To *my mentors in science,*
William Gerace, Robert Naumann,
Martin Rees, and Kip Thorne

If given a chance to start over, I would do just what I did, to be not only a young man in the shimmering of youth but a scientist. I would want again to be driven day and night by my research. I would want the beauty and power of the equations. I would want to hear that call of certain truth, that clear note of a struck bell.

(2000)

PRISONER OF THE WIRED WORLD

NOT LONG AGO, while sitting at my desk at home, I suddenly had the horrifying realization that I no longer waste time. It was one of those rare moments when the mind is able to slip out of itself, to gaze down on its convoluted gray mass from above, and to see what it is actually doing. And what I discovered in that flicker of heightened awareness was this: from the instant I open my eyes in the morning until I turn out the lights at night, I am at work on some project. For any available quantity of time during the day, I find a project, indeed I feel compelled to find a project. If I have hours, I can work at my laptop on an article or book. If I have a few minutes, I can answer a letter. With only seconds, I can check telephone messages. Unconsciously, without thinking about it, I have subdivided my waking day into smaller and smaller units of "efficient" time use, until there is no fat left on the bone, no breathing spaces remaining. I rarely goof off. I rarely follow a path that I think might lead to a dead end. I rarely imagine and dream beyond the four walls of a prescribed project. I

hardly ever give my mind permission to take a recess, to go outdoors, and play. What have I become? A robot? A cog in a wheel? A unit of efficiency myself?

I can remember a time when I did not live in this way. I can remember those days of my childhood when I would walk home from school by myself and take long detours through the woods. With the silence broken only by the sound of my own footsteps, I would sit on the banks of Cornfield Pond and waste hours watching tadpoles in the shallows or the sway of water grasses in the wind. My mind meandered. I thought about what I wanted for dinner that night, whether God was a man or a woman, whether tadpoles knew they were destined to become frogs, what it would feel like to be dead, what I wanted to be when I became a man, the fresh bruise on my knee. When the light began fading, I wandered home.

I ask myself: What happened to those careless, wasteful hours at the pond? Has the world changed, or just me? Of course, part of the answer, perhaps a large part, is simply that I grew up. Besides the unreasonable nostalgia that most of us have for our youth, adulthood undeniably brings responsibilities and career pressures and a certain consciousness of the weight of life. It is extremely difficult to disentangle the interior, personal experience of aging, strapped with these new burdens, from any change in the exterior world. Yet, I sense that

some enormous transformation has indeed occurred in the world from the 1950s and '60s of my youth to the twenty-first century of today. A transformation so vast that it has altered all that we say and do and think, yet often in ways so subtle and pervasive that we are hardly aware of them. Among other things, the world is faster, less patient, louder, more wired, more public.

Some anecdotal examples: A friend who has been practicing law for thirty years wrote to me that her "mental capacity to receive, synthesize, and appropriately complete a legal document has been outpaced by technology." She says that with the advent of the fax machine and electronic mail, her clients "want immediate turnaround, even on complex matters," and the practice of law has been "forever changed from a reasoning profession to a marathon." Another friend who works at a major software company described to me the job interview process. An applicant is interviewed independently by several different people on the selection committee. Afterward, there are no face-to-face meetings of the committee to discuss the applicant. Instead, each interviewer, within twenty minutes of completing the interview, must write up his or her impressions and send them by e-mail to the other members of the committee. If the transmission of judgment isn't completed within this time frame, that interviewer is out of the loop. Other business presses on. Or consider time away

from the office. A family that vacations in the same area of Maine where I spend the summer arrives at their rented cabin with sunglasses, beach towels, and canoe paddles. My friends also unpack cell phones and laptops and modems, so that they can stay connected to their workplace throughout the holiday.

Although I cannot document any general conclusions, I believe that these anecdotes represent common experiences. Haven't we all seen people talking on cell phones while dining or riding the train, deadlines and lead times growing shorter and shorter, video screens imposed in the most unexpected of places? All around me, everywhere I go, I feel a sense of urgency, a vague fear of not keeping up with the world, a vague fear of not being plugged in. I feel like the character K in Kafka's *The Trial*, who lived in a world of ubiquitous suspicion and powerful but invisible authorities. Yet there is no real authority here, only a pervasive mentality. I struggle to understand what has happened to the world and to me, why it has happened, and what exactly has been lost.

The dramatic development of technology, especially high-speed communication technologies, has certainly played a major role in shaping the world of today, both for good and for ill. Technology, however, is only a tool. Behind the technology, I believe that our entire way of thinking has changed, our

way of being in the world, our social and psychological ethos. The various qualities of this new world are far too complex and broad to be easily categorized, but I will attempt to gather them under the simplistic heading of the "Wired World." Certainly, few people could deny that the new technologies of the Wired World have improved life in many ways. Some of the less agreeable symptoms and features of the Wired World seem to be:

1. An obsession with speed and an accompanying impatience for all that does not move faster and faster. Among the many examples of our accelerating society in James Gleick's recent book *Faster* is the speed of printers. In my childhood, there were people known as typists, who measured their speed in words per minute, perhaps fifty words per minute for a good typist. Authors accepted that they would need to wait weeks to have a manuscript typed. In the 1970s, with the advent of computer printers, speed became gauged in characters per second. A daisy wheel could spit out forty to eighty characters per second, or a single-spaced page every minute, and an author could print an entire manuscript in one day. Ten years later, that same author quickly became discontented with a mere page per minute when the new generation of ink-jet and laser printers could create five pages per minute. When we become accustomed to speed, it is natural to be impatient with slowness.

2. A sense of overload with information and other stimulation. Our computers are not only faster but they store more and more data. The Internet offers an almost infinite amount of information, at easy access. In the face of this avalanche of facts, far more than can be excavated or digested, it becomes easier to confuse information with knowledge. Television screens now are subdivided to show not only the regular program but also, simultaneously, weather information, the latest values of the Dow Jones and Nasdaq indices, and news headlines. Many people have become accustomed to performing several tasks at the same time, such as conducting business on cell phones while driving or walking or eating.

3. A mounting obsession with consumption and material wealth. According to figures from the U.S. Department of Commerce, adjusted for inflation, in 1960, the middle of my childhood, the consumption per person in the United States was $10,700 (in year 2000 dollars). In 2000, it was $24,400, more than double. Researchers have documented that spending and consuming in the United States are higher than anywhere else in the world.

4. Accommodation to the virtual world. The artificial world of the television screen, the computer monitor, and the cell phone has become so familiar that we often substitute it for real experience. Many new technologies

encourage us to hold at a distance the world of immediate, face-to-face contact. Electronic mail, although very useful in some respects, is fundamentally impersonal and anonymous. The sociologist Sherry Turkle, in her book *Life on the Screen: Identity in the Age of the Internet,* discusses how people in "multiuser domains" (MUDs) have created entire artificial communities in cyberspace, escaping for hours at a time their small rooms and meager closets, the relationships or loneliness of their real lives. This increasingly large part of the population refers to real life as "RL," in contrast with "VR," standing for virtual reality.

5. Loss of silence. We have grown accustomed to a constant background of machine noise wherever we are: cars, radios, televisions, fax machines, telephones, and cell phones—buzzes, hums, beeps, clatters, and whines.

6. Loss of privacy. With many of the new communication technologies, we are, in effect, plugged in and connected to the outer world twenty-four hours a day. Individuals are always accessible, always able to access the world around them. Each of us is part of a vast public network of information exchange, communication, and business. This mentality of public connectedness is invisible but always present, like the air.

Aside from the particular technologies, these fundamental qualities of the Wired World have not appeared suddenly or even only during the period since my child-

hood at Cornfield Pond. They are part of a trend of ever-increasing speed and public access over the last couple of centuries and longer. In recent decades, however, this trend has accelerated to a disturbing degree. If we have indeed lost in some measure the quality of slowness, have lost a digestible rate of information, immediate experience with the real world, silence, and privacy, what exactly have we lost? More narrowly, what have I personally lost when I no longer permit myself to "waste" time? When I never let my mind spin freely, without friction from projects or deadlines, when I never let my mind think about what it wants to think about, when I never sever myself from the rush and heave of the external world—what have I lost?

I believe that I have lost something of my inner self. By inner self I mean that part of me that imagines, that dreams, that explores, that is constantly questioning who I am and what is important to me. My inner self is my true freedom. My inner self roots me to me, and to the ground beneath me. The sunlight and soil that nourish my inner self are solitude and personal reflection. When I listen to my inner self, I hear the breathing of my spirit. Those breaths are so tiny and delicate, I need stillness to hear them, I need aloneness to hear them. I need vast, silent spaces in my mind. Without the breathing and the voice of my inner self, I am a prisoner of the world around me. Worse than a prisoner, because I do

not know what has been taken away from me, I do not know who I am.

The struggle to hear one's inner self in the noise of the Wired World might also be thought of in terms of private space versus public space. Public space—the space of people and clocks and commerce and deadlines and cellular phones and e-mail—is occupying more and more of our physical and psychic terrain. But the truly important spaces of one's being cannot be measured in terms of square miles or cubic centimeters. Private space is not a physical space. It is a space of the mind. It is "soul space," to use a phrase from Margaret Wertheim's book *The Pearly Gates of Cyberspace*. It is the domain of the inner self. When Dante makes his great journey through heaven and hell in *The Divine Comedy*, he moves not only through physical space but also through spiritual space. He visits immaterial realms of good and evil, beauty, truth. No wonder his companion and guide is the poet Virgil. Poets are masters of the inner self. In earlier centuries, physical space and soul space were united in a whole way of being in the world, of understanding the world. That dualism and wholeness are what I have lost.

Sometimes I picture America as a person and think that, like a person, our entire nation has an inner self. If so, does our nation recognize that it has an inner self, does it nourish that inner self, listen to its breathing in

order to know who America is and what it believes in and where it is going? If citizens of that nation, like me, have lost something of our inner selves, then what of the nation as a whole? If our nation cannot listen to its inner self, how can it listen to others? If our nation cannot grant itself true inner freedom, then how can it allow freedom for others? How can it bring itself into a respectful understanding and harmonious coexistence with other nations and cultures, so that we might truly contribute to peace in the world?

IT IS A WARM spring day, and I stand in my classroom at the Massachusetts Institute of Technology, one of the world's great temples of technology. A freckle-faced student has just opened the large swinging window to allow some fresh air to waft into the room. I've had a schizophrenic career at MIT, teaching both physics and creative writing. Indeed, that split has followed my life's double passions in the sciences and the arts. Today, as usual, my students wander in late to class, eating bagels and pizza slices, wearing cutoff jeans and shorts and T-shirts and halter tops, complaining about some difficult problem on their physics or chemical engineering homework. My students are so bright, so quick, so eager to take their training into the world, and every one of them assumes, without question, that faster and more

equals better. Hasn't that been the guiding assumption since the Industrial Revolution, that all developments in technology constitute progress? According to this view, if a new optical fiber can quadruple the transmission of data, then we should develop it. If a new plastic has twice the strength-to-weight ratio of the older variety, we should produce it. If a new automobile can accelerate at twice the rate of an old model, we should build it. MIT and many other institutions of science and technology do indeed have good departments in the arts and humanities, with the intention of graduating well-rounded human beings, and yet do not challenge the basic supposition: technology equals progress. "Progress" is some kind of ordained imperative of our species, an abstract conception of evolution, an inevitable direction of development like the increase in entropy, the future.

Centuries ago, technology was first and foremost associated with improving the quality of life and the human condition. (I use the word *technology* here retrospectively. In fact, the word did not enter the public vernacular until the founding of the Massachusetts Institute of Technology, in 1861. Early technologists and scientists might have called themselves craftsmen or engineers or natural philosophers.) One of my heroes in the history of science is Francis Bacon, whose *Novum Organum* (1620) proposed that nature could be under-

stood only by careful, firsthand observation, as opposed to the acceptance of knowledge handed down by prior authorities. In his *The New Atlantis* (1627), Bacon envisioned a kingdom of science and technology, much of it unheard of at the time, that included living chambers where the air is treated for the preservation of health, the perfection of agriculture and the development of flowers and plants especially for medicinal use, glass lenses developed for "seeing objects afar off, as in the heavens and remote places," the study of sound and the creation of devices "which set to the ear do further hearing greatly." In this utopian kingdom, called Salomon's House, three "Benefactors" were charged with sifting through the experiments of all the house scientists "to draw out of them things of use and practice for man's life and knowledge."

Soon after Bacon, the development of technology became part of a major Western intellectual theme called "progress." Progress was centered around the notion that human beings were inevitably advancing to a higher plane—socially, politically, intellectually, scientifically, and morally. In France, Marie Jean Nicolais Caritat Condorcet's *Sketch of the Intellectual Progress of Mankind* (1795) proposed the concept of the "infinite perfectibility" of humankind. In England, the influential sociologist and philosopher Herbert Spencer attempted to synthesize the physical and social sciences and argued

that a fundamental law of matter, "the persistence of force," inevitably brought about complexity, evolution, and progress in all things, cosmic and human alike.

In this grand idea of progress, which took on almost mythic proportions in the eighteenth century, intellectual progress was represented most notably by the theoretical discoveries of Isaac Newton and his sweeping laws of motion. The laws of gravity, discovered by the mind of man (Newton), governed everything from the orbit of the moon to the fall of an apple. Material progress was nowhere better symbolized than in James Watt's remarkable steam engine, the centerpiece of the Industrial Revolution. Power looms, for example, enabled textile workers to perform at ten or more times their previous rates and reasonably promised to raise the standard of living and relieve the exploitation of factory workers, as well as to increase the wealth of nations. Concern for the human condition was central in these developments. Technology in the service of humanity. On this score, I've always been inspired by the attitude of Benjamin Franklin—another of my heroes—inventor and scientist, statesman, philosopher, complete human being. Franklin refused to patent his many inventions for private profit because he felt that citizens should serve their society "freely and generously." In his famous *Autobiography* (1791), after giving a tedious account of his new invention for improving street clean-

ing, Franklin writes, "Human felicity is produced . . . by little advantages that occur every day." For Franklin and many other scientists and technologists of his day, the human being always came first.

LEO MARX, the distinguished historian of American literature and traditions and my colleague at MIT, occasionally joins me for lunch. Leo's landmark book *The Machine in the Garden* (1964) examined the way that the American self-identity, defined since early days by pastoral themes and images, has been confronted with and reshaped by the advent of technology. Leo is now in his mid-eighties. He still has most of his hair, and his striking blue eyes still look back at me with a penetrating clarity. As we sit on a bench with our cheese-and-turkey sandwiches, he gently suggests how I might think about technology and other large forces of the day. In his articles, Marx says that sometime in the mid-nineteenth century, the intention and direction of technology changed. Technology went from a means to humanitarian progress to an end in itself. The idea of progress, which had once meant an improvement in the human condition, became equated directly with technology. Progress was technology, technology was progress.

According to Marx and other historians of technology, at least two developments in the mid-nineteenth century helped change the nature and perception of technology. First, some areas of technology began to evolve from the individual-oriented "mechanic arts," like glassblowing and woodworking, to large, depersonalized systems, like the railroad. Secondly, these vast technological systems became hugely more profitable than any previous technology in the history of the world, offering great personal wealth to their creators. Technology became an instrument of the powerful enterprise called capitalism.

The earlier, mechanic arts were characterized by the skill of a small number of individuals and often a direct, personal contact between producer and consumer. By contrast, technological systems were large, amorphous organizations of machinery, people, and bureaucratic structures, with many levels between producer and consumer. Each railroad, the largest new technology of the nineteenth century, required thousands of workers, tracks laid for hundreds or thousands of miles, many stations, layers of bureaucracy and management, huge outlays of capital. (Compare this with the cell phone networks of today.) No longer was technology a humanistic activity, with its principal purpose to improve the quality of life. This turn of events led Henry David

Thoreau to make one of his more famous and witty remarks: "We do not ride on the railroad; it rides upon us."

An example that Marx uses to illustrate his point is a speech given by Daniel Webster, one of the foremost orators of his day, at a dedication of a new railroad in 1847: "It is an extraordinary era in which we live. . . . We have seen the ocean navigated and the solid land traversed by steam power, and intelligence communicated by electricity. Truly this is almost a miraculous era. . . . The progress of the age has almost outstripped human belief; the future is known only to Omniscience." Aside from the reference to Omniscience, the tone does not seem dissimilar to some of the early speeches and writings of Bill Gates or Larry Ellison or Gordon Moore. Nowhere in these words is there any reference to the quality of life, or human happiness, or the social betterment of humankind.

I look at my bright young students, so full of life, and wonder whether they can slow down enough to think about the purposes of their studies, think about what is truly important to them, as individuals and as members of a society.

MY INVESTIGATIONS turn to capitalism, possibly the most powerful organizing force in the world of today,

certainly in the United States of America. I am not surprised to learn that capitalism has helped redirect the thrust of invention. And I even wonder: perhaps capitalism has always fueled the fires of technology, even Watt's steam engines and power looms. Capitalism lives on product, and no human creation has yielded product with such high efficiency as technology. More precisely, capitalism lives on profit, but the products of recent technologies have often translated into profits. Railroads, airplanes, telephones, automobiles, electric ranges and blenders, vacuum cleaners, dishwashers, microwaves and refrigerators, televisions and radios, Walkmans and CD players and video players, humidifiers, cell phones, copying machines, fax machines, personal computers—all have been gold mines for capitalism, returning great monetary gain to the inventors, creators, producers, and distributors.

As a consumer, I have benefited like most people from these rapid developments. I purchased one of the first Hewlett-Packard pocket calculators in the early 1970s and have owned a succession of powerful desktop and laptop computers ever since. I am a member of a two-cell-phone family. I have an electric garage door opener. I watch videos at home. I use the Internet to keep up with friends in other countries. I have certainly benefited from the advances in technology. But I have also paid a heavy price. And that price is what I most want to

understand. That price, and even my personal benefit, are not of direct concern to capitalism. The first goal of capitalism is not to improve society and its members but to maximize the personal wealth of the capitalist. This goal is both the great strength and the great weakness of capitalism. I take out my copy of Adam Smith's *The Wealth of Nations* (1776), the bible of capitalism, and read: "It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest. We address ourselves not to their humanity but to their self-love."

A good illustration of the relentless way in which capitalism and technology operate together is in the production-consumption work cycle of modern business. In the 1950s, academics forecast that as a result of new technology and increased productivity, by the year 2000 we could have a twenty-hour workweek. Such a development would be a beautiful example of technology at the service of the human being. In newly formed institutes of "Leisure Studies" and in such books as *Mass Leisure* (1958), experts pondered how Americans would spend their impending leisure time. More family vacations? More time for sports? More movies? More reading, more attendance at musical concerts or stage productions or art galleries?

According to the Bureau of Labor Statistics, the goods and services produced per hour of work in the

United States has indeed more than doubled since 1950. Half of the forecast was correct. However, instead of reducing the workweek, the increased efficiencies and productivities have gone into increasing the salaries of workers. Managers, desiring more and more profit, have found it against their interests to shorten the workweek or to stitch together part-time positions. Workers, for their part, have generally not lobbied for fewer hours but rather have used their increased efficiencies and resulting increased disposable income to purchase more material goods. As mentioned earlier, per-person consumption in the United States, in real dollars, has more than doubled since 1950. Indeed, in a cruel irony, the workweek in America has actually lengthened. The sociologist Juliet Schor, in her important book *The Overworked American* (1991), found that the average American worked 160 hours longer each year in 1990 than twenty years earlier. And that increase in working time cuts across all income levels. More work is required to pay for more consumption, fueled by more production, in an endless, vicious circle.

And what is it that we are consuming so voraciously, what impels us to work faster and longer hours, even in the face of higher efficiency? What are these burning material needs, when Americans have become wealthier and wealthier, more than doubling their real income per person in the last fifty years? One of the methods of capi-

talism is to create demand for its products, even when that demand does not previously exist. I was astonished to read this aim so unabashedly spelled out by Charles Kettering, a major inventor and executive of GM Research Labs. In 1929, at the beginnings of the automobile industry in the United States, Kettering wrote in *Nation's Business* magazine that business must create a "dissatisfied consumer" and "keep the consumer dissatisfied." A more recent example of the same idea was voiced by the economist John Kenneth Galbraith as he surveyed the future of capitalism in an ever-wealthier America. In his book *The Affluent Society* (1984), Galbraith writes that in modern America, production will have to "create the wants it seeks to satisfy." In short, a large part of our consumption is what we are told to consume, told that we need. And the cycle continues.

So it seems that we are running round and round like hamsters on the wheel of capitalism, production, demand, consumption, and work. Instead of slowing down the wheel, increased productivity has only sped it up. Instead of creating breathing spaces in the workweek, increased efficiency has caused us to work faster and longer. In this maze of counterintuitive results, it is hard to tell cause from effect, effect from cause. But the larger import seems clear. Ever since the physician George Beard commented in 1881 that "American nervousness" had increased since the invention of the tele-

graph, the pace of daily life has been set by the speed of communication and business. Everything in our lives has become faster, more hurried, more urgent. I cannot help but recall the first lines of William Wordsworth's poem, which is prescient in the way that artists often can divine the future:

> The world is too much with us; late and soon,
> Getting and spending, we lay waste our powers;
> Little we see in Nature that is ours;
> We have given our hearts away, a sordid boon!

MANY PEOPLE in the United States, both in intellectual forums and in daily conversation, have begun to express a fervent desire to slow down their lives, a sense of being trapped in a world that they cannot control. The word *helpless* is often repeated. For many of us, the practical difficulties of changing our work conditions and life rhythms are indeed enormous. Living in the Wired World as we do, are we then helpless to create private spaces and silences to contemplate our inner selves? Are we helpless to disconnect from the network?

I do not think so. In an odd way, my growing understanding of the vast forces that shape modern life has only increased my resolve to counter those forces, to build a parallel universe for my inner life and spirit. I am

convinced that such an interior world is both possible and necessary. And, here, I disagree in part with two distinguished technology visionaries, the American co-founder of Sun Microsystems, Bill Joy, and the French philosopher and sociologist Jacques Ellul. Joy, in his provocative essay in *Wired Magazine,* "Why the Future Doesn't Need Us," argues that the world is being taken over by machines. Ultimately, Joy says, we humans will be the machines of the machines. Joy's prediction, which has much sympathetic resonance, is just too extreme. Although technology is proceeding at a dizzying pace, I believe that the human mind will always have control of itself. And since the human mind has a degree of infinity and imagination unlikely to be matched by a machine for a very, very long time, I don't think that we will become the machines of the machines.

Ellul, in his *The Technological Society* (1954), claims that technology and technical thinking have torn apart our world and rebuilt it into a rigid and unthinking society. Technology, according to Ellul, has so transformed our culture that "the human personality has been almost wholly disassociated and dissolved through mechanization." In Ellul's view, the technological mentality, the mentality of efficiency and production, is so pervasive that we have "no intellectual, moral, or spiritual reference point for judging and criticizing technology." I don't agree with Ellul for the simple reason that I did

indeed have the moment of awareness that I described at the start of this essay. I did become conscious of the life I was living in the Wired World, I did remember the silences and inner solitude that I had experienced as a child, I did remember my places of stillness. I am writing these words.

A critical element, it seems to me, is awareness. In particular, becoming aware of the choices we have. Some of those choices are visible, some are not. Every day each of us decides, consciously or unconsciously, what to buy from the marketplace, what machines to have in our offices and homes, how to use those machines, when and how to communicate with the outer world, how to spend our time, what to think about. When do we unplug the telephone? When do we take our cell phones with us and when do we leave them behind? When do we read? When do we buy a new microwave or television or automobile? When do we use the Internet? When do we go out for a quiet walk to think? These decisions may seem petty and trivial. But at stake in these hundreds of daily decisions is the survival of our inner selves. We have choices, but we must become aware of these choices.

I do not believe that needed changes can be mandated from the top down. First, the underlying malaise of the Wired World is not primarily economic or legal. Rather, it is philosophical, psychological, and spiritual. And

second, invididuals have different priorities, different values. It is the slowness and silence and privacy for reflection on those values that we must regain. While it would be helpful for governments to enforce new laws—such as that cell phones are forbidden in restaurants or that all businesses must provide six weeks of vacation for their workers (as in some European countries) or that all public and corporate spaces are required to have noise-free zones or that transactions in the stock market must have a twenty-four-hour delay—none of these mandates can by themselves alter attitudes of self. Changes in philosophy of life come about slowly, and at the level of the individual.

A comparison is the institution of slavery. Slavery has existed in all parts of the world since the earliest recorded history. The involuntary servitude of one class of individuals to another is sanctioned in Mosaic law and described in the Old and New Testaments. Despite their life of high culture and refinement, the ancient Greeks not only permitted slavery but also organized much of their society around it. For millennia, slavery was accepted as part of the natural order of things. Without question, it was believed that some human beings were naturally inferior to others, could rightfully be owned by others. Even many of the founding fathers of America, such as Thomas Jefferson, counted slaves among their possessions. The various antislavery laws in

Pennsylvania in the late seventeenth century, in Denmark and France in the late eighteenth century, and in England in the early nineteenth century did not stop slavery. What ended slavery was the gradual recognition by individual members of human society that slavery was dehumanizing, not only to the slaves but also to their masters.

In creating the Wired World and the mentality that goes with it, we have unintentionally imprisoned ourselves. That imprisonment has happened slowly and unconsciously. Our manacles are subtle and invisible as air, but they are real. Although the regaining of our freedom and the reclaiming of our inner selves will take time, it is possible.

FINALLY, I RETURN to the present, the moment of my questioning. The Wired World, for good and for ill, is the world that we live in. Capitalism and technology, for good and for ill, are here to stay. But, as potent and pervasive as these forces are, I do not think we can blame them for the absence of privacy and silence and inner reflection in our lives. We must blame ourselves. For not letting my mind wander and roam, I must blame myself. For allowing myself to be plugged in to the frenzied world around me twenty-four hours a day, I must blame myself. Only I can determine my personal set of priori-

ties and values, reflect on who I am and where I am going, become aware of those many small decisions I make throughout the day. The responsibility is mine. Understanding that the responsibility is mine is a kind of freedom in itself.

Thoreau framed the problem well a century and a half ago when he said that we must produce better dwellings "without making them more costly; and the cost of a thing is the amount of what I will call life which is required to be exchanged for it, immediately or in the long run." Somehow, each of us must figure out how to measure the "life," our personal life, our inner self, that we exchange for each piece of technology or scheduled project or public connection. This accounting may have to be done item by item, hour by hour, but I believe that it must be done and it can be done only by the individual. Only individuals can measure their own values and needs, their own spirit, their own story of life.

(2002)