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New Media Society 2006; 8; 73

DOI: 10.1177/1461444806059871

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Coming of age with the internet:

A qualitative exploration of how the internet has become an integral part of young people's lives

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Abstract

Analyzing autobiographical essays written by 72 young adult college students, this study investigates how coming of age concurrently with the internet and related technologies has influenced these young people's lives. An understanding of how the technology is influencing the various domains of their lives provides a window on what internet use may be like for future generations. Essays revealed insights into four primary domains: self, family, real communities, and virtual communities. Within each of these domains, participants' responses tended to focus on key dualities. Additionally, these young people report a growing dependency on the internet for activities ranging from managing their daily lives to building and maintaining virtual communities.

Key words

generational media use • interactive media use • media dependency • online social interaction • qualitative research

In the 1980s, 'interactive' technologies began to proliferate. These ranged from video games to proprietary computer-based communication

systems such as CompuServe and Prodigy (Pavlik, 1998). In the 1990s, the internet began to grow beyond its research roots with wide public access to the internet through the first world wide web browser beginning in 1993 (Leiner et al., 2000). At the same time, a generation was coming of age. Today's college students grew up with video games and many began using the internet before they came to college. A recent study by the Pew Internet & American Life Project found that college students are early adopters and heavy users of the internet (Jones, 2002).

This pivotal group of young people has been studied as they were progressing through school and as they reached young adulthood. However, as Buckingham has noted, 'As in the case of television, much of the research has been preoccupied with the search for evidence of negative effects; and much of it has been based on implicitly behaviorist assumptions' (Buckingham, 2002: 79).

The primary goal of the current study is to move beyond behaviorist assumptions and listen to young people's own experiences with new media technologies. In particular, this study seeks to understand how the internet is integrated into their daily lives and their social interactions. This study examines self-reported experiences of 72 young people who are on the cusp of adulthood, yet most are close enough to childhood to remember it well. By telling their own stories they open a window into their past and present use of interactive media. Furthermore, these young people 'are tomorrow's shapers of society' (Miller, 2001). An understanding of how new technology is influencing the various domains of these young people's lives provides a window on what internet use may be like for future generations.

LITERATURE REVIEW

The literature reviewed at this point in the study is minimal for two reasons. First, the research question addressed by this study is broad: how is the internet integrated into young people's daily lives and social interactions? A wide range of literature relates to this subject – from studies of computer use in education to examination of how multiple personalities are managed online. To review such a large and diverse body of literature is unmanageable in the scope of a single journal article. Second, the research question is best addressed through qualitative analysis that allows themes to emerge from participants, rather than testing relationships among variables previously identified in the literature. The literature reviewed here is limited to a brief overview of studies focused on young adults.

Studies about the internet and young people often focus primarily on pre-teen children rather than young adults (see for example: Buckingham, 2002; Facer and Furlong, 2001; Facer et al., 2001a, 2001b; Holloway and Valentine, 2000; Hutchby and Moran-Ellis, 2001; Livingstone, 2003;

Montgomery, 2001; Ribak, 2001; Sefton-Green, 1998; Tarpley, 2001; Valentine and Holloway, 2002) although some studies have examined teenagers – often in comparison to pre-teen children (see for example: Casas, 2001; Clark, 2003; Livingstone and Bober, 2003; Livingstone and Bovill, 2001; Sefton-Green and Buckingham, 1998; Subrahmanyam et al., 2001). Livingstone's studies (Livingstone, 2002, 2003; Livingstone and Bober, 2003; Livingstone and Bovill, 2001) of children and young adults provide some of the most comprehensive examination of young people and new media. She frames new media use as a conduit, a language, and an environment.

The Pew Internet & American Life Project conducted a comprehensive study that focused specifically on college students' internet use. The study found that college students are early adopters and heavy users of the internet. They are more likely than the general population to be online, check email, use multiple email addresses, browse for fun, download music files, and use instant messaging. They also reported that the internet has enhanced their education. They use the internet for contacting professors, conducting research, working on projects with fellow-students, and receiving messages from academic-oriented email services. College students also report that the internet has changed social life on campus. They use the internet to communicate socially, for entertainment, to easily and conveniently stay in touch with friends, and to forward messages to friends and family (Jones, 2002).

Other studies have suggested that young people's online social life mirrors offline relationships: computer activities provide support for offline friendships; are mainly devoted to ordinary yet intimate topics (e.g., friends, gossip); and are motivated by a desire for companionship (Facer et al., 2001b; Gross et al., 2002). Some studies have also explored specific behaviors of young people such as online dating (Clark, 1998), online musical explorations (Boiarsky, 2002), internet addiction (Hall and Parsons, 2001), and compulsive online shopping (LaRose and Eastin, 2002).

A recent study of America's college class of 2001 reported that these students are almost 100 percent connected to the internet (Miller, 2001). This 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' (Rice, 2001: 124).

METHOD

Analysis of documents has a long history in the social sciences. Hodder (1994) notes that written evidence can be separated across time and space from its author. Documents are an important data source for qualitative researchers because the information they provide may differ from, or not be

available in, spoken form, and because the enduring nature of the texts offers opportunities for historical insight. One such type of document is the narrative account, in which persons write reflective accounts of experiences in their lives. Interpretive sociologists suggest that the ability to remember past experiences is particularly associated with epiphanies – those unique experiences that form milestones in the human life (Denzin, 1989). Relevant to the current study, written narrative accounts were examined to uncover insight into historical milestones associated with interactive media use. While in-depth interviews might have achieved similar purposes, the opportunity to take the time to make a written record gave participants more opportunity to reflect on both past and current experiences.

The narrative account used in this study took the form of autobiographical essays. Such essays can help capture the evolution of cultural patterns and how those patterns are linked to the lives of individuals (Marshall and Rossman, 1989). Theoretical and applied research on autobiographical memory has been used extensively in psychology (see for example Thomson et al., 2002). Researchers have used this technique as far back as 1933 to study human interaction with media (Blumer, 1933). Four recent studies adopted this research method to contemporary media settings. Barnhurst and Wartella (1991) examined life histories in which students provided information about their experiences with newspapers. Spangler (1989) explored American students' experiences with television. Aidman and Ginossar (1998) studied Israeli students' television experiences. Matthews (2003) examined how the first generation to grow up with cable television and VCR technology recall their media-viewing experience.

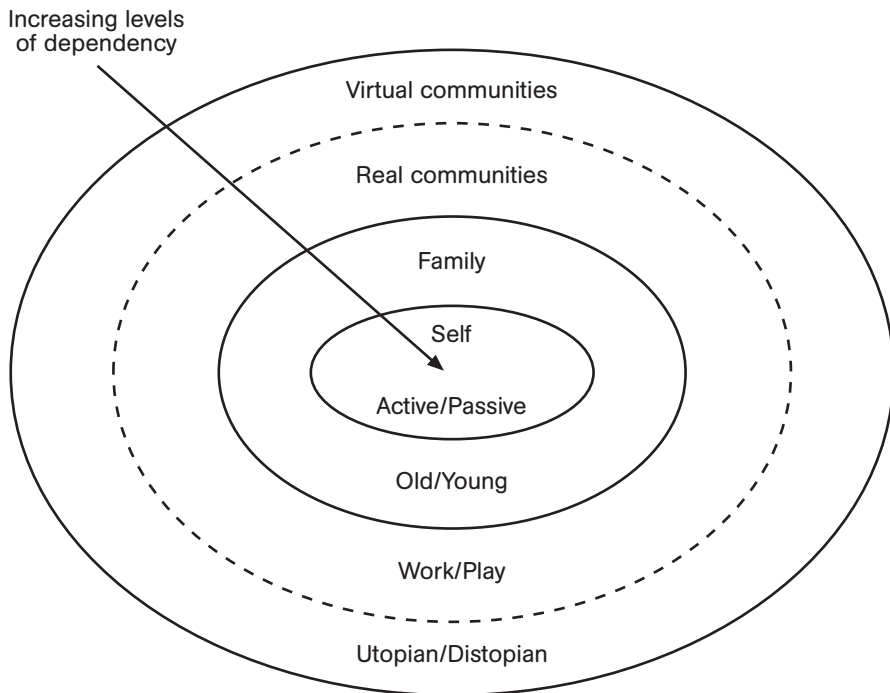
College students are an ideal study group for life histories of interactive media. They are young adults whose memory of childhood and teenage media use is relatively fresh but who are mature enough to have started building lifetime patterns of media use. And, as noted previously, this group's formative years correspond to accelerated growth and usage of interactive technologies.

Between 1998 and 2000, a total of 72 undergraduate and graduate students in communications were asked to write their personal histories of interactive media use. Participants were born between 1975 and 1980 and thus were between the ages of 13 and 18 when the world wide web became widely available in 1993. The essays were written between 1998 and 2000 when participants were between the ages of 19 and 25. Students were asked to recall their experiences growing up with the internet and related technologies.

This study incorporated techniques described by Glazer and Strauss (1967) in their seminal work *The Discovery of Grounded Theory*. Corbin and Strauss (1990) contend that qualitative data, like their quantitative cousins,

can be systematically evaluated. Autobiographical accounts provide data by which to generate grounded theory, a process of linking and relating subcategories of behaviors and interactions by denoting conditions, context, strategies, and consequences. This procedure was conducted in three steps.

The first step, open coding, involved compiling all 72 accounts into a single computer file. Data was then broken down into units of information that could be systematically sorted. Researchers reviewed the autobiographical accounts line by line, looking for passages that were relevant to the research question. The second step, axial coding, involved identifying key topics and themes that had unfolded in open coding. By grouping like descriptions and ideas together and considering intervening conditions, patterns emerged from the data. These patterns were determined inductively by evaluating each unit of information through a method of consistent questions and constant comparison, as described by Berg (2000) and Strauss and Corbin (1990). In the final step, selective coding, researchers attempted to put together a picture of what had emerged from open and axial coding – bringing all the pieces that summarize what participants were communicating into a whole. This coding process has been conceptualized in a model that is presented in Figure 1.



• Figure 1 Domains and dualities

FINDINGS

Each of the concentric circles presented in the model represents a domain or sphere in which the internet has affected the lives of these young people. Discussion of findings starts with the inner sphere, the self, and works outward to virtual communities. In each sphere participants seemed to focus on a key duality. These are discussed in the context of each sphere. Quotations from participants are used to support or illustrate insights relevant to each sphere. Additionally, key related literature is examined for each sphere. Finally, the issue of dependency – a central reoccurring theme that overlaps all spheres – is discussed at the end of the findings section.

Internet and the self

Essays frequently discussed ways in which informants, their friends, and family members define themselves by using interactive media. For many, learning to use the internet and related technologies was a coming of age ritual. One informant told about how his younger brother defined himself through interactive media use:

My 18-year-old brother, Mark, has developed in the short time he has had home internet access a propensity to frequent a chat room entitled 'Gen-X.' He already has a regular nickname, much as CB radio users have handles. He calls himself 'Insane Marcos,' and I believe real life mirrors fiction in his case. He does everything the news media say people do in chat rooms, exaggerating his height and changing his hair color. He is also a rather shy person in real life, a characteristic he sheds when engaged in the anonymity of the internet and email. (Brian)

While some informants found the internet allowed for the creation of a new persona that could be accepted 'as is', others found that the new self they had developed through their online activities was alienated. One young woman wrote:

The ironic and somewhat comical part of my rapture with the web is that few of my friends and family members really know or understand how far reaching and powerful it has become. They may know, for example, that I have a job that has something to do with the web. They may also know that I check my email more often than they do. Perhaps they have heard me mention the website I built for an art teacher's group. But usually that's about it. (Terri)

For many, the experience of personal development through online media use was primarily positive. Some saw it as a natural and necessary part of human evolution: 'I think people were born to enjoy interactivity and love communicating interactively' (Park). However, for others, defining themselves through their online media experience was difficult and frustrating. They often reported feeling intimidated by others who knew more about the technology than they did: 'The fact that I did not feel

comfortable using computers while most of my classmates used them with great ease made me feel mentally inferior' (Thea).

The breadth of information available via the internet sometimes made self-definition challenging: 'Everyday I am presented with someone's views on politics, world peace, and culture; sometimes I have to step back and remind myself what my own opinions are' (Fred). For some, the opportunity to easily find non-dominant world views, had a major influence on defining who they are:

The internet has changed my life. I now almost exclusively buy organic foods. I no longer eat red meat because of information I retrieved off of the American Medical Association's website and from sites authored by various environmental organizations. The web introduced me to my favorite intellectual, Noam Chomsky, who forever altered my perception of the world. (Brian)

A key duality that emerged in terms of how participants used the internet for self-definition and meeting personal needs was its active/passive nature. Many informants saw interactive media as inherently active. They must do things such as searching, writing, and chatting in order to use the medium. 'People log onto the internet precisely because it is interactive. They want to participate in something' (Terri). But others reported that they were constantly seeking for ways to streamline their online activity and get the same benefits without having to be so active all the time. One informant reported using portal sites to set up a customized format that would deliver only the information she wanted without making her have to seek it out everyday: 'I like that I can go to one of these sites and personalize a page for myself that will then give only the news, stock quotes, horoscope, weather, and information that is relevant to me' (Liz).

Byam, a leading scholar in the field of online interpersonal relationships, noted that: 'The extent to which people use CMC as a means to invent new personas, to recreate their own identities, or to engage in a combination of the two and the ways in which they do so are issues central to the construction of a computer-mediated social world' (Byam, 1995: 156). Most of the participants in the current study did not report extensive 'dabbling' in online identity. Most described the internet as a place that helped them solidify their offline identities. Their stories were consistent with those of young people in Europe who reported that they use media technologies to help define themselves as individuals with unique identities within the context of family and social structures (Livingstone, 2002).

The findings of the current study are consistent with studies that have suggested online identities are not substantially different from those developed offline. For example, one study found children build both private and public identities through their interactions on the computer screen.

Their online lives are no less 'real' than those they live offline (Valentine and Holloway, 2002). Another study found that in the context of online-dating sites, the disembodied anonymity that characterizes the internet acts as a foundation for building trust and establishing real-world relationships, rather than the construction of fantasy selves (Hardey, 2002).

The participants in this study focused more on instrumental rather than on hedonic uses of the internet (for a discussion of the hedonic/instrumental dichotomy see for example, Childers et al., 2001; Novak et al., 2000; Ruggiero, 2000; Subrahmanyam et al., 2001). However, consistent with the literature, even though the participants were somewhat goal driven in their media use, the goals they followed were their own rather than the mandate of an educator, parent, or other outside force. Facer and her colleagues (Facer et al., 2001b: 213) reported: 'When we explore the reasons why young people themselves value computer expertise it becomes clear that the attainment of objectives of relevance to their everyday lives provides a powerful motor to drive acquisition of these skills.' Even as they seek to balance the active demands of the medium with their desire to simplify media use, young people are objective driven and are focused on making their everyday lives easier.

Internet and the family

Families played an important role in interactive media use. Parents were facilitators who bought the family's first computer, subscribed children to their first internet service, and encouraged students to write home via email when they went away to college. Typically, fathers were presented as enablers while mothers were viewed as reticent in their use of communication technology. One informant wrote:

My father enjoys the online services, email, and surfing the web. My mother complains that my father is glued to the computer constantly, to the point of not participating in other activities. Conversely, while not an active participant, my mother seems intrigued by the concept of email and how my father can instantly communicate with a friend in Sweden or relatives on the West Coast; as well as the amount of information available. (Doug)

Siblings also played a key role for many informants. Many reported that an older brother or sister had introduced them to the internet. Others reported that a younger sibling was a computer genius. Many informants reported a kind of generation gap with themselves as the 'boundary spanners'. Older relatives were reticent to adopt communication technologies. Parents weren't much better off, than grandparents and older siblings were only slightly more advanced than parents. But participants saw themselves as relative dinosaurs by comparison to their younger relatives who are learning technology at a much younger age.

The theme of 'staying in touch' with relatives appeared frequently. Some informants reported that a primary reason for using email was to be able to maintain low-cost and convenient communication with distant family members. One young woman reported on an approach she had taken:

The internet also gives me the capability to keep in contact with my entire family across twelve states at an inexpensive cost. I send a newsletter about once a month to all my friends and family who do not live in town (that's all of them). It is a convenient way to let everyone know how well I am 'growing' and it is the least time consuming method of communication. (Tara)

For many informants, email and the web provided a low-cost substitute for the telephone or a low-effort substitute for writing letters, for others the shift to electronic communication was more substantive. One young man wrote:

Whereas before I rarely discussed matters of emotional significance with my dad, my emails now are soliciting dating advice. It was – and is – a peculiar transformation of the relationship. We still rarely talk in person about anything of real personal significance. My relationship with my dad is definitely closer on the electronic level. (Brian)

A central dichotomy that emerged from examination of internet use and the family was the contrast between old and young. For example, one young woman reported: 'There are two distinct views about interactive media in my family. My sister and I use the internet in almost every facet of our life – reading about current events, email, online shopping, horoscopes, etc.' (Debbie). By contrast, her parents were hesitant and concerned: 'Neither of them feels confident or comfortable enough to browse the internet and use it to its full potential. They seem almost afraid of the internet' (Debbie).

For the most part, participants viewed the internet expertise of younger generations in positive terms. But many also recognize value in older ways of doing things. For example, one young man expressed concern that his younger brother would probably never read a newspaper or buy a magazine because all the information he needed was on the internet. Old communication tools were associated with old ways of doing things (e.g. picking up the phone to call family and friends) and new media with convenience. But even though many informants venerated the young people who were on the leading edge of technology, they also recognized that the internet was being adopted by older generations in their families. They viewed this intergenerational communication in positive terms: 'I did not truly realize the power of the web until the day my grandmother sent me an email' (Fred).

Much of the literature on internet and family communication focuses on children who are still living at home. Many of the patterns that are

identified in that literature seem to be continuing as young people move away from home. For example the kinds of father/son relationships Ribak (2001) explored in the context of computing were also found in the current study. The internet seems to have the power to enhance father/son relationships among some participants. But the troubling stereotyping of mothers as technology have-nots that was found among younger children (see for example Facer et al., 2001b; Pasquier, 2001) also continues among the sample of college students examined in the current study. Livingstone found that this casting of the mother as the technologically inept one occurred among children of all ages and actually became more prominent as they grew older. By contrast, the father was seen as the primary expert among the youngest children, while teens were most likely to see themselves or their brother as the family expert on computer use (Livingstone, 2002)

The young women participating in the current study were not likely to cast themselves in the same role as their mothers. Unlike young girls who often have been found to develop gendered-based play habits online (Clark, 2003; Vered, 1998), most of these women seem to see themselves as having internet use behaviors similar to those of their male counterparts.

Real communities

Slater (2001) reported that new media have been studied less for their uses within existing social relations and practices, and more as a new social space that constitutes relations and practices of their own. Though the distinction is sometimes arbitrary, participants in the current study seemed to differentiate somewhat between 'real' and 'virtual' communities. As illustrated by the dotted line in the model (Figure 1), the line separating real and virtual communities is often fluid and permeable. For these participants 'real' communities were those that existed offline. The internet often helped them to develop, manage, and grow these communities, but the communal experience existed firmly in the offline world.

Even though parents might have provided enabling technology, it was often peers who most strongly influenced informants' adoption of communication technologies and shaped their first experience of adding an internet component to their offline community. Sometimes peer influence slowed adoption:

Initially my friends had a negative effect on my attitude towards interactive media. No one around me really knew what to do with it. At first it seemed so complicated and the future of it so uncertain that there seemed to be no reason why the average person would need to know how to use it. This attitude rubbed off on me. Perception soon changed, and everyone around me was quickly trying to figure out how to use interactive media. (Lisa)

More often, peers inspired informants to get online so that they could 'play' together. A young man described how he made friends with boys that

were outside of his social set primarily so that he could learn more about interactive media:

In 6th grade, some new friends of mine invited me over to their houses. They had been friends before and were both a little on the nerdy side, but they were nice and they kept talking about their computers at home, so I ventured with them. They both showed me my first experiences on the internet. They would connect through Prodigy and chat and play games with other people. I was very surprised that you could see what someone else was typing on your screen. (Brad)

International students explored ways in which technology enabled them to participate in their 'home' community while studying abroad. This ability to participate in a real, but distant, community ranged from the routine reading of newspapers in their native language to real-time chat with friends at home. One international informant explained her need to communicate in real-time to maintain her distant community:

Writing simultaneously online gives me an added sense of interactivity and a feeling of proximity. I go as far as sacrificing my early morning sleep to get up and get online with friends in Greece who are seven hours ahead. My mornings are dedicated to writing online and sending email while drinking my morning coffee. Early mornings have become the favorite part of my day and early classes seem to disrupt my daily interactive ritual. (Stacey)

'Offline' friends also often used 'online' technology to plan their social events. One reported that she and her friends worked together online to plan a trip to celebrate their graduation from high school:

We began surfing the web to get information on any tropical destination. We found enough on Cancun, Mexico to convince our parents that it was safe enough and reasonable for eleven girls to spend an entire week after graduation. I remember how powerful I felt going to my parents and presenting them information on Cancun that I had received from the web. (Debbie)

Many informants focused on how they used the internet to build their communities of work. As they work with classmates on team assignments, the internet is an indispensable tool for coordinating their group efforts: 'All of my classmates communicate with me via email. It is the only real way to contact someone in college' (Leslie). These work-related communities also sometimes extend to their part-time jobs, which require that they be savvy users of the internet.

This work/play dichotomy was a central tension in the discussion of real communities. For many of the informants, the internet and related technologies were about work. They did research online, coordinated their

class teamwork by email, registered for classes online, and used technology to organize their lives. But it also affected their play. Many reported using the web to search out entertainment opportunities and buy tickets online for activities in the 'real world'. For others, 'play' actually occurred online. They played multi-user games, fantasy sports, and engaged with friends in chat rooms. Many informants saw online work as necessary and appropriate, but had grave concerns about online play:

Using the web for a purpose is one thing and using it simply for entertainment is another. Many people find it easier to deal with a machine rather than interacting with each other. When dealing with a machine you have total control over what information you will get when and how. Most importantly, the machine is not demanding or expecting anything from you. Interacting with people can put a certain amount of pressure on you. (Pam)

The current study provides evidence that the real communities in which we live, work and play can be influenced by the internet. Community norms can help shape definitions of technology and vice versa (Borgida et al., 2002). Communication technologies also often influence definitions of community. Holloway and Valentine (2000) reported that children are active in the construction of their own life-worlds, interpreting and making sense of the communication technologies within the context of their own 'local' cultures of computing.

Some research suggests that a common use of the internet is for maintaining contacts with friends and family and to build stronger ties with communities that also exist offline (Johnson, 2001). Such uses for maintaining ties with family and friends were woven throughout participants' essays. Studies have also suggested that online social life mirrors offline relationships in many ways. Computer activities provide support for offline friendships, are devoted to ordinary yet intimate topics (e.g., friends, gossip), and are motivated by a desire for companionship (Facer et al., 2001b; Gross et al., 2002).

Virtual communities

Even though the internet was often used for sustaining real communities, community-building was not bound by geography or by a sense that only relationships with an offline component were valid: 'This new medium has had a profound effect on how I view the concept of community. It has become so easy to create a new community, or find a community that is centered around a specific interest, hobby, or belief that you may have' (Lisa). One young woman explained how a specific health issue has served as the catalyst for a community that exists for her primarily online:

I am an active online advocate of scoliosis research and education, which I got involved with after joining a listserv for scoliosis patients like myself. . . . I

email Congress members and hospitals on a regular basis to push for funding and studies on spinal surgery or I correspond with teenage girls who are scared or worried about their scoliosis and want to hear from someone who survived it. Before getting involved with the scoliosis mailing list, I was never a participant in any type of social movement. The web enables me to spread a message far and wide with great ease, which I think is the major impediment for many people who want to be involved with a cause, but don't have the time or the means by which to do so. (Terri)

Many informants reported that the internet had expanded their world view and made them recognize they are part of a global community. However, many informants warned about the potential downside of communities that were defined by technology and interests, rather than geography and relationships: 'This type of community should not replace basic social interaction. We cannot become glued to our computers and forgo all other human contact' (Lisa).

An interesting sub-theme that occurred frequently was the expressed belief in communities built around technology experience. In other words, by virtue of their technological capability, participants become part of an elite community: 'Once I had my connection and email account I felt like I was living in a small elite and had to exploit this great opportunity I was given' (Sophia). One informant expressed this concept in terms of how his generation had evolved together through common media use experiences:

Since they [friends] too are part of my generation, we have all shared in similar experiences, and deal with the same aspects of interactive media daily. We have all been in college to see the almost overnight change from card catalogue files, to online card catalogue. It happened so fast that when I ask them, they cannot remember when the sudden switch actually took place. (Chris)

Many informants expressed the idea that their community and/or society was defined through technology – almost a technological determinism. Whereas radio had defined their grandparents' generation and television their parents' generation, they were defined by the internet. They were able to form virtual communities of interest and maintain those communities through email and common online experiences. One young man wrote:

I use email frequently throughout the week to send in lineups for my fantasy football league. The league is set up through a web page so it basically requires me to use interactive media if I want to participate in the league. I have made fantasy football a hobby and I probably spend three–four hours a week looking for information about it. (Joe)

While most reported that online social interactions had many positive benefits, several informants expressed concerns about the effects that online socializing had on their offline social lives. One young man wrote: 'I began

to lose the really intimate relationships I had with the friends I saw on a regular basis at school. I could open up with new friends online on a level that I couldn't with friends I saw everyday' (Ben). Another young woman wrote at length about her concerns that online social interaction would destroy other important forms of human interaction:

We should not forget that interactive media are based on a computer, which is not a human being. We can write emails to friends, buy online without entering a store, chat with unknown people, maybe fall in love with unknown people all without moving from our chair. We can even forget about the outer world, the real one. All this, though, is very different from a real chat with a friend, a day of shopping, and a first date. This is, as far as I am concerned, the biggest risk about the spread of interactive media: losing contact with the world around us. We must not forget that a computer will never be able to replace personal relationships. After all, we all need to interact with real people and places. The emotion that derives from facing such masterpieces as *La Gioconda* could never be replaced by the most detailed virtual tour of the Louvre. In the same way, a real hug or smile will always transmit emotions that are impossible to feel through an apathetic computer screen. (Sophia)

In their discussion of virtual communities participants often focused on the interlocking dualities of positive/negative, and utopian/distopian worldviews. Many informants expressed excitement about coming of age at the same time that the internet, web, and related technologies spread throughout society. They saw many positive benefits for the future with interactive media as a central part of life. But even amidst this positive view, they sometimes saw negatives such as fear of technology and social isolation.

In many essays, the duality focused on social effects of technology. Some envisioned a future utopia in which technology would enable an informed society to function more efficiently. But they also recognized potential problems with this kind of participatory democracy. One informant wrote: 'The internet represents the democratic process at its messiest, with all its rough edges – the free exchange of ideas. It brings citizens closer to government in a way that empowers everyone more equally by providing a channel for personal expression' (Brian). Other utopian images included the ability to communicate with anyone anywhere about anything. This social use of the internet was seen as a good thing, but many also noted distopian potential embedded in the technology:

Man is a social being that is supposed to interact with other human beings according to a certain set of values. Truth and honesty are some of them. By hiding our identities behind a monitor we just lose so much of the essence of life. Some people are so hooked up to computers that they neglect almost all other activities in life. (Thea)

This tension that was expressed in these participants' essays is also reflected in much of the literature about the building of disembodied

communities online. Riva and Galimberti (1998) presented the positivistic view that new media genuinely enhance communication and social interaction. But other researchers have found some negative social consequences: men and women experience somewhat different online social worlds (King, 2001), the medium can increase power inequalities (Spears et al., 2002), and introverts become more introverted online (Kraut et al., 2002). Researchers have also pointed out that the internet and related technologies can create ‘communities of practice’ in which only those who speak the *lingua franca* and have easy access to the technology can participate in new forms of community (Livingstone, 2002). In short, the jury is still out on relationships between computer-mediated communication technology and social interaction.

Dependence

Many informants reported that they depended on the internet and related technologies to help them define themselves and their communities. They needed it to be able to maintain social interactions. One young woman wrote that the internet ‘filled a void that we did not know we had’ (Kathy). Another wrote about the way that her dependence on the internet affected almost every aspect of her life:

I use it all the time, and I believe that my life would be very different without it. I would not be able to look up the things that I wanted to without calling to get a brochure, going to the library, or ordering a book or catalog. My phone bills would be extremely high, and I would not talk to my mom as much. I really do not see what people did before the internet was invented. (Natalie)

This quote and many similar observations point to the deep personal need that participants feel for the internet. The arrow depicting this dependency in Figure 1 is intended to show that the dependency exists in all spheres of the individual’s life but develops most intensely when it becomes highly personal. It is the ability of the self to utilize internet tools (to be able to look up the things that I want) that is presented first in Natalie’s description. But she also feels the need for the internet in maintaining relationships – particularly those that are close, such as her ability to communicate with her mother.

Informants reported that they were ‘expected’ to be connected and if they weren’t they would not be able to participate in their community. A young man wrote: ‘Every year I feel that more people are requiring me to use the computer to interact or search for information’ (Jack). A young woman noted that:

Classmates and friends are not just using the internet; it has become a vital influence in their lives. It has changed the way that they are able to research,

and participate in classes. Social interaction has been effected as well, as email becomes a major form of communication (Esther).

For some, dependency was described as addiction: 'I have become hooked on the web, trite as it sounds' (Terri). One informant reported dependency had turned into need that was driven by others in his community:

I think I actually need to use the internet on a daily basis in order to maintain all of my relationships with people that are currently established. If I don't 'instant message' or email my girlfriend on a daily basis, she will get worried about me because that is our main method of communication. (Matt)

Other informants looked forward to their futures and expected this dependency to increase. Not only would they need to stay in touch with their college friends after graduation, but also they would continue their use of the internet for staying current, shopping, information searching, etc. Communication technologies would affect both their personal and professional lives: 'I realize that I need to be able to use the internet well for my future career' (Jillian).

DISCUSSION

A major contribution of this study is that it allowed young people to speak in their own voices about a wide range of influences that the internet has had in their lives. Even though results were presented based on different 'spheres of influence' it is clear that the internet is pervasive. The concentric circles used in the model (Figure 1) show that the internet contributes to every aspect of participants' lives. A major finding to emerge from the research is the duality of feelings that interactive media technologies evoke for young adults. These yin and yang attitudes toward the media technologies in their lives are manifest within a context of dependency.

The results of this study relevant to the role of interactive technologies in the family are intriguing. Participants described clear differences in the way their generation used technologies compared to the generations of their parents and grandparents. In almost every instance, older generations were characterized as not understanding the potential of interactive technologies. While the current research sheds light on how young adults build 'community' around interactive technologies, more research is needed on how technologies define a generation, and how technological use by generations unifies or isolates the generations within a family from each other.

For young adults, the family plays a key role in their introduction to interactive technologies with parents and siblings being especially important. Participants' views about the roles of parents varied, with fathers being characterized as primary facilitators and mothers as laggards. What is left

unanswered is how these views affect the parent/child relationship and other dynamics in the family. Are the roles of parents in the modern family changing because of media technologies such as the internet? If so, what role does technology play in defining how children view their parents? Do media technologies function to strengthen sibling bonds? What role, if any, do interactive media technologies play in formulating gender stereotypes in the family? Are stereotypes being perpetuated or diluted with the help of newer media types? Among parents who use interactive technologies, what role do the technologies play in learning how to be a parent? Has the internet taken on the role of household babysitter, a role once held by television? Are attempts being made by parents to structure the use of these new technologies? Future research that seeks answers to these questions is needed and will shed more light on the role of media technologies in the changing dynamic of the modern-day family.

Results of this study suggest that even within groups of siblings, media use differs. Participants described older siblings as less adept at using interactive technologies, while younger siblings were often described as far ahead of participants in their use of the technologies. This finding suggests that while the young participants in this study grew up with the internet, within their age cohort vast differences and skill levels are evident. Previous research somewhat supports this assertion (Shaw et al., 2001). The current study suggests that studies on media use may be best accomplished by breaking down research subjects into the smallest possible age categories.

The current study also supports the assertion that young adults build and form social relationships online. Wilkins (1991) hypothesized that internet users incorporate linguistic features normally associated with oral conversation in their computer-mediated communication. This oral style may explain why participants become friends so easily. Future research should investigate if and how 'internet speak' differs from more traditional patterns of communication.

The findings of this study also suggest that many bonds formed online migrate offline to more traditional settings. Parks and Floyd (1996) concluded that online relationships often develop and are then broadened to include family and friends. Further, these relationships grow beyond the computer into other communication channels technologies such as the telephone or the postal service. Morrison and Krugman (2001) documented that computers increase social action external to the family. While the findings from this study suggest that participants perceive differences in real versus virtual communities, longitudinal studies are needed to determine whether the lines between these two types of communities blur as relationships are developed. Further research is also needed to examine how important these relationships become and how they influence the social

dynamics of young adults. What is clear from this study, however, is that the computer is taking on an increased social role for young adults.

Several participants in this study commented on how the nature of interactive technologies facilitated being able to participate in various things, such as special interest groups or political organizations. Because young adults are often characterized as disinterested in such topics, this may be viewed in a positive light. However, the involvement described by the participants varied markedly from what sociologists have traditionally described as participation in social groups. Previous research has documented that interactive computer networks facilitate political participation and social movements (O'Sullivan, 1995). This is true particularly among sympathizers of organizations who act professionally on behalf of causes with great public appeal and low radical potential (Diani, 2000). Future research might investigate if (and how) the nature of computer-mediated participation in social groups differs from traditional participation. In the desire of young adults to participate in something, are virtual means of participating replacing more traditional means? If we are able to protest on line, is our society adversely affected because we are not participating in the flesh? Politically, how are virtual constituencies viewed by those who determine government policy? The answers to these questions may offer insight into the nature and role of computer-mediated participation in society.

The results of this study have implications for the way that US educators approach the internet in their classrooms. First, American students should be taught that their use of the internet is not the norm. In fact, recent research in Europe shows that internet use patterns there are still dominated by the patterns associated with early adopters of a new medium (Rogers, 1995). That is, users are most likely to be teenage middle-class boys (Livingstone, 2002). Many participants in the current study believe they are 'typical' internet users and that their access to technology is representative of the access available to everyone. In reality, college students are a privileged group whose use of technology is the exception rather than the rule. While the effects of technology on society can be quite positive – witness the role of medical websites for providing information that facilitates early diagnoses of many illnesses – young adults must not forget that access to information technology is a barrier to be overcome. One possible solution to this misconception is to interweave technological perspective through courses dealing with international issues. For young adults to realize that their experiences are atypical, they must first be aware of the technological environments of other cultures.

Because the participants in this study were communication students, they may have more training in and expectations for use of communication technologies than do other students even within American universities. This

is a possibility that should be explored in future research. Future research should also seek more diversity in terms of nation of origin as well as nation in which the student is studying. Several participants in this study were international students, but their experiences were not analyzed to explore for cultural differences. A different methodological approach would be needed for such a study.

Second, dependency on the internet is so heightened that educators must take initiatives not to let alternative ways of doing things fall by the wayside. For example, many of the participants in this study noted how the internet had replaced the need for traditional 'library' research. In a sense, for this group of young adults, a building full of books had been replaced by a computer and an internet connection. Students need to be counseled that the internet does not replace the need for traditional forms of research and instead should be viewed as supplemental to the learning process. As educators, we should instruct students that media technology is a tool, a means to an end, but not an end in itself.

The results of this study suggest that media technologies may threaten to overwhelm young adults. Many respondents reported that they feel in danger of losing themselves amidst the wealth of information available on the web. In the face of large amounts of information, participants want to step back and remind themselves of what their own opinions really are. The world wide web poses an interesting dilemma. While a vast amount of information helps shape the identity of these young adults, it also threatens to overwhelm them. In some instances, participants expressed frustration with their ability to discern 'good' information from 'bad'. In this realm, educators also play a role. The problem of information overload suggests that media literacy programs are needed to help young adults critically evaluate and sort through information available on the web. While young people should be encouraged to explore new views and expand their worlds, they should also be educated in how information is assembled and disseminated and how persuasive arguments are framed around information.

One positive finding from this research is that young people are aware of both the benefits and the dangers associated with interactive technologies. However, just because they are aware of technology's potential negative effects, it doesn't mean their use is tempered. It is possible that technology so defines this generation of young adults that not using it means running the risk of being left out.

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