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Perspectives on Internet Use: Access, Involvement and Interaction

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After a brief interlude when it looked like Internet growth, at least in the US, was showing signs of leveling off, more recent numbers show access has again risen sharply. Between December 2000 and April 2002, the proportion of the US population with access to the Internet remained at approximately 59 per cent (Nua.com, 2001). Yet, recent figures show a rapid rise, from 66 per cent in 2003 to 75 per cent in 2004, representing over 200 million people in the US (Nielsen//NetRatings, 2004). Worldwide, the top ten countries (Sweden, Hong Kong, US, Iceland, Netherlands, Australia, Canada, Switzerland, Denmark and South Korea) show similar Internet access statistics, with 62 to 74 per cent of each country's population having access (Internet World Stats, 2004). Numbers are dramatically different when examined by region, with only 1.4 per cent of Africa and 7 per cent of Asia and the Middle East with access (Internet World Stats, 2005), but so are growth rates – 187 per cent for Africa, 126 per cent for Asia, and 228 per cent for the Middle East (for other figures around the world, see ClickZ Stats, 2005). In all it is hard to dispute the increasing presence and penetration of the Internet around the globe.

Along with this increased access come many social changes. This rapid adoption brings with it new ways to seek and distribute information, communicate with others, foster communities, and produce, share and sell goods, culture products and services, which naturally raises a vast range of enduring as well as new social and policy issues. This chapter reviews relevant research on three primary issues – access, civic, political and community involvement, and social interaction and forms of expression – by grouping arguments and results into pessimistic and optimistic perspectives. Although the phenomena are occurring worldwide, the following addresses largely US outcomes.

ACCESS

The first fundamental concern is about 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; NTIA, 2002; Schon

et al., 1999). New technologies may enhance or hinder access to information in a democracy (Deetz, 1989a, 1989b; Dervin, 1980; 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; Krendl et al., 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; Jansen, 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 (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; McConnaughey and Lader, 1998; Strover, 2003; see also the *Falling Through the Net* series by the US National Telecommunications and Information Administration (e.g. NTIA, 2002)).

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). Labour markets will prefer individuals with current or prior access to, experience with, and skills necessary for using communication networks. Learning new applications, software and technologies will be easier for those who already have a good understanding of the Internet and communication protocols (Carrier, 1998). Non-users are likely to face economic disadvantage: e.g. Bikson and Panis (1999: 156) discovered that employees who use 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 and awareness of communication activities such as decision-making and discussions at the workplace (Carrier, 1998). 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. Others report on how access can help individuals weather emotional crises, as well as gain the information needed to deal with local events, as UK farmers did during the 2003 foot and mouth disease outbreak (Hagar, 2003; Haythornthwaite and Hagar, 2004; Wall, 2002).

Pessimistic Perspective

Access to Computers and the Internet

Pessimism about access stems from a concern about unequal access, and thus of unequal advantage being derived from its benefits. Many studies show that minorities such as African-Americans 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). Even as access in numbers becomes more similar, studies then show that other measures such as amount of time spent online are lower for minority groups. Howard et al. (2002) show that of those who have access, more of the men, whites, higher income earners, higher educated and more experienced users are likely to be online; while 57 per cent of men will be online on any particular day, only 52 per cent of women will be; while 56 per cent of whites will be online, 36 per cent of African-Americans, and 49 per cent of Hispanics will be.

A number of studies have also shown how access by those in traditionally disadvantaged sectors – lower education, female, higher age, lower income, non-US regions – are slow to come online and thus slow to overcome the lack of experience online. An ambitious study by the UCLA Center for Community Policy (UCLA,

2000) analysed a panel of 2096 representative households across time, comparing Internet users with non-users and with non-users who became 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 education used the Internet. While access among American males and females is about even, with recent statistics even indicating more women than men online (81.7 per cent women aged 35–54, 77 per cent aged 25–34 compared to 80.2 per cent of men aged 35–54, and 75.6 per cent aged 25–34), the 2000 UCLA study showed a wide gender gap for those over 66 years old (18.4 per cent for females and 40.4 per cent for males). While the close of the gender gap in the US is a good sign, previously in North America – and currently in the rest of the world – more men than women were likely to have access to the Internet, thus still putting women in a catch-up position regarding use (Chen et al. 2002; Katz and Rice, 2002b; National Statistics Omnibus, 2000).

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). They compared 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) on measures associated with a large-scale 'life styles study'. The overall conclusion of the study was that 'the disconnected are, in fact, disadvantaged and disenfranchised' (2000: 1). 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), 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.

Often forgotten in considerations of connectivity are issues of dropouts. The UCLA (2000) study also notes 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) and Katz and Rice (2002a) report that this 10 per cent figure is fairly consistent in surveys they conducted in 1995, 1996, 1997 and 2000. So, full connection rates should not be treated as a line that, once crossed, no longer needs to be addressed, but instead as a mark to constantly work towards.

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). Not being able to find content online that has local or personal meaning, or represents one's culture, can also affect use of the Internet (Katz and Rice, 2002a; Warschauer, 2003).

Van Dijk (1999) identifies four general obstacles that affect the use of 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 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' (1999: 152). This is a style that is said to 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). These differences subdivide the potential user populations, and rather than creating a range from elite to excluded, the different uses may contribute to the reinforcement of differences across societal sectors.

Indeed, cultural, rather than strict economic, educational and racial differences are receiving increased attention, from both government and commercial studies. Rojas et al. (2004) identify other factors contributing to the digital divide, such as the interrelations among economic capital, cultural capital, ethnicity, gender and age. Often, 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.

There are other aspects of access in the US 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; Howard et al., 2002; Katz and Rice, 2002a) have been finding that at least racial and gender differences in Internet access disappear after other variables are taken into account statistically.

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, POLITICAL 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

The very differences associated with the Internet digital divide, relative to traditional outlets such as newspapers, radio and TV, could narrow the basis of political participation and government legitimacy (White, 1997). 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. 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 problematic, leading to concerns about the corruption or debasement of elections, and a consequent reduction in political participation.

Some theorists have argued that the Internet is destroying community groups and voluntary associations that are necessary for the democratic process to succeed (Putnam, 2000; 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). The Internet also often removes one layer of filtering of political information – that done by gatekeepers of the mainstream media. 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. (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.) 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.

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. 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. 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. 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 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.

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. Users in the Katz and Rice (2002a) study were more likely to participate in community and leisure organizations, but not religious organizations.

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 (Beniger, 1988; Gergen, 1991; Kiesler et al., 1984; 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 (1995: 12). The use of online systems to communicate with more distant others may reduce the vitality and integration of physical communities (Calhoun, 1986).

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). 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 characteristic 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.

However, Wellman (2001) 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. 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 (Johnson, 1997: 69). Putnam (2000) argues that active involvement and participation in community have 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. 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. 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.

Optimistic Perspective

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 Katz et al., 2004; 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. 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. 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).

Stacey Horn's (1998) account of ECHO, the New-York-based virtual salon whose members also physically meet at monthly gatherings, reinforces the idea that online behaviours, relations and concerns are essentially the same as those of physical communities. Online communities can reinforce and complement, even create and foster, physical communities and interest in local culture. 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). 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.

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. 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 (1993) 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. 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).

SOCIAL INTERACTION AND FORMS OF EXPRESSION

Although the actual architecture, and initial intention, of the Internet was 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 (Gergen, 1991; Hiltz and Turoff, 1995; Parks and Floyd, 1996; Turkle, 1996; Wynn and Katz, 1997; see also Baym, this volume).

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 (Beniger, 1988). Many have argued for the socially isolating and psychologically depressing effect of (at least extreme) Internet use (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 and 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).

Shapiro and Leone feel that 'the more time we spend online, the less time we will have to interact directly with our families, our neighbours, 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.

Optimistic Perspective

Increased Frequency and Diversity of Interactions

The optimistic perspective increasingly sees the Internet as a medium for social interaction. 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). 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.

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 and Rice (2002a) 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 these percentages were somewhat greater for those who had been online for more years. 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.

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 the 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) centered in a text-based medium, which promotes written literacy (see also Cherny, 1999). Tapscott 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).

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. Sixty-one 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 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). A 2002 AOL survey of 6700 teenagers and parents of teens reported that 81 per cent of teens aged 12–17 use the Internet to e-mail friends or relatives, and 70 per cent use it for instant messaging; for teens aged 18–19, usage rises to 91 per cent and 83 per cent, respectively.

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 in 1994 and 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). 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. 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.

Franzen (2000) analysed 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). 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. 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.

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 consequential 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 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.

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.

NOTE

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