ED 385 280   IR 055 563

AUTHOR   Bollier, David
TITLE   The Future of Community and Personal Identity in the
                Coming Electronic Culture. A Report of the Annual
                Aspen Institute Roundtable on Information Technology
                (3rd, Aspen, Colorado, August 18-21, 1994).
INSTITUTION   Aspen Inst., Queenstown, MD.
REPORT NO   ISBN-0-89843-166-2
PUB DATE   95
NOTE   57p.
AVAILABLE FROM Aspen Institute, Publications Office, 109 Houghton
                Lab Lane, P.O. Box 222, Queenstown, MD 21658
                ($10).
PUB TYPE   Collected Works - Conference Proceedings (021)

EDRS PRICE   MF01/PC03 Plus Postage.
DESCRIPTORS   *Community Change; Community Characteristics;
                Computer Networks; *Family Environment; *Futures (of
                Society); Information Networks; *Information
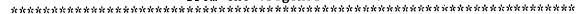   Technology; Public Policy
IDENTIFIERS   *Intermediaries

ABSTRACT
        The 1994 Aspen Institute Roundtable on Information
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building scenarios of the "new home," the participants expressed many
significant insights into issues of personal identity,
community-building, and setting boundaries in our lives and
environments. This report captures many of those insights and
observations. It is intended to be a catalyst for readers to
understand the consequences of the trends in communications and
information technologies, to think more about these issues, and to
consider appropriate new actions to take as individuals, as workers,
and as citizens to have better lives and communities. The report
first concentrates on the impact that electronic networks might have
on the future of communities, geographical and virtual. A second
major theme explored is that of changes in personal identity
occasioned by electronic networking in both the physical spaces of
home and geographical community, on the one hand, and the virtual
communities called MUDs ("Multi-User Domain") and MOOs (MUDs using
Object-Oriented computer code), on the other. A third area of focus
is that of the changing nature of intermediaries in democratic
societies. The areas of public policy that are ripe for review are
described in the last section of the report. A paper entitled, "The
New Intermediaries" (Charles M. Firestone), and a list of conference
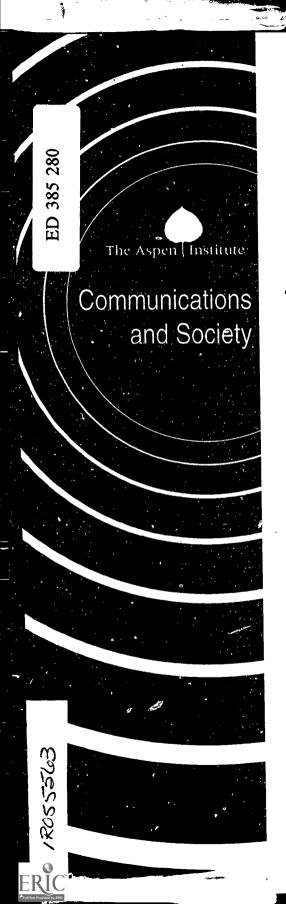participants are appended. (MAS)

ED 385 280

The Aspen Institute

Communications and Society

The Future of Community and Personal Identity in the Coming Electronic Culture

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2

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The Future of Community and Personal Identity in the Coming Electronic Culture

A Report of
*The Third Annual Aspen Institute
Roundtable on Information Technology*

Aspen, Colorado
August 18–21, 1994

By
David Bollier
Rapporteur

With a Paper
The New Intermediaries
by Charles M. Firestone

The Aspen Institute

Contents

Foreword

As the United States and other countries contend with the development of information and communications infrastructures for the next century, a variety of societal and personal issues arise. The Third Annual Aspen Institute Roundtable on Information Technology, held in Aspen, Colorado, August 18–21, 1994 began as a look at the changing nature of the home. But in building scenarios of the new home, participants bared many significant insights into more interesting issues of personal identity, community-building, and setting boundaries in our lives and environments.

This report captures many of those insights and observations. It is intended to be a catalyst for readers to understand, as much as possible, the consequences of the trends in communications and information technologies, to think more about these issues, and to consider appropriate new actions that we might take as individuals, as workers, and as citizens to have better lives and communities.

One participant commented that a successful conference is to have one new insight that is actionable. Each year the Roundtable has progressed in its delivery of actionable insights. David Bollier's task and mission, in writing this report, is to capture and contextualize the many thoughtful interventions and profound observations of the conference participants in a way that is useful to the lay reader.

Previous Roundtables

Each year this Roundtable on Information Technology has brought together a diverse group of leaders and experts in technology, business, government, academia, and the non-profit sector to look broadly at some of the consequences of the rapid advancement of information and communications technologies. The cast changes each year, returning only a relatively small cadre of participants for continuity from year to year.

The first year, following a presentation by physicist Murray Gell-Mann, the application of theories of self-organizing complex adaptive systems captivated the thinking of the group. How do these theses, generally labelled "complexity theory," apply to the societal impact of these new technologies? The results of the meeting are reported in David Bollier's *The Information Evolution: How New Information Technologies are Spurring Complex Patterns of Change* (The Aspen Institute, 1992).

In 1993, the Roundtable sought to carry forward the thinking begun in the first meeting and apply it to issues of democratic governance and the workplace. In *The Promise and Perils of Emerging Information Technologies* (The Aspen Institute, 1993), Bollier reports on the deliberations. Of particular interest that year was the concept of "informed participation," introduced by participant John Seely Brown, in which a certain degree of synergy between knowledge and participation is required for effectiveness in either being informed or an effective participant. Brown and two colleagues illustrated how the new electronic technologies enhanced this process in a series of scenarios entitled, "Toward Informed Participation: Six Scenarios in Search of Democracy in the Electronic Age," which are appended to that Report.

The 1994 Roundtable

This year, the Roundtable sought to explore the changes in lifestyle arising from the electronic connection of the home to the outside world. As the organizers set the stage for the meeting to the participants:

> In the Twentieth Century, the home has become a respite from the commerce of work and public life, a place where one can pull back from the world, enjoy one's personal privacy, familial relations, and individual pursuits. Increasingly, however, people will be able to work, learn, pray, shop, participate in civic events, and even vote at home. This may allow for many more opportunities of individual participation in communities and activities from the home, in more leisure time, and possibly in more productive time at home. But it may also raise other questions about the

7

quality of one's life. The separation of work and leisure could evaporate, and the meaning of privacy, home, and community could change significantly.

The Roundtable then sought to build scenarios to address how the connection of a superhighway of information to the home might reflect on one's personal identity and the changing nature of communities. It also focused on intermediary institutions and functions in our society. Connecting this year's topic to prior ones, participants considered how these intermediaries might survive, change, adapt, and emerge in order to serve the needs of individuals and communities of the coming decade.

To help participants with these questions, Peter Schwartz, business consultant and author of *The Art of the Long View*, joined the Roundtable and led an exercise in building scenarios. These helped in eliciting some of the many insights contained in the ensuing Report. We also distributed a number of background readings among which was my truncated piece entitled, *The New Intermediaries*, appended to this report, which begins to explore the significance of the changing nature of intermediary institutions in our society.

The Report

Bollier's report reorganizes the material and discussion of the Roundtable to be more cohesive and coherent to the reader who was not present at the meeting. In so doing, he concentrates first on the impact that electronic networks might have on the future of communities, geographical and virtual. What in fact constitutes a "community" in the future world of electronic-mediation? What are the essential ingredients? How do the virtual and geographical communities interrelate, or will they "recombine" as one participant suggested? What impact do electronic networks have on the nature of one's relationships?

A second major theme explored by participants was that of changes in personal identity occasioned by electronic networking in both the physical spaces of home and geographical community, on the one hand, and the virtual communities called MUDs and MOOs (defined and explained in the report), on the other. Again, Bollier's mission here is to weave the observations and insights of

the participants into a contextual whole. Themes begin to repeat from those that arose in the section on communities: for example, the blurring of boundaries between the physical and virtual, between self and machine, and between serving one's self and responsibility to others.

A third area of focus, one that I personally find most significant and have been trying to address in various contexts, is that of the changing nature of intermediaries in democratic societies. (See Appendix.) Who are the new mediating forces in the emerging world of electronic mediation and what are the functions that they will play? What are the deficiencies, subtle and apparent, that await us? The contributions of the participants to this subject are noteworthy, and should spark additional work in the field. (This will be a major focus of the Fourth Annual Roundtable in the summer of 1995 entitled, "Electronic Commerce: New Intermediaries in the Knowledge Economy.")

The Roundtable did not end with a series of observations, however. Rather, the final sessions of the meeting spelled out the areas of policy that are ripe for review. These are described in the last section of the Report. While it is not the function of the Roundtable to suggest any specific action at this point, this may very well be an area of closer attention in future meetings.

The Report captures many interesting new observations on the exciting new world ahead of us. I suspect that these will spark other ideas relating to this subject matter. The Aspen Institute would like to hear from those who would like to share these new insights with us.

Acknowledgements

David Bollier for his endless work in putting the fruits of the meeting to paper. We also want to acknowledge Amy Garmer, Program Associate, for her organizational and editorial help on the project, and Daniel Wright for production of this Report.

Charles M. Firestone, Director
The Aspen Institute
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Washington, D.C.

The Future of Community and Personal Identity in the Coming Electronic Culture

David Bollier

As new electronic .technologies continue to insinuate themselves into American life, they are prompting many far-reaching changes: new business practices, new patterns of social interaction, new personal habits. In trying to understand these changes, students of the "digital future" tend to focus on trends affecting markets, technology and public policy—all important drivers of change, to be sure.

Yet it is increasingly becoming clear that there are other influential forces at work, forces which can only be described as personal, social and cultural. A "creative negotiation" is occurring as new technologies and people are thrown together. In unpredictable ways, people variously accommodate themselves to the new systems, balk at them, and/or deploy them in creative new ways. In the process, the very terms of community and personal life are being changed. But how? And in what discernible patterns? Can we better plan the design and deployment of new electronic technologies so that they will have a more constructive social, civic and personal impact?

To explore this little-understood realm and suggest some fruitful lines of further inquiry, The Aspen Institute's Communications and Society Program brought together a diverse group of 27 experts: top executives from computer and software companies, information scientists, market research analysts, investors, public policy leaders, educators, and consultants. The conference, the third annual Aspen Institute Roundtable on Information Technology, was moderated by Charles Firestone, Director of The Aspen Institute's Communications and Society Program.

1

One key lesson of the gathering was that "soft" human factors will play at least as pivotal a role in the evolution of the new information technologies as the more obvious "hard" factors of economics, technology and public policy. Observers of the new technologies must begin to take cognizance of this fact by beginning to imagine provisional new "mental maps" for understanding this domain. Too often, noted Peter Schwartz, President of Global Business Network, a consulting firm, we unwittingly rely upon obsolete mental maps that misdirect our energies. He cited the land maps used by Spaniards from 1605 to 1685 which depicted California as an island. Despite firsthand testimony to the contrary, missionaries relied upon the erroneous maps and actually hauled their boats over the Sierras expecting to find water. "Once you believe a map, it is very, very hard to change," Schwartz noted. "That's the problem we face today. How do you break out of a mental map? It's a profound struggle." The problem is particularly acute for "experts," said Schwartz, because they tend to be invested in existing mental maps and are thus more resistant to entertaining alternative ones.

A key goal of this conference, then, was to explore how personal psychology, family dynamics and social relationships are shaping the new technologies, and vice-versa. Admittedly, the body of empirical information for charting this unfamiliar terrain is still somewhat fragmentary and speculative. Yet in the course of the conference it became abundantly clear that future mental maps of the electronic world need to incorporate many significant new landmarks.

I. THE FUTURE OF COMMUNITY

In assessing the impact of new electronic technologies, it is customary to consider how they affect individuals, or collections of individuals. Yet some of the most consequential effects are on the *structuring of community life*, and therefore on the kinds of individual behaviors that can take root and develop. Just as urban design or zoning laws affect how communities evolve and the spectrum of individual opportunities, so it is with the new

electronic technologies. Computer networks, the Internet, electronic mail and intelligent agents—among other new systems—are changing the structures of existing communities. They are introducing novel forms of public space, social communication and personal relationships. They are helping to create new types communities that transcend the space, time simultaneity of ordinary personal encounters—yet which are not strictly divorced from "real life" either. How are we to understand these hybrids? What are some of the long-term social implications of the new systems?

New Varieties of Technology-Mediated Community

The varieties of technology-mediated community are rich, experimental and expanding. But as hybrid communities that can exist simultaneously within several vectors (i.e., face-to-face, geographic regions, cyberspace), it can be difficult to understand how these "mutant" electronic communities really function. Perhaps the most notable feature of these new communities is their plasticity and voluntary nature. "There's a struggle going on between communities being defined for individuals and individually defined communities," said Ray Lane, President of Worldwide Operations for the Oracle Corporation. "The communities of the 1950s and early 1960s were generally more stable and defined. But now we have much greater choice and flexibility in defining our own communities."

One prime example of such a self-defined community is SeniorNet, an online network of nearly 7,800 older people in the United States and Canada. The members of SeniorNet use their computers to overcome the sense of isolation that often afflicts elderly people. Some members carry on their online relationships in person as well; others interact only online. But even in the latter cases SeniorNet members often develop quite meaningful and even intimate relationships online.

When the system first got underway, "it seemed a little cold," said Mary S. Furlong, President of SeniorNet. "So we created a 'hearth' where people could get together online. A 76-year-old man decided to become the bartender, and they call it their 'Online Cheers.'" SeniorNet has many of the characteristics of a local community. It hosts welcoming events, celebrates anniversary

parties and mourns when one of its members dies. But SeniorNet is not just about overcoming social isolation, said Furiong, but also about finding new ways to encourage the civic participation and use the formidable talents of elderly people in interacting with other, larger communities, such as national politics.

Another flourishing electronic community is the WELL, an online community of 12,000 users who live in the San Francisco Bay Area. There is a great sense of common purpose and mutual support among WELL users, reports Peter Schwartz. For example, when the WELL wanted to upgrade its computer system to improve service, it asked users to make pledges to help with the financing. Within 24 hours, the WELL had received sufficient advance subscriptions. "It was the community responding to itself," said Schwartz.

One reason for such loyalty and commitment, he observed, is the geographical proximity of most of the members of the virtual community. They interact with each other not just electronically but also face-to-face. The replicability of the WELL community will be tested soon, as its new owner, Bruce Katz, seeks to establish a series of WELLs in other metropolitan areas. Schwartz noted that the WELL model could be contrasted with the very different way that Prodigy or other on-line service subscribers interact with each other. Prodigy users function more as atomistic consumers, he suggested, than as a mutually supportive community whose members feel a passionate collective ownership in its activities.

Electronic mail is another robust technology-mediated vehicle for building community. Although some people complain that e-mail filters out the richness of face-to-face and even telephonic communication, others argue that e-mail enhances personal relationships. Ray Lane recounts, "I know of several relationships that were enhanced by their *not* having face-to-face contact. People could not express themselves face-to-face, but they could do so electronically." E-mail even helped Lane revive a relationship with his sister, from whom he had grown apart—a relationship that was difficult to nurture over the telephone. Another conference participant said that e-mail was an important vehicle in courting his future wife.

One of the more experimental, still-evolving genres of electronic communities are the MUDs ("Multi-User Domain") and MOOs (MUDs using Object-Oriented computer code). These communi-

ties exist in cyberspace only, and revolve around assumed *perso-nas* that computer users create for themselves in virtual spaces. While many MUDs are organized around a game or fantasy theme —cyberpunk conversations, "Dungeons and Dragons" sorcery and other role-playing—there are also MUDs devoted to quite serious and personal topics, such as sexual abuse. In essence, MUDs allow computer users to explore facets of their personalities in interactions with others, th ough a protective cloak of anonymity. Whether the communities are based on fantasy-play, intimate confessions or general discussion, the human relationships are real in the sense that they can have actual emotional consequences, both positive and negative. The functioning of MUDs and MOOs have been likened to the elaborate masquerade balls of the 18th Century.

Will the Technology Foster Community or Isolation? While there is little question that information technologies can foster positive kinds of community, many participants worried that they can just as easily promote isolation and alienation. "I'm concerned that interactive technology will be just as isolating as passive broadcast television," admitted Waring Partridge, Chief Strategy Officer of AT&T Multimedia Products and Services Group. "We may be moving down a path where people say, 'I'll have my [software] agent call your agent.' People will just drop out of the loop at some point. That's my nightmare."

But does the technology necessarily lead in this direction? Like many observers, Gary Lauder, Chairman of ICTV, Inc., an interactive television company, believes that the technology is more or less neutral; it does not inherently promote *either* community or isolation: "There is a risk that people may cloister themselves more, but in general, technology gives people more of what they want. If you want to be an isolationist, it will enable you to spend more of your time that way and enjoy it more. But most people, by their nature, are social animals," he said. "People will simply use the technology to find partners for tennis games, commuting or dates. The technology enhances the selection process."

To this, Waring Partridge demurred: "I don't believe that technology gives you more of what you want. It gives you more of *what you're familiar with*. That's the problem. It limits your

experience and gives you more of that experience. Which is why there is such a need for introducing serendipity into the electronic universe." But this may be putting matters too simplistically, also, objected Jerry Murdock of the Aspen Technology Group: "While some technology *is* limiting, just the fact that you can make more connections is, in my definition, adding to the richness of your life."

A critical question then becomes, When does technology enhance the richness of life and when does it diminish life? The use of sophisticated technologies, by itself, is not necessarily more satisfying to people. Consider the naive fantasies of some technologists who aspire, for example, to install "card-swiping" credit-card machines everywhere (ski lifts, vending machines), ostensibly to make transactions more convenient. Is that what people really want? "No," suggested Dr. Michael Hawley, Assistant Professor of Computer Science and Engineering at the Massachusetts Institute of Technology. "People want a system that knows something about them and has a little personality—like the doorman whose job it is to remember your name."

This desire for human connection, the building of community, is arguably what most needs to be cultivated, said Governor Gaston Caperton of West Virginia: "We have to use this technology so it won't further isolate children and families within their own little world," he said. "We have to show that individuals have a responsibility to a group larger than themselves, that we have an interdependence. We have a real lack of that. We need something to enrich the soul, human spirit or community."

Participants agreed that the yearning of Americans for a greater sense of community is pronounced. It can be seen even in the unlikely context of the QVC Home Shopping Network. Peter Schwartz noted that the average viewer of QVC watches for 56 hours before making his or her first purchase. Why? "Because until they feel part of the QVC community, they don't feel ready to buy," Schwartz said. In deploying new technologies, one important lesson seems to be the potency of the social impulse and the need to connect with others. This may help explain why direct-mail catalog shopping has been a relative failure in Europe and North Africa: it has no social dimension, a conspicuous deficiency for Europeans accustomed to the social and sensory pleasures of shopping.

What Makes for Community?

The rise of so many unusual technology-mediated communities brings to the forefront the question: What makes for community? How does one define "community" when electronic technologies are bringing together diverse strangers from around the globe in novel ways?

The Role of Geography in Creating Community. "There was a time," observed Schwartz, "when work, neighborhoods, schools and church were all geographically proximate, so it was natural that you knew your neighbors and the community. Then, as work moved beyond the community, friendships began to build up around work, resulting in an extended geographical community. Now, work has extended globally."

All this means that community often has less to do with geography than with other factors. Charles Firestone of The Aspen Institute noted: "A lot of people have very superficial relationships with their geographic neighbors even though they see them all the time, yet have very close relationships with professional colleagues who they may only see occasionally." One participant confirmed this, pointing out that she feels more personally connected to some geographically dispersed people attending the conference than to others who are nominally her colleagues at MIT. Bill Mitchell, Dean of the MIT School of Architecture and Planning, indicated that this phenomenon is becoming quite common, "because we are aggregating expertise in a very different way today. A research project pulls together expertise in a non-geographic way. This is occurring in all the professions today."

The larger dynamic going on here is the use of technology to gain greater control over space and time, as Dr. Craig Fields, former Chairman and Chief Executive Officer of the Microelectronics and Computer Technology Corporation pointed out. One could cite many examples: store-and-forward telephone calling, answering machines, video-on-demand, time-shifting on VCRs, voice mail, electronic mail. Technologies are helping to erode the notion of "location-driven communities," said Fields. The resulting discontinuities in how we experience space and time produce patterns of living that have some strange qualities. John Seely

Brown, Xerox Chief Scientist and Director of the Xerox Corporation's Palo Alto Research Center (PARC), noted: "There is this tension between being lost in a familiar (geographical) place and being located in an extended (electronic) space." The communities now emerging in cyberspace have their own distinct characteristics, but bear a resemblance to "a kind of extended family."

While geography may be relatively less important to the definition of community today, it is certainly not irrelevant. Mitchell cautioned that it is simplistic to bifurcate our analysis into activities that are site-specific and activities that are not. The future deployment of technologies will be based on a *fragmentation and recombination* of site-based and non-site-based activities, with a complicated logic that remains murky for the moment.

"You see this very clearly in banks," said Mitchell by way of illustration. "Once, the bank was a building on Main Street. It housed the bank's operations and its physical presence played an important symbolic role in representing the power and prestige of the institution in the community. Now banks are fundamentally a network of automatic teller machines. The physical pieces have been recombined in different places. Most of them do not sit on Main Street any more; they are in office building lobbies, student unions, airports, supermarkets and even in police station lobbies. We see a recombination of the fragments with a very different kind of spatial logic."

Just because electronic technologies can overcome geographic distances does not mean that geography no longer matters. "Geography doesn't go away," said Mitchell. "The logic of it just gets redefined—and for a very fundamental reason: Our bodies need to be parked somewhere, and we're not indifferent to that." We should not be deluded into thinking that our involvement in diverse "site-based material processes" (schools, business, shopping, etc.) will simply wither away, cautioned Mitchell. A good example, he said, is the restaurant, which links a complex material process to a very particular site. "The restaurant is not disappearing," said Mitchell. "Material possessions don't go away. The need for direct human care and supervision don't go away. The logic of place-based activity remains. But it seems to me what happens is that a lot of contiguity requirements that traditionally exist—

relations between particular spaces—do go away [as electronic technologies are introduced]. So you get a fragmentation of traditional architectural forms, and a recombination of the pieces in different kinds of structures."

Mitchell foresees a recombination of place-based activities with activities that occur in virtual places. The geography and logic of this recombination, however, is "very, very complicated," said Mitchell. "For me, as an architect, the real question is: How do these two systems—place-based activities and activities in cyberspace— map onto each other?" As more consumers buy ever-more-varied electronic technologies, he predicts, the fragmentation and recombination of functions are likely to extend to households as well.

What Sorts of Relationships Make a Community? Does it make sense even to use the term "community" in the context of cyberspace? After all, the kinds of interpersonal relationships in technology-mediated communities are quite different from those of conventional communities. In the latter, people share the same geographic location, common experiences, face-to-face encounters and a fairly heterogeneous mix of values. But cyber-communities do not necessarily share any of these features.

For Jerry Murdock, the indispensible condition of a community is mutual empathy. While the members of many affinity groups in cyberspace do have such empathy for each other, the groups are generally quite segmented, said Murdock. Individuals interact with very distinct groups (co-workers, like-minded aficionados, casual friends) in which they express fairly narrow aspects of their personality or interests. "The old sense of the term 'community' was richer and more multi-dimensional than the 'communities' of the electronic world, which tend to be more fragmented and limited," he said.

To Dr. Jorge Schement, Associate Professor at the School of Communication, Information and Library Sciences at Rutgers University, the essential nature of all communities has always been relationships. But, as he points out, we often misunderstand community as focusing on geography. Schement looks at it another way: "It may make sense to differentiate between *primary relation-ships*, in which you know a person in multiple dimensions, and

secondary relationships, in which you know a person in a single, or only a few, dimensions." The communities in cyberspace, said Schement, "are really made up of secondary relationships." This is all well and good, he continued, "but to lead a non-psychotic life, you still have to have primary relationships. And that's the tension we're seeing. We're moving towards more communities with secondary relationships and are somehow losing our grasp on communities with primary relationships."

But cyberspace communities do not necessary revolve around "secondary relationships," objected Dr. Sherry Turkle, a professor of sociology at MIT and author of *The Second Self: Computers and the Human Spirit*. She cited the SeniorNet member who, as she lay dying in the hospital, received dozens of calls and cards from her friends from the electronic network. Her imminent death was of great importance to the SeniorNet community; it was emphatically not a secondary relationship. Rather than make facile comparisons to other sorts of relationships, Turkle urged that electronic communities be accepted as "a new kind of private space."

There may be circumstances in which the "technology may be helping us put more energy into maintaining new kinds of primary relationships," John Seely Brown agreed. But he also worries that the opposite may be occurring: the technology may be getting "so good that it allows us to exploit secondary relationships almost as an excuse *not* to develop primary relationships." This is a potentially ominous development, Brown fears, because "it is not always clear where accountability and responsibility reside in virtual communities. By contriving a collective whose members may or may not share meaningful personal ties with each other, electronic technologies could be fostering behavior that is careless, irresponsible and even anti-social. The simulacrum of intimacy in cyberspace may induce some people to circumvent the hard work of primary relationships—just as some people find it more attractive to pursue a series of casual affairs rather than shoulder the hard work of making a marriage work. "The *sine qua non* of a real community is a mutual respect among its members, shared values and commitments," said Brown. "By this standard, many cyber-communities cannot really be considered authentic communities. There must be an ethos of responsibility and a means of accountability."

The interpersonal repercussions of electronic technologies bear some resemblance to those effected by the telephone. The telephone can help bring individuals together, but it can also make it easier for them to leave each other in the first place. And the new technology-mediated relationship is generally not as supple and rich as a person-to-person relationship. Is this dynamic at work with electronic technologies?

This is too narrow-minded, in the view of Dr. Marc Porat, President and CEO of General Magic, Inc. He argued that traditionalists need to entertain more open-minded, flexible notions of community: "Technology breaks down monolithic notions of communication and makes it more personalized and customized." The norms of ordinary face-to-face communities simply may not apply to the emerging cyberspace communities, or at least the correspondences are not simplistic. People are adopting new technologies and using them in complex new ways, said Porat. This can be seen in the migration of electronic technologies from people's work lives to their personal lives, which, at least in the case of electronic mail, has helped make personal communication "sweeter and sweeter and less imposing and daunting," said Porat. Other participants told of how their extended families, including techno-phobic grandparents, carry on robust, frank, ongoing conversations through e-mail. "The benefits and joys of maintaining relationships through technology outweigh the anxiety, fear and resentment," said Porat.

II. THE NEW INTERMEDIARIES OF RECONFIGURED COMMUNITIES

If the new communities of cybersp .ce are going to be fragmented, reconfigured versions of existing communities—as suggested by Professor Bill Mitchell in Part I—then what organizing principles will likely propel this evolution? What complicated logic will govern the organization of virtual communities? How will the sinews of interpersonal connection work?

A core insight emerged from the discussion: *the complexion of technology-mediated communities will depend critically upon the*

kinds of new intermediaries that arise to bring disparate people and institutions together. Historically, individuals have relied upon the judgment, expertise and credibility of various intermediary institutions such as newspapers, schools, politicians, government agencies and professional associations and journals. But now, as more people go online, the authority and influence of these intermediaries are being challenged. Individuals can acquire their own information quickly and directly. They can interact with each other freely—and with unconventional information sources—without having to rely upon traditional "gatekeepers" or intermediaries. This "disaggregates existing organizational forms," in the words of Dr. Craig Fields, and diminishes the presumptive authority of traditional intermediaries.

While liberating in many ways, this development also creates new boundaries. Direct access to timely information does not necessarily make it more reliable or useful. People still need an "agenting" process to locate information, filter it in desired ways, and synthesize and interpret it in a trustworthy fashion. There is little question that new electronic intermediaries will arise to fill this void. As they do, they will begin to reconfigure existing patterns of commerce, political power, civic life and community formation.

But as new intermediaries start to emerge, it is important to consider the precise "circuitry" of interaction that the new intermediaries allow. What kinds of personal relationships will be facilitated? What sorts of collective accountability and ethical standards will prevail? How open or closed will the community be? What sorts of information will be accessible, who can join and under what terms?

Coming Soon: "Intelligent Agents"

For the moment, the kind of intermediaries most likely to flourish commercially will be "intelligent agents." Although the concept is still in its infancy, the idea is to develop autonomous, customizable software agents that can gather and synthesize information—and in some cases, actually perform economic transactions. "This device becomes my expression of my identity in an electronic network," said consultant Peter Schwartz. "It is one step removed from 'me' so that I have the opportunity for

both protection *and* engagement." But it remains to be seen, Schwartz quickly added, whether it will actually be feasible to build such a personal agent as software; the agent may just have to be a human being.

The first intelligent agent was introduced to the market in September 1994, when AT&T announced its new PersonaLink service, which the *Wall Street Journal* described as "a relatively simple way for ordinary people to launch their own electronic servants into the ether. Those agents will communicate with agents of other people or of merchants and information publishers, performing work such as alerting their owners to a nose-diving stock or buying concert tickets." Meanwhile, Sony Corp. has introduced the first device for deploying agents on PersonaLink, a hand-held communication device known as Magic Link PIC 1000.

Conference participants were shown a conceptual model of a more all-encompassing electronic network that allows the use of intelligent agents and interaction among people in a three-dimensional "virtual town." The presentation was made by representatives of the two companies developing the system—Roel Pieper, President and CEO of UB Networks, and Cole Larson of Knowledge Adventure World, a specialist in educational products for children. The idea behind the new system, said Pieper, is to "stretch the limits of existing platforms and have people from around the world meet at a virtual museum." Larson and Pieper stressed that their prototype was not actually operational at the moment, but is meant to illustrate promising experimental ideas for creating new cyberspace marketplaces and communities.

The system works like this: Using a mouse to navigate through a town with false fronts, a user can move from one place to another: a shopping center, a leisure services area, a news stand, a place for accessing online information sources (e.g., stock quotes), a learning area, a museum and so forth. Each space has its own theme song (which can be overridden). At the "News Wall," a user can deploy his agent to search and collect news and information of personal concern, which is then compiled into an individualized newspaper. At the leisure area, a user can meet and mingle with the three-dimensional personas of other users, or visit special-interest areas devoted to chess, photography or art, for example.

To shop for a car, consumers could visit a virtual car dealership and "walk through" a virtual car showroom on a CD-ROM, which would show three-dimensional, moving images of the car's performance or its engine, for example. A consumer's visit to the virtual dealership would trigger notification of the actual local dealership, which could then send its own virtual agent to meet the customer in cyberspace to talk about the car.

To avoid the tedium of moving between spaces, the system has "teleportation offices" that allow the user to create customized gateways to quickly move to frequently-visited places. Thus, if a user often "visits" a florist or the news stand, the system automatically creates a gateway to that place in the teleportation office. A personalized software agent reconfigures the space to reflect the information needs and desires of the user. Certain areas can be placed off-limits as well. Users pick their own "avatars"—or virtual persons—to represent them on the network. An "agent wall" can be used to access different sorts of information depending upon which agent is selected. For example, if the word "flowers" is typed in, the 'Albert Einstein agent' might take you off to the encyclopedia and show you the biological and scientific references about flowers, said Larson. An agent showing a woman might take you to a shopping center and show you new floral prints. But the default agent, which 'knows' the user's preferences, might take the user to a flower shop to place an order." The system "regenerates the world around the user's preferences," said Larson. "All you need are a few metrics about what the user has done (visited the flower shop) to 'think up' that notion of configurability."

The system also allows other customizations. The user can substitute totally different visual environments—a desert scene, a forest or a futuristic fantasy scene—for the default village milieu. The user can also pick different "censorship levels" that limit the degree of unexpected encounters with different "people" and information. The user can adjust the "fate level," for example, to make it more likely that he/she will meet "weird, wonderful and wacky people whom you normally wouldn't interact with," said Larson. To simulate night and day, the system shows brightness or darkness through the windows, depending upon the time of day.

Can Many Agents a Community Make? The grand ambition of deploying personal agents in cyberspace has serious, inherent problems, objected Max D. Hopper, Chairman of The Sabre Group, the airlines' computerized reservation system. "In seeking identity, we don't really know what we want," he said. "An agent would be so limiting in terms of exploring beyond what we know of ourselves at the moment. You'd lose the surprise element, which I think is the essence of life. How would you get the 'aha!' factor?" Furthermore, said Jacqueline Hess, Director of the National Demonstration Laboratory, "We don't have even *imperfect* information about our personal assistants, whether human beings or technological. And all sorts of problems arise when people can't know if their e-mail transmissions, for example, are getting past someone else's filtering agents."

Why must intelligent agents be considered so atomistic, and not servants of a larger community? asked Professor Mitchell of MIT. "Most of the agents I've encountered are like lone cowboys riding out there on the information range, occasionally meeting another lone cowboy. It's very individualistic. But if you take seriously the idea of community—which after all, derives from the same Latin root as "communication," *communitas*, "holding something in common"—these agents do not make for community. So you have to ask the question: How could an agent be a good citizen in some sense? What properties would agents need to have in order to seriously construct a community?" What is needed, Mitchell suggested, are some new ways to "begin to articulate the properties of agents in that sort of sense—not just as personal agents but as members of communities. We know about anti-social agents on the Internet. But what about the reverse?"

How Information Intermediaries are Changing Business

The future deployment of new intermediaries has profound long-term economic implications for business. As Ray Lane of Oracle noted: "Everything beyond raw materials is value-added, including what is done in manufacturing, wholesale distribution, physical distribution, retailing and finally, the actual transfer to consumers." At each of these nodes, electronic technologies will eliminate "non-value added" processes and improve productivity.

Existing intermediaries will crumble and what remains will be consolidated into a new intermediary structure.

"As the information infrastructure changes," he continued, "I see whole distribution steps being eliminated, and new ones created. In terms of the buying of services, there will be different kinds of value-added channels that will ignore geography and current physical channels." To make matters even more complicated, the long-term stability of value-added channels is likely to diminish, warned Hopper. "Value-added today will not necessarily be value-added in the future." This stems partly from the novel, unpredictable ways that new cost efficiencies can be introduced into business operations. Many of these efficiencies occur at a secondary level of organization, as Jerry Murdock explained: "Intermediaries are *creating* demand, or allowing us to access demand, to what I call 'meta-information'—information that was previously too complex to even think about." Examples: the use of "program trading" on Wall Street and software programs for selecting the cheapest travel reservations or long-distance carrier.

The new information infrastructure has been critical to the rise of the "virtual corporation," the phenomenon by which firms use information technologies to "outsource" functions previously performed at a higher cost within the firm, noted Dr. Craig Fields. "As more people become buyers and sellers of services, we are seeing the rise of a 'global free trade' in services facilitated by the information infrastructure," he said. Consumers, too, will use electronic intermediaries to seek out bargains from vendors around the world, predicts Merle Aiko Okawara, President of JC Foods Co. Ltd. of Tokyo, Japan. This trend will be most evident in countries with higher prices, such as Japan. It may also force some direct retailers to assume new roles as deliverers of goods purchased abroad.

Businesses will intensify their use of electronic intermediaries in the future, predicts Waring Partridge of AT&T, because they tend to serve three useful functions:

1. They improve distribution economics.

2. They enhance editorial content.

3. They save time and add value for end-users.

Several participants cited examples that confirmed and elaborated upon Partridge's categories. Judith Hamilton, President and CEO of Dataquest, a leading information-technology market research and analysis firm, said that her company's clients want much greater frequency of information and much less volume of information than in the past. Clients still want germane facts, she said, but what they really want is an intelligent filtering of facts that are timely, and synthesized with a distinctive point of view.

"The economic value of the editorial selection function is very fundamental in today's economy," said Peter Schwartz. Schwartz' firm provides such a service through a "book club" that selects and distributes two books a month to its client-corporations. His firm makes 50 times what the author makes for our selecting appropriate books for its clients. The spectrum of value-added in selecting germane information ranges from between 10 and 50 times the original cost of producing the information, according to Schwartz. Dr. Craig Fields stressed that such intermediary functions are not gratuitous, but represent a genuine value added. There is great utility in having human expertise help a client navigate a given realm of knowledge, said Fields, citing the role played by teachers, travel agents, museum curators and clerks at video stores. "This role has to be carried over to this new medium," he said. "We don't just need data, but useful information."

The value added by intermediaries is not just a matter of navigating *content*, agreed Max Hopper. They really add value by providing *context*—factors external to the individual that may be addressing needs the individual doesn't perceive. This is one of the most critical functions provided by intermediaries, noted Charles Firestone: they help users ascend an "information pyramid" that begins with raw data and extends upward to information, knowledge and wisdom. By providing greater context to information, one can create knowledge.

Subtle Deficiencies of the New Intermediaries. While the new intermediaries will facilitate many valuable new functions, they may also be fraught with subtle but profound deficiencies. "There is so much potential for what I call the '11 o'clock news syndrome' —the situation in which there is so much information available that

everyone has access to the same information in very superficial ways," warned Hamilton of Dataquest. What results is a uniform superficiality of knowledge, rather than diversity or depth.

This dynamic is sometimes difficult to detect, but it can greatly skew the nature of one's knowledge of a situation, said Charles House, Senior Vice President and General Manager of Veritas Software. A case in point was television news coverage of the 1988 presidential election. House watched campaign news coverage as it happened, and then a year after the election, via a videodisk of the identical news segments. "What was shocking to us was that we recognized from the 11 o'clock news every news clip on the disk. But when the speeches of the same candidate or political party were presented on a thematic basis, over the course of several months, it was a very different election from the one that we, personally, had experienced the year before." The lesson: data access systems run the risk of the '11 o'clock news syndrome' because they decontextualize a topic and telescope it into a very short time-frame. The more meaningful information often exists only in a longer time-frame, House pointed out.

Another deficiency of most electronic intermediaries, said Waring Partridge, is their inability to allow for the "serendipity factor," which is an essential element in the creative and learning processes. There is no way for unexpected, not-necessarily-desired information to present itself. This information on the periphery often plays an important role in developing new insights or syntheses. John Seely Brown likens it to the need for an "electronic porch": a way to congregate and converse electronically with chosen friends in a convivial, familiar environment while still being able to watch a passing parade of unexpected strangers, acquaintances and events. As Partridge points out, the "serendipity factor" increases the fun in life.

This represents an important challenge in developing new intermediaries, agreed Professor Mitchell: honoring idiosyncratic perspectives. The whole point of wine, for example, is the distinctive taste of a given bottle, which derives from particular locations, ingredients and cultural traditions. So, too, the European tradition of journalism is arguably more interesting and insightful than the American tradition precisely because the former sanctions

idiosyncratic viewpoints and styles. "If we use the new electronic technologies in the right way," said Mitchell, "we will support that process of adding cultural diversity rather than watering it down to the uniformity of Coca-Cola."

For Murray Gell-Mann, the Nobel Prize-winning physicist and retired faculty member of the California Institute of Technology, one of the most urgent needs is a system of incentives to reward the "editing, synthesizing, and integrating functions. Despite faith that the Hidden Hand supplies what is necessary to meet demand," said Gell-Mann, "in fact, there is frequently a lag between the rise of a real need for some service and the appearance of generalized economic rewards for satisfying that need." To illustrate his point, Gell-Mann cited the reward structures of academia, "where great kudos are available to those who improve, even slightly, our knowledge or understanding at the frontier, while someone who provides a deep and important review of what is already known, taking a crude look at the whole and editing and explaining it, is not similarly rewarded. In fact, we've often relegated that function to people such as science reporters, many of whom are not really up to the job."

As this discussion suggests, electronic intermediaries can structure our personal interactions; facilitate different sorts of commerce and community-building; generate different sorts of public knowledge; and mold our consciousness, in many profound ways. Yet the more dominant and normative an intermediary becomes, the more invisible its structural biases become. A case in point, asserted by many participants at the conference, are market-driven intermediaries; there are some "gift economy" intermediaries worth considering as well.

Building Community Through the "Gift Economy"

Intermediaries need not function in a market context, John Seely Brown emphasized. "The whole notion of a 'value-added chain' [as discussed in the preceding section] presupposes a market economy," he said. "What we have not talked about is the *gift economy*."

"A tremendous amount of useful intermediation could actually be done through gift-exchanges," said Brown. "For example,

scientists trying to find out what's really worth reading could *give* each other their insights and, in accordance with gift dynamics, expect a payback on their gift at some later time." This dynamic is also seen in SeniorNet, which allows older people to consult, educate and help each other without paying for each transaction; they simply give and eventually receive as well. "This is a whole different kind of economy that actually substantiates and builds a sense of community," said Brown. "What may be emerging are two kinds of economies. We shouldn't lose track of this second economy."

Perhaps the most distinctive property of the Internet as an intermediary, said Dr. Michael Hawley, is its ability to connect people with highly specialized interests. "If you want to find a bit of information that's important to you," said Hawley, "you can cut across a community of millions of people to find the two or three people who have the answer. That's not just a 10:1 or 50:1 cost-ratio of value-added of a smart editor selecting the right book for you to read. It's the ability to find out about scuba diving in Honduras from the three people who've been there." Furthermore, said Hawley, "You can trust the information that comes back to you. The value of information on the Net is *not* proportioi. .l to its price. We used to joke that the value of information on the Internet was proportionate to its price, but nothing could be further from the truth."

In any case, information obtained from the Internet is not especially reliable, observed Dr. Mike Nelson, Senior Policy Analyst at the White House Office of Science and Technology Policy. "We need intermediaries who we can trust and who can provide validation for information. How do you design a system to do that?" Hawley conceded that information from the Internet may be "a little less reliable than that provided by expert consultants, but you get it weeks or months more quickly." But, retorted Nelson, that may not be good enough for people making big or risky decisions involving huge sums of money."

A more serious deficiency of the Internet as an intermediary, said Charles House, is its inability to provide "contextual integration" of information. "It's hard to do considered reasoning in a group process," he said. But, replied Brown, that is precisely the point of the Internet: "Isn't that what happens in the building of community? Community is where trust lies." Although the process of develop-

ing a group consensus may be cumbersome and lengthy, Brown explained, that is what community-building is all about.

We should consider the community as a collective which has its own power to form the social mind, and not simply as a group of individuals," said Brown. "There are information systems to extend the *outward* reach of the individual (the Internet), and there are systems to expand the *inward* reach of the individual (MUDs and MOOs). But these systems focus on the individual *qua* individual," Brown said. "They do not begin to tap into the 'community mind,' which is quite different from the ensemble of individuals." The question we need to confront is whether technology can enable "a spiral that affords fragments of ideas to build upon fragments of ideas—creating an 'affordance structure' that actually taps the structure of the 'community mind', as opposed to the minds of specific individuals," said Brown.

The Importance of Trust in Building Community. A relatively unexplored dimension of intermediaries, it became clear, is the importance of their legitimacy and how they come to be trusted. "In order to be effective," said Charles Firestone, "an intermediary must be trusted, connected to the social group and legitimated." Speaking from her own scrutiny of the legitimation process in various electronic communities, Dr. Sherry Turkle explained:

> There has been no electronic community I know of that didn't create its own set of "wizards" who serve the people. These people are trusted facilitators and leaders who decentralize their authority. And when they violate people's trust, they are removed. It's a social phenomenon. . . .
>
> The intermediary [or "wizard"] must be legitimated by a *nascent community*, a group that is itself in formation and developing its goals. There is a process of negotiation that occurs within the group to find the appropriate wizards to serve the community. But no single kind of wizard is appropriate for all communities. An efficient, brilliant wizard who fixes problems himself from the top-down would not work effectively, for example, in communities that are more egalitarian and participatory.

While trust may be essential for any intermediary, trust does not really inhere in a given technology conduit, noted Jerry Murdock, but in the norms of a particular community. Some intermediaries of the Internet are highly trusted while others are not. The same holds true of market-driven intermediaries in commercial television, Murdock said. Some programs are highly trusted while others, such as psychic hotlines, are much less so. Turkle agreed that "it's not an issue of trust in the technology, it's about trust in who is programming and molding the technology. People now realize that technology doesn't stand by itself"—a reversal of naive, previous expectations that computerized information is intrinsically authoritative.

But it is important to realize that trust can flourish quite well, or even more so, in a gift economy, said Hawley. Trust need not be sustained through market-driven payments to experts. "At one time, people turned to experts for good information," said Hawley. "But with the opening of new technological channels and a diffusion of these tools, users can turn to many grassroots helpers who have their own passions and expertise."

In a sense, this is what politicians do, said Dr. Mike Nelson. They rely upon trusted information intermediaries—other legislators, staff and outside organizations and experts—to help them make the right decisions. Decisions are often based not on details alone, but on the trustworthiness of known intermediaries with whom they have an historical relationship. "The most effective legislators are those who use intermediaries effectively," explained Nelson. "Some have several competing intermediaries for each subject, so they can check out the reliability of each one and get different perspectives." There is a "reality testing" built into this use of intermediaries, interjected Jacqueline Hess. "If they steer you wrong, or give you horribly biased information, that will be the last time you use them."

Trust is highly prized, but it is also susceptible to corruption, noted Dr. Jorge Schement. "In order for us to work well with an intermediary, we have to trust it," he said. "But it is a blind trust because, although we have certain expectations, we don't understand what the intermediary is going to do for us." As a result, "intermediaries are caught in a cycle of trust, power and corruption,

The more you trust them, the more you need them and the more power they collect. When any system has sufficient power, it is susceptible to corruption." Corruption in the electronic context could mean the programmed-in selection of certain product information over other information, perhaps because there is some payoff to do so, said Schement. "But this corruption is invisible to me. The more the corruption becomes visible, the less intermediaries will be trusted. The less trusted, the more you have a dysfunctional system with alienated constituents."

The actual or perceived lack of fairness, curiously, has often been a powerful prod to technological innovation. As Gary Lauder of ICTV explained: "One of the fundamental technological innovations of this century—the automatic telephone switch—arose from a perceived lack of fairness. It was invented not by AT&T but by an undertaker irritated that one of the telephone operators at a switching center was channeling people looking for an undertaker to her relative's funeral parlor. The automatic telephone switch did away with most operators, and created the need for the Yellow Pages, which is an inherently fair system—you get what you pay for."

People's desire for trusted intermediaries is so great that a system may have to endure cost-inefficiencies to ensure fairness. A perfect example, said Lauder, is the continued existence of travel agents. Because consumers do not trust the airlines to offer them the competitors' flights at the cheapest rates, the reservation system sanctions the use of an economically inefficient intermediary, the travel agent, whose 10 percent commission is folded into airline rates. "Unless you can find out otherwise, you trust the travel agent to find the best travel plans for you," said Lauder. "What has sustained them is a perceived fairness."

Lauder's examples raise a larger issue. What prevents existing intermediaries from artificially imposing or sustaining inequities on citizen consumers? Waring Partridge worries that traditional intermediaries such as government, the schools and the news media will work to block the emergence of new intermediaries. The behavior inspired by these conflicts of interest between old and emergent intermediaries "may be more decisive than the technology itself," he speculated. "On the other hand, the technology is

making it possible for everyone to be an intermediary, and for anyone to be an intermediary for millions of people. It is becoming a free market battle."

Because so many electronic communities are still forming—acquiring new members, negotiating a group ethic, searching for "wizards"—it is difficult to predict the patterns by which trust and legitimacy will be established. But it is clear that this remains one of the preeminent unresolved issues for the inhabitants of cyberspace.

There is a corollary insight here as well. The renewal of democratic culture will probably have less to do with technology itself than with the social vitality of communities. Some suggestive evidence can be found in *Making Democracy Work*, a book by Harvard professor Robert D. Putnam, cited by Peter Schwartz. The book studied Italy's wholesale political reforms of state governments in 1970, and investigated why, twenty years after the reforms, some state governments were honest and efficient while others remained corrupt and inefficient. Putnam found a remarkably consistent correlation between good government and the number of soccer clubs and choral societies in that state. The essential lesson: When people are tightly connected through trusted social intermediaries, they tend to create good government. When they are alienated and disconnected from each other, government corruption and mismanagement tend to flourish.

This insight suggests that the real question may be how to use technology to help people become committed stakeholders in new forms of community. Mary Furlong of SeniorNet paraphrased the arguments made by John Gardner, the founder of Common Cause, in his book, *Building Community*: "How can you reinvest people in meaningful activities again and help them become stakeholders?" This is not an abstract, rhetorical question, said Furlong. "Just look at the homeless children who have become unofficial techno-guides to the Internet in the Seattle public libraries. They have replaced some functions provided by librarians. This is because the children spend all day online, learning how to obtain information fast and reliably."

Furlong's point is that some unlikely people may have important roles to play in developing and using the new technologies—

and in restoring our civic culture. But these potential contributions will not be perceived unless we begin to consider the non-economic, psychological rewards that are at play—and begin to reconceptualize the possibilities of community in the new electronic media.

III. THE CHANGING CRUCIBLES
OF PERSONAL IDENTITY

One of the most provocative sets of issues raised by the new technologies is how they may be changing some crucibles in which people develop personal identity and character. This is still an emerging phenomenon, and hardly pervasive. Yet it is quite evident that new technologies are altering relationships within families; changing the support systems by which youngsters acquire skills and choose role models; creating strange new forms of virtual experience; and blurring the boundaries that once separated home and work life. In a sense, a new kind of culture is slowly engrafting itself onto the received patterns of the past, conjoining "real life" and virtual environments in odd, promiscuous ways. Can we begin to discern how new technologies may be changing the formative environments of personal development?

Exploring Personal Identity in Virtual Space

One of the most intriguing and emotionally intense virtual communities are the MUDs and MOOs mentioned earlier, the strange new environments that allow diverse computer users from around the globe to carry on focused conversations in "virtual rooms." Originally developed by Xerox's Palo Alto Research Center, MOOs are used by scientists as a surrogate conference milieu as well as by ordinary people as a "place" to discuss common personal concerns, such as parenting and sexual abuse. As journalist Christopher Anderson described MOOs in *Science* (May 13, 1994):

> Unlike e-mail and bulletin boards, MOO conversations take place in real time. Unlike Internet Relay Chat (another

Internet tool for real-time communication), MOOs are focused on particular subject areas and let users show and share data and tools as they talk. And unlike videoconferencing, all a scientist needs to use a MOO is a computer and a bare-bones Internet connection.

The unique attraction of a MOO, [said Pavel Curtis, a PARC researcher who co-developed the MOO language]. is that it's a 'shared, customizable environment that is, above all, persistent.' Build a lab and put in data, notes, and tools, he explains, and they will remain there after you sign off. With your permission, collaborators can visit your lab and work with data and tools while you are gone.

These virtual spaces do not only open up vast new possibilities for scientific collaboration, they are a new environment for exploring personal identity, said Dr. Turkle, who has been studying the dynamics of MUDs and MOOs. These environments, she said, "impinge directly upon people's sense of self. Through MUDs and MOOs, people are creating virtual bodies, virtual homes and virtual offices in cyberspace. Paradoxically, a lot of what these virtual spaces allow is to *escape* from dealing with disembodied voices because now a person has a virtual body, accent and persona that you can recognize. On MUDs, people talk, meet, have sex and have discussion groups about trauma and child-raising. People talk about sexual abuse in their virtual living rooms." These virtual spaces "honor people's desires to connect and not be lonely, and to form community," she said.

What is also notable about the virtual world is its overlap with the real world. People bring symbolic bits and pieces of real life into these virtual spaces, which shows how the two realms are not mutually exclusive, said Turkle. Furthermore, there is a sense that many people have of actually *living in the machine*. "There is a subtle sense in which people begin to think of themselves as more continuous with the machine than previously," explained Turkle. "Before it was 'me, person; it, machine'. But then the machine becomes something of an extension of people's sense of personal space, as in 'I love my PowerBook, it has my whole life on it.' There's a sense that you don't want to be too far away

from your computer because so much about you is already projected into it, in the ways that you have organized your life there. So there is a sense of the self and the machine having a more permeable boundary."

One of the most positive aspects of this development is the chance for people to "use experiences in virtual communities to work on their identity," as Turkle puts it. "For some, such experiences can be quasi-therapeutic. For many, such experiences provide a sense that identity is not a unitary notion. People are learning to see themselves as the sum of their many identities off the net—and on it."

There may be a lesson here for anyone trying to understand the digital future: focus on the internal mindsets that people bring to the technology. Waring Partridge suggested that instead of evaluating computer users through objective, external indices (demographic data, income levels, occupation, etc.), perhaps a better way to understand users is from the inside out. For example, a yuppie with a cellular phone might have a very positive outlook on the world: "I'm mobile, free and connected." An 18-year-old computer whiz might proudly consider himself an "info-star" emulating Bill Gates. A 50-year-old programmer who just got laid off could consider himself a victim. The head of a technology-rich but beleaguered family could wonder, "I don't know if I'm living or coping." These are all very different personal perspectives on identical technology, Partridge noted.

The Changing American Household

Perhaps the single most influential crucible for people's interior lives is the home and family. It is here where values and aspirations, personal habits and emotional universes, are first developed. As more electronic technologies enter the home, many basic functions of home life will certainly be affected, for good and ill. It is worth considering more systematically, therefore, just what basic functions take place in the home and how they could be affected by the new technologies.

At least since the Industrial Revolution, explained Dr. Schement, a home has served as a:

- *A window on the world:* a place for acquiring the habits of citizenship, learning about one's community and pursuing lifelong learning.

- *A marketplace:* a place from which consumers evaluate products, make purchases, and pay for media entertainment.

- *A workshop:* a place where a person becomes a worker, with all the complications of integrating work obligations with home life.

- *A refuge:* a place where the individual retreats from the harsh, impersonal forces of the market to enjoy privacy, intimacy and develop a grounding for personal identity.

Throughout the 20th century, Americans have eagerly exploited information technology to satisfy these four needs, said Schement. Paradoxically, only the wealthiest Americans could ever feasibly acquire all the electronic appliances to fulfill the consumerist vision. But that is really the point, he said: "What we want isn't always reality. We want an ideal." In pursuit of a technology-driven ideal, Americans have greatly altered the ways that they carry out the four basic functions of household life, said Schement. The salon, once a place for conversation, entertainment and gossip, has been largely replaced by the television and VCR. The kitchen table, once the site for purchasing decisions (perusing the Sears catalog, sending away for products) has been supplanted by the telephone (800-number catalog sales) and television (home shopping, advertising). The workshop functions of the home (the preparation of animal carcasses for meals, textile-weaving, crafts, etc.) were separated from the home by industrialism, a development that Karl Marx considered a source of alienation." "Increasingly," said Schement, "we now find the re-introduction of the workshop to the home. It may seem strange to us, but in fact this trend may be a corrective rather than an innovation."

Finally, the notion of home as a refuge, exemplified by the cliché that "a man's home is his castle," remains quite strong today. But this "distinctly industrial notion" is honored more in the breach than in its observance, said Schement. As more electronic connec-

tions have been laid from the outside world to the home (TV channels, online capabilities, fax-dedicated telephone lines, etc.), and as work duties are more frequently performed at home, home has become less of a refuge. Still, it remains an ideal that we honor architecturally in such vestigial symbols as gables, bay windows and symbolic porches.

As Americans have come to rely upon electronic technologies to conduct fundamental tasks of life, we have become more dependent upon the services of strangers, noted Schement; the local community has correspondingly diminished in importance. In the course of a day, we come into contact with many more people than earlier generations, and have far fewer repeat contacts with merchants, neighbors, and others. "Millions of people buy their clothes from Dodgeville, Wisconsin—home of the Land's End catalog—without ever having visited Wisconsin," said Schement. "We never talk to the same voice twice. And yet we're very comfortable using technology to connect us with strangers."

One upshot of conducting so much daily life amidst strangers, as facilitated by technology, is a greater emphasis on individualism, said Schement. People feel a greater need to define and differentiate themselves from the great mass of society. Individualism has also increased as the technology has served to break down the communal family unit. After Americans bought their first radios in the 1920s and 1930s, they bought their second radios in the 1940s and 1950s to get their kids away from the first radio. The same thing happened with the purchase of second television sets and record players: the technology began to proliferate, individual usage rose and the family tended to spend less time together.

The nuclear family was the key purchasing unit for televisions, record players and other systems 25 years ago, said Schement. But today "sub-nuclear family units" tend to be the consumer decision makers. Technology is bought to satisfy *individuals*, not families as a whole. Parents remain the "purchasing brokers," according to Schement, but the children now play a significant role in decision making.

How are the new electronic technologies changing people's daily lifestyles, particularly at home? Waring Partridge sees four major trends:

1. *We are receiving more information, faster.*
    Examples: faxes, e-mail and targeted television program-
    ming and advertising.

2. *We are interacting with people regardless of location.*
    Examples: wireless telephones, paging systems and time-
    shifting devices such as voice mail and VCR recording.

3. *We are accessing many more information sources and
    services.*
    Examples: CD-ROMs, the Internet and online services.

4. *The technologies are changing our expectations of inti-
    macy, privacy and involvement.*
    Examples: online chat, two-way video and technologies
    that can reach you wherever you are.

This last point perhaps deserves elaboration. As new tech-
nologies colonize households and family life, we may lose sight
of one of the most essential factors needed for personal develop-
ment: the need for solitude and privacy. "Some care and concern
must be made to protect solitude against the assaults of technol-
ogy," said Jacqueline Hess of the National Demonstration Labora-
tory, who pointed out that personal creativity and well-adjustedness
require a certain amount of individual solitude. As universal
connectivity becomes the norm, cellular phones penetrate to the
wilderness and e-mail systems start buzzing when new mail
arrives, a serious question may become: *Can you turn it off?* "I
don't think so," said Hess, "especially if we're living in a world in
which everyone else is wired."

IV. THE PUBLIC POLICY IMPLICATIONS

There is little question, based on the foregoing discussion, that
the evolution of information technologies will have profound
consequences for families, communities and people's sense of self.
But what, if anything, does this fact imply for public policy? What
new sorts of federal laws or regulatory regimes may be necessary

to ensure that the technologies have a constructive or at least benign impact on American life?

Many of the issues raised in the conference can be assigned to familiar policy categories—privacy, free speech, universal service, etc. But for many future issues affecting community and personal identity, it is unclear what specific roles public policy could play, even though policy would seem to be implicated. For the sake of clarity, therefore, we will separate the likely policy implications into two categories: near-term concerns and long-range, speculative concerns.

Near-Term Policy Concerns

If we are going to anticipate the future effects of the new technologies on community and personal identity, said White House staff member Dr. Mike Nelson, there are four major policy areas that must be addressed:

Privacy. People are understandably concerned about the integrity of their electronic communications while in-transit, said Nelson. But a more knotty challenge involves the privacy of information contained in individual computer servers, especially those owned by businesses. What are people's rights to privacy for information contained in a company's computer system? In government, too, this issue may need to be revisited because the "public records" requirements of the Freedom of Information Act are beginning to be applied to electronic information such as e-mail. Is this really necessary or desirable?

Freedom of Speech. How will the First Amendment apply to communications over the new electronic media? There are numerous novel and troubling questions of constitutional law that will need to be resolved in the future. One such case involves the prosecution of a California man whose computer server was distributing allegedly obscene material over the Internet, an act that a Memphis prosecutor considered a violation of local community standards for obscenity. What makes this a case of first impression is that the material was only transported through, and not actually shown, in Memphis. The Memphis authorities had "reached into"

the server to access the material; it had not been distributed to an unsuspecting user in Memphis. A similar set of legal quandaries arise regarding allegedly pornographic materials accessed by American computer users from foreign servers.

Open Access. One of the vital principles of the National Information Infrastructure is ensuring that the information super-highway allows robust, two-way communication. Legislation is necessary to ensure open access, said Nelson, because many content-suppliers have a strong economic self-interest in limiting competition in the new marketplace. It is imperative that NII policies promote an open data platform so that anyone can do almost any application over the network, he said.

Libel Standards. The legal definitions of libel may need to be modified for communications on the Internet and other electronic networks, suggested Nelson. The need for change is illustrated by the case of a journalist who, as an individual in his off hours, distributed to a small group of friends his own private commentary on companies that he reported on during the day. One of the companies that he disparaged through his private electronic communications then sued the journalist for libel.

Other conference participants pointed to other key policy concerns that will have to be faced in the near-future:

The Definition of Derivative Products. "Who owns what is going to affect the long-term sustainability of all the things we're talking about," said Roel Pieper. "Somewhere, somebody has to pay for all the things that are going to be created." Jacqueline Hess agreed that "*defining* a derivative product is critical to moving the economics forward. We have an infrastructure [in mature industries] for compensating the original rights holder. But we don't have any of that in the digital world. We may be able to get away with it now, but as the abuse increases, the economic costs will be greater." Hess cited the dilemmas raised by creative collaborations carried out over networking software. "Who gets the rights in the objecti-fied product?" she asked. "When does it become a new product?"

42

Government Leadership. As the world's largest user of information technology, government itself needs to show greater leadership in coordinating policies and disseminating its own information, said Morton Meyerson, Chairman and CEO of Perot Systems Corporation. He suggested a single "information czar" to help coordinate the work of diverse agencies and policy agendas, and to put more governmer information online. Government leadership for the information technologies is clustered in four distinct areas, noted Nelson: *Technology policy* (e.g., the setting of interoperability standards so that the NII will be an open platform); *telecommunications policy* (e.g., determining whether to pursue some form of universal service versus a more simple standard of open access); *applications* (e.g., stimulating the development and accessibility of new services); and *information policy* (e.g., determining what sorts of information will be accessible and affordable to people, and under what terms).

Long-Range, Speculative Policy Concerns

Some of the toughest issues for policymakers will concern the long-range effects of information technologies in changing the character of communities, families and personal interactions. It is not an attractive proposition, on the one hand, to propose policies that smack of "social engineering" by interfering with free market results. On the other hand, technologies and services generated by an untrammeled free market could have distasteful and even pernicious effects on our American democratic culture and social life.

At the very least, greater attention should be paid to the unintended consequences of the new technologies, warned Peter Schwartz. He cited the far-reaching and unwitting impact of the Federal Housing Act and National Interstate Highway Act of the 1950s, two laws which basically locked in the nation's energy-use policies for generations by promoting the construction of single-family suburban houses and major highways. Today, as the foundations of the National Information Infrastructure are being laid, Schwartz said, we may be embracing a system "whose long-term consequences could be the exact opposite of what this Administration says it wants, namely the recreation of family and community. We may be creating the most powerful force for tearing them apart that we've ever seen."

43

What happens if people no longer choose to be spatially intimate, a circumstance which helps us feel empathy for others near us, including the family itself? Technology could be very centripetal in its impact, Schwartz predicted, which may result in new stresses on family cohesion. This may be the most fundamental question raised by any new National Information Infrastructure policies, he said. Whether one agrees with that prediction or not, it is clear that this topic deserves far more investigation than it has received to date. Dr. Schement agreed: "We don't really understand what community is, yet we presume to adopt policies that will profoundly affect community, which lies at the sociological heart of what a nation is and what people are."

Public policymakers may have trouble grappling with these issues, he suggested, because the technologies are effecting changes that are almost metaphysical—not the stuff of a typical congressional hearing. "We don't have a good handle on the human resolution of space/time communication," said Schement, referring to the ways that technologies are overcoming historic barriers of geography and time. "I'm not convinced that space does not matter. Space *does* matter," Schement insisted, aligning himself with the view that geography has *not* been rendered irrelevant. "I'm convinced that our policies are going to affect our experiences of space and time as well. As we enter the policy discussion, let us enter it with our eyes more open than we usually do, looking at the periphery and beyond our immediate goals."

This requires a greater willingness to look beyond our own myth about the cognitive rationality that supposedly drives computerization, science, economics and organization, suggested John Seely Brown. One highly instructive source of guidance is a book by sociology professor Bruno Latour, *We Have Never Been Modern* (Harvard University Press, 1993), said Brown. By looking at modernism through the lens of comparitive anthropology, Latour seeks to re-integrate the humanities with the "hard sciences" by asserting the primacy of informal collectives and hybrid networks in creating the conditions of contemporary life.

An important long and short-term policy concern is maintaining an "open architecture" for new software programs—i.e., a

market regime with non-proprietary technical standards and non-discriminatory commercial access. Such a policy framework is critical to the rapid profusion of diverse software applications, participants agreed. As for which medium will predominate in the new, consolidated marketplace—the personal computer or television—Brown suggested that the more significant issue is "the degree of interactivity and degree of symmetry of information being sent into and sent out of the home."

In other words, will the architecture of the new systems facilitate interactive conversations in all sorts of permutations (point-to-point, point-to-multipoint, multipoint-to-point, etc.)? Or will the policy framework merely allow consumers to *receive* information supplied by a limited number of sources? This is a fundamental tension that must be worked out, said Dr. Turkle. But clearly the preferred alternative is to enable people to become "content-creators." If there is going to be a "reversal of stultification" that television has visited upon American life, in the words of physicist Murray Gell-Mann, then people must become more than "passive content-consumers."

Policies to Govern Anti-Social Behavior in Cyberspace. In many ways, cyberspace represents a new frontier that should be understood in terms of the famous "frontier thesis" put forward by historian Frederick Jackson Turner in 1893, as Jerry Murdock suggested. Turner proposed that the American character has been indelibly influenced by the existence of a frontier—a place where anyone could stake their own claim to free land, revel in a loosening of civilized standards and institutional authority and celebrate an extreme individualism. The tensions of "taming" the Western frontier and incorporating it into "civilized society" resemble the challenges now facing us in cyberspace.

The need for specific policies to govern anti-social behavior in cyberspace may arrive sooner than we think. Dr. Turkle noted that there have been instances of "virtual rape," harassment, libel and other transgressions against societal norms on electronic networks, particularly on some MUDs and MOOs. But how should the law regard these sorts of behavior? Turkle explained that much depends upon the moral and psychological significance that policy-

makers ascribe to a given virtual act. Should a given act in virtual space be regarded as:

1. *"Acting out"*—an acceptable alternative to actually doing so in "real life"?

2. *"Working through"*—a quasi-therapeutic experience that should be socially acceptable and given proper support (because it may actually help prevent "real-life" enactments)?

3. *"Permission to"*—the sanctioning of behavior that socializes people into violence?

The problem that must be addressed, said Turkle, is, "What are the implications of consequence-free behavior online? In a certain way, these are consequence-free communities." How does one begin to introduce new mechanisms of community accountability into virtual communities? This may be a particularly timely issue, noted Governor Caperton, at this time when so many people "need to learn to accept responsibility in a community that holds them accountable for their behavior."

A singular challenge for electronic communities is finding new ways to live with people whom we don't like or fear or with whom we have nothing in common. This requires a policy framework that protects unpopular expression and activity. As Peter Schwartz noted, "If the 'fringes' are where new ideas come from, then how do you tolerate fringe activities while still having rules that allow everyone else to participate in an effective way? This is a very difficult problem."

The traditions of the First Amendment, certainly, offer the most trustworthy guidance in this area. Yet it is also true that reconciling competing social values can become more complicated in cyberspace. This is because questionable behavior can take place in both the real and virtual worlds in perplexing ways—raising the question of which realm is the most appropriate one for reform initiatives. For example, "virtual crime" is generally punished only in virtual space, said Turkle. "But that policy, where nothing that happens virtually is punished outside of the

virtual space, needs to be thought through a great deal," she warned, "because, in fact, some virtual crimes have real consequences—psychological, economic and so forth. Negotiating that boundary is very important."

To this, Professor Mitchell offered some useful wisdom: "There are appropriate times and places for action without consequences—childhood, playgrounds, Mardi Gras celebrations. These serve very important social and cultural functions. But there is still a need for *some* boundaries. A successful community requires action *with* consequences, but also times and places for actions *without* consequences. The problem with cyberspace, it seems to me, is that the boundaries often are not clear. If we are going to have successful communities, a crucial policy issue that must be sorted out is drawing appropriate boundaries." Drawing upon his expertise in urban planning, Mitchell observed that any community has to assign different sorts of spaces for various activities: "Who's allowed to be there and what can be done there? In public spaces, anyone is allowed to be there (which is why a mall is not a public space). Other dimensions are absolutely necessary, such as self-defined clubs; semi-public spaces such as porches; and private spaces where you can control access. To make a real kind of community, you need multiple kinds of places."

CONCLUSION

If one thing became clear from the conference, it is that the "cartography" of community and personal life in a technology-mediated culture remains fairly primitive. A great deal remains unknown about how the new information systems "map onto" the patterns of personal relationships in "real life." At the same time, the discussion offered many illuminating glimpses of important landmarks in this new terrain that merit greater scrutiny in the future: the need to define new ethical boundaries, the need to differentiate spaces within cyberspace; the community-building dynamics of the gift economy, the strange dislocations of time and space that electronic systems can create, the strange ways of exploring our intimate lives in an anonymous electronic commu-

nity, the novel ways that technologies can enhance and diminish personal relationships and community. Learning more about this landscape sooner rather than later could prove critical in deploying the new technologies in constructive ways.

Appendix A

The New Intermediaries

Charles M. Firestone

Due in large part to the new information and communications technologies, the nature of intermediary institutions in our society is changing significantly. This will affect the way we acquire and process information, gain knowledge of the worlds around us, and act as citizens, consumers, and individuals.

Traditionally, the role of societal intermediaries, such as political parties, journalists, teachers, preachers, and even retailers, has been to select among various choices in the world, to filter and analyze those choices, and to guide the end user to a specific outcome. Sometimes called "gatekeepers," these institutions and professionals have often controlled the flow of information to an individual through censorship, editing, filtering, or other such limiting functions.

For example, a news organization presents to the reader or viewer specific news stories from the many potential items of news in the world and in the process of delivering these stories also provides context for understanding the story. Similarly, the teacher refines the ways that a learner might understand a subject, and the retailer gives the customer a choice of goods and helps that customer make a selection.

Today and in the foreseeable future, the functions of intermediaries are changing. Instead of gatekeepers they will be two-way exchanges, facilitating the flow of communications in two (or more) directions. The successful intermediaries of the new electronic world will be those that not only filter information, but also integrate systems or audiences, serve as agents for the user (the

consumer, reader or communicator), help navigate the vast worlds of information resources, analyze and contextualize information to facilitate its conversion to knowledge in the minds of the user, and authenticate the value of the information.

Three trends and phenomena are creating the new breed of intermediary. First is the ability of the end user to connect directly to the source, to bypass the old gatekeeper, and to reach the primary source in quick and easy fashion. Some call this "disintermediation." The second trend is the reversal in direction-ality of electronic communications, from the old center out direction to the current trend of accessing information from the other end at the initiative of the end user. The third phenomenon of the new age of information is "information overload." We are simply inundated with information of print, sound and video varieties and from a myriad of sources. The combination of these three trends has created increasing need for the functions of information integration, navigation, analysis and authentication.

Disintermediation

The first trend of significance is the ability to bypass traditional intermediaries by means of the new interactive communications technologies. More and more, we will be able to work at home, shop at home, learn at home, and even vote at home—electroni-cally. This bypass phenonomenon creates a tremendous pres-sure on the societal intermediary to be more than a pure gatekeeper.

Furthermore, the new technologies, which allow for greater user control, change the salient function of intermediary from gate-keeper to a combination of filter and agent, from bottleneck and adviser to integrator, navigator, context-builder and analyzer, from a one-way valve to a two way exchange.

Reverse Directionality of Communications

Over the past fifty years, we have moved through at least two major stages of electronic communications. In the first, the media, whether telephone, television, film, or computer, were character-ized by concentrated and oligopolistic markets, intense regulation, center-out, command-and-control management approaches. This was the era of communications scarcity.

In the second stage, beginning in the late 1960s, new technological advances allowed for more outlets, more competition, and less control. This era of communications abundance has been characterized by diversified markets, the beginnings of deregulation, and, as suggested by George Gilder in his law of the microcosm, movement of power to the edges of organizations. While there are, of course, still vestiges of the first stage in our communications systems, we probably began the second stage 25 years ago.

Indeed, we are now moving to a third stage—this one of communications complexity. I would suggest that the power that moved to the edges of Gilder's microcosm, is now reversing direction and heading back upstream. Gilder now speaks of a "telecosm," the increased power of computing that comes from networking. But beyond that, the end user is taking control of the act of communication.

We own our television sets and telephone handsets. Recent legislation requires that remote control devices be offered to the consumer for purchase or lease, and the new set-top devices are the subject of intense scrutiny by legislators and regulators as we begin building digital driveways to the home. As cable and telephone companies can economically string competing optical fibers to the curb, it may make sense for the consumer to own the link between the home and the curb.

This is all to say that the nature of electronic communication has moved from the stage of central control and passive reception, through the competitive outlet stage, to the emerging complex stage of simultaneous two way communications. The user is now a potential producer of information, not simply a recipient. More and more, the initiative in the communications process, in social transactions and in commercial transactions, will come electronically from the end user.

This phenomenon is not confined, however, to the communications business. As the nature of communications is to be the nerve center of society, it affects all institutions. Simply, the end user or consumer or citizen can now be heard faster and more directly and expects to be listened to. The concept of empowerment is taking hold in a variety of ways.

Now the learner can access more direct and secondary sources of information. Now the consumer can shop by mail and 800 number, or, more and more, by watching television or a computer screen (or the converged version nearly at hand) and pushing a button. Now the consumer can pay bills, tune into news stories of choice, connect to town officials, and the like from personal electronic devices. The potential applications are only limited by our imaginations.

Information Overload

As the ability to access more sources of information increases, however, the individual is reaching a saturation level: information overload. One commentator suggests we are approaching a period of information immersion. Virtual reality may make that a very apt characterization. With information immersion and overload, there is a greater need than ever for interpretation, guidance, analysis, contextualization, and authentication—for meaning in an increasingly strange world.

The Need for New Intermediaries

We are witnessing, I believe, the beginning of a behavior shift by the consumer/communicator. While the use of electronic networks and new software agents is not yet widespread, developments in user-friendliness and cheaper prices will bring about a change. The information glut, uncertainty about the fast pace of change in the world, distrust of authorities, and similar attitudes are leading to a greater willingness of individuals to use the communications technologies to find information for themselves, at the source, and to express themselves. Talk radio, Internet news groups, and chat services are but the beginning. At the same time, and for the same reasons, people want to be able to rely on what they hear or read, to gain understanding, and to act. They will look for ways of verifying, authenticating, and contextualizing their realities, and will rely on information brand names, such as *The Wall Street Journal* or Rush Limbaugh or the Electronic Frontier Foundation.

As these behavior shifts become more and more apparent, the traditional intermediary institutions that hold onto the former

methods of gatekeeping the flow of information will find them-
selves societal vestiges, superceded by new institutions and
software programs that provide the guidance, navigation skills and
analytical abilities for the same constituencies. To survive, the older
intermediaries will have to adapt to the new mediating functions—
methods that recognize and receive feedback from their constitu-
encies. They will need to relegitimize themselves by listening as
well as they convey. It is an increasingly complex world where
adaptation, feedback, and flexibility will be key.

What we need, then, are new ways to analyze the roles and
functions of intermediaries, to suggest the essential elements
necessary for success and sustainability, and to describe the
dangers inherent in both the non-adapting institutions and the
emerging new ones. I would suggest, as a start, that those entities
that do not recognize or act on the fact that the direction of
communications between source and end-user is reversing, i.e,
that the end user is increasingly becoming the initiator, will
ultimately fail. Those that serve the convenience of the new
directionality by agenting, filtering, integrating, analyzing,
contextualizing, and authenticating information are likely to be the
successful new intermediaries in our society.

In any event, these are suggestions that warrant further thought
and study in a variety of contexts.

Appendix B

The Aspen Institute
Communciations and Society Program
Washington, D.C.

The Future of Community and Personal Identity in the Coming Electronic Culture

Aspen, Colorado
August 18–21, 1994

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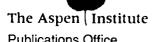## STAFF

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57