the electronic version of *The Virtual Community*

by [Howard Rheingold](#)

"When you think of a title for a book, you are forced to think of something short and evocative, like, well, 'The Virtual Community,' even though a more accurate title might be: 'People who use computers to communicate, form friendships that sometimes form the basis of communities, but you have to be careful to not mistake the tool for the task and think that just writing words on a screen is the same thing as real community.'" - HLR

Chapter Nine: Electronic Frontiers and Online Activists

"Ben Franklin would have been the first owner of an Apple computer. Thomas Jefferson would have written the Declaration of Independence on an IBM PC. But Tom Paine would have published *Common Sense* on a computer bulletin board," Dave Hughes insists. If you want to talk about grassroots activism, Hughes is a good place to start. He's an old infantryman: you don't always wait for headquarters to give you permission to cobble something together in the real world; if it might save your ass, you just do it.

Since he retired from the military and decided to use technology to change the world, Hughes has been acting out an ongoing online melodrama of his own devising. The scenario: Hughes rides into town--and "town" can be an actual small town on the prairie, or a hearing room on Capitol Hill, or the political structure of his hometown, Colorado Springs. He meets the locals, who are frustrated by the old ways of doing things. Hughes takes out his laptop, plugs it into the nearest telephone, reveals the

scope and power of the Net, and enlightens the crowd. He tempts them into putting their hands on the keyboard, and they're hooked. When Hughes rides out of town, the town is on the Net.

Installments of Dave Hughes's stories of electronic political pioneering in America have proliferated by way of his online proclamations, manifestos, and seminars on a dozen different public-access CMC networks for more than a decade. Dave's modus operandi is straightforward and uncomplicated: First he brags shamelessly about what he is going to do, then he does it, and then he shows everyone else how to duplicate his feats. Then he brags shamelessly some more. If you want the hard information about how to put your own system together, you have to listen to his stories.

I first ran into Dave Hughes during my first session online to the Source in 1982-1983. I saved his 1983 self-introduction to the online world because I had a hunch this electronic vanity publishing business might be important some day:

> Hello.
>
> I am "Sourcevoid" Dave. Dave Hughes otherwise.
>
> I was born in Colorado, descended from stubborn Welshmen who were never too loyal to the king, which is probably why I am content being a maverick of sorts, with a Welsh imagination.
>
> I live in Historic Old Colorado City at the base of 14, 114 foot Pike's Peak.
>
> I work out of my 1894 Electronic Cottage with a variety of microcomputer and telecommunications tools. . . .
>
> I am a happily married middle-aged family man who has seen enough of Big Government, Big Wars, Big Industry, Big Political Causes--either of the left or right--to now prefer to operate a small business out of a small house, in a small neighborhood, working with small organizations, using a small computer to make it all possible.

Hughes is a believer in teleports--communities like his own, where people can enjoy a small-town atmosphere and work from their homes by using computers and modems. When it looked as if the Colorado Springs city council was going to make a decision that would effectively prohibit telecommuting from his home in nearby Old Colorado City, Hughes went into action.

"The city planners of Colorado Springs decided to tighten the ordinance that regulates working out of the home," Hughes recalls. "I was the only person to stand up in front of the planning commission and testify against the ordinance; the planners tabled the matter for thirty days. I then brought the text of the ordinance home with me and put it on my BBS."

Hughes sent letters to the editors of his two local papers, inviting people to dial into his BBS and read the ordinance. Two hundred and fifty callers above the normal traffic level for his BBS called within the next ten days. What Hughes did not realize at the time was that many of those callers worked in large high-tech plants,

and they downloaded, printed, copied, and circulated hundreds of copies of the ordinance throughout the city. At the next city council meeting, more than 175 citizens, representing every part of the political spectrum, showed up to protest the ordinance. It was defeated. Hughes pointed out that "ordinarily, the effort needed to get involved with local politics is enormous. But the economy of effort that computers provided made it possible for me to mobilize opinion."

Hughes made his next foray into online activism in Colorado Springs because he wanted to find a way of letting local vendors air their complaints that they had been shut out of bidding on the county computer contract for fourteen years. The press dialed in to Hughes's BBS, asked questions online, and confronted the county commissioners with the complaints and the facts they had compiled.

"It got so hot that county staff members were reading from BBS printouts at the podium during formal meetings," Hughes recalled when I interviewed him in 1988. "In the end," he added, "the commissioners knuckled under, went to bid, the whole inefficient and incestuous system was exposed, and today there is a whole new approach to information management in the county."

For his next venture into BBS politics, Hughes invited a candidate for city council to post his views on Hughes's BBS and to respond to questions from voters. The candidate was elected, and the councilman continued to use the BBS to communicate with his constituents during his tenure on the council.

Dave tries a lot of things, and when something works, he pushes the pedal to the metal. Next, he prodded Colorado Springs to create a City Council Telecommunications Policy Advisory Committee, which does its business on the city's new BBS; the committee is proposing recommendations on how to make elected officials publicly accessible online. Penrose Public Library in Colorado Springs, working with the city, now has City Hall Online, which includes all agendas, announcements, and minutes of meetings. Then Hughes decided to see what he could do for candidates on a countywide scale: "I used my personal computer to dial into the county clerk's computer and download the entire registration list of all the voters in my precinct. Now anyone can dial me and go into the world's first political precinct BBS." Then he told his local branch of the Democratic party that he could put 100 percent of the voters in every one of the 120 precincts of the county on a public BBS. The cost would be nominal, considering that his county normally charges $800 to print out their list.

Big Sky

It isn't hard to imagine the light bulbs going on in their heads when Frank and Reggie Odasz, educators and activists from Montana, came to Hughes in the late 1980s with some ideas about hooking up inexpensive BBS systems in rural Montana schoolhouses, to help overcome the educational isolation of some of the widest open spaces in America. They called their project Big Sky Telegraph. Dave had spent enough time and money in his retirement, learning how to operate the equipment that linked his electronic cottage with his worldwide constituency. He knew how to cobble together BBS systems from the cheapest hardware, and how to get it to work with the telecommunications system. And he was burning to demonstrate how his "great equalizers" could revitalize real communities.

Frank and Reggie Odasz were computer-literate change agents who were eager to use the kind of technology they had encountered on Hughes's own online system to enhance educational resources and other aspects of life in rural Montana. They had in mind practical ways of helping real people with down-to-earth problems, and they also had big dreams. Like Hughes, Frank and Reggie Odasz felt that they had found something more than a communication tool with CMC. It was, to them, a means of trying to fulfill their hopes of improving their community. It was part of a new way of thinking that technology made possible. CMC technology was the means to the end of enhancing human relationships in a rural area where long distances made traditional face-to-face community-building more difficult. The possibility of using CMC to extend all kinds of Montana citizens' power to build relationships with each other was the feature of virtual communities that drew together the principals of Big Sky Telegraph.

This idea of many-to-many communications as a framework for collective goods is a powerful one that many who are familiar with previous communication revolutions are often slow to grasp. Most people think of mass media as one-to-many media, in which the mass represents a large population of consumers, who pay to be fed information by the few who profit from their control of that information conduit: the broadcast paradigm. For years, educators and political activists have not taken advantage of the power inherent in CMC networks because they failed to take advantage of the power of a many-to-many or network paradigm.

In terms of the high expectations of a microchip revolution in our badly ailing schools, computer education was a failure in the 1980s. One reason dispersal of personal computers to schoolrooms failed to check the deterioration of traditional

public education in the media age was that the computers were so often seen as just another channel for transferring knowledge from the teachers to the students (broadcast paradigm) rather than providing an environment in which the students can explore and learn together (network paradigm). Only a very few pioneers in the early 1980s thought of plugging their schoolroom computer into a telephone line, and few could have afforded the online resources available at the time.

To Frank Odasz, CMC wasn't just a shift from the broadcast paradigm of educational technology to a network paradigm, it was a consciousness shift on the part of the people who took to the technology. As he told researcher Willard Uncapher:

> It's more a consciousness thing than anything else. And I'm in the business of teaching new ways, new levels of thinking, new levels of intellectual interaction. . . . When I e-mail with Dave, or when I e-mail with you, that is more consciousness than any other single thing. So we are not just computer networking, when you and I share comments back and forth. It's in a context that to me is much more a consciousness thing. It's literally, as I have said tongue in cheek before, working as an electronic analogy for telepathy. I don't even think that's right. I think it's something more. I think, in a sense, it is shared consciousness.

In the 1980s, Frank Odasz and his wife, Reggie, worked in rural Montana as educators who were determined to improve the living conditions for their community by "thinking globally and acting locally," as Buckminster Fuller advised. They were enthusiastic about the educational potential of computer technology, especially the kind of CMC technology they had seen through Chariot, the conferencing system Dave Hughes and his partner Louis Jaffe ran in Old Colorado City as a successor to Dave's original "Rogers' Bar" BBS.

Frank and Reggie Odasz had been looking for ways to use new technologies to improve the communication problems inherent in an area where very small schools are spread out over a large amount of countryside. Teachers are on their own, without the kind of personal as well as pragmatic support network that is available even in impoverished urban schools. Communication costs are high in that part of the country, and transportation costs are even higher. The Big Hole Valley, part of the territory included in Big Sky Telegraph, has the longest school-bus route in the United States.

When Frank Odasz talked about his hopes for using something like Chariot to encourage resource-sharing among the schools, Dave Hughes pointed out that they were already ahead of the game because so many rural schools probably had old computers sitting around from the first failed computer revolution in

education, when everybody thought computer literacy was a great idea and many school districts purchased computers. Indeed, they did.

In the early 1980s, the only affordable computers were pathetically underpowered compared to what is available today, which severely limited their usefulness. The initial computer literacy grants that purchased the computers, however, usually did not include training and continuing support, so most of the computers were never used. And those teachers who did learn how to use the machines had trouble sifting out the few examples of genuinely useful educational software from the large amount of crap. Many schools abandoned the attempt, but few threw away the old Apple IIs or Ataris or Commodore-64s.

Although none of the old computers in storage rooms all over Montana could hold a candle to the kinds of graphics and simulation that are available on today's computers, Dave Hughes knew that they are all perfectly serviceable terminals for a telecommunications network. You don't need fancy graphics or a color screen to run simple terminal software. Even one-room schoolhouses usually have a telephone line. The modem--the piece of hardware that plugs the PC and the network together--used to cost $500 or more; now they cost $50. So the actual physical infrastructure for most of what Frank and Reggie envisioned for Big Sky Telegraph (BST) was already in place when they got together with Dave Hughes.

Hughes just happened to know the right things to say and used the Net to discover the right people to say it to at U.S. West--the regional telephone company for both Colorado and Montana. Frank and Reggie Odasz knew the *where* (rural Montana) and the *who* (schoolteachers, students, local change agents, and ranchers) of Big Sky; the rural teachers they trained to use the technology provided the *what;* and Dave Hughes came along with the *how.* They obtained two grants, of approximately $50,000 each, to equip and train rural teachers to communicate with a central BBS and information database.

Students of CMC are fortunate that social scientist Annenberg School of Communications, "Rural Grassroots Telecommunications," reflects the most important aspects of BST: it was a rural, populist effort, rather than an urban, top-down design.

Uncapher went to the Big Hole Valley, in the heart of BST territory, for two weeks, after BST had been operating for a short time. He interviewed the teachers, ranchers, local social activists, Hughes, and Frank and Reggie Odasz. This was not strictly a study of CMC technology, but a study of the social changes that

were triggered, or failed to be triggered, by introducing the technology to a largely nontechnological part of American society.

Uncapher declared his intention to observe the impact of CMC technology in the context of the community the technology was entering. His thesis was that you can't predict the way people will use communications technologies without knowing something about the social, economic, political, and cultural circumstances of the specific environments in which the technologies are introduced. Uncapher hypothesized that the skills necessary to use the new technologies and the inspiration to adapt them to new uses would be unevenly distributed in each community. Some groups would lack the skills, some groups would resist the changes, and the reasons for those reactions would be rooted not in technology but in local culture, economics, and politics.

Western Montana offered an interesting mix of people for observations to test such a thesis. There were the teachers, mostly women; the ranchers who supported the schools through taxes, controlled the school board, and were traditionally conservative about newfangled technology; and the students, who were far away from the world's centers of learning. There were also environmental groups, domestic violence support groups, and other nonprofit organizations who might also make good use of CMC, if somebody could show them how. The organization most important to the early success of BST, as it turned out, was the Women's Resource Center in Dillon, where the vital ingredient of a highly motivated population of early adopters was found.

According to Uncapher, Hughes sought to broaden Frank and Reggie Odasz's involvement with the wider community. "While Frank Odasz had come up with the idea, and had apparently discussed it with some of the rural teachers, Dave Hughes sought to involve the broader community in an effort of rural self-development," says Uncapher. "His idea was not to bring specific ideas to the area (other than interactive telecommunications), but to provide an augmented means by which the rural communities could acquire and exchange their own ideas and resources, beginning with the rural teachers. The Big Sky Telegraph represented an extension, thereby, of his own online efforts."

Big Sky Telegraph went online January 1, 1988, at Teaching computer skills to some of these women was a good idea, Jody Webster, director of the center, noted, for reasons related to their sense of themselves. Could this be an example of the "change in consciousness" that Frank Odasz was trying to describe? Jody Webster, as quoted by Uncapher, put it this way: "Some of it is attitude. All your skills aren't the physical skills, like typing or shoveling. A lot of it is attitudinal skills, communication skills: how to ask for a raise, or how to ask for a job or not to ask for a raise;

the fact that you need to sell yourself; the difference between self-esteem and conceit."

Through Big Sky, women across western Montana were given an opportunity to teach and support each other emotionally as well as a way to impart skills. "The Women's Resource Center . . . would get funding, often project by project, primarily to aid the women in the region to get new jobs, to learn new self-esteem, and to protect women and their rights;" Uncapher reported. "In fact, to a great extent the use of the Telegraph took off first in the general community in the hands of women, and the kinds of issues this center addressed revealed why. Indeed, most of the rural teachers were women. . . . When I visited a woman who ran her connection to Big Sky Telegraph from the Lima Stop 'n Shop gas station, which she and her husband ran near the Idaho border, it turned out that the computer had been loaned to them by the Women's Resource Center."

Frank Odasz, in an article about BST, also mentions the same woman at the truckstop, although he has a slightly different name for the gas station: "Sue Roden, the woman in Lima, was able to learn computer skills from the Gas 'n Snacks truckstop between fillups. When she got stuck on Lesson 2, a trucker named Windy looked over her shoulder and got her going again." You can bet that as soon as Frank told Dave about Sue and Windy, the story started spreading through the Net.

Hughes and Odasz knew enough about the power of citizen-to-citizen (lateral) communications to set up common discussion areas and BBSs as well as databases of information and software. There is power in the broadcast paradigm when you can give people access to large bodies of useful information, such as agricultural and meteorological data that can be critically important in the real lives of Montana rural populations. But the community-building power comes from the living database that the participants create and use together informally as they help each other solve problems, one to one and many to many. The web of human relationships that can grow along with the database is where the potential for cultural and political change can be found.

By 1991, the success of the system enabled BST to meet goals of getting online "forty rural schools, including ten Native American schools, twelve rural public libraries, twelve rural economic development offices or chambers of commerce, twelve women's centers, twelve Soil Conservation Service or County Extension offices, five handicapped organizations, and five rural hospitals," according to Frank Odasz.

Besides the local connections that formed the core and real-life community of BST in western Montana, Hughes and his net-weaving cohorts were plugging places like the Big Hole Valley into the vast rich turmoil of the Net. First, they established a connection with FidoNet, and through FidoNet's gateway, to Internet. Then they looked for ways to take advantage of more direct Internet connections at universities. Dave is the kind of guy who will walk into the county commissioner's office or MIT or the Pentagon and shake down everybody he can find in the cause of an educational crusade. He found a lot of sympathetic Netheads at key power points, as he always does. As he was wiring BST to the world, Dave Hughes also was zeroing in on the kind of distance-education prestigidation he could brag about on the Net: connecting a professor at MIT's Plasma Fusion Laboratory to the BST to develop a course on chaos theory for gifted science students in rural Montana.

After Big Sky was working, and bright kids in Montana were learning physics from MIT professors, Hughes and Frank Odasz started doing demonstrations for another kind of community in that part of the country. Hughes brought a color laptop computer and a modem; all he needed was a telephone line. Hughes has always insisted on including ways for people to create and share graphics as well as text online. He had the notion that the Assiniboine, Gros Ventre, Crow, and Blackfoot who gathered around his computer might be interested in the way the graphics software would enable them to create and transmit text in their native alphabets.

As he had done with the teachers and change agents at BST, Dave encouraged his audience to get their hands on the equipment as soon as possible and teach each other how to use it. After his performance, Dave turned the computer and software over to the graphic artists among the assembled Native Americans and challenged them to create one of their tribal designs on the computer screen and upload it to BST.

By 1990, one of the groups who were inspired by Hughes's first demonstration had opened the >Native American Share-Art gallery on the Russell Country BBS in Hobson, Montana. The idea was to make people outside the immediate geographic area aware of tribal culture, and to generate income for tribal artists. The artists used graphics software to create tribal designs that could be viewed on a computer screen. People could dial in to Russell Country BBS and view different designs; for a small fee, dial-up BBS users could download the designs and display them.

Their motivation behind these projects, as Hughes explained it online in 1990, was to "use telecommunications to help Native Americans learn the skills and knowledge they will need, by

getting them first to be the teachers of the rest of us about their culture, and in their preferred modes (graphic art, storytelling, native language expression) rather than just feed the white man's view of the world into them by satellite educational feeds, or impose upon them only white man's ascii text."

Dave Hughes and Frank Odasz certainly weren't, and never claimed to be, the first to teach Native Americans to use telecommunications. John Mohawk and AInet (American Indian Network), and other ventures by American Indians to use networking, were also happening. But Hughes was a kind of Johnny Appleseed. It's far easier to operate a well-set-up BBS or network than to set one up. Dave's strategy has always been to come to town, dazzle them with possibilities, show them how to do it on their own, and move on.

Although he believed in working at the local level, Hughes, who had once written a major policy speech for Secretary of Defense McNamara, always showed up in online debates on national and international telecom policy. In 1991, when then-senator Albert Gore began talking about government sponsorship of a National Research and Education Network, Dave started spending as much time online in D.C. as in Dillon.

The budget for a National Research and Education Network to link scholars, scientists, government workers, students, and business people into a national high-speed information superhighway was built into the High Performance Computing Act of 1991. There was only one problem, as far as Hughes was concerned: if NREN was going to be a superhighway, there were no on and off ramps for elementary and secondary (K-12) schools. Hughes and others insisted that unless it provided for a truly broad-based educational component, with affordable access by the already-impoverished public schools, NREN could lead to even greater gaps between the information-rich and the information-poor. Dave started haunting hearings on the Hill. He and his cohorts were heard; 1992 amendments to the bill made provisions for the beginnings of K-12 access.

As Dave puts it, in his own inimitable online style:

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It's ramp-up time in America, for telecom. And education is going to ride the
wave--with all kinds of fools, charlatans, gold-counting houses, clowns,
trying to get on their boards.

Its going to be messy. Just like America.

But as they say on Walden Pond.

Surf's up.
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Dave Hughes is a formidable spokesman and activist. But he's far from the only one. Online education has been pioneered by Paul

Levenson's Connect Ed since 1985, and by Andrew Feenberg and others at the Western Behavioral Sciences Institute before that. Entire networks, such as the Institute for Global Communications, use CMC as a political tool. There are municipalities such as Cleveland, Ohio, and Santa Monica, California, where citizens are using CMC to set the political agenda. And organizations such as the Electronic Frontier Foundation are forming committees in defense of the political freedoms previously enjoyed in cyberspace that now are threatened by powerful political interests.

The Birth of the Electronic Frontier Foundation

Fear of hackers in a virtual community is a little like fear of pyromaniacs in a rice-paper city. The goal of every hacker is to attain the system powers granted only to the person who knows the system password, and that includes the power to erase all records of previous conversations, all current e-mail, everything in everybody's private file area. Most hackers just want to explore. Others are vandals.

In an ecology of communities like the WELL, the idea of the managers of the system inviting known hackers to join the system, even temporarily, puts the WELL into a double bind. Yes, they were endangering the security of the WELL's technical and human system. But this system had a long history of avoiding censorship or heavy-handed social management, almost at any cost. If the WELL could be said to be committed to one thing above all, it would be social experimentation. And most of the WELL population understood the difference between a kid out for a joyride on his modem and more serious cases of electronic thieves or vandals. Then *Harper's* magazine offered WELL management a social experiment they couldn't refuse.

The magazine's editors had invited John P. Barlow, Mitch Kapor, Cliff Stoll (author of *The Cuckoo's Egg,* a best-seller about the successful hunt for a KGB-sponsored ring of German hackers), Stewart Brand, Kevin Kelly (one of the founders of the WELL), Dave Hughes, and a number of other cyberspace debaters from the WELL and beyond to meet in a private conference on the WELL with several of the young fellows who hack into other people's computer systems.

I remember the night the chain of events began. None of us could have known at the time that it would involve the FBI and Secret Service and grow into the founding of the Electronic Frontier Foundation. But it did have a kind of western, frontier feel to it from the beginning.

John Barlow recalled the event in his article "Crime and Puzzlement":

> So me and my sidekick Howard, we was sitting out in front of the 40 Rod Saloon one evening when he all of a sudden says, "Lookee here. What do you reckon?" I look up and there's these two strangers riding into town. They're young and got kind of a restless, bored way about 'em. A person don't need both eyes to see they mean trouble. . . .
>
> Well that wasn't quite how it went. Actually, Howard and I were floating blind as cave fish in the electronic barrens of the WELL, so the whole incident passed as words on a display screen:
>
> Howard: Interesting couple of newusers just signed on. One calls himself acid and the other's optik.
>
> Barlow:
>
> Hmmm. What are their real names?
>
> Howard:
>
> Check their finger files.

When you see a name you don't recognize, you can read that person's online biography, or "finger file." That's where the person's real name is supposed to be found on systems like the WELL.

With monikers like these, the young crackers were coming online in full sneer. Barlow is a computer journalist, pundit, third-generation cattle rancher, and former power in the Wyoming Republican party, whose main claim to fame was his history as lyricist for the Grateful Dead. The hackers were not impressed. He could have been the lyricist for Guy Lombardo for all they cared. The cocky young hackers were making a point of getting off on the wrong foot with all the old fogeys *Harper's* had invited to debate them.

At one point, Acid Phreak compared cracking computer systems to walking into a building where the door was unlocked. Barlow responded by saying he kept the door to his house unlocked, and Acid challenged Barlow to e-mail his address to him. Barlow replied in the *Harper's* conference:

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"Acid. My house is at 372 North Franklin Street in Pinedale, Wyoming. If
you're heading north on Franklin, you go about two blocks off the main drag
before you run into a hay meadow on the left. I've got the last house before
the field. The computer is always on . . . And is that really what you mean?
Are you merely just the kind of little sneak that goes around looking for
easy places to violate? You disappoint me, pal. For all your James Dean-on-
Silicon rhetoric, you're not a cyberpunk. You're just a punk."
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The next day, Phiber Optik posted Barlow's credit history in the *Harper's* conference. He had hacked TRW, the private company that stores the key details of everybody's credit history in online

computer systems that are supposed to be secure.

The arguments continued, the WELL conference ended, and the *Harper's* editors started cutting down the hundreds of pages of online rhetoric to paper-publishable size. Before the article was published, however, *Harper's* took Optik, Acid, and Barlow to dinner in Manhattan. As Barlow noted at the time, "They looked to be as dangerous as ducks." They didn't exactly become immediate friends after meeting face-to-face, but Barlow and the crackers did find some common ground--a commitment to individual liberty as a core value.

Cut back to Pinedale: "And, as I became less their adversary and more their scoutmaster," Barlow recalled when he told his story, first online and then in print, "I began to get `conference calls' in which six or eight of them would crack pay phones all over New York and simultaneously land on my line in Wyoming. . . . On January 24, 1990, a platoon of Secret Service agents entered the apartment which Acid Phreak shares with his mother and 12-year-old sister. The latter was the only person home when they burst through the door with guns drawn. They managed to hold her at bay for about half an hour until their quarry happened home."

Among the others arrested was Craig Neidorf, whose crime was to publish sections of an allegedly purloined document in *Phrack,* an online newsletter he distributed electronically. Another related raid resulted in the arrest and confiscation of all the business equipment of Steve Jackson, whose Austin company published a fictional board game that law enforcement officials were convinced was a computer crime manual. The news was all over the Net. Law had come to cyberspace in a big way, and they were busting all the wrong people. More frighteningly, they were arresting people just for the crime of disseminating information, and they were doing it on a nationally coordinated basis.

Acid and a few other young men across the United States were part of the now-notorious Operation Sun Devil, involving more than 150 federal agents, local and state law enforcement agencies, and the security arms of three or four regional telephone companies. It all had to do with the illegal electronic possession of a document that turned out to be publicly available for less than $100. The plot already was sinister enough when Barlow got his call from Agent Baxter of the FBI. Baxter, who operated out of an office in Rock Springs, Wyoming, one hundred miles away from Pinedale, wanted to get together with Barlow as soon as possible to talk about some kind of mysterious--at least to him--conspiracy to steal the trade secrets of Apple Computer.

A word of explanation is always in order when discussing high-tech crimes, because many involve theft or vandalism of intangible property such as private credit records, electronic free speech, or proprietary software. Apple computers all include in their essential hardware something known as a ROM chip that contains, encoded in noneraseable circuits, the special characteristics that make an Apple computer an Apple computer. The ROM code, therefore, is indeed a valuable trade secret to Apple; although it is stored in a chip, ROM code is computer software that can be distributed via disk or even transmitted over networks. If you knew that code, you could make your own ROMs and bootleg Apple computers. Well-known figures in the PC industry had been receiving unsolicited computer disks containing pieces of that code, accompanied by a manifesto by some group that called itself the NuPrometheus League. (Barlow swears that Agent Baxter repeatedly pronounced it the "New Prosthesis League.")

Agent Baxter's puzzlement was the heart of the encounter between him and Barlow. Not only Agent Baxter, but his sources of information, seemed exceedingly unclear about the nature of whatever it was they were supposed to be investigating. It turned out that Barlow had been contacted by the FBI because his name was on the roster of an annual private gathering called the Hackers' Conference. Baxter reported that he had been informed that the Hackers' Conference was an underground organization of computer outlaws that was probably part of the same grand conspiracy as the NuPrometheus League.

Hacker used to mean something different from what it means now. Steven Levy's 1984 book *Hackers: Heroes of the Computer Revolution* was about the unorthodox young programmers who created in the 1960s and 1970s the kind of computer technology that nonprogrammers used in the 1980s and 1990s. Although they kept odd hours and weren't fashion plates, and although they weren't averse to solving lock-picking puzzles, the original hackers were toolmakers, not burglars.

The first Hackers' Conference was a gathering of the traditional kind of hacker, not the system cracker that the mass media have since identified with the word *hacker.* I've attended enough Hackers' Conferences myself to know they are innocent events that celebrate the best in what used to be known as Yankee ingenuity, more like Nerdstocks than saboteur summits. Something seems weirdly and dishearteningly wrong when the FBI is investigating the kind of people that gave America whatever it retains of a competitive edge in the PC business.

That wasn't the only thing Baxter was unclear about. John Draper, known since the 1970s as Captain Crunch, is old enough to be Acid Phreak's father, but he still claims respect and notoriety as the original "phone phreak" who actually predated computer crackers. He's still a (legitimate) computer programmer (who created, among other things, the first word processor for IBM's first personal computer). Crunch, as he is known these days, is an amiable and unorthodox fellow who mostly stays in his apartment and writes programs. Baxter told Barlow, who probably had to physically restrain himself from the kind of involuntary laughter that spews beverages on people's shirts, that Draper was "the CEO of Autodesk, Inc., an important Star Wars contractor." And Draper was suspected of having "Soviet contacts."

Just about everything Baxter told Barlow was wrong, and Barlow knew it. There was a wacky near-miss element to the way Baxter was wrong. It was true that Draper had once worked at Autodesk as a programmer, but that was as close to being the CEO of Autodesk that he ever got; the real CEO of Autodesk, John Walker, definitely was on the Hackers' Conference list of attendees himself. Autodesk makes computer-aided design software for personal computers and was in the process of developing a cyberspace toolkit for architects and designers, but it was hardly a top-secret defense contractor. John Draper did have some Russian programmer friends, but by 1990, the Evil Empire was in the throes of disintegration.

Baxter's story was hilariously misinformed enough to make anybody worry about how well the FBI is doing against the real techno-criminals, the nuclear terrorists and large-scale data thieves. So Barlow sat Baxter down at a computer, showed him what computer source code looked like, demonstrated e-mail, and downloaded a file from the WELL. Baxter, Barlow reported, "took to rubbing his face with both hands, peering up over his fingertips and alternating `It sure is something, isn't it?' with statements such as `Whooo-ee.'"

There was controversy on the WELL about Barlow's online recollections of his candid conversations with Agent Baxter. The most radical faction in the online discussion insisted that Barlow was acting as an informant for the FBI. Barlow's point was that if everybody in law enforcement was acting on completely erroneous information about cyberspace technology, travesties of justice were inevitable.

Another person on the Hackers' Conference roster, who had actually received some of the purloined ROM code, unsolicited, and properly reported it to the authorities, was Mitchell Kapor.

Kapor had cofounded Lotus Development Corporation, one of the first and most successful software companies of the PC era, and had codesigned Lotus 1-2-3, one of the most successful PC programs of all time. He had sold the company years ago for multiple tens of millions of dollars, and the WELL was one of the places he now could be found, talking about software design, intellectual property, and civil liberties in cyberspace. He, too, was concerned with the Sun Devil arrests and what that might mean for the perhaps short-lived liberties presently enjoyed in cyberspace. He too, had been contacted by the FBI.

In late spring 1991, while he was piloting his jet cross-country, Kapor realized he was almost directly over Barlow's ranch. He had been following Barlow's reports on the WELL; they had met in person for the first time at a WELL party--introduced, as a matter of fact, by Blair Newman. Kapor called Barlow from his jet and asked Barlow if he was interested in a drop-in visit.

Kapor landed, he and Barlow started talking about the Sun Devil arrests, the NuPrometheus affair, the recent state of high aggressiveness by federal law enforcement authorities in cyberspace, and law enforcement's correspondingly high state of puzzlement about what was really going on in the world of high-tech communications. They founded the [Electronic Frontier Foundation (EFF)](#) that afternoon in Barlow's Pinedale kitchen.

Within a few days, Kapor had put Barlow in touch with the distinguished constitutional law firm that had made it possible for the *New York Times* to publish the Pentagon Papers. Kapor, concerned about the nature of the Sun Devil arrests and what they signaled for civil liberties in cyberspace, offered to support the costs of legal defense. Acid Phreak, Phiber Optik, and their buddy Scorpion were represented by Rabinowitz, Boudin, Standard, Krinsky, and Lieberman.

Within days of the Pinedale meeting, [Steve Wozniak](#), cofounder of Apple Computer, and [John Gilmore](#), Unix telecommunications wizard and one of the first employees of the enormously successful Sun Microsystems, offered to match Kapor's initial contributions. A board of directors was recruited that included, among others, WELL founder Stewart Brand. The EFF endowment was intended from the beginning to be a great deal more than a defense fund.

The EFF founders saw, as the first reporters from the mass media did not, that Sun Devil was not just a hacker bust. The EFF founders agreed that there was a good chance that the future of American democracy could be strongly influenced by the judicial and legislative structures beginning to emerge from cyberspace. The reasons the EFF helped defend Acid, Optik, and Scorpion as

well as Neidorf and Jackson had to do with the assumptions made by the Secret Service about what they could and could not do to citizens. "The Electronic Frontier Foundation will fund, conduct, and support legal efforts to demonstrate that the Secret Service has exercised prior restraint on publications, limited free speech, conducted improper seizure of equipment and data, used undue force, and generally conducted itself in a fashion which is arbitrary, oppressive, and unconstitutional," Barlow declared in an early manifesto. "In addition, we will work with the Computer Professionals for Social Responsibility and other organizations to convey to both the public and the policy-makers metaphors which will illuminate the more general stake in liberating Cyberspace."

System cracking is serious business. Someday, some data vandal is going to do real damage to something important, like a 911 response system, or air traffic control, or medical records. But Acid Phreak and his buddies weren't the culprits. And the way they were busted sent a chill down the spine of every sysop of every one of the forty to fifty sixty thousand BBSs in America.

The legal defense team blew a fatal hole in the Sun Devil prosecution when an expert who happened to monitor the public EFF conference on the WELL offered a key piece of expert knowledge: the document that was so highly valued that hundreds of law enforcement officers were protecting it on behalf of a large corporation could be obtained legally from the publications department of that corporation for an amount that would merit something more akin to a petty theft misdemeanor charge than a guns-drawn raid. The problem soon turned out to be one of education: not even the deep pockets of the EFF founders and the best legal expertise they could buy could be effective against a system in which very few people involved in enforcing the law or defending suspects understood the kind of place--cyberspace--in which the alleged crimes took place.

It wasn't just the legal system that had been taken by surprise. New social and civil rights and responsibilities, utterly untested by case law, have been emerging from CMC technology, along with the online cultures that have been growing in it. To most citizens and lawmakers in 1990, online newsletters and ROM code and the constitutional implications of computer networks were remote and incomprehensible issues. In that atmosphere of confusion and ignorance, most people thought the EFF was defending hackers, period; the rights of electronic speech and assembly that the EFF founders were so concerned about were invisible to the majority of the population. Someone had to do a better job of explaining to citizens that they were in danger of losing rights they didn't know they possessed.

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The EFF began its public outreach via a conference on the WELL, inviting both the prosecutors and the defendants in the Sun Devil busts to engage in a dialogue with cryptographers, criminologists, hackers, crackers, and attorneys about the kind of law enforcement that is proper and improper in cyberspace. The Computers, Freedom, and Privacy conference was organized independently by some of the people who had participated in the EFF's online discussions on the WELL and the EFF's node on the Net, bringing the former online and courtroom opponents together face-to-face.

By early 1992, the EFF had opened a national office in Cambridge, Massachusetts, where ex-WELL director Cliff Figallo became the first EFF director, and an office in Washington, D.C., to spearhead lobbying efforts. They hired a legal director and a publications director. They began holding press conferences, attending congressional hearings, publishing online and mailing paper pamphlets, and seeking members via the Net. By the end of 1992, however, tension emerged between the Cambridge office, where the educational and community-building efforts were focused, and the Washington, D.C. office, where the litigation support and political lobbying efforts were based. The EFF board, deciding that the organization should focus its energy on lobbying and legal support, closed its Cambridge office in 1993. By that time, the Computers, Freedom, and Privacy conference and other allied organizations, such as Computer Professionals for Social Responsibility, were in position to pick up the outreach and community-building tasks that the EFF was no longer supporting.

At the end of January 1993, the Steve Jackson case came to a dramatic climax. The EFF and Steve Jackson Games had filed suit against the Secret Service. Jackson's publishing business, almost two years later, had not recovered from the confiscation of computer equipment belonging to Steve Jackson Games. We followed the trial on the Net. Shari Steele< from the EFF's legal team relayed [news from the site of the trial in Austin](#) to the Net:

> Hi everybody.
>
> I really don't have much time to write, but I just witnessed one of the most dramatic courtroom events. The judge in the Steve Jackson Games trial just spent 15 minutes straight reprimanding Agent Timothy Foley of the United States Secret Service for the behavior of the United States regarding the raid and subsequent investigation of Steve Jackson Games. He asked Foley, in random order (some of this is quotes, some is paraphrasing because I couldn't write fast enough):
>
> How long would it have taken you to find out what type of business Steve Jackson Games does? One hour? In any investigation prior to March 1st (the day of the raid) was there any evidence that implicated Steve Jackson or Steve Jackson Games, other than Blankenship's presence? You had a request from the owner to give the computers and disks back. You knew a lawyer was called. Why couldn't a copy of the information contained on the disks be given within a matter of days? How long would it have taken to copy all disks? 24 hours? Who indicated that Steve Jackson was running some kind of illegal activity? Since the equipment was not accessed at the Secret Service office in Chicago after March 27, 1990, why wasn't the equipment released on March 28th? Did you or anyone else do any investigation after March 1st into

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the nature of Mr. Jackson and his business? You say that Coutorie told you it
was a game company. You had the owner standing right in front of you on March
2nd. Is it your testimony that the first time that you realized that he was a
publisher and had business records on the machine was when this suit was
filed?

The government was so shaken, they rested their case, never even calling
Barbara Golden or any of their other witnesses to the stand. Closing
arguments are set for this afternoon. It truly was a day that every lawyer
dreams about. The judge told the Secret Service that they had been very
wrong. I'll try to give a full report later. Shari
```

The verdict came in on March 12, 1993, a significant legal victory for Steve Jackson Games and the EFF, although certainly not the last battle in this struggle. The judge awarded damages of $1,000 per plaintiff under the Electronic Communications Privacy Act and, under the Privacy Protection Act, awarded Steve Jackson Games $42,259 for lost profits and out-of-pocket costs of $8,781. The method in which law enforcement authorities had seized Jackson's computers was ruled to be an unlawful search and seizure of a publisher.

It remains to be seen whether the online civil libertarians can build a broad-based movement beyond the ranks of the early adapters and whether even a well-organized grassroots movement can stand up to the kind of money and power at stake in this debate. But at least the battle over fundamental civil rights in cyberspace has been joined, and organizations like the EFF, Computer Professionals for Social Responsibility, and Computers, Freedom, and Privacy are beginning to proliferate. If these organizations succeed in gaining supporters outside the circles of technically knowledgeable enthusiasts, citizens might gain powerful leverage at a crucial time. There comes a time when small bands of dedicated activists need wide support; in cyberspace, that time has arrived.

The online community has a responsibility to the freedom it enjoys, and if it wants to continue to enjoy that freedom, more people must take an active part in educating the nontechnical population about several important distinctions that are lost in the blitz of tabloid journalism. Most important, people in cyberspace are citizens, not criminals, nor do the citizens tolerate the criminals among them; however, law enforcement agencies have a commitment to constitutional protections of individual rights, and any breach of those rights in the pursuit of criminals threatens the freedoms of other citizens' rights to free speech and assembly.

The constitutional government of the United States has proved to be a flexible instrument for two centuries, but cyberspace is very new and we are moving into it quickly. Any freedoms we lose now are unlikely to be regained later. The act of simply extending the Bill of Rights to that

portion of cyberspace within U.S. jurisdiction would have an enormously liberating impact on the application of CMC to positive social purposes everywhere in the world.

Grassroots and Global: CMC Activists

Are virtual communities just computerized enclaves, intellectual ivory towers? The answer must lie in the real world, where people try to use the technology for the purpose of addressing social problems. Nonprofit organizations on the neighborhood, city, and regional levels, and nongovernmental organizations (NGOs) on the global level, can be seen as modern manifestations of what the enlightenment philosophers of democracy would have called "civil society." The ideal of building what one pioneer, Howard Frederick, calls a "global civil society" is one clear vision of a democratic use of CMC. Nonprofits and NGOs that use CMC effectively are concrete evidence of ways this technology can be used for humanitarian purposes.

Nonprofits and NGOs are organizationally well-suited to benefit from the leverage offered by CMC technology and the people power inherent in virtual communities. These groups feed people, find them medical care, cure blindness, free political prisoners, organize disaster relief, find shelter for the homeless--tasks as deep into human nonvirtual reality as you can get. The people who accomplish this work suffer from underfunding, overwork, and poor communications. Any leverage they can gain, especially if it is affordable, will pay off in human lives saved, human suffering alleviated.

Nonprofit organizations and volunteer action groups dealing with environmentalism, civil rights, physical and sexual abuse, suicide prevention, substance abuse, homeleslness, public health issues, and all the other people problems in modern society that aren't addressed adequately by the government, the justice system, or the private sector generally operate on a shoestring, with volunteer labor. Few of them have people with enough computer expertise to set up a mailing list database or an e-mail network, so they end up spending five times as much money by paying a service or misusing volunteers to do their mailings.

Dan Ben-Horin tapped the social consciousness of experts on the WELL, matching computer-literate mentors with nonprofit organizations. The scheme worked so well that it turned into a well-funded nonprofit organization itself--CompuMentor. Here is the story of the birth of CompuMentor, in Ben-Horin's own words:

> The CompuMentor project began four and a half years ago when I couldn't get
> my new 24-pin printer to print envelopes without smudging. I had just started
> logging onto the WELL, so I posted my printer
>
> question in the IBM conference. The answers I received were not only informal
> but also profuse, open-hearted, full-spirited. The proverbial thought balloon
> instantly appeared. These computerites on the WELL wanted to share their
> skills.
>
> I had recently spent more than four years as ad director of Media Alliance,
> of San Francisco, where I had started a technical assistance facility called
> Computer Alliance. Computer Alliance offered training to nonprofit groups and
> individuals who traveled to Fort Mason in San Francisco for instruction. From
> various conversations with nonprofit organizations, as well as my own
> experience as a fledgling computerist, I knew how easy it is to take a great
> class and then forget a crucial part of the lesson on the drive home.
>
> My own learning had really commenced when my next-door neighbor expressed a
> willingness to help me whenever I needed him. And I needed him frequently.
> Now, here on the WELL was a whole community of helpful
> electronic next-door neighbors.
>
> Of course, few nonprofit organizations are online with their personal
> computers. Was there a way to connect the online computer guides with the
> nonprofit organizations that needed guidance? I sent a flier (`Do you need
> computer help?') to thirty nonprofit organizations, eighteen of which
> responded, `You betcha and how.' Then, on the WELL, I started asking folks if
> they wanted to adopt a nonprofit organization. A dozen folks said they were
> willing to visit nonprofit organizations as computer mentors. In addition,
> two dozen more said they would be glad to handle phone queries. One
> WELLbeing suggested we call the project ENERT--for
> Emergency Nerd Response Team--but we opted for the more
> bland CompuMentor.

By December 1990, CompuMentor had set up 968 matches with 446 nonprofit organizations, from a database of 668 volunteer mentors. A few examples of the kinds of organizations CompuMentor helped set up include DES Action of San Francisco, California Rural Legal Assistance, St. Anthony's Dining room, and Women's Refuge in Berkeley. CompuMentor has gone national since then and continues to secure funding from charitable foundations that know leverage when they see it.

Environmental activists have been among the most successful of the early adapters of CMC technology. Among the first online environmental activists was Don White, director of Earth Trust, a worldwide nonprofit organization that concentrates on international wildlife protection and environmental problems that "fall between the cracks of local and national environmental movements." According to White, "Recent EarthTrust programs include shutting down Korea's illegal whaling operations, expeditions to South America to save Amazon wildlife, acoustic and communications research on whales and dolphins, and groundbreaking work against deep-sea gillnetting fleets."

EarthTrust is an extremely low-overhead transnational organization that exists almost entirely as a network of volunteers scattered around the globe. Some volunteers are in cities where national governments can be lobbied; many are in remote locations where they can verify "ground truth" about logging, mining, fishing operations, and toxic waste disposal. EarthTrust

provides its branch offices with inexpensive personal computers, printers, modems, and accounts with MCImail, a global electronic mail service. Each basic electronic workstation costs less than $1,000. The professionals in the field and those in the offices can coordinate communications inexpensively.

Environmental scientists and activists are dispersed throughout the world, generally don't have the money to travel to international conferences, and are compartmentalized into academic institutions and disciplines. The uses of electronic mailing lists and grassroots computer networks began to spread through the scientific and scholarly parts of the ecoactivist grapevine through the late 1980s. Just as virtual communities emerged in part as a means of fulfilling the hunger for community felt by symbolic analysts, the explosive growth in electronic mailing lists covering environmental subjects has served as a vehicle for informal multidisciplinary discussions among those who want to focus on real-world problems rather than on the borders between nations or academic departments.

By 1992, there were enough online environmentalist efforts to support the publication of a popular guidebook to CMC as a tool for environmental activism, *Ecolinking: Everyone's Guide to Online Environmental Organization. Ecolinking* is a combination of CompuMentor-in-a-book that instructs activists in the arcana of going online, and a directory that lists the key information about different BBSs and networks that already exist.

Among the subjects of FidoNet echoes (ongoing, BBS-network-based, international computer conferences on specific subjects), *Ecolinking* lists hazardous waste management, Indian affairs, sustainable agriculture, global environmental issues, health physics, geography, hunger, radiation safety, >Native American NewsMagazine, Native American Controversy, and technology education, as well as other interest areas.

The struggle for preservation of theearth's biodiversity, which is threatened on a massive scale by human destruction of old-growth ecosystems, is an environmental-political issue that requires the concerted efforts of a number of different disciplines and nationalities. Ecologists, ethologists, biologists, anthropologists, activists around the world, have been using parts of the Net to coordinate scientific and political efforts. *Ecolinking* notes the example of Aldo de Moor, a fourth-year information management

student in the Netherlands who created the Rain Forest Network Bulletin on BITNET as an online think tank for evaluating ecological action plans from both scientific and political perspectives--an incubator for potential environmental solutions.

The importance of BITNET is its reach throughout the world's research establishments. Originally funded by NSF and implemented by IBM, BITNET (Because It's Time Network) links more than two thousand academic and research organizations worldwide, in thirty-eight countries, mostly through automatic Listservs, electronic mailing lists that automatically move written discussions around to those who subscribe; the latest rounds of every discussion show up in the subscribers' electronic mailboxes, and the subscribers can send responses around to the rest of the list by replying to the e-mail. The European version of BITNET is called EARN (European Academic Research Network), which begat PLEARN, the Polish network that sprang up the moment communism crumbled.

BITNET mailing lists are gatewayed to the Internet. This means that this "invisible college" already has tremendous reach in the scholarly and scientific world across national as well as disciplinary boundaries. The dozens of BITNET mailing lists, from Agroforestry to Weather Spotters (and including such forums as the Brineshrimp Discussion List, the National Birding Hotline Cooperative, the Genomic-Organization Bulletin Board, and the Dendrochronology Forum), have created a web of interdisciplinary communications and a worldwide forum for sharing knowledge about environmental issues among tens of thousands of experts.

The increasing "networkability" of the nonprofits and NGOs that are springing up around the world, specifically in the area of environmental action and peacework, is what gave birth to the largest and most effective activist network in the world, the Institute for Global Communications, which includes EcoNet, PeaceNet, GreenNet, ConflictNet, and others worldwide.

The NGO movement represents another example of the kinds of organizations that global voice telecommunications made possible in the first place, and which have the potential to thrive in a CMC networked world. Just as nonprofit organizations focus on those social problems that fall between the cracks of local or regional institutions, public and private, NGOs address the issues that national and international institutions, public and private, don't seem to address. The Red Cross is the paradigm example. Amnesty International is a contemporary example of an NGO that has had real impact.

Howard Frederick, present news director of the Institute for Global Communications, believes that NGOs are the global

equivalent to the institutions of civil society that the first theoreticians of modern democracy envisioned. In an online discussion that took place via a BITNET Listserv (and which was compiled into a book by MIT Press), Frederick asserted:

> The concept of *civil society* arose with <u>John Locke</u>, the English philosopher and political theorist. It implied a defense of human society at the national level against the power of the state and the inequalities of the marketplace. For Locke, civil society was that part of civilization--from the family and the church to cultural life and education--that was outside of the control of government or market but was increasingly marginalized by them. Locke saw the importance of social movements to protect the public sphere from these commercial and governmental interests.

Frederick pointed out in our online discussions that big money and powerful political interests have "pushed civil society to the edge," leaving those who would constitute such a culture with no communications media of their own. Frederick believes that CMC has changed the balance of power for NGOs on the global level, the way Dave Hughes believes CMC changes the balance of power for citizens on the community level:

> The development of communications technologies has vastly transformed the capacity of global civil society to build coalitions and networks. In times past, communication transaction clusters formed among nation-states, colonial empires, regional economies and alliances--for example, medieval Europe, the Arab world, China and Japan, West African kingdoms, the Caribbean slave and sugar economies. Today new and equally powerful forces have emerged on the world stage--the rain forest protection movement, the human rights movement, the campaign against the arms trade, alternative news agencies, and planetary computer networks.

NGOs, according to Frederick and others, face a severe political problem that arises from the concentration of ownership of global communication media in the hands of a very small number of people. He cited Ben Bagdikian's often-quoted prediction that by the turn of the century "five to ten corporate giants will control most of the world's important newspapers, magazines, books, broadcast stations, movies, recordings and videocassettes." These new media lords are not likely to donate the use of their networks for the kinds of information that NGOs tend to disseminate. Yet rapid and wide dissemination of information is vitally important to grassroots organizing around global problems.

The activist solution to this dilemma has been to create alternate planetary information networks. The Institute for Global Communications (IGC), then, was conceived as a kind of virtual community for NGOs, an enabling technology for the continued growth of global civil society. Again, the distributed nature of the telecommunications network, coupled with the availability of affordable computers, made it possible to piggyback an alternate network on the mainstream infrastructure.

In 1982, an environmental organization in California, <u>the</u>

Farallones Institute, with seed money from Apple Computer and the San Francisco Foundation, created EcoNet to facilitate discussion and activism on behalf of worldwide environmental protection, restoration, and sustainability. In 1984, PeaceNet was created by Ark Communications Institute, theCenter for Innovative Diplomacy, Community Data Processing, and the Foundation for the Arts of Peace. In 1987, PeaceNet and EcoNet joined together as part of IGC. In 1990, ConflictNet, a network dedicated to supporting dispute mediation and nonviolent conflict resolution, joined IGC.

IGC worked with local partners to establish sister networks in Sweden, Canada, Brazil, Nicaragua, and Australia. Eventually, GlasNet in the former Soviet Union affiliated with IGC. In 1990, the different member organizations formed the Association for Progressive Communications (APC) to coordinate what had become a global network of activist networks. By 1992, APC networks connected more than fifteen thousand subscribers in ninety countries.

APC networks experienced a radical surge in activity during the Gulf War. As the most highly news-managed war of the media age, the Gulf War created a hunger for alternative sources of information, a hunger that was met by the kinds of alternatives offered by APC. During the attempted coup in the Soviet Union in 1990, Russian "APC partners used telephone circuits to circumvent official control," according to Frederick. "Normally, the outdated Russian telephone system require hordes of operators to connect international calls by hand and callers must compete fiercely for phone lines. But the APC partner networks found other routes for data flow. While the usual link with Moscow is over international phone lines, APC technicians also rigged a link over a more tortuous route. That plan saw Soviet news dispatches gathered through a loose network of personal computer bulletin board systems in Moscow and Leningrad. The dispatches which were sent by local phone calls to the Baltic states, then to NordNet Sweden, and then to London-based GreenNet, which maintains an open link with the rest of the APC."

To those of us who had the Net's window on the world during the major international political crises of the past several years, the pictures we were able to piece together of what actually might be happening turned out to be considerably more diverse than the one obtainable from the other media available through conventional channels-- the newspaper, radio, and television. Within hours of the crucial events in China in 1989 and Russia in 1991, the

Net became a global backchannel for all kinds of information that never made it into the mass media. People with cellular telephones report via satellite to people with computers and modems, and within minutes, witnesses on the spot can report what they see and hear to millions of others. Imagine how this might work ten years from now, when digital, battery-operated minicams are as ubiquitous as telephones, and people can feed digitized images as well as words to the Net.

Information and disinformation about breaking events are pretty raw on the Net. That's the point. You don't know what to think of any particular bit of information, how to gauge its credibility, and nobody tells you what to think about it, other than what you know from previous encounters, about the reliability of the source. You never really know how to gauge the credibility of the nightly news or the morning paper, either, but most of us just accept what we see on television or read in the paper.

With the Net, during times of crisis, you can get more information, of extremely varying quality, than you can get from conventional media. Most important, you get unmediated news that fills in the important blank spots in the pictures presented by the mass media. You can even participate, if only as an onlooker. During the Gulf War, we on the WELL were spellbound readers of reports relayed via BITNET to Internet by an Israeli researcher, who was in a sealed room with his family, under missile attack. We asked him questions in the WELL's many-to-many public conference that were sent to him, and his answers returned, via Internet e-mail.

None of the evidence for political uses of the Net thus far presented is earthshaking in terms of how much power it has now to influence events. But the somewhat different roles of the Net in Tiananmen Square, the Soviet coup, and the Gulf War, represent harbingers of political upheavals to come. In February 1993, General Magic, a company created by the key architects of Apple's Macintosh computer, revealed their plans to market a technology for a whole new kind of "personal intelligent communicator." A box the size of a checkbook with a small screen, stylus, and cellular telephone will enable a person anywhere in the world to scribble a message on the screen and tap the screen with the stylus, sending it to anyone with a reachable e-mail address or fax machine. The same device doubles as a cellular phone. Apple, AT&T, Matsushita, Philips, Sony, and others have already announced their plans to license this technology. When the price drops to $25, what will that do to the mass media's monopoly on news? What kinds of Tiananmen Squares or Rodney King incidents will emerge from this extension of cyberspace?

Access to alternate forms of information and, most important, the power to reach others with your own alternatives to the official view of events, are, by their nature, political phenomena. Changes in forms and degrees of access to information are indicators of changes in forms and degrees of power among different groups. The reach of the Net, like the reach of television, extends to the urbanized parts of the entire world (and, increasingly, to far-flung but telecom-linked rural outposts). Not only can each node rebroadcast or originate content to the rest of the Net, but even the puniest computers can process that content in a variety of ways after it comes in to the home node from the Net and before it goes out again. Inexpensive computers can copy and process and communicate information, and when you make PCs independent processing nodes in the already existing telecommunications network, a new kind of system emerges.

Cities in Cyberspace

If electronic democracy is the theory, Santa Monica's Public Electronic Network (PEN) is a vivid example of the practice. And the PEN Action Group's SHWASHLOCK proposal is a classic case history, illustrating how citizens can agree on a common problem, use their collective resources to propose a solution, and convince the city's official government to help put the solution into practice. It's also an example of how the nonvirtual realities of modern cities can be influenced in concrete ways by the focused use of virtual communities. The scale of the example is small, and the city is one of the wealthier enclaves in the world, but SHWASHLOCK is what scientists call an "existence proof" for theories of virtual civil society-building.

The name of the proposal is an acronym for "SHowers, WASHing machines, LOCKers," the three elements that PEN members, including several homeless participants, agreed that homeless job-seekers most needed. Having determined that they wanted to address in some way what a Santa Monica Chamber of Commerce survey pinpointed as "the city's number-one problem" --homelessness--PEN members formed an action group that began having face-to-face meetings long with their ongoing virtual meetings. In August 1989, an artist, Bruria Finkel, posted her idea for providing a needed service. Homeless people cannot effectively seek employment without a place to shower in the morning and a free laundry service to help make them presentable, as well as a secure place to store personal belongings. And no city or nonprofit services provided those key elements.

The PEN Action Group discovered that hot showers in public parks were not open until noon, and nonprofit service agencies were reluctant to set up lockers because they didn't want to police their contents. Online with service providers and city officials, the Action Group found no clear consensus on how to implement what all agreed to be a promising new service. PEN enthusiast Michele Wittig, a psychology professor, proposed forming a group to directly address the homelessness issue. Existing social service providers weren't happy with the prospect of this new online group competing for shrinking social service budgets, so the SHWASHLOCK advocates decided to raise funds for an existing agency, which agreed to administer a laundry voucher system. Another obstacle was overcome when a city council member introduced the Action Group to a locker manufacturer who agreed to donate lockers to the city on a trial basis.

In July 1990, the Santa Monica city council, responding to the PEN Action Group's formal proposal, allocated $150,000 to install lockers and showers under the Santa Monica pier, and agreed to open public showers elsewhere at 6:00 a.m. The homeless members of the Action Group continued to ask for some kind of job bank as well, to provide job leads. PEN members decided to try to grow a network: a PEN terminal was donated to a homeless drop-in center already staffed by job counselors, and two graduate students earned course credits for finding job listings. PEN was doing what it was designed to do: enabling citizens to discuss their own agendas, surface problems of mutual concern, cooperatively design solutions, and make the ideas work in the city's official government.

Santa Monica is an exceptional city in terms of local citizen interest, stemming from the renter's rights movement in the early 1980s. The citizens' organizations that helped pass a historically stringent rent-control ordinance also helped elect a city council that was publicly committed to opening up the government to wider citizen participation. The city council, inspired by the way an American company had helped a Japanese city use CMC to resist destruction of a local forest, hired the same American company to help them design a municipal CMC system. Metasystems Design Group (MDG), the Alexandria, Virginia, company that helped Santa Monica set up the Caucus computer conferencing software, is well aware of the culture-altering potential of CMC technology and deliberately blends organizational development work with CMC systems engineering.

MDG's Lisa Carlson was one of the early true believers in social transformation via networking; she practices what she preaches to the extent that it is hard to find any significant CMC system in the world that doesn't have a contribution from her. Another

partner in MDG, Frank Burns, was Colonel Burns of the U.S. Army's delta force in the early 1980s, when I first met him at a conference on education and consciousness. He explained to me that the largest educational institution in the world, the U.S. Army,, needed to find out if it could learn anything from the human potential movement. Before he retired to become a toolmaker for electronic activists, Burns came up with the army's highly successful recruitment slogan, "Be All That You Can Be."

If you can convince the army to model itself after Esalen, even in a tiny way, you probably have some knack for facilitating changes in organizations. MDG has always coupled an awareness of the community with its knowledge of CMC tools. CMC was seen by the city and by MDG as a tool to increase citizen participation in local government. The specific changes that they hoped would come about were not designed into the system, for they were supposed to emerge from the CMC-augmented community itself. Four years later, those who started the system began to realize what they should have designed into the system, which those who replicate their efforts ought to take into account-- the common problem in cyberspace of the hijacking of discussions by a vociferous minority.

PEN was launched in 1989. Ken Phillips, director of the Information Systems Department in Santa Monica City Hall, was the systems instigator and chief architect. When the city wouldn't pay for his plan, he obtained donations of $350,000 worth of hardware from Hewlett-Packard and $20,000 worth of software from MDG. The city distributed free accounts to city residents who would register for the service. Personal computers at home, terminals at work, and the dozens of public terminals provided to libraries, schools, and city buildings enable Santa Monicans to read information provided by the city, exchange e-mail with other citizens or city hall officials, and participate in public conferences. The police department runs the Crimewatch conference. "Planning" is a forum for discussions of land use, zoning, and development; "Environment" is where air quality, water pollution, and recycling programs are discussed; "Santa Monica" covers rent control, community events, and information about city boards and commissions.

Other forums allow discussion of topics far afield from municipal concerns. MDG, well aware of Oldenburg's ideas about informal public spaces, made sure there was enough virtual common space for people to create their own formal and informal discussions in addition to following the ones established by the system's organizers. MDG knew from experience with other organizations that you have to be careful not to structure a citizen participation system too elaborately in advance, that it is important to give the

people who use the system both the tools and the power to change the structure of discussion as well as its content.

Giving the power of expression to citizens and connecting their forum to city officials does not guarantee that all projects will turn out as positively as SHWASHLOCK. Pamela Varley, a casewriter for Harvard's Kennedy School of Government, wrote a full case study of PEN, a version of which was published in MIT's *Technology Review* in 1991. Varley quoted several enthusiasts who acknowledged the real excitement they found in using the system. Don Paschal, who was homeless when he started using the system, used one of the phrases online activists often use: "It's been a great equalizer." People did seem to talk across social barriers. But violent disagreements broke out and spread, according to other informants. "PEN's egalitarianism, however," wrote Varley, "also makes the system vulnerable to abuse. PENners quickly discover that they must contend with people who feel entitled to hector mercilessly those with whom they disagree." She quoted PEN's Ken Phillips saying that it was like trying to hold a meeting while "allowing somebody to stand in a corner and shout."

Women had trouble online with a small number of men who would badger all females as soon as they joined the system, with public and private unwanted attention, innuendo, and violence fantasies that used the initials of women on PEN. A support group, PEN Femmes, emerged and immediately made a point of welcoming women and encouraging them to participate. As women became more visible online, harassment subsided, according to Varley.

Varley noted that "PEN's biggest disappointment has been the domination of its conference discussions by a small number of users. More than 3,000 people are signed up for PEN, but only 500 to 600 log on each month and most never add any comments to the conference discussion. PENners talk about the `50 hard core' users whose names appear again and again in the conference discussions." Varley quoted Phillips as saying, "I recommend to people that if they're going to do a system like this that they start with a group of community leaders, and let them set the tone of the system."

WELLite Kathleen Creighton also spent some time exploring PEN and interviewing PEN members in 1992 about what did and what did not work about the system. Creighton's informants agreed with Varley's, that some people had more time on their hands to harangue city officials online, and those with the worst manners had a powerfully negative impact on the process of communication between citizens and city officials. "Folks' expectations were very high and they counted on a dialogue with city employees," Creighton reported. "Except that city employees

don't like being criticized or being held accountable. So users would ask the city folks questions, or PEN staff questions (which is just as bad) and not get any answers. So people got pissed off. Then they realized there was no penalty for being assholes (there isn't because the feeling is that the City of Santa Monica is barred from restricting speech--well, that's the feeling of *some*). And the powers that be told Ken Phillips years ago he couldn't have moderators."

Valuable lessons derived from the PEN experience: People want a means of communicating more than they want access to information; make databases of useful information available, but emphasize citizen-to-citizen communication as well. Citizens can put items on the city agenda, but if you plan to involve city officials, make clear to everyone what can and cannot be accomplished through this medium in terms of changing city policies, and set up some rules of polite communication within a framework of free speech. Free speech does not mean that anyone has to listen to vile personal attacks. Having both moderated forums and totally unmoderated forums for hot subjects is one technique for maintaining a place for reasoned discourse without stifling free expression. The people who use the system can design these rules, but if the PEN experience has anything to teach, it is that citizens can't hope to work with city hall without a flame-free zone for such discussions.

Another manifestation of municipal online systems is the Free-Net concept, pioneered in Cleveland and spreading outward from the American heartland. Cleveland Free-Net and the >National Public Telecomputing Network movement grew out of a 1984 research project conducted at Case Western Reserve University. Dr. Tom Grundner, then associated with the university's Department of Family Medicine, tested the applicability of CMC to the delivery of community health information. With a single telephone line, he set up a BBS known as St. Silicon's Hospital, where citizens could pose their questions to a board of public health experts and receive answers within twenty-four hours. The popularity of the project attracted financial support from AT&T and the Ohio Bell Company, which funded a larger project.

Grundner designed a full-scale CMC system as a community information resource for fields far beyond public health alone. The governor of Ohio opened Free-Net in July 1986. The first phase of the experiment attracted seven thousand registered users and more than five hundred calls a day. In 1989, a new system opened, offering access via forty-eight telephone lines, including a connection to Case Western Reserve University's fiber-optic network and, eventually, Internet. People from anywhere in the world can read Free-Net discussions, although only citizens of the Free-Net municipality can participate actively. In 1987, the

Youngstown FreeNet went online. In 1990, TriState Online in Cincinnati, the Heartland FreeNet in Peoria, Illinois, and the Medina County FreeNet, a rural system, went online.

In 1989, the participating organizations decided to create the National Public Telecomputing Network (NPTN), modeled after the National Public Radio and Public Broadcasting Systems in the United States-- user-supported, community-based, alternative media. Although the system itself is funded by citizens and by nonprofit funding sources, the core idea of NPTN is that access to the network by citizens should be free. Again, if this combination of organizational vision and CMC technology continues to succeed, yet another approach to building an online civil society could spread beyond the early adapters.

The direction of CMC technology might take a different turn, however. The transition from a government-sponsored, taxpayer-supported, relatively unrestricted public forum to a privately owned and provided medium has accelerated recently, and this transition might render moot many of the fantasies of today's true believers in electronic democracy and global online culture. When the telecommunications networks becomes powerful enough to transmit high-fidelity sound and video as well as text, the nature of the Net--and the industry that controls it--might change dramatically.

Events of the spring and summer of 1993, when entertainment conglomerates, software companies, and telephone companies started jumping into bed with each other promiscuously, may have signalled the beginning of the end of the freewheeling frontier era of Net history. April and May saw a flurry of top-level agreements among the biggest communications and entertainment companies in the world. Every week in June seemed to feature a new bombshell. During a period of a few months, the big players that had been maneuvering behind the scenes for years went public with announcements of complex, interlocking alliances. The results of these deals will influence powerfully the shape of the Net in the late 1990s.

Nobody is sure yet who the winners and losers will be, or even where the most successful markets will turn out to be, but the nature of these interindustry alliances and the announced intentions of the partners paint a picture of what Big Money sees in the Net today: a better-than-ever conduit for delivering prepackaged entertainment to the home tomorrow. Everything that has been discussed in this book

seems to be missing from that picture.

Will the enormously lucrative home video and television markets finance the many-to-many communications infrastructure that educators and activists dream about? Or will it all be pay-per-view, with little or no room for community networks and virtual communities?

In the late spring of 1993, U.S. West, one of the Regional Bell Operating Companies, announced their intention to invest $2.5 billion in Time-Warner Inc., the world's largest entertainment company, toward the goal of creating advanced cable and information networks. Time-Warner announced another partnership a few weeks later with Silicon Graphics Company to create computer-switched "video on demand." Suddenly, the most highly touted implication of these high-tech business partnerships was the miraculous ability to download tonight's video rental instead of walking a block and a half to the video rental store.

More than technology has been changing: the nature of the partnerships that emerged in early 1993 could be signs of a major shift in the structures of many traditional businesses, triggered by the shifts in our modes of communication made possible by the new technologies. IBM and Apple joined forces in a partnership that would have been unthinkable a few years ago; the IBM-Apple joint venture, Kaleida Labs, has been developing multimedia software to merge text, sound, graphics, and video in next-generation PCs. Kaleida in turn made deals with Motorola to provide microchips, and with Scientific Atlanta, a firm that makes decoders for cable television systems. Scientific Atlanta also has a partnership with Time-Warner.

The buzzphrase about these new digital channels slated to emerge from these alliances was not "virtual community," but "five hundred television channels." Newspapers started concentrating on the plans that many companies announced to put the control system for the Net connection in the cable box atop the television set--the "battle for the set-top." A reporter for the *San Francisco Chronicle* described these business alliances under the headline, "Future TV Will Shop for You and Talk for You," and began the article this way: "Imagine a television that talks to you, enables you to communicate with the kids who go to bed before you get home, and that helps you select a movie." Will set-top Net boxes bring the mass audiences into many-to-many contact? Or will grassroots conviviality be marginalized by high production values?

The information highways, as many print and broadcast

journalists began to describe them, were suddenly seen as ever-more-effective conduits for broadcasting more of the same old stuff to more people, with most interactivity limited to channel selection. *Time* and *Newsweek* magazines both did cover stories on information superhighways. Neither of the major newsmagazines mentioned the potential for many-to-many communications between citizens.

The most powerful alliance was disclosed in June 1993. Microsoft, the company started by home-brew PC hobbyist Bill Gates, dominates the PC software market. Tele-Communications Inc. is the world's largest cable television company. On June 13, John Markoff reported on the first page of the *New York Times* that Time-Warner, Microsoft, and Tele-Communications Inc. were forming a joint venture that, in Markoff's words, "would combine the worlds of computing and television and perhaps shape how much of popular culture is delivered." Markoff quoted James F. Moore, an expert consultant: "This has tremendous economic and social importance; it is the gateway for popular culture. . . . This is the substitute for newspapers and magazines and catalogs and movies, and that gives it enormous economic potential for those who control the gateway."

The day after Kaleida announced their deal with Scientific Atlanta to develop set-top controllers, Microsoft announced a deal with Intel Corporation, the world's largest chip maker, and General Instrument, a manufacturer of cable converters. Telecommunications industry pundits began speculating that the future Net was going to be a hybrid of cable company conduits, telephone company money, and entertainment company content.

The largest chip maker in the world, the largest personal computer software vendor in the world, the largest entertainment company in the world, the largest cable television company in the world, the largest computer hardware manufacturers in the world--the Net these players are building doesn't seem to be the same Net the grassroots pioneers predicted back in the "good old days" on the electronic frontier. It is possible that the leaders of one or more of these institutions will have the vision to recognize that they are in the business of selling the customers to each other, as well as the business of selling them CDs and videos. But those who are used to thinking of CMC as a largely anarchic, dirt-cheap, uncensored forum, dominated by amateurs and enthusiasts, will have to learn a new way of thinking.

Electronic democracy is far from inevitable, despite the variety of hopeful examples you can find if you look for them. There are those who believe the whole idea is a cruel illusion, and their

warnings are worth consideration--especially by the most
enthusiastic promoters of CMC activism. The next chapter looks
more closely at criticisms of the notion of electronic democracy.

read on to
Chapter Ten:
Disinformocracy

Return to rheingold's brainstorms