73 households during their first one to two years online. They used a panel design to improve the validity of causal claims, and included reliable measures of psychological states and social involvement (social network, social support, loneliness, stress, depression), as well as objective system usage data (average hours per week spent online, number of e-mail messages, and WWW sites accessed per week). Greater social extroversion and more extended social networks predicted less Internet use in the following year or two; conversely, greater Internet use predicted decreased local and distant social networks. Neither social support nor stress was unrelated to Internet use. However, while neither loneliness nor depression predicted greater subsequent Internet use, greater use did predict increased loneliness and depression. Kraut et al. (1998) concluded that Internet users experienced reduced communication among household members, reduced personal network size, and increased depression and loneliness. They suggest that the best

explanation for these results is that online activity replaces strong social ties in the unmediated world with weak online ties, which cannot resolve loneliness and depression as well, as they are not as physically available and may not understand the contexts of particular situations. They do note that, while the research design allows them to make causal claims, this sample may not be representative, so the results may not be generalizable.

Indeed, Shapiro and Leone feel that 'the more time we spend online, the less time we will have to interact directly with our families, our neighbors, and other community members' (1999: 118). For example, Nie and Erbring (2000) found that web TV users spent less unmediated time with others. They argue that Internet use focuses on the individual, whereas watching TV may at least provide 'some sort of shared experience' (2000: 118). We may develop relationships online but may let our relationships with those around us suffer. The same tremendous ease with which users can 'personalize' the presentation, results and use of the Internet also facilitates a narrowing of focus and exposure to diverse perspectives. Further, it helps advertisers and other information providers in targeting their services, products and opinions to users identified by their online preferences and usage patterns (Schroeder and Ledger, 1998; Shapiro and Leone, 1999).

One's freedom of expression on the Internet is another's predation and indecency, especially when the users are children (Schroeder and Ledger, 1998). Tapscott (1997) identifies some possible disadvantages of the increased individuality and interactivity provided to young users by the Internet, such as disconnection from formal institutions, misleading and dangerous representations of information and identities, flaming, overload, lack of evaluation by informed gatekeepers, and emphasis on the short term. A few critics of virtual communities reviewed by Bollier (1995) feel that virtual communities and other Internet communications allow users to make superficial types of friendships instead of developing multidimensional relationships with those around them. Issues of the digital divide and expression intermingle, such as the online representation of racial identity and the offline representations of the racial makeup of cyberspace (Kolko et al., 1999; Smith and Kollock, 1998).

Optimistic Perspective

Increased frequency and diversity of Interactions

The optimistic perspective increasingly sees the Internet as a medium for social interaction (Rice, 1987a). Numerous case studies of CMC have shown that 'the social' is an important glue

that binds together the task-oriented aspects of CMC, and in some cases even supplants them (Rice, 1987b). This work has been complemented by research on the functioning of medical discussion lists and newsgroups, health and psychological support groups, Internet relay chats, multi-user dungeons, object-oriented MUDS, and even online dating services, all of which are essentially social- and affect-oriented as opposed to task-oriented (Rice, 2001). A good proportion of those searching and participating in health information sites and discussion groups do so as 'third-party' intermediaries, seeking information and support for their significant others, for themselves to help them deal with illnesses of significant others, or to bring information from the Internet to stimulate, challenge or engage their health care providers (Aspden and Katz, 2001). The growth and persistence of web-based chat rooms and 'instant messaging' offering 'community' would seem to provide additional evidence refuting the 'non-social' nature of CMC.

Baym summarizes a decade of research as revealing that 'the ways in which people have appropriated the commercial and non-commercial networks demonstrate that CMC not only lends itself to social uses but is, in fact, a site for an unusual amount of social creativity' (1995: 160). Rice (1987a) argued that fundamental aspects of social groups and communities may well be supported, even extended, through online communities, though the boundaries and permanence of such groups might be quite different. Turkle (1997) wrote a classic ethnographic study of the inhabitants of the computer community, online, at work and at home. Porter's (1997) edited book provides a variety of additional perspectives, including the problem of interacting with virtual bodies.

Van Dijk (1999: 201–12, 239–40) summarizes some of the benefits of CMC: people can compensate for missing cues in images, sounds, texts and data by using available textual cues; people can focus more on the content of the text by reading e-mails; people can engage in more informal conversations and settings; and electronic group conversations often encourage normally quiet people and women to participate more. Walther (1996) shows that mediated interaction is usually personal, especially when participants have time and interest, and mediated interaction may even be 'hyperpersonal', managing interaction and impressions more than is possible face-to-face. Straus (1997) similarly found that CMC is not necessarily less personalized than face-to-face communication. Further, unmediated communication is highly constrained by the need for geographic and temporal proximity, limited processing and storage potential; it does, however, tend to foster greater communication quality and more explicit sequencing of contributions (Rice, 1987b; van Dijk, 1999).

Hamman's (1999) ethnographic study concluded that Internet communication complements real-world relations, and Wellman and Gulia's (1999a) review of research on Internet communities argued that offline relationships may be strengthened as well as weakened. Surveys by Parks and colleagues found evidence of intimate and well-developed online relationships, often leading to real-world interactions, even though the frequency and duration of online relationships tend to be shorter (Parks and Roberts, 1998), and involve issues extending beyond the Internet communities (Parks and Floyd, 1996). Scherer's (1997) survey of college students showed no difference in sociability between those who exhibited Internet dependencies and regular users, even though they use Internet communication more and had fewer face-to-face social interactions. A Pew Research Center (2000) poll reported that Internet users indicated that e-mail had improved their social and kinship connections, and more so for those who had used the Internet longer and more frequently. Indeed, there were fewer social isolates among users than non-users, and users had a greater number of recent social contacts and greater access to social support. Riphagen and Kanfer (1997) showed that e-mail users and non-users had similar numbers of relationships, but users had more distant relationships, suggesting that e-mail reduced local interactions. Katz et al. (2001) found similar results, except that users had more offline relationships in general.

Survey results show diverse, extensive and growing use of the Internet for social interaction. In 2000, those online activities reported by the greatest percentage of the AOL (2000) respondents were doing research (91 per cent), communicating with friends and family (90 per cent), getting information about products to buy (80 per cent), getting news (76 per cent) and getting health information (70 per cent), and then there were many others (less than 60 per cent). The percentages reporting these activities, especially for doing research and getting health information, were higher for those online for more years. Of 12 new activities mentioned by the AOL (2000) respondents, the greatest interest was for sending/receiving pictures to and from family/friends (92 per cent). Of the AOL respondents, 44 per cent reported that they were more in touch with brothers/sisters, 40 per cent more in touch with aunts/uncles/cousins, 23 per cent more in touch with parents, 12 per cent more in touch with grandparents, and 38 per cent more in touch with other relatives, because of being online. Amazingly, 41 per cent reported that they had reconnected with people they had lost touch with – for an average of 12 years! And 48 per cent reported using instant messaging, especially to connect with friends (82 per cent) but also with family and relatives. And these percentages were somewhat greater for those who had been online for more years. Women were more

likely to include family members on their instant messaging contact list (for siblings, 40 per cent compared with 26 per cent for men, and for parents, 35 per cent compared with 24 per cent). People also spent time together online: 80 per cent with their children, and 68 per cent with their spouse. In the AOL survey, overall, people still preferred the telephone to online for communicating with friends (57 versus 35 per cent) and family (71 versus 24 per cent), but these differences decrease for those people who have been online more years.

The online activities most frequently mentioned by those 9 to 17 years of age in the AOL youth study were: write letters/notes to friends and relatives (61 per cent), use instant messages (55 per cent) and play games (53 per cent) (another dozen activities were reported by fewer than 40 per cent of respondents). The activities reported noticeably more by young women were writing letters/notes, using instant messaging, getting information about rock stars or music groups, visiting chat rooms and writing to a penpal in another state or country. Young users had an average of 35 people on their instant messaging contact list, with those 15–17 years old reporting an average of 43.3 others. These contacts were primarily friends but also included various relatives, and 3 per cent reported that people they met online were on their instant messaging contact lists. Initial results from a study of survey responses to the National Geographic Society's website in the fall of 1998, from 35,000 Americans, 5000 Canadians and 15,000 others, showed that (1) high e-mail contact does not reduce other forms of interaction, (2) younger people used e-mail more for friends, near and far, (3) older people used e-mail more for kin, near and far, (4) women used e-mail more with kin at a distance, but (5) overall, communication frequencies for men and women were basically the same for all media.

The Internet at Home and in School

Tapscott (1997) discusses more than just access by, or representation of, different demographic groups on the Internet. He describes the very generation that is growing up with the Internet, what he calls N-Gen (the net generation, consisting of those aged 2 to 27 in 1997). This generation watches less TV, and is able to communicate through e-mail, develop web pages and start businesses. He emphasizes that these young users take advantage of the Internet to play, explore their world, try out different identities, express themselves through personal web pages, develop relationships with friends and family and become socialized. These activities are centred in interactive use of the medium and communication with others, as opposed to the more passive use of traditional mass media, and are (still) centred in a text-based medium, which promotes written literacy (see also Cherny, 1999; and Kellner, this volume).

Lacking facial expression, body language, tone of voice, clothing, physical surroundings, and other contextual information, the N-Gen has had to innovate within the limitations of the ASCII keyboard. As a result of this, a new script is emerging with new contextual information, subtleties, and to ... Almost all of the adults we encountered who work with N-Geners commented on how articulate they are as a group, and that the youngsters had views on subjects that seemed advanced for their age. While this is to be expected from the Net-savvy elite demographic group, we can expect that the interactive environment will strengthen verbal ability and the expression of ideas in every group. (Tapscott, 1997: 64, 70)

Tapscott gives as just one example the rise of youth e-zines, which 'provide a portrait of the culture of interaction – the antithesis of broadcast culture' (1997: 84). He suggests that early online communication will foster greater value for collaborative skills, based on 'peer-oriented relationships rather than hierarchies within families and companies' (1997: 212).

Tapscott summarizes one teacher's experience when she ran a community computing centre in New Haven, Connecticut. The class with the computer-savvy teacher became more computer literate than the other classes who had teachers who knew little about computers. The teacher would bring in people who worked in New Haven to talk to the kids about their job. The kids would send e-mails to these visiting guests. 'It broke down the power dynamic that exists between a kid and an adult' (1997: 149). A third of the respondents in the AOL (2000) youth study felt that going online had made them a better student, 31 per cent said it had improved their language skills, and 56 per cent preferred going online for help with their homework, compared with 27 per cent for the library and other resources. Critics argue as to whether familial relationships are affected by increased Internet use.

Tapscott argues that families may become closer as a result of Internet use in the household: 'The new media hold the promise of strengthening the family by moving many family activities [such as working, learning, shopping] dispersed by industrial society back into the home' (1997: 252). Since children today quite frequently know more about computers than their parents, the children often rise in the family hierarchy. 'Open families adopt the interactive model ... The traditional authoritarian model is changing due to the generational gap in that, for the first time, children know more than their parents about something really important' (1997: 251). For example, in the AOL (2000) youth survey, 61 per cent reported going online at least once with their parents, 44 per cent (52 per cent for those 15–17 years old) said they had some influence in getting their parents or family members

to go online, and 66 per cent said that they had helped their parents get online or use the Internet (see also Buckingham, this volume).

Respondents to the UCLA (2000) study indicate that their use of the Internet helps to create and maintain friendships as well as communicate with the family. Indeed, the two most popular Internet activities reported by users were web surfing/browsing (81.7 per cent) and using e-mail (81.6 per cent) – that is, general information seeking and communicating with others. Concerning the attributes of the Internet, respondents were most satisfied with their ‘ability to communicate with other people’ – more so than with relevant information, goods and services, ease of finding information, and connection speed. Most (89.0 per cent) of the parents in the study reported that their children spent about the same time with their friends since they started using the Internet; 4.0 per cent indicated more time, and 7.0 per cent less time. While 27.5 per cent reported spending no time on the Internet together with other household members, 47.1 per cent reported doing so at least some time each week. Indeed, more people reported feeling ignored because of others’ television use (36.5 per cent) than Internet use (24.7 per cent). Overall, 91.8 per cent indicate no change in the time members of the household spend together since becoming connected to the Internet. On average, Internet users feel that the Internet has slightly increased (3.3 on a scale of 1 [greatly decreased] to 5 [greatly increased]) the number of people regularly contacted, and extent of communicating with family and friends; 26.2 per cent reported having online friends (on average, almost 13 friends) that they have never met, and 12.4 per cent have met in person someone they first met online (on average 5.6 such new friendships).

Tapscott claims that children sacrifice TV time, not social time, to use their family’s computer. He also maintains that video games are often intended for multiple users. The ‘average AOL home spends almost 15 per cent less time watching TV than the US average ... More than 40 per cent of respondents in a recent survey conducted by Jupiter Communications and the KidsCom Company said that they watch less TV because of their internet use ... In a study conducted by Odyssey, respondents were asked, “What activities are you typically taking time from to go online?” The number one answer, at 30 per cent, was television’ (1997: 30). Kids who are part of this generation are not wasting time on the net. ‘Time spent on the Net is not passive time, it’s active time’ (1997: 8–10): they read, investigate, learn how to solve problems and compose their thoughts. Of the respondents to the AOL (2000) youth survey, 62 per cent (but 73 per cent of young men) reported they would rather go online than watch television, though young women (54 per cent) would prefer the telephone.

Indeed, Tapscott states that, for the first time

ever, children are taking control of critical elements of a technological revolution:

Net based communications usually starts around 11 for girls and 13 for boys – basically during adolescence. At these ages, children seek autonomy and the creation of an identity. The Net seems to provide a vehicle to explore the self and for children to establish themselves as independent, self-governing individuals ... Of the potential 28 per cent of American children who had potential Net access at the end of 1997, between 6.7 and 7 million individual N-Geners are characterized as active users; 85 per cent–90 per cent of this population ... were participating in live chat on a regular basis. (1997: 56)

On the one hand these media foster increased openness, but on the other they reduce the consequences or judgements associated with unmediated interactions. Tapscott reports some beneficial aspects of what are usually seen as harmful uses of the Internet. For example, youth see cybersex as safe, experimental and mutual; they ‘can always disconnect if disinterested or harassed ... They seem more interested in developing both the emotional and the physical side of real relationships, with the Internet as just one more “safe” mode of communication’ (1997: 172–3).

Associations with Other Media Use

Kayany and Yelsma (2000) argue that households comprise both social and technological dimensions; so the addition of new elements such as online media affects the organization of roles, relationships and functions. Their study of 185 people in 84 households showed that online use affects time spent mostly in TV viewing, some in telephone use, some in newspaper reading, and a small amount in family conversations, with greater declines reported by children. Both informational and entertainment functions of media were rated as more important by more frequent online users. The authors concluded that online media seem to be displacing informational functions for TV, but not entertainment functions for either TV or newspaper.

James et al. (1995) studied home-based media via an online questionnaire, finding that computer bulletin board use reduced time spent using TV, books, telephone, and letters. Robinson et al. (1997), analysing data from a national probability telephone survey (1994, 1995), found that print media and CMC use seem to reinforce the use of each other, but there was no relationship to radio or TV use. Thus, displacement effects are most likely among functionally equivalent media, and among media that depend on the same limited resources, as well as provide similar resources, uses and gratifications.

Other studies find that use of computer and Internet decreases some other media use. Reagan (1987) reported that young computer users are less likely to use radio, newspapers, local and network TV. The Pew Research Center (1997) found that online news consumers viewed TV news less, and the GVU (1997) online surveys reported that web surfing replaces weekly TV viewing. Coffey and Stipp (1997) analysed home media diaries, finding only a very small percentage of respondents use their computers during prime time; few people have a computer in the same room as television (Media Metrix, 1997); heavy computer users are not heavy TV viewers (Crispell, 1997); and greater computer use is associated with greater use of print media (Perse and Dunn, 1998). A European survey reported that from 50 per cent to 60 per cent of British, German, Swedish and French Internet users said they were watching less television since going online, and 29 per cent reported reading fewer magazines and newspapers. However, 90 per cent indicated that online usage did not interfere with their normal social life (Internetnews, 2000). Jessel (1995) and Miller and Clemente (1997) also show that nearly a third of online users reported spending less time watching television than before their online usage. AOL's (2000) representative national Internet users' survey also found declines in other media use, but less so than the European study. Users reported watching less television (24 per cent compared with 16 per cent in 1999), reading fewer print newspapers (19 versus 13 per cent) and reading fewer print magazines (18 versus 11 per cent), and those percentages generally increase the more users have been online.

Internet users report that they use more media overall than non-users (UCLA, 2000), especially books, video games, recorded music and radio. However, users report watching about 28 per cent less television per week than do non-users. More (67.3 per cent) also rate the Internet as an 'important' or 'extremely important' information source, compared with 53.1 per cent for television and 46.8 per cent for radio.

One study applying the uses and gratifications approach (Ferguson and Perse, 2000) analysed data from an online survey and a three-day media-use diary from over 200 college students at two universities that had extensive Internet access. Entertainment was the most salient motivation for web use, after required school activities; after search engines, the most frequently visited sites were entertainment and sports. Thus, the play component of the web may displace TV viewing, as entertainment is a primary gratification from TV. However, little web surfing seems motivated by the need to pass time. The second most important motivation for watching TV is for relaxation, but web use was not much motivated by this,

probably because it requires active choice and cognition. Finally, companionship motivations were not salient for web use: 'There was little evidence that the World Wide Web can substitute for personal interaction' (2000: 170), or even much parasocial interaction, but this may change with greater bandwidth, which would allow for streaming video and responsive Internet telephony.

Applying a uses and gratifications perspective to survey responses from 279 students, Papacharissi and Rubin (2000) found that the Internet was used as a 'functional alternative to face-to-face communication for those who are anxious about face-to-face communication and who did not find face-to-face communication to be rewarding' (2000: 188). Those who rated the Internet as providing more social presence were more likely to say they used the Internet to help pass time, for convenience and for entertainment. They note that interpersonal utilities and information seeking are distinct types of uses; for those with satisfying interpersonal relations, the Internet was used more for information seeking; for those with unrewarding or anxiety-inducing interpersonal relations, the Internet was used as an alternative medium for social interaction, and such users had a greater affinity for the Internet. This set of results reverses the causality of the Kraut et al. (1998) study: in this interpretation, the Internet provides greater freedom of expression, fewer visible requirements for interaction, and fewer stressful personal interactions. 'These findings highlight the potential of the Internet as a social medium that can augment our socializing capabilities' (Papacharissi and Rubin, 2000: 193).

LaRose et al. (2000) also challenge Kraut et al.'s (1998; 1999) results, which indicated that Internet use by new adopters was associated with increased loneliness, depression and stress over a one- to two-year period. LaRose et al. argue that one factor possibly explaining these differences is experience with the Internet: many of the studies finding a negative association between sociability and Internet use involved novice users. Experienced users would tend to have greater facility in managing social cues online, would have less stress about learning the technology, and may have been less likely to have recently moved which would reduce their access to social networks. Also, the Homenet respondents studied by Kraut et al. reported overall low levels of depression, so they may have not had as great a need for social support.

As Kraut et al.'s results might have been specific to novice Internet users, LaRose and his colleagues analysed a new set of respondents, 171 students. What did they find? Internet use influenced depression through two paths. Prior Internet experience and Internet usage increased self-efficacy, which

reduced online stress, which, as part of general life hassles, increased depression. Second, Internet use leads to more e-mail sent to known others, which increased social support, which decreased depression. However, Internet use also created Internet stress, leading to more depression, which could be mediated by Internet self-efficacy. Also, they found reduced depression in Internet users among these college students, as 'they may have used the Internet to obtain social support rather than to replace it' (LaRose et al., 2000: 12). There was, essentially, no relation between Internet use and depression, but general stress (hassles) and Internet stress *were* significantly related to depression. Thus, novice users may not have enough expertise to develop the self-efficacy necessary to moderate the new Internet stresses. So, while the central point in the Kraut et al. studies is that Internet usage displaces strong (face-to-face) social ties with weak (online) ties, it may be more accurate to say that some people turn to the Internet to obtain strong social support, especially when they can't find that in their unmediated situation, and do so because of online advantages (such as anonymity for sensitive topics, specialized expertise, group norms, etc.).

Franzen (2000) also critiques the Kraut et al. (1998) results, by analysing differences between responses to an online survey from 15,842 Internet users (20 per cent response) and a mailed survey to a control group of 1196 non-users (50 per cent response). He points out that the Homenet study used no control group, so could not test for maturation or local history effects (such as participants concentrating on Internet use early on in the study because of the novelty). Franzen's study found few differences in network size (in fact non-users reported 10 while users reported 12) or time spent with friends between users and non-users (though users had 23 per cent more friends), controlling for a variety of demographic, social and media factors. There was no effect of the number of months since first starting to use the Internet on network size. Consequentially, however, he shows that the number of people contacted online via e-mail increased the number of close friends, but longer or more intensive time spent on the Internet did not affect that number, or time spent socializing with others, though it did slightly reduce overall network size. So it is the ability to contact others via the Internet that leads to the associated increase in social networks. Respondents also reported many positive effects of e-mail usage on social networks. He concludes that 'Internet users are, on average, not socially isolated but quite to the contrary a relatively socially active group', and also suggests that larger social networks lead to greater e-mail contacts which in turn generates larger networks.

Increasing Diversity of Voices

The Internet can be a great communication tool for those who have a hard time meeting new friends owing to physical handicaps, diseases or even poor social skills (Wallace, 1999). These people can easily find others like them throughout the country and around the world, providing support and a chance to decrease loneliness or low self-esteem. Jones (1997) emphasizes that online communities can especially support otherwise marginalized cultures – both those discriminated against, and those acting as sources of discrimination against others. For example, the 7800 older SeniorNet members from the US and Canada say the network helps them ease their loneliness: 'It hosts welcoming events, celebrates anniversary parties, and mourns when one of its members dies' (Bollier, 1995: 3). The WELL is another example of an Internet community; WELL members live in the San Francisco Bay Area and often meet face-to-face (Rheingold, 1993). Other online communities include health support groups for people with illnesses that are not frequent enough to foster local physical communities (Rice, 2001).

Certainly the Internet has provided possibilities for viable communicative spaces for feminist networking and interaction (see Harcourt, 1999; Terry and Calvert, 1997). Harcourt in particular considers how the Internet might be used to support women's empowerment in developing countries, to bridge cultures, both local and global, and to coordinate women's issues at international conferences and working groups.

Internet users may increase their tolerance for a greater diversity of views, because the content of the message, not the physical appearance of the messenger/writer, is emphasized. However, as Hill and Hughes (1998: 184) point out, just because people have the opportunity to build friendships does not mean that they will be amiable. New forms of online expression also include virtual sex, alternate cyber identities and electronic stalking (Civin, 1999; Odzer, 1997). Odzer, in particular, argues that while the interaction occurs in virtual and fantasy environments, the psychological and emotional relations are real in both experience and consequence. Indeed, she puts forth online eroticism as a valid form of emotional relationship and self-growth. Others, however, analyse online sex as one manifestation of loneliness, isolation and depression.

At the other extreme of social relations, Cobb (1998) discusses how online technology and spirituality are reinforcing and convergent. Indeed, the transcendent transformations in technology can be seen as ongoing God-inspired creation. Consider, for instance, that the experience of cyberspace is in some ways the antithesis of materialism, being largely non-material itself, and an untapped

manifestation of the human collectivity. And what might it mean about human nature when artificial intelligence does satisfactorily mirror human actions, intentions and communication? Certainly there are many online religious communities and websites (from the most orthodox to the most fantastic), all supporting humans' needs for and expressions of spirituality. On the other hand, as with critiques of online communities in general, it may be difficult to avoid overemphasizing the individual's own experience, at the cost of real, personal religious relations with other humans, and with the inherent self-submerging nature of great religions.

Potential Transformations

More extravagantly, Levy (1997) suggests a transformation not only from a material economy to an information economy, but farther into a 'social economy', or a collective intelligence mediated through cyberspace, where interactions, relationships and communication become the central resource and social infrastructure, fostered by information and communication technology. This is precisely the argument of social capital, where the value-added and positive network externalities (or public goods) aspects of shared knowledge, collaboration and social networks cannot be captured, processed and mass produced. This rise of the role of social interactions, now unimpeded by physical, cultural, language and temporal boundaries, will bring great challenges to traditional notions of countries, nationalities and economies.

Others, such as Robertson (1998), argue that because scientific theory or our analytic ability, now augmented and even superseded in some cases by computing power, can generate cumulative as well as discontinuous change, the current transformation is clearly revolutionary. Indeed, he argues that the computer and information revolution will be more transcendent than language, writing and printing, in terms of consequences for knowledge, culture, education, entertainment and ordinary life. Johnson (1997) makes a somewhat similar claim, equating the rise of various computer interfaces (the hardware, software and usage patterns) with the development of literacy. One of the ways he constructs this argument is to reject the dichotomy between technology and art, so as to be able to consider artifacts such as Gothic cathedrals and hypertext both as instances of interfaces.

Levy (1998) goes further in conceptualizing the possibilities of online identity. Rather than oppose 'virtual' with 'real', he places both in a larger typology that also includes 'possibility' and 'actuality'. Virtualization has been occurring in many social domains, from contacts to intelligence as well as to identity – indeed it is an inherent aspect of the human mind, because cognition and action are both

social processes. He feels that this virtualization does not replace or destroy personal identity, but rather augments and transforms it.

CONCLUSION

This chapter has reviewed research literature and results concerning three primary social issues surrounding the increased use of the Internet: access, civic and community involvement, and social interaction and new forms of expression.

While some evidence indicates that the digital divide is decreasing or even disappearing with respect to gender and race, differences in income and education are still great, and in some studies increasing. The general lag in access and use may create enduring and subsequential negative social consequences, persisting even after later adopters achieve full access. There are many barriers, obstacles and challenges to more equitable access, and some of those may be deeply embedded in social and cultural contexts and differences.

Many critics are quite pessimistic about the impact of Internet use on civic, political and community involvement. People may use a less diverse range of media, individuals' actions may be less private, online activists may be more extreme, users may have difficulty assessing the vast amounts of information available, people may basically reinforce their prior beliefs by participating only in selected interest groups, and the greatest current threat may be the growing concentration across media industries. Some conceptualizations of the attributes of the Internet and communities reject the notion that organic communities can thrive in mediated, online form, as they constitute secondary and distant relationships. Further, individual privacy is threatened, especially by commercial interests, and online communities typically are bound only by a single shared interest. More fundamentally, the nature of current 'real' communities can be debated, as some evidence (especially by Putnam) shows that various forms of social involvement have been declining for many years in the US, and that very few people actually interact densely with physically proximate neighbours; rather, they participate in thin local communities and dispersed family and work networks.

On the other hand, recent studies and surveys find that Internet users tend to be more interested in current events; campaigns and political activists have already started using the Internet for a variety of purposes; users are more involved in civic and political activities than non-users; and many government offices provide e-mail and web access. Nonetheless, real online dialogue among different interest groups is rare, and government access is typically one-way. However, many communities

are strengthened through online interaction, if only because of the lower obstacles, such as time, distance and need to initially know others personally before communicating. It's probably more appropriate to think of online interaction as complementing physical communities. Nonetheless, there are many vibrant and long-lived mediated communities, ranging from health support groups to dispersed cultural and ethnic groups. The very growth and intensity of online communities may well speak to the perceived decline in real communities, as humans seek out social support and interaction. Indeed, many aspects of relationships, emotions and identities are experienced as just as real through the Internet as they are over other media (such as the telephone) or face-to-face. There are several case studies showing that small communities have been reinvigorated through online systems. Researchers taking a more historical approach warn that there are likely few really revolutionary changes associated with new technologies, and people embed these new media within familiar social contexts.

Finally, concerning social interaction and expression, pessimistic perspectives claim that not only does mediated communication impoverish the nature of interactions, but online interactions can be deceiving, simplistic, hateful and transient. Some conclude that high or extended Internet use leads to isolation and depression, as weak mediated relations replace strong unmediated ones, and narrowly focused relations replace more diverse ones. However, both survey and ethnographic studies show that rich, fertile, diverse and expanded interactions are possible through the Internet. There are many online groups with impassioned members providing emotional and other resources to each other, and users regularly rate communicating with others – family, friends and new people they have met online – as their most favourite and important activity. Some studies show that interactive Internet usage replaces passive television watching, but that overall Internet users are greater media participants. The net generation may well be more literate, creative and socially skilled because of their early familiarity with the Internet, including trying out various aspects of their developing identity online. Interacting with teachers and other students is easier when supported by the Internet, and both students and patients are more likely to talk about sensitive issues online, possibly because of the protection of anonymity. A noticeable percentage of users meet new people they come to call friends online, and go on to meet these people in person. Several studies have specifically countered some prior research linking Internet use with isolation or depression, showing indeed that experienced Internet users may find greater support online, become more satisfied with their interactions and communication, and generate new relationships

through the ability to contact others more easily. Indeed, some speculate that the Internet can also foster greater tolerance through exposure to a wider diversity of voices, and even support transcendent and spiritual growth. All these possibilities may lead to major growth in our concepts of identity, groups and society.

While the uses and effects of many major communication technologies (such as the pen, telegraph, telephone, photocopier, memo), have been studied retrospectively, if at all the recent rapid growth of the Internet affords communication researchers a unique opportunity to describe, assess, predict and evaluate short-term changes as well as long-term developments. If the current speculation and research seem to indicate diverse, contradictory and simultaneous consequences, at several levels of analysis, this may be because that is fundamentally the nature of social change. However, it is far better to ground this understanding of the complexity of this major phenomenon in research than in speculation and assertion.

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