

THE VIRTUAL COMMUNITY



HOMESTEADING ON THE ELECTRONIC FRONTIER

REVISED EDITION

HOWARD RHEINGOLD

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Homesteading on the Electronic Frontier
revised edition

Howard Rheingold



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To the friends and family I've met through the WELL, our virtual community.

We know the rules of community; we know the healing effect of community in terms of individual lives. If we could somehow find a way across the bridge of our knowledge, would not these same rules have a healing effect upon our world? We human beings have often been referred to as social animals. But we are not yet community creatures. We are impelled to relate with each other for our survival. But we do not yet relate with the inclusivity, realism, self-awareness, vulnerability, commitment, openness, freedom, equality, and love; of genuine community. It is clearly no longer enough to be simply social animals, babbling together at cocktail parties and brawling with each other in business and over boundaries. It is our task—our essential, central, crucial task—to transform ourselves from mere social creatures into community creatures. It is the only way that human evolution will be able to proceed.

M. Scott Peck

The Different Drum: Community-Making and Peace

Preface to the MIT Press Edition

When *The Virtual Community* was first published in 1993, social cyberspaces and the Internet were new phenomena to most people. Now, the entire world seems to be undergoing an Internet-enabled transformation. This new edition has afforded me the opportunity to try to cover some of the enormous new territory that has opened up over the past seven years. My update is at the end of the book, in an afterword that the MIT Press generously allowed me to add. (Note that there is also a 1994 afterword—the Web was an interesting little cloud on the horizon in 1992, when I was writing the first edition.)

New people and a new virtual community need to be acknowledged in regard to the additional material. First and foremost, Moya Mason, bibliographic researcher extraordinaire, has helped me compile an extensive new bibliography that is meant to serve as a guide to further research for those who are setting out to map the vast new social cyberspaces. In addition, members of the Brainstorms virtual community offered invaluable advice. Some of those who were helpful in that context are Bryan Alexander, Andrea Baker, Valerie Bock, Glen Blankenship, Michael Boyle, Timothy Burke, Steve Cisler, Sherwood A. Dowling, Robert F. Johnson, Gary Jones, Tim Jordan, Thorsten Kogge, Jon Lebkowsky, Elizabeth Lewis, Geert Lovink, Del Rickel, Mike Sellers, Sharon Shaw, David Silver, Dana Still, John Suler, Paul Waterhouse, Bob Watson, Michael Wilson.

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Introduction

“Daddy is saying ‘Holy moly!’ to his computer again!”

Those words have become a family code for the way my virtual community has infiltrated our real world. My seven-year-old daughter knows that her father congregates with a family of invisible friends who seem to gather in his computer. Sometimes he talks to them, even if nobody else can see them. And she knows that these invisible friends sometimes show up in the flesh, materializing from the next block or the other side of the planet.

Since the summer of 1985, for an average of two hours a day, seven days a week, I’ve been plugging my personal computer into my telephone and making contact with the WELL (Whole Earth ‘Lectronic Link)—a computer conferencing system that enables people around the world to carry on public conversations and exchange private electronic mail (e-mail). The idea of a community accessible only via my computer screen sounded cold to me at first, but I learned quickly that people can feel passionately about e-mail and computer conferences. I’ve become one of them. I care about these people I met through my computer, and I care deeply about the future of the medium that enables us to assemble.

I’m not alone in this emotional attachment to an apparently bloodless technological ritual. Millions of people on every continent also participate in the computer-mediated social groups known as virtual communities, and this population is growing fast. Finding the WELL was like discovering a cozy little world that had been flourishing without me, hidden within the walls of my house; an entire cast of characters welcomed me to the troupe with great merriment as soon as I found the secret door. Like others who fell into the WELL, I soon discovered that

I was audience, performer, and scriptwriter, along with my companions, in an ongoing improvisation. A full-scale subculture was growing on the other side of my telephone jack, and they invited me to help create something new.

The virtual village of a few hundred people I stumbled upon in 1985 grew to eight thousand by 1993. It became clear to me during the first months of that history that I was participating in the self-design of a new kind of culture. I watched the community's social contracts stretch and change as the people who discovered and started building the WELL in its first year or two were joined by so many others. Norms were established, challenged, changed, reestablished, rechallenged, in a kind of speeded-up social evolution.

The WELL felt like an authentic community to me from the start because it was grounded in my everyday physical world. WELLites who don't live within driving distance of the San Francisco Bay area are constrained in their ability to participate in the local networks of face-to-face acquaintances. By now, I've attended real-life WELL marriages, WELL births, and even a WELL funeral. (The phrase "in real life" pops up so often in virtual communities that regulars abbreviate it to IRL.) I can't count the parties and outings where the invisible personae who first acted out their parts in the debates and melodramas on my computer screen later manifested in front of me in the physical world in the form of real people, with faces, bodies, and voices.

I remember the first time I walked into a room full of people IRL who knew many intimate details of my history and whose own stories I knew very well. Three months after I joined, I went to my first WELL party at the home of one of the WELL's online moderators. I looked around at the room full of strangers when I walked in. It was one of the oddest sensations of my life. I had contended with these people, shot the invisible breeze around the electronic watercooler, shared alliances and formed bonds, fallen off my chair laughing with them, become livid with anger at some of them. But there wasn't a recognizable face in the house. I had never seen them before.

My flesh-and-blood family long ago grew accustomed to the way I sit in my home office early in the morning and late at night, chuckling and cursing, sometimes crying, about words I read on the computer screen. It might have looked to my daughter as if I were alone at my desk the

night she caught me chortling online, but from my point of view I was in living contact with old and new friends, strangers and colleagues:

I was in the Parenting conference on the WELL, participating in an informational and emotional support group for a friend who just learned his son was diagnosed with leukemia.

I was in MicroMUSE, a role-playing fantasy game of the twenty-fourth century (and science education medium in disguise), interacting with students and professors who know me only as "Pollenator."

I was in TWICS, a bicultural community in Tokyo; CIX, a community in London; CalvaCom, a community in Paris; and Usenet, a collection of hundreds of different discussions that travel around the world via electronic mail to millions of participants in dozens of countries.

I was browsing through Supreme Court decisions, in search of information that could help me debunk an opponent's claims in a political debate elsewhere on the Net, or I was retrieving this morning's satellite images of weather over the Pacific.

I was following an eyewitness report from Moscow during the coup attempt, or China during the Tiananmen Square incident, or Israel and Kuwait during the Gulf War, passed directly from citizen to citizen through an ad hoc network patched together from cheap computers and ordinary telephone lines, cutting across normal geographic and political boundaries by piggybacking on the global communications infrastructure.

I was monitoring a rambling real-time dialogue among people whose bodies were scattered across three continents, a global bull session that seems to blend wit and sophomore locker-room talk via Internet Relay Chat (IRC), a medium that combines the features of conversation and writing. IRC has accumulated an obsessive subculture of its own among undergraduates by the thousands from Adelaide to Arabia.

People in virtual communities use words on screens to exchange pleasantries and argue, engage in intellectual discourse, conduct commerce, exchange knowledge, share emotional support, make plans, brainstorm, gossip, feud, fall in love, find friends and lose them, play games, flirt, create a little high art and a lot of idle talk. People in virtual communities do just about everything people do in real life, but we leave our bodies behind. You can't kiss anybody and nobody can punch you in the nose, but a lot can happen within those boundaries. To the millions who have

been drawn into it, the richness and vitality of computer-linked cultures is attractive, even addictive.

There is no such thing as a single, monolithic, online subculture; it's more like an ecosystem of subcultures, some frivolous, others serious. The cutting edge of scientific discourse is migrating to virtual communities, where you can read the electronic pre-preprinted reports of molecular biologists and cognitive scientists. At the same time, activists and educational reformers are using the same medium as a political tool. You can use virtual communities to find a date, sell a lawnmower, publish a novel, conduct a meeting.

Some people use virtual communities as a form of psychotherapy. Others, such as the most addicted players of Minitel in France or Multi-User Dungeons (MUDs) on the international networks, spend eighty hours a week or more pretending they are someone else, living a life that does not exist outside a computer. Because MUDs not only are susceptible to pathologically obsessive use by some people but also create a strain on computer and communication resources, MUDding has been banned at universities such as Amherst and on the entire continent of Australia.

Scientists, students, librarians, artists, organizers, and escapists aren't the only people who have taken to the new medium. The U.S. senator who campaigned for years for the construction of a National Research and Education Network that could host the virtual communities of the future is now vice president of the United States. As of June 1993, the White House and Congress have e-mail addresses.

Most people who get their news from conventional media have been unaware of the wildly varied assortment of new cultures that have evolved in the world's computer networks over the past ten years. Most people who have not yet used these new media remain unaware of how profoundly the social, political, and scientific experiments under way today via computer networks could change all our lives in the near future.

I have written this book to help inform a wider population about the potential importance of cyberspace to political liberties and the ways virtual communities are likely to change our experience of the real world, as individuals and communities. Although I am enthusiastic about the liberating potentials of computer-mediated communications, I try to keep my eyes open for the pitfalls of mixing technology and human rela-

tionships. I hope my reports from the outposts and headquarters of this new kind of social habitation, and the stories of the people I've met in cyberspace, will bring to life the cultural, political, and ethical implications of virtual communities both for my fellow explorers of cyberspace and for those who never heard of it before.

The technology that makes virtual communities possible has the potential to bring enormous leverage to ordinary citizens at relatively little cost—intellectual leverage, social leverage, commercial leverage, and most important, political leverage. But the technology will not in itself fulfill that potential; this latent technical power must be used intelligently and deliberately by an informed population. More people must learn about that leverage and learn to use it, while we still have the freedom to do so, if it is to live up to its potential. The odds are always good that big power and big money will find a way to control access to virtual communities; big power and big money always found ways to control new communications media when they emerged in the past. The Net is still out of control in fundamental ways, but it might not stay that way for long. What we know and do now is important because it is still possible for people around the world to make sure this new sphere of vital human discourse remains open to the citizens of the planet before the political and economic big boys seize it, censor it, meter it, and sell it back to us.

The potential social leverage comes from the power that ordinary citizens gain when they know how to connect two previously independent, mature, highly decentralized technologies: It took billions of dollars and decades to develop cheap personal computers. It took billions of dollars and more than a century to wire up the worldwide telecommunication network. With the right knowledge, and not too much of it, a ten-year-old kid today can plug these two vast, powerful, expensively developed technologies together for a few hundred dollars and instantly obtain a bully pulpit, the Library of Congress, and a world full of potential coconspirators.

Computers and the switched telecommunication networks that also carry our telephone calls constitute the technical foundation of computer-mediated communications (CMC). The technicalities of CMC, how bits of computer data move over wires and are reassembled as computer files at their destinations, are invisible and irrelevant to most

people who use it, except when the technicalities restrict their access to CMC services. The important thing to keep in mind is that the worldwide, interconnected telecommunication network that we use to make telephone calls in Manhattan and Madagascar can also be used to connect computers together at a distance, and you don't have to be an engineer to do it.

The Net is an informal term for the loosely interconnected computer networks that use CMC technology to link people around the world into public discussions.

Virtual communities are social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace.

Cyberspace, originally a term from William Gibson's science-fiction novel *Neuromancer*, is the name some people use for the conceptual space where words, human relationships, data, wealth, and power are manifested by people using CMC technology.

Although spatial imagery and a sense of place help convey the experience of dwelling in a virtual community, biological imagery is often more appropriate to describe the way cyberculture changes. In terms of the way the whole system is propagating and evolving, think of cyberspace as a social petri dish, the Net as the agar medium, and virtual communities, in all their diversity, as the colonies of microorganisms that grow in petri dishes. Each of the small colonies of microorganisms—the communities on the Net—is a social experiment that nobody planned but that is happening nevertheless.

We now know something about the ways previous generations of communications technologies changed the way people lived. We need to understand why and how so many social experiments are coevolving today with the prototypes of the newest communications technologies. My direct observations of online behavior around the world over the past ten years have led me to conclude that whenever CMC technology becomes available to people anywhere, they inevitably build virtual communities with it, just as microorganisms inevitably create colonies.

I suspect that one of the explanations for this phenomenon is the hunger for community that grows in the breasts of people around the world as more and more informal public spaces disappear from our real

lives. I also suspect that these new media attract colonies of enthusiasts because CMC enables people to do things with each other in new ways, and to do altogether new kinds of things—just as telegraphs, telephones, and televisions did.

Because of its potential influence on so many people's beliefs and perceptions, the future of the Net is connected to the future of community, democracy, education, science, and intellectual life—some of the human institutions people hold most dear, whether or not they know or care about the future of computer technology. The future of the Net has become too important to leave to specialists and special interests. As it influences the lives of a growing number of people, more and more citizens must contribute to the dialogue about the way public funds are applied to the development of the Net, and we must join our voices to the debate about the way it should be administered. We need a clear citizens' vision of the way the Net ought to grow, a firm idea of the kind of media environment we would like to see in the future. If we do not develop such a vision for ourselves, the future will be shaped for us by large commercial and political powerholders.

The Net is so widespread and anarchic today because of the way its main sources converged in the 1980s, after years of independent, apparently unrelated development, using different technologies and involving different populations of participants. The technical and social convergences were fated, but not widely foreseen, by the late 1970s.

The wide-area CMC networks that span continents and join together thousands of smaller networks are a spinoff of American military research. The first computer network, ARPANET, was created in the 1970s so that Department of Defense-sponsored researchers could operate different computers at a distance; computer data, not person-to-person messages, were the intended content of the network, which handily happened to serve just as easily as a conduit for words. The fundamental technical idea on which ARPANET was based came from RAND, the think tank in Santa Monica that did a lot of work with top-secret thermonuclear war scenarios; ARPANET grew out of an older RAND scheme for a communication, command, and control network that could survive nuclear attack by having no central control.

Computer conferencing emerged, also somewhat unexpectedly, as a tool for using the communication capacities of the networks to build

social relationships across barriers of space and time. A continuing theme throughout the history of CMC is the way people adapt technologies designed for one purpose to suit their own, very different, communication needs. And the most profound technological changes have come from the fringes and subcultures, not the orthodoxy of the computer industry or academic computer science. The programmers who created the first computer network installed electronic mail features; electronic mail wasn't the reason ARPANET was designed, but it was an easy thing to include once ARPANET existed. Then, in a similar, ad hoc, do-it-yourself manner, computer conferencing grew out of the needs of U.S. policymakers to develop a communications medium for dispersed decision making. Although the first computer conferencing experiments were precipitated by the U.S. government's wage-price freeze of the 1970s and the consequent need to disseminate up-to-date information from a large number of geographically dispersed local headquarters, computer conferencing was quickly adapted to commercial, scientific, and social discourse.

The hobbyists who interconnect personal computers via telephone lines to make computer bulletin-board systems, known as BBSs, have home-grown their part of the Net, a true grassroots use of technology. Hundreds of thousands of people around the world piggyback legally on the telecom network via personal computers and ordinary telephone lines. The most important technical attribute of networked BBSs is that it is an extremely hard network to kill—just as the RAND planners had hoped. Information can take so many alternative routes when one of the nodes of the network is removed that the Net is almost immortally flexible. It is this flexibility that CMC telecom pioneer John Gilmore referred to when he said, "The Net interprets censorship as damage and routes around it." This way of passing information and communication around a network as a distributed resource with no central control manifested in the rapid growth of the anarchic global conversation known as Usenet. This invention of distributed conversation that flows around obstacles—a grassroots adaptation of a technology originally designed as a doomsday weapon—might turn out to be as important in the long run as the hardware and software inventions that made it possible.

The big hardwired networks spend a lot more money to create high-speed information conduits between high-capacity computing nodes. Internet, today's U.S. government-sponsored successor to ARPANET, is

growing in every dimension at an astonishing pace. These “data super-highways” use special telecommunication lines and other equipment to send very large amounts of information throughout the network at very high speeds. ARPANET started around twenty years ago with roughly one thousand users, and now Internet is approaching ten million users.

The portable computer on my desk is hundreds of times less expensive and thousands of times more powerful than ARPANET’s first nodes. The fiber-optic backbone of the current Internet communicates information millions of times faster than the first ARPANET. Everything about Internet has grown like a bacterial colony—the raw technical capacity to send information, the different ways people use it, and the number of users. The Internet population has grown by 15 percent a month for the past several years. John Quartermann, whose book *The Matrix* is a thick guide to the world’s computer networks, estimates that there are nine hundred different networks worldwide today, not counting the more than ten thousand networks already linked by the Internet “network of networks.”

Real grassroots, the kind that grow in the ground, are a self-similar branching structure, a network of networks. Each grass seed grows a branching set of roots, and then many more smaller roots grow off those; the roots of each grass plant interconnect physically with the roots of adjacent plants, as any gardener who has tried to uproot a lawn has learned. There is a grassroots element to the Net that was not, until very recently, involved with all the high-tech, top-secret doings that led to ARPANET—the BBSers.

The population of the grassroots part of the Net, the citizen-operated BBSs, has been growing explosively as a self-financed movement of enthusiasts, without the benefit of Department of Defense funding. A BBS is the simplest, cheapest infrastructure for CMC: you run special software, often available inexpensively, on a personal computer, and use a device known as a modem to plug the computer into your regular telephone line. The modem converts computer-readable information into audible beeps and boops that can travel over the same telephone wires that carry your voice; another modem at the other end decodes the beeps and boops into computer-readable bits and bytes. The BBS turns the bits and bytes into human-readable text. Other people use their computers to call your BBS, leave and retrieve messages stored in your personal computer,

and you have a virtual community growing in your bedroom. As the system operator (sysop) of the BBS, you contribute part of your computer's memory and make sure your computer is plugged into the telephone; the participants pay for their own communication costs.

Boardwatch magazine estimates that sixty thousand BBSs operated in the United States alone in 1993, fourteen years after the first BBSs opened in Chicago and California. Each BBS supports a population of a dozen to several hundred, or even thousands, of individual participants. There are religious BBSs of every denomination, sex BBSs of every proclivity, political BBSs from all parts of the spectrum, outlaw BBSs, law enforcement BBSs, BBSs for the disabled, for educators, for kids, for cults, for nonprofit organizations—a list of the different flavors of special-interest BBSs is dozens of pages long. The BBS culture has spread from the United States to Japan, Europe, Central and South America.

Each BBS started out as a small island community of a few people who dialed into a number in their area code; by their nature, like a small-wattage radio station, BBSs are localized. But that's changing, too. Just as several different technologies converged over the past ten years to create CMC—a new medium with properties of its own—several different online social structures are in the process of converging and creating a kind of international culture with properties of its own.

Technical bridges are connecting the grassroots part of the network with the military-industrial parts of the network. The programmers who built the Net in the first place, the scholars who have been using it to exchange knowledge, the scientists who have been using it for research, are being joined by all those hobbyists with their bedroom and garage BBSs. Special “gateway” computers can link entire networks by automatically translating communications from the mechanical languages used in one network to the languages (known as protocols) used in another network. In recent years, the heretofore separate groups of Internet and BBS pioneers worked together to gateway the more than ten thousand computers of the worldwide FidoNet, the first network of small, private BBSs, with Internet's millions of people and tens of thousands of more powerful computers.

The Net and computer conferencing systems are converging too, as medium-size computer conferencing communities like the WELL join Internet. When the WELL upgraded to a high-speed connection to Inter-