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For Sourceoid Dave -

Thanks for the
inspiration!
Best,

THE VIRTUAL COMMUNITY

Homesteading on the
Electronic Frontier

Howard
Rheingold

HOWARD RHEINGOLD



A William Patrick Book



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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.

In real life, Dave Hughes is a West Point graduate who commanded combat troops in Korea and Vietnam. He looks like the kind of officer the troops would call “the old man.” 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.

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 Willard Uncapher was looking for a technological revolution to study at the same time that Frank and Reggie Odasz and Dave Hughes launched their experiment in CMC community-building. Uncapher saw BST as an ideal site for the research needed for his master's thesis. The title of his report to the 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

example, was the nexus of a widespread community of interest that lacked the resources to get together often in the same physical place. The center's mission was to find ways to retrain and help women who were having a rough time—victims of physical abuse, unskilled women who were divorced late in life, single mothers without child support—who needed ways to climb out of their predicaments.

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 impor-

tant 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 prestidigitation 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-impooverished 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:

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.

It's going to be messy. Just like America.

But as they say on Walden Pond.

Surf's up.

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.