

THE ILLUSION OF PROGRESS

When scientific power outruns moral power, we end up with guided missiles and misguided men.

—Martin Luther King Jr.,
Where Do We Go from Here?

There is a time when the operation of the machine becomes so odious, makes you so sick at heart, that you can't take part; you can't even passively take part, and you've got to put your bodies upon the gears and upon the wheels, upon the levers, upon all the apparatus, and you've got to make it stop. And you've got to indicate to the people who run it, to the people who own it, that unless you're free, the machine will be prevented from working at all!

—Mario Savio,
Berkeley, California, December 3, 1964

The one who dies with the most toys wins.

—Popular American bumper sticker

THAT TECHNOLOGY is the motor of the consumer economy is no great intellectual breakthrough; the evidence for this, from paper clips to iPods, is all around us. If the goal of American life is to accumulate as many objects as possible prior to death, then technology lies at the center of that life, because those objects exist only by virtue of technology and applied science. And historically speaking, economic and technological expansion have gone hand in hand. The word “technology” was coined by Professor Jacob Bigelow of Harvard University in 1829, the very same year when the first American railroad went into operation. By 1830, 73 miles of track had been laid; then 3,328 miles by 1840, 8,879 by 1850, and 30,636 miles by 1860—which was more than the combined total of the rest of the world. Between 1825 and 1850, 3,700 miles of canals were constructed. By 1850 as well, machine parts were being manufactured by other machines, ones that could reproduce an endless number of interchangeable parts—a technique that became known as “the American system of manufactures.” Nearly 6,000 patents were issued in the United States during the 1840s; 23,000 were issued during the 1850s, and this latter figure was approximated or exceeded during *every single year* from 1882 on. At the same time that all of this was going on, the steel, petroleum, and electrical industries expanded so dramatically that by 1894 the value of U.S. manufactured goods was almost equal to that of Great Britain, France, and Germany combined. And should we be surprised that Philo Farnsworth, the first person to transmit a television picture in 1927, chose the dollar sign as the image he wanted to transmit? The synergy of all this is quite obvious.¹

Less obvious is the role that technology has played in fueling the hustling life, which is as much a social phenomenon as an economic one. As indicated earlier, the geographical frontier was declared officially closed in 1890, leaving a psychological vacuum that got quickly filled by the technological frontier. Henry Ford pioneered the first moving assembly line in 1913, and the country was off and running; in 1926 alone, when the price of a Model T dropped to \$260, Americans traveled 141 billion miles. Where's the fire? as the cop who stops you for a speeding ticket might reasonably ask.²

As we also noted in chapter 2 (citing Richard Easterlin), "the growth process itself engenders ever growing 'needs' that lead it ever onward." This "hedonic treadmill"—the situation in which every step you take in keeping up with your next-door neighbor "merely stimulates new economic desires"—is completely dependent on technological innovation. Technical novelty is integral to the hustling life because it ensures that there is a "ladder" to climb without end. As the philosopher Albert Borgmann points out, this expanding technological frontier keeps class antagonism at bay, in the same way that an expanding geographical frontier once did. The purpose of life is thus to keep hustling, but since there is no end to innovation (there is always another software or electric toothbrush variant), there is no end to hustling, which, like technological expansion, becomes its own purpose. Borgmann describes this rat-on-a-wheel lifestyle with uncanny accuracy:

Inequality favors the advancement and stability of the reign of technology. The unequal levels of availability represent a synchronic display of the stages of affluence that many people can hope to pass through. What the middle class has today the lower class will have tomorrow, while the middle class aspires to what the rich have now. . . . The peculiar conjunction of technology and inequality that we find in the industrial advanced Western democracies results in

an equilibrium that can be maintained only as long as technology advances.

As long as this arrangement remains unquestioned, Borgmann goes on to say, "politics will remain without substance," for the crucial dimensions of our life will have already been determined by technology. The technological order is thus the real one; politics merely exists on a metalevel. Appeals to republicanism, or to participatory democracy, that fail to address this hedonic game and the role that technology plays in it are therefore pointless. "One may as well call for participation in pocket calculators," he concludes.³

This is, in fact, about as deep as everyday discussion in America gets. A few years ago, a friend of mine was taking the train up the California coast, and decided to walk very slowly through the train, from the last car up to the locomotive, so she might get a sense of what people were talking about. Every single conversation, she told me, was about technology: this new bit of software or computer attachment, that new special function on a cell phone, what is now available in TV screen sizes, etc. Consider also the magazine *Wired*, which is one of the most popular and sophisticated journals around. Its sole purpose is to chronicle "progress," with essays on topics such as software that got created and engineering problems that got solved. The November 2010 issue is a perfect example of what Americans regard as progress: in addition to 3-D TVs and iPads, the issue deals with breast implants, a Disney television cartoon, advances in sports betting, methods for cheating at coin flipping, Ticketmaster, and a history of the AK-47(!), complete (in the latter case) with illustrations taken from clips from Hollywood films and video games. And then we (well, a few of us) wonder how fundamentally hollow individuals—Reagan, the Bushes, Clinton, Obama—who can be trusted *not* to address the hedonic game and the role technology plays in it, wind up in the White House. What a frivolous country this is, when you get right down to it: a nation of people who throw their lives away for toys.

This brings me to my next point, namely that in the absence of real politics—of republicanism or any moral center for the country—technology moves in to fill the vacuum. It acts as a kind of hidden religion. Associated as it is with unlimited “progress,” and therefore with utopia and redemption (more on this in a moment), it supplies the social glue that is lacking in the United States—a glue that hustling by itself is too shallow to provide. (Americans want to believe they have loftier goals than making money, even if they don’t.) Indeed, since hustling is an every-person-for-themselves existence, it is basically a solvent, not a glue. As Zygmunt Bauman writes in *Consuming Life*, we live in a society that has been “pulverized into solitary individuals” and crumbling families. How we came to worship technology, then, is a topic of no small importance.⁴

The notion that technology is tied to unlimited progress, and the “perfectibility of man,” is rooted in the French Enlightenment. By the end of the seventeenth century, for the first time, large numbers of people believed that progress had no bounds, and that by controlling the material forces of the world human beings could control their own destiny. To that end, the project of the *Encyclopédie* was launched, with the idea that it would contain the basic facts and principles of all knowledge. The first volume appeared in 1751 under the editorship of Denis Diderot, along with the *Preliminary Discourse to the Encyclopedia of Diderot* by Jean le Rond d’Alembert. The work of tradesmen and artisans was given special emphasis, because the editors believed that technology was the key to the current transformation, and in fact to happiness in general. To that end, the work contains fabulously detailed plates of tools, machines, and craft-industrial processes (eleven volumes of which appeared during 1762–72). All of this was a dramatic departure from French intellectual tradition, which saw mental activity as superior to manual labor. As Diderot explains in his

Prospectus to the work (1750), the editors sent designers to workshops to make sketches of everything, so they could illustrate exactly how the machines were assembled. Contributors to the articles on the mechanical arts—roughly seventy-two thousand entries in all—thus have a firsthand knowledge of the various trades being discussed. Subject matter, says Diderot, will include stonecutting, gardening, hydraulics, watchmaking, mineralogy, architecture, glassworks, brewing, dyeing, wood engraving, type-founding, sawmilling, and so on. The theme of unlimited progress was finally summed up in the *Sketch for a Historical Picture of the Progress of the Human Mind*, written by the marquis de Condorcet in 1793. The author promised a future utopia in which obstacles to progress, such as ignorance and tyranny, would be eliminated due to the impact of science, technology, and political revolution.⁵

Meanwhile, on the other side of the Atlantic, the Revolutionary generation was wasting no time getting on the Enlightenment bandwagon. Philadelphia merchant Tench Coxe addressed the Society for Political Enquiries at the home of Benjamin Franklin in 1787, and also delivered the inaugural address for the Pennsylvania Society for the Encouragement of Manufactures and the Useful Arts a few months later, at the request of Benjamin Rush. These lectures, which emphasized the importance of manufactures for America’s future, constituted “a prophetic vision of machine technology as the fulcrum of national power.” In fact, says Leo Marx, they prefigured “the emergence of the machine as an American cultural symbol.” Except in the South, the idea that the aims of the United States would be realized by means of machine production was fast becoming an official ideology, closely linked to progress. Technology, adds John Kasson, was increasingly seen as an instrument of republican virtue, a defender of liberty, and something essential to democratic civilization. From the 1820s on, Americans identified

the progress of the nation with the progress of technology. In his 1831 essay "Defence of Mechanical Philosophy," Cincinnati lawyer Timothy Walker expounded on the doctrine of unlimited economic development based on technology, and in fact viewed technological progress as part of a divine revelation. The machine, he wrote, represents the possibility of universal abundance, and is the one thing that can fulfill the egalitarian aims of the nation. William Henry Seward, the New York politician who would eventually become Lincoln's secretary of state, caught the prevailing mood when he declared that "popular government follows in the track of the steam-engine and the telegraph." As the railroad, steam engine, and (after 1844) the telegraph became national obsessions, writers elaborated on this idea, and popular magazines such as *Harper's Weekly* were filled with progressive-republican rhetoric, along with illustrations of blast furnaces and cotton presses. As Leo Marx tells us, the underlying assumptions were those of the Enlightenment, and "the awe and reverence once reserved for the Deity . . . [were] directed toward technology, or rather, the technological conquest of matter." By 1850, he concludes, the machine had become a transcendent symbol endowed with metaphysical significance. Americans "grasped and panted and cried for it," and foreign travelers recorded the nation's obsession with it. Even Emerson (who changed his mind only later) got into the act, telling his audience in 1844 that machinery and Transcendentalism went hand in hand and that "railroad iron is a magician's rod." Currier & Ives turned out romantic lithographs of railroads (done as ads for railroad companies), and Walt Whitman wrote a quasi-religious song to the locomotive in 1876:

Type of the modern—emblem of motion and power—pulse
of the continent,

For once come serve the Muse and merge in verse, even as
here I see thee, . . .

In his poem about the Centennial Exposition of the same year in Philadelphia, Whitman made this explicit: "sacred industry," he wrote, after sitting in silence in front of the Corliss steam engine for half an hour.⁶

The new power, says Marx, was seen as a means of realizing the original aims of the Republic; indeed, it was regarded as a validation of national "greatness." Only a few understood what was going on, saw that technology was not just technology but something much more than that—an ersatz religion. "It would seem," wrote Thoreau, "that there is a transcendentalism in mechanics as well as ethics."⁷

Fanatical devotion to technology is something that the great historian of Puritanism, Perry Miller, identifies as a quintessentially American characteristic. Early Americans, writes Miller, were not "a simple, ascetic, and pious rural people who suddenly had their idyllic way of life shattered by a barrage of mechanical contrivances." Rather, the American mind "positively lusted for the chance to yield itself to the gratification of technology. The machine has not conquered itself in some imperial manner against our will. On the contrary, we have wantonly prostrated ourselves before the engine." During the period of Tocqueville's visit, he adds, "democracy itself was identifying its innermost being with the vibration of this triumphant utility." Tocqueville himself, says Miller, "could not comprehend the passion with which these people flung themselves into the technological torrent, how they . . . cried to each other as they went headlong down the chute that here was their destiny, here was the tide that would sweep them toward unending vistas of prosperity." "The age was grasping for the technological future, panting for it, crying for it." Technology, he concludes, is "the veritable American religion."

The religious nature of American technoworship is the focus of an important study by a student of Leo Marx, David Nye,

titled *American Technological Sublime*. The sublime, according to Nye, is an overwhelming feeling of grandeur or power; applied to technology, it is the sense of awe or astonishment one might be seized with on encountering, say, the Corliss steam engine, or the Golden Gate Bridge. Year in and year out, he says, Americans have demonstrated their adoration of technology, from the Erie Canal and the first railroads to the space program of the 1960s and '70s. Thus the artist Joseph Stella recorded how he would stand on the Brooklyn Bridge, feeling as though he were "on the threshold of a new religion or in the presence of a new DIVINITY." In reality, technology has been a sacrament for this country, "an outward and invisible sign of an ideal America." (I shall never forget the crazed fanaticism that greeted the "unveiling" of Windows 95 by Microsoft, in Seattle, when I lived there in the 1990s. There was actually a countdown to the "launch.") Projects such as these enable the citizen to see himself or herself as part of a moral vanguard, leading the entire world toward democracy. Nye argues that the Revolutionary generation had to invent new forms of civic virtue, in the face of a citizenry motivated by pecuniary objectives. The technological sublime, he contends, moved in to fill the void, serving as a crucial element of social cohesion—"a transcendental ideal that constituted the glue of American culture for more than two centuries." When you have more than a million people turning out for the Apollo XI liftoff on July 16, 1969, and the rest of the nation watching it on TV, you get some idea of how the technological sublime functions socially, culturally, and politically. Cape Kennedy (Canaveral), Nye contends, is in effect an American holy place, the focus of pilgrimage.⁸

In this regard, a comparison with Europe is very instructive. The European nations have a social glue dating back to the Middle Ages; they do not need to find sublime experiences or national purpose in machinery (although, as we have seen, the

French in the eighteenth century came pretty close). Europeans never embraced the vertical city of the skyscraper, they banned or restricted electric signs, they did not see atomic explosions as tourist sites, and they rarely took trips to see rockets going off into space. All these things are necessary in a country where the social glue is weak and community life practically nonexistent.⁹

This matter of religion, transcendence, and utopia as being central to the belief in technological progress, however, is deserving of closer attention. It turns out that it has a deeper and more complex pedigree than the Enlightenment thinkers of eighteenth-century France. How modern were these folks, really? In a stunning reversal of the classic interpretation of the Enlightenment (secular, modern), the historian Carl Becker, in 1932, argued that the "progressive" and utopian aspirations of the movement were actually the conversion of Christian eschatology into a kind of secular fundamentalism. As Christianity declined, wrote Becker, its core of revolutionary utopianism morphed into a secular variant. Nor should this be particularly surprising: Western civilization is, after all, a Christian one, and that means it has been dominated by millennialist thinking. What we really have in the *Encyclopédie* and the *Sketch* of Condorcet, said Becker, is a form of secular salvation: *The Heavenly City of the Eighteenth-Century Philosophers*.¹⁰

In more recent years, the British philosopher and social critic John Gray has gone over this territory in his book *Black Mass* and concluded that Becker correctly fingered the central contradiction of Enlightenment thought: it is basically religious. Progress via technology, the notion that the evil of the world can and will be eradicated by means of reason and applied science, is ultimately Christian eschatology in modern dress. After all, there is absolutely no evidence whatsoever that technology is taking us to a better place; in fact, there is a lot of evidence to suggest the contrary. Theories of progress, says Gray, are

not scientific hypotheses but rather myths, which—like the Christian myths of redemption and the Second Coming—answer to the human need for meaning. This is why we refuse to let them go, regardless of what the evidence might suggest. It is also why, in the United States, the commitment to technology goes much deeper than fueling consumerism, lubricating the socioeconomic system, and keeping a lid on class conflict. Without this belief system, Americans would have literally nothing, for it lies at the heart of the American Dream and the endlessly vaunted American way of life. Strip away the illusion of unlimited growth and the country would suffer a collective nervous breakdown. (This is key to why Jimmy Carter had to go: he was pushing the limits of American psychological tolerance, asking a nation of addicts to confront their dependency and change course.) Globalization, along with neoliberalism, according to Gray, is merely the latest incarnation of this illusion, and its deep religious roots account for the ferocity of its adherents, even after the crash of 2008 gave the lie to the notion of unlimited development through the free market economy. We want to believe that the future will be better than the past, but there isn't a shred of evidence to back this up. In particular, as I shall discuss below, scientific progress doesn't translate into moral progress; one could reasonably argue that just the opposite is the case. Truth be told, concludes Gray, we are even more superstitious than our medieval forebears; we just don't recognize it. Nor is it likely that we shall abandon these beliefs. It's utopia or bust, even if the odds are heavily weighted toward bust.

If, as we saw in chapters 1 and 2, consumerism and the pursuit of affluence didn't have too many critics along the way, it can surely be said that the religion of technology has had even fewer. Ultimately it amounted to little more than a handful of disaffected intellectuals. "Let your life be a counter friction

to stop the machine," wrote Thoreau in 1849, in an uncanny anticipation of Mario Savio (see his epigraph to this chapter). In *Walden*, Thoreau calls the new machinery "an improved means to an unimproved end." Leo Marx comments that Thoreau's real enemy was a culture pervaded by a technological outlook, which he referred to as an antilife. Nor was Thoreau unaware of whom all this was intended to benefit. "The principal object," he wrote, "is, not that mankind may be well and honestly clad, but, unquestionably, that the corporations may be enriched." As for Emerson, a note of skepticism began to creep into his attitude toward the machine culture as early as 1839, when he wrote that it could establish "a new Universal Monarchy more tyrannical than Babylon or Rome." In an address he gave in Concord in 1851, he asserted that the United States was metaphysically debilitated, and that locomotives and telegraphs couldn't compensate for this. In general, Emerson came to see that the attempt to use technology as a substitute for republican ideals was doomed to fail.¹¹

The self-destructiveness of the hustling, techno-driven way of life was a theme of America's greatest writers at about this time. One can see it metaphorically in the stories of Edgar Allan Poe, for example (most particularly in "The Pit and the Pendulum"), or in *Moby-Dick*, where Ahab's monomaniacal obsession with the whale leads to the destruction of the *Pequod* (more on this in chapter 5). As the ship is rammed by the whale and pulled under, writes Leo Marx, the vagabond sailor Ishmael survives, but as a kind of orphan, "floating helplessly on the margin of the scene as society founders." Nathaniel Hawthorne also emphasized the dangers of the narrow-minded pursuit of a science divorced from conscience in stories such as "Ethan Brand" and "The Procession of Life." In the latter he writes that "the demon of machinery annihilates the soul." In a lighter vein, Hawthorne satirized the blind faith in technology

that he saw all around him in "The Celestial Railroad" (1843), in which passengers believe they are on a train to the "Celestial City." Their guide, "Mr. Smooth-it-away," rides with them to dispel any doubts they may have; he also turns out to be a major stockholder in the corporation. Along the way, the passengers observe two dusty travelers walking alongside the train. "The preposterous obstinacy of these honest people in persisting to groan and stumble along the difficult pathway rather than take advantage of modern improvements," writes Hawthorne, "excited great mirth among our wiser brotherhood." But the wiser brotherhood proves to be a pack of fools. For Smooth-it-away is actually the devil, and he leaps off the train before it arrives at its real destination: hell. The voyage of salvation promised by modern technology, it turns out, is a complete illusion.¹²

The great spokesman for this point of view in the early twentieth century was Henry Adams (great-grandson of John), especially in *The Education*. Like Thoreau, Adams saw through the game; he understood that the order advanced by the technological narrative of progress was an imaginary one. For Adams, such beliefs were mere vanity, and he posed the issue most starkly in chapter XXV, "The Dynamo and the Virgin." Adams was struck by the power of the dynamo at the Gallery of Machines at the International Exposition in Paris in 1900, and was led to compare this with the statue of the Virgin in Chartres Cathedral. Worship of the machine, said Adams, is as nothing in the face of true spiritual belief. For Adams, comments Jackson Lears, "The worship of technological force ended in a solipsistic blind alley, a worship of ourselves." Adams was not a Catholic, but he saw the Virgin as representative of true faith, and worship of the dynamo as sterile, a dead end.¹³

Again, we need to be clear as to how marginal all of this literature was to mainstream American thinking. In the nineteenth century as well as the twentieth, it made absolutely no

difference for the actual behavior of the American public. In fact, as Leo Marx points out, outside of the South the Luddite position had no social or political clout at all. Opponents of the new religion of technology were regarded, then as now, as "a small cult of literary dreamers beyond the fringe." While the rhetoric of the technological sublime wound up in mainstream publications such as the *North American Review* or *Scientific American*, the writings of its opponents got published in the papers of small organized minorities, groups that had no visibility and no ability to change anything. "The dissenters," writes Perry Miller, "were at best minor voices and . . . were sadly ineffectual. They provide us . . . with no usable programs of resistance." Today, the religion of technology is so entrenched that critics of it are largely invisible, associated with hippies (if there are any left), the environmental movement (such as it is), a few university professors, and assorted "techno-cranks," including Theodore Kaczynski, the notorious Unabomber. In this way, technological civilization manages to escape any widespread fundamental critique of its premises, which are basically self-congratulatory and self-confirming.¹⁴

Of course, the twentieth century's greatest critic of American techno-civilization was Lewis Mumford, some of whose work we have already discussed. As Mumford pointed out in an anniversary review he wrote in 1959 of his pioneering work *Technics and Civilization*, the really remarkable thing about the book was that no one, down to 1934, had thought to undertake an extended historical and critical study of technology—in the English language, at least. Mumford ends the review by saying that the book "still unfortunately possesses its original distinction: it stands alone, an ironic monument if not an active influence."¹⁵

This was hardly an idle observation. The fact that technology was so single-mindedly celebrated in the United States made it

virtually invisible as a possible target of criticism, even as late as 1959. It would be like criticizing the air, in a way, which didn't begin to happen until the next decade. Indeed, when Mumford published the first volume of *The Myth of the Machine* in 1967, *Time* magazine characterized it as a call to return to Neolithic culture. The fog of techno-civilization is so dense in this country that any suggestion that a technological culture might be something of a mistake will only be met with blank incomprehension or dismissive sound bites.¹⁶

Mumford began pursuing his central theme—the rise of the machine and the mechanistic outlook in the West—as early as 1922, in *The Story of Utopias*. Reviewing the Western utopian tradition from Francis Bacon's *New Atlantis* to Edward Bellamy's *Looking Backward*, Mumford couldn't help but notice how one-dimensional these visions were. They were essentially machine-age utopias, he observed, relying on technology to bring about the good life. Both (economic) liberalism and socialism, quite clearly, subscribed to the same vision, in which “progress,” defined as technological innovation, would lead to ever-increasing material expansion. This critique was developed further in *Technics and Civilization*, which argued that the flaw in this sort of “progress” was that it required human beings to submit to the cult of the machine. During the Middle Ages, said Mumford, technics (i.e., the industrial arts, but including the habits and goals of a society with respect to technological innovation) were used in the service of life—to build cities, say, or cathedrals. This was a balanced civilization; but in the “paleotechnic era,” starting with the Industrial Revolution of the eighteenth century, the defining idea was to bring all of human experience under a technological regime. Oddly enough, Mumford believed we could turn all this around; that since this regime was a product of our values, we could change society by changing our values. A mental revolution, in short, would

bring about a “neotechnic” civilization, in which the machine would be directed toward human purposes once again.¹⁷

The second volume of *The Myth of the Machine*, titled *The Pentagon of Power* (1970), elaborates on this theme, arguing that the American “megamachine” was based on a kind of bribe, namely that the individual can get to enjoy the benefits of the technocapitalist way of life if he or she gives the system unquestioning allegiance. The answer, then, was obvious: reject the bribe, the myth of the machine, and the whole structure will collapse like a house of cards. “The gates of the technocratic prison will open automatically,” wrote Mumford, “as soon as we choose to walk out.” But as his biographer, Donald Miller, comments, by this time the optimism came as a kind of afterthought, and had a false ring to it. Mumford hardly believed Americans would turn their backs on technology, and frequently stated (if not in print) that only a miracle could save us. “I think, in view of all that has happened in the last half century,” he wrote to a friend in 1969, “that it is likely the ship will sink.” His increasing pessimism, as already noted, was understandable: “he was living in a culture that rejected completely the values and ideals he stood for.” Mumford's life work was comprehensive, brilliant, and desperately needed, but (given the context) unfortunately quixotic: he was un-American in the finest sense of the word. As indicated in chapter 1, his call for a redefinition of progress in human rather than technological terms was totally ignored by a nation that couldn't really grasp what he was talking about.¹⁸

Despite the depth and originality of Mumford's work, he cannot be said to have been operating in a vacuum. In particular, his emphasis on the “balanced” (steady-state) civilization of the Middle Ages, and its disruption by the rise of an “imbalanced” (ever-expanding) industrial economy, with attendant loss of meaning, has a long intellectual pedigree. Before we look at

the various critiques of technology that arose in the 1960s and after, we need to have some sense of this tradition, because the conflict between the “technical order” and the “moral” one, as it has been called, lies at the heart of virtually all contemporary critiques of the technological society.

The notion that there is a way of life characteristic of modern (or industrial) societies that is qualitatively different from the way of life of premodern (or folk) societies goes back, at least, to the German sociologist Max Weber. Modern societies, said Weber, are governed by bureaucracy; the dominant ethos is one of “rationalization,” whereby everything is mechanized, administered according to the dictates of scientific reason. Weber famously compared this situation to that of an “iron cage”: there was no way the citizens of these societies could break free from their constraints. Premodern societies, on the other hand, were permeated by animism, by a belief in magic and spirits, and governance came not through bureaucracy but through the charisma of gifted leaders. The decline of magic that accompanied the transition to modernity Weber called *die Entzauberung der Welt*—the disenchantment of the world.¹⁹

The distinction between these two fundamental types of social orders emerged in a variety of studies in the decades that followed. Thus another sociologist, Ferdinand Tönnies, saw the two in terms of *gemeinschaft* (community) vs. *gesellschaft* (society, especially the culture of business), noting that whereas the former was characterized by bonds of kinship or friendship, the latter is notable for the preponderance of impersonal or contractual relations. Linguist Edward Sapir, in turn, cast the dichotomy in terms of “genuine” vs. “spurious” cultures, arguing that the activities of the former were imbued with spiritual meaning, whereas the latter are discordant and empty. Finally, the American anthropologist Robert Redfield would relabel the dichotomy as the moral vs. the technical order, asserting

that in traditional or folk societies meaning was given, whereas in modern ones it had to be constructed. Individuals had a sense of belonging in the moral order, he wrote; indeed, that’s what a moral order *is*. In the technical order, on the other hand, people essentially feel lost, cosmically orphaned. Ultimately, Redfield believed that while the human race had made great advances in the technical order, it had made virtually no progress in the moral order—the knowledge of how to live, as it were—and that because of this, the human prospect was rather dim.²⁰

At the heart of Redfield’s anthropological research was the conviction that technological progress by itself was sterile. In the technical order, he maintained, human beings are bound by things or are themselves things. If this regime were to be adopted by (or more likely, forced upon) traditional societies, it would tear those societies apart—which is, of course, the historical record. “Every precivilized society of the past fifty or seventy-five millennia,” he wrote, “has a moral order to which the technical order was subordinate.” Over time, however, this equation was reversed. The consequences, he concludes, are obvious.²¹

Two things deserve comment here. The first is that the dichotomy of moral vs. technical is a bit too stark, based (as Redfield acknowledged) on “ideal types.” As the Norwegian anthropologist Thomas Hylland Eriksen points out, there are significant differences between traditional societies. And yet, he adds, it is not off base as a first approximation: life in medieval Europe or in a remote village in Melanesia was/is vastly different from life in contemporary New York. Thus the following things have become scarce in hypermodern society:

- Slow time; silence
- Security; predictability
- Sense of belonging, and of personal identity

Coherence; understanding
 Organic growth
 Real experiences (i.e., ones not mediated by the mass media)
 Recognition that death is a part of life

Whereas the items below are new and constantly in your face:

Chips and computers
 Ubiquitous mobile telecommunications
 Genetic engineering
 Electronically integrated global financial markets
 Interlinked capitalist economy embracing the entire planet
 Majority of urban labor force working in information processing
 Majority of planetary population living in urban centers²²

The second point is that it is not at all clear that those of us in the technical order feel more in control of our destinies than those in the moral order did, even though technology is (ironically enough) specifically about control. Indeed, if we frame this difference in terms of the preceding two lists, what sane human being could possibly find a sense of belonging in the world of the second list? And yet, as Lewis Mumford's life demonstrates, you can't get taken seriously if you point this out. What is left out of public discussion, writes Zygmunt Bauman, is "the role that almost every single 'modernizing' measure has played in the *continuing decomposition and crumbling of social bonds and communal cohesion*." Or as *New Yorker* staff writer Adam Gopnik once put it, "There is the feeling that something vital is passing from the world, and yet to defend this thing is to be immediately classified as retrograde." What can possibly be done to save a culture that thinks iPads represent "progress," while everything humanly valuable is going down the drain? What are the chances that this culture might ever be able to

rethink its definition of progress? What is the point of these rhetorical questions?²³

In many ways, it was Vietnam that brought all of this to a boil in the United States. Not that sixties radicals spent a whole lot of time reading Redfield; but the so-called counterculture was definitely attuned to the notion of a technical order that was obliterating the moral one, as it was conveyed through the work of a number of serious, yet popular, writers: Herbert Marcuse (*One-Dimensional Man*), Arthur Koestler (*The Sleepwalkers*), and Jacques Ellul (*The Technological Society*), to name the most prominent. In the context of a hypertechnological society pounding a peasant culture into the dirt with napalm and cluster bombs, some of the younger generation began to make the obvious connections. This surely accounts for the huge popularity of Theodore Roszak's work, discussed in chapter 1, and a limited but nevertheless vocal revulsion against science and technology, which were now regarded by a small segment of the population as inherently inhumane. This is a crucial point, and one to which I shall return in a moment.

As noted in chapter 1, it was partly the debacle of Vietnam that catapulted a most unlikely candidate, Jimmy Carter, into the presidency. He was hardly unaware of these currents in popular culture, especially as they were taken up by the environmental movement; and as a man trained as an engineer, he was sensitive to technology-related issues. I already mentioned that he was a follower of the economist E. F. Schumacher, and invited the latter to the White House in 1977. As with his attempt to redirect Americans away from the hustling life, so was he interested in getting them to think differently about technology. In his enormously influential *Small Is Beautiful*, Schumacher advocated what he called "appropriate technologies"—ones that would operate in local, decentralized contexts, a proposal

that had a crafts-oriented, Mumfordian flavor to it. Such technologies, he held, would be nonintrusive—ecologically sensitive and respectful of the communities in which they were embedded. They would employ simpler equipment, for example, and involve the creation of workplaces that were located where people lived; they would be inexpensive, and suitable for small-scale application; and they would enable the use of simple techniques and local materials. Following this vision, Carter saw to it that the U.S. Agency for International Development received \$20 million to set up an AT program (as it was called), and a National Center for Appropriate Technology also was established. All of this was quickly dismantled soon after Reagan's assumption of the presidency in 1981. In effect, the AT movement died before it was born.²⁴

Yet the failure of the movement had deeper roots than Reagan's opposition to it. As historian Carroll Pursell points out, despite state and federal initiatives for AT during the Carter administration, there was great resistance to shifting economic subsidies from nuclear to solar power, for example. It's not likely that Carter, or the environmental movement, could take on agribusiness, private utilities, major manufacturing firms, as well as the military-industrial complex, and win. But beyond the issue of vested interests, Pursell believes that the forces behind "hard" as opposed to "soft" energy options "were committed to a certain kind and understanding of technology which operated as a hegemonic culture." There was a way of life, a symbolism, at stake, in other words; AT was seen by the dominant culture as subversive, a very different kind of value system—"feminine," perhaps one could call it. "In attempting to redefine technology," writes Pursell, "advocates of Appropriate Technology were directly challenging the power of those who shaped the hegemonic notion of that subject." In a word, switching to a kind of crafts-based technology (or indeed,

merely advocating it) was as great a mental shift as Carter's 1979 suggestion that Americans find fulfillment in spirituality rather than consumerism. It never had much of a chance.²⁵

Of course, AT didn't fit into the category of a technology that was inherently inhumane. As indicated, it was more craft than technology, and its specific objective was to enhance the way of life already present in any given context, not radically alter it. The same cannot be said of the dominant technological mode of industrial societies, but for psychological and cultural reasons it has been hard for people to grasp this. In particular, it would seem almost impossible for individuals living in societies such as ours to entertain the notion that technology is not neutral. Ingrained in the popular mind is the idea that technology operates much like a razor blade: you can choose to shave with it, or you can cut your wrists. In this presumably commonsense view, technology is nothing more than a tool—value-free—and it is up to human beings to decide how to use it. It can be used in a positive way (peaceful nuclear energy, say) or a negative one (atomic bombs); the decision is ours.

The only problem with this theory is that it is wrong. From Robert Redfield to Lewis Mumford to Marshall McLuhan to the Frankfurt School for Social Research (which includes Herbert Marcuse) to the technocritics of today, the one thing they all agree upon, and have been able to substantiate in various ways, is that the "tool" theory of technology is hopelessly naive. It ignores the fact that most technologies are not appropriate; rather, they carry with them a mindset, a way of life, that once introduced into a culture changes that culture forever. As Redfield discovered, if you start vaccinating cows in a small Mexican village, the tradition of magic, of native healing, begins to disappear. Similarly, McLuhan, in books such as *The Gutenberg Galaxy*, *Understanding Media*, and *The Medium Is the Massage*, which catapulted him to celebrity status in the sixties,

argued that communications technologies radically changed the societies into which they were introduced. Believing that such things are neutral, wrote McLuhan, is a form of "somnambulism." Thinking that it is strictly the use of the technology that is the issue, he went on, "is the numb stance of the technological idiot." A medieval oral culture, for example, is radically different from a modern print culture, which is in turn different from a postmodern screen culture. The medium is not only the message, it is also the *massage*—it molds the culture in powerful ways. Hence the popular adage that the man who is given a hammer suddenly relates to everything as though it were a nail. Print culture pushed the auditory and sensuous world of the Middle Ages to the margins, just as digital/virtual culture is now doing to the inward and contemplative world of print culture—as Sven Birkerts demonstrates quite convincingly in his aptly titled *The Gutenberg Elegies*. And what modern technology does (and not just media technology) is translate everything into mechanism (including cybermechanism)—people and human life included. If you live in a hustling society, everything is a commodity; if in a technological one, everything is a means, an instrument. There is nothing "neutral" about this.²⁶

This one powerful, and accurate, thesis runs through the writings of literally every critic of technocivilization of the McLuhan-Mumford era and beyond: Paul Goodman, Theodore Roszak, Langdon Winner, Jerry Mander, Kirkpatrick Sale, Wendell Berry, Albert Borgmann, Neil Postman, Theodore Kaczynski (the Unabomber), and twenty-first-century critics of the virtual information society such as Christine Rosen and Nicholas Carr.²⁷ It will, therefore, not be necessary to review the work of all these writers because for the most part what we find are variations on a theme. Winner, for example, who has been writing on the politics of technology since the seventies (*Autonomous Technology, The Whale and the Reactor*), states repeatedly that

technologies imply whole ways of life, and that ways of life are hardly neutral. Ignorance of this fundamental reality—which (echoing McLuhan) he refers to as "technological somnambulism"—lies at the root of the mess we are in. It should be a vision of society that determines the course of technological innovation and distribution, he argues, rather than (as is now the case) the reverse. Technological development needs to be guided in advance "according to self-conscious, critically evaluated standards of form and limit." Winner does not believe, à la Mumford, that we can return to an older tradition of small-scale technics and craftsmanship, for "the world that supported that tradition and gave it meaning has vanished." What, then? The fact is that beyond exhortation and appealing to our (nonexistent, in my view) better sensibilities, Winner, no more than any of the other writers on the subject, has no specific, credible program for bringing this about. Furthermore, he fully understands this. "The idea," he writes, "that civilized life consists of a fully conscious, intelligent, self-determining populace making informed choices about ends and means and taking action on that basis is revealed as a pathetic fantasy." This, of course, raises the question of how things are likely to finally play out, a topic I shall deal with in chapter 5.²⁸

Something similar can be said about the work of Neil Postman (*Technopoly*), which provides an excellent analysis of how America lost its moorings ("The Surrender of Culture to Technology"). Postman divides cultures into three types: tool-using cultures, technocracies, and technopolies. Until the seventeenth century, he tells us, all of the world's cultures fell into the first category. Tools were invented to solve specific problems (e.g., the windmill) or to serve symbolic purposes (e.g., the cathedral). They continued the traditions of the cultures in which they were invented. In such cultures, "technology is not seen as autonomous, and is subject to the jurisdiction of some binding

social or religious system." Of course, occasionally there were long-range, unintended consequences. Thus the mechanical clock of the fourteenth century went from being a "tool" of religious observance to one of commercial enterprise. But for the most part, inventions were not intruders; they were integrated into the culture in ways that didn't significantly contradict its worldview. They were, in a word, appropriate.²⁹

The same cannot be said of technocracies. In a technocracy, tools play a central role in the worldview of the culture. Rather than being integrated into the culture, they attack it—they bid to *become* the culture. The printing press and the telescope fall into this category. It was technocracy, says Postman, that gave us the idea of progress and that speeded up the world. Still, it is typical for technocracy to coexist, for a time, with its tool-using predecessor, as was the case in nineteenth-century America. With the rise of technopoly, however, the earlier culture disappears. Technopoly is "totalitarian technocracy," or "technological theology"; it eliminates everything else.

Postman dates this latter development to the emergence of Henry Ford and Frederick W. Taylor as pivotal figures on the American scene. As already indicated, the moving assembly line debuted in 1913; Taylor's *Principles of Scientific Management* rolled off the press two years earlier. Taylor saw efficiency as the goal of human life; his book, and his industrial time-and-motion studies, constituted the first clear statement that society is best served when people are subordinated to technology rather than the reverse. "In the past," he wrote, "man has been first; in the future the system must be first." Whereas in a technocracy, it is understood that people must sometimes be treated like machines, this never rises to the level of a philosophy. In a technopoly, it does. Technopoly, says Postman, is "the submission of all forms of cultural life to the sovereignty of technique and technology." It's essentially a form of madness, and

it creates a culture lacking in moral foundation. (We should not be entirely surprised that Taylor was greatly admired by both Hitler and Lenin.) The culture tries to use technology itself as a source of direction and purpose, but this is doomed to failure: it's like making the disease the cure. As in the case of Winner, Postman has no real remedies to suggest. A statement in his last chapter is also exhortatory: "You must try to be a loving resistance fighter." It comes off more wistful than inspiring.³⁰

The best example of a *nonloving* resistance fighter in recent years is Theodore "Ted" Kaczynski, more commonly known as the Unabomber. His case is extremely illuminating in terms of where America is vis-à-vis the role of technology in modern life, both in terms of his *New York Times/Washington Post* "manifesto" and in terms of how he was perceived by the American public. After killing three people and injuring twenty-three more by means of homemade letter bombs, Kaczynski wrote the *New York Times* on April 24, 1995, that he would desist from any further attacks if the *Times* or the *Washington Post* agreed to publish his "manifesto" regarding technological civilization, "Industrial Society and Its Future." It subsequently appeared in both newspapers on September 19, 1995.

From one angle, one wonders what all the fuss was about, apart from the fact that it was written by someone who was ostensibly deranged and had spent the past sixteen years randomly selecting targets for assassination. The text—which is leaden and tedious—is largely a pastiche of environmental clichés and pop psychology. It is digressive, rambling, and poorly argued, and it offers a potted version of a host of writers such as Weber, Marcuse, Ellul, and Aldous Huxley without ever mentioning them. The "problem" here (if there really is one) is that from my point of view, at least, there isn't that

much in the manifesto to disagree with. Consider the opening paragraph:

The Industrial Revolution and its consequences have been a disaster for the human race. They have greatly increased the life-expectancy of those of us who live in "advanced" countries, but they have destabilized society, have made life unfulfilling, have subjected human beings to indignities, have led to widespread psychological suffering (in the Third World to physical suffering as well) and have inflicted severe damage on the natural world. The continued development of technology will worsen the situation. It will certainly subject human beings to greater indignities and inflict greater damage on the natural world, it will probably lead to greater social disruption and psychological suffering, and it may lead to increased physical suffering in "advanced" countries.

If the system survives, the author goes on to say, it will do so "only at the cost of permanently reducing human beings and many other living organisms to engineered products and mere cogs in the social machine."³¹

Given the fact that turning people into "cogs in the social machine" was the express purpose of Frederick Taylor a hundred years ago, and that this goal has pretty much been achieved, it's hard to regard Kaczynski's analysis as dramatic or unprecedented. In addition, the notion that the Industrial Revolution has been an unmitigated disaster for the planet is coin of the realm among most environmental groups. They would certainly agree with Kaczynski's statement that techno-civilization offers human beings no real stability; that it breaks down community and family ties; that it has shattered ancient cultures; and that

it is taking us in the direction of a dystopian nightmare. The thesis really boils down to two points: one, that technological society greatly constricts human freedom, and two, that it will survive only if it gains enough control over human behavior (by means of psychoactive drugs, for example). If it doesn't, the system will break down, says Kaczynski, probably within a few decades.

The point, however, as Kirkpatrick Sale wrote in an article about the manifesto in 1995, is that while this way of thinking is au courant in most environmental circles, the majority of Americans are not familiar with it, and therefore that these issues need to be popularized and made the focus of public debate. (Note that on this side of the Atlantic, the Green Party is trivial in both strength and following.) Even environmentalists, I would add, are not really clear on the thesis of technology being value-laden, which is why they can be counted on to buy the latest electronic gadget along with the rest of the population, as though these things were not seamlessly woven into the industrial way of life they condemn. Kaczynski himself was not that naive, noting at one point that while each technological innovation by itself may seem desirable, and a source of increasing freedom, taken as a whole these "advances" (mistakenly regarded as "progress") actually narrow our freedom, and put increasing power into the system and the corporations that are running it. Meanwhile, he adds, people become more dependent on these devices with every new advance—in effect, enslaved.³²

As an interesting exercise, the reader might want to take the "quiz" offered online that reproduces quotes from the manifesto alongside quotes from Al Gore's book *Earth in the Balance*, and asks you to sort out which is which. A couple of examples:

We retreat into the seductive tools and technologies of industrial civilization, but that only creates new

problems as we become increasingly isolated from one another and disconnected from our roots.

Modern industrial civilization, as presently organized, is colliding violently with our planet's ecological system. The ferocity of its assault on the earth is breathtaking, and the horrific consequences are occurring so quickly as to defy our capacity to recognize them, comprehend their global implications, and organize an appropriate and timely response. Isolated pockets of resistance fighters who have experienced this juggernaut at first hand have begun to fight back in inspiring but, in the final analysis, woefully inadequate ways.³³

Which of these was penned by the Unabomber? Neither, as it turns out. Both were written by the former vice president and Nobel laureate. There are a total of twelve quotes; as I began taking the quiz, I realized that my responses were purely arbitrary—I had no idea who said what, and wound up with a humiliating score of 33 percent, worse than random guessing would likely have gotten me.

But the notion of the manifesto as being a cliché among environmental groups, or the fact that it is occasionally difficult to distinguish it from the writings of Al Gore, should not deceive us as to what is going on here. The *New Yorker* once remarked that there was a little of the Unabomber in all of us, but what does this really mean? As I said, the idea of technology not being a neutral tool has very little currency in American society, and the condemnation of industrial civilization by environmentalists is not necessarily matched by concrete daily behavior. I actually knew a bigwig in the “voluntary simplicity” movement years ago who owned a Porsche, and I doubt that she was all that idiosyncratic; it's very easy to be schizophrenic about modern

technology. We are in a situation similar to the early sixties, in which millions devoured Vance Packard's books and then ran out and bought a ton of consumer goods; or that of the early eighties, in which the huge popularity of *Small Is Beautiful* or *The Whole Earth Catalog* of the previous decade ultimately counted for nothing at all. If Americans, by their daily actions, can be seen to be fierce advocates of the consuming way of life, the same can be said of their behavior with respect to technology. It really doesn't matter how much Al Gore or Bill McKibben you read; if you interrupt a conversation with a friend to take a cell phone call, you are not only rude; you are also doing your bit to tighten the grip of technology around your own throat and that of society. When push comes to shove, virtually the entire country is on the side of technological civilization, and basically ignorant of what is at stake.³⁴

For this reason it was imperative for the news media to paint a portrait of Kaczynski as insane. He wasn't. His court-appointed lawyers wanted to use the insanity plea, presumably because this would be much more easily understood or accepted than an intellectual critique of industrial society. In general, Americans classify anyone who is opposed to the American way of life—the 9/11 attackers, for example—as insane by definition, for what rational person could possibly not want what we have? But terrorists are not necessarily insane; they may just be dedicated enough to follow up on the logical consequences of their beliefs. Thus Sale writes of the manifesto, “It is the statement of a rational and serious man, deeply committed to his cause.” Of course, one might legitimately wonder how clearly Kaczynski was seeing things if he believed that sixteen years of random bombing, without public explanation of that cause, would serve to “get the message out,” as he claimed to be trying to do. Nevertheless, when someone provided the FBI with a sketch of him at one point, the Unabomber suspended his

activities for a full six years so as not to push his luck—hardly the behavior of a lunatic. And the manifesto comes across not as insane, but sophomoric (and badly in need of a good editor). But the news media were heavily invested in branding the guy a total nut job, and in this they succeeded. This is also the way the American public preferred to see him. Because the alternative—that he was drawing on a long-standing, and quite respectable, tradition of critique of the technological society and the American way of life—is something we shall never collectively acknowledge as legitimate. If that critique does flit across our consciousness, it gets dismissed almost immediately as being outside the realm of serious consideration. I very much doubt that Kirkpatrick Sale's call for public attention to these issues will ever be heeded, because ironically enough, if it were, this would be a very different country and probably not even need such a public forum in the first place. We are strangling on our own catch-22.³⁵

Kaczynski's vision is what I call the *Pequod* theory of the course of American civilization, according to which it was Melville, our greatest writer, who got the meta-narrative of the nation correct. The obsessive pursuit of the whale, in short, will end with the ship being smashed to pieces. Kaczynski believes that the likely scenario is a dialectical one: our commitment to this way of life, the exacerbation of it, will generate enough instabilities and self-destructive tendencies to eventually bring about its collapse. I don't regard this as mad; I regard it as obvious. Indeed, the process is well underway.

As an illustration of this, it might be helpful to look at specific instances in which technology is failing in its own terms—making things less efficient rather than more, for example. This phenomenon might best be described as a “technological boomerang.” Thus Thomas Hylland Eriksen points out that while the period from 1980 saw an enormous development in so-called

time-saving technologies, the truth is that we have never had so little free time as we do now. The Internet has made possible a huge expansion of available information, and yet the data show an increasingly ignorant population. (Books such as *The Dumbest Generation*, by Mark Bauerlein, that document this, are becoming increasingly common.) Air travel is now so heavily congested that by the year 2000, 50 percent of the flights connecting major European cities were delayed. In the United States, road traffic tripled during 1970–2000, and the average speed involved in getting around decreased every year. In fact, the average speed of a car in New York City in 2000 was about seven miles per hour, and we can guess that it is even less today. You get the idea.³⁶

Another example of the techno-boomerang is the alleged socialization function of the Internet, the promise of virtual communities (a variant of McLuhan's “global village,” perhaps). We were all going to be happily wired into each other, having hundreds of friends instead of just a handful, and creating new, intimate connections. And, of course, the Net now includes Facebook, YouTube, MySpace, Twitter, etc.—an embarrassment of riches. Except that “poverty” is much closer to the truth. All of this cyberactivity has led to social isolation, because if you are at home alone with a screen, that's where you are. (Michael Kinsley of *Slate* magazine calls these sites “vast celebrations of solipsism.”) “Virtual community” is pretty much an oxymoron, because friendships online don't typically involve physical proximity or genuine intimacy. In 1998, for example, a research team at Carnegie Mellon University published an empirical study titled “Internet Paradox,” demonstrating that within the first year or two online, people were experiencing less social engagement and poorer psychological well-being. The researchers also found that greater use of the Internet was associated with less family communication, a reduction in

local social circles, an increase in loneliness, and higher rates of depression. The authors of the study concluded by suggesting that by using the Net, people were “substituting poorer quality social relationships for better relationships, that is, substituting weak ties for strong ones,” with consequent negative effects.³⁷

A more recent study, conducted at the University of Michigan for the period 1979–2009, revealed a 48 percent decrease in empathy among college students during this time, and a 34 percent decrease in the ability to see things from another person’s perspective. Most of these declines, it turns out, occurred over the past decade, and the general interpretation was that this was related to the isolation involved in the use of personal technology and popular social networking sites that have become so much a part of student life. The study suggested that this was not surprising “in a world filled with rampant technology revolving around personal needs and self expression.” But it is also the *nature* of the technology that is at issue, because (see below) the Internet and other electronic media are based on speed and distraction, on rapidly shifting attention. The higher emotions, such as empathy and compassion, emerge from neural processes that are inherently slow. Various studies have shown that the more distracted we become, the less able we are to experience such emotions, or to see things from the perspective of others. Put briefly, these technologies may be undermining our moral sense. At the very least, it becomes hard to argue that they are promoting community.³⁸

Another example of the boomerang phenomenon is the crash of 2008. In “The Financial Crisis and the Scientific Mindset,” Paul Cella argues that for the past twenty years capital investment in the United States has been driven by a very intricate structure of speculative debt known as shadow banking, “a technological innovation amalgamating computing power and probabilistic modeling to vastly expand the various world markets

in debt securities.” The technology involved slicing and dicing and repackaging pools of loans to generate huge profits (for a few) while it was actually creating a debt culture that put the entire economy at risk. Credit derivatives, credit-default swaps, leveraged buyouts—these were technical products of computerized mathematical models that resulted not in more wealth, the ostensible purpose of it all, but in economic collapse. Nor are these practices a thing of the past, crash be damned. Cella writes, “much of the reckless grandiosity of modern technological civilization is evident in the peculiar features of the finance crisis.”³⁹

In truth, the techno-boomerang is really a particular subset of a much larger pattern, that of negative fallout from technology in general; what might appropriately be labeled “techno-blowback.” As in the case of political blowback—i.e., terrorism (what some have called the price of empire)—these results are not side effects; rather, they are integral to the way the system functions. When Winner or Postman or the Unabomber argue that the system is doing itself in, they are talking about this type of blowback. Illustrations of this could, and do, fill many volumes; I’m going to cite only a few examples.

The most significant types of techno-blowback at the present time are due to the rapid diffusion of telecommunication devices (TDs, for short). A review of the literature analyzing the impact of screens, cell phones, and related gadgets suggests two themes in particular: the creation of a different type of human being, partly as a result of the neural rewiring of the brain engendered by these devices; and the emergence of a different type of society, concomitant with that. These are frequently hard to separate in real-life situations, but let me start with the impact of the new technology on individual consciousness and behavior.

One activity that is particularly encouraged by the proliferation of TDs is multitasking—doing several things at once. It is not uncommon to call someone up these days and realize,

in the course of the conversation, that they are simultaneously checking something out online and watching television, for example. Whereas you might regard it as rude and annoying, more often than not they think it's good use of their time, despite the fact that they are only half-listening to the conversation. Multitasking was initially hyped (everything in the TD world seems to be hyped) as the key to future productivity and efficiency, and as far as I know is still the rage. But the truth proved to be otherwise. In 2007 Jonathan Spira, a leading business analyst with the research firm Basex, estimated that multitasking was actually costing the American economy \$650 billion a year in lost productivity. It turns out (this from a 2005 University of London study) that workers who are distracted by e-mail and cell phone calls suffer a drop in IQ of more than twice that experienced by pot smokers. Research conducted by the University of Michigan further revealed that multitasking causes short-term memory loss. In switching back and forth between tasks, you lose focus; you have to keep "revving up" to get back to what you were doing every time you switch. In typical techno-boomerang style, multitasking *reduces* efficiency.⁴⁰

"Multitasking," writes Walter Kirn, "messes with the brain in several ways." The constant switching of attention has a negative effect on those areas of the brain related to memory and learning. In this way, it slows down our thinking; it interferes with our ability to analyze things (which requires a continuous, linear thread of attention). Screen technology, of course, is a big part of this, whether we are talking about televisions, cell phones, or laptops; and recent neurological research has discovered that "screen people" are exposing themselves to large amounts of dopamine, which can result in the suppression of activity in the prefrontal cortex. Multitasking also boosts levels of stress-related hormones (cortisol, adrenaline) and wears down the system, resulting

in premature aging. All in all, he concludes, "multitasking is dumbing us down and driving us crazy."⁴¹

Much of the evidence for this has been collected and expanded upon by Nicholas Carr in his recent book *The Shallows: What the Internet Is Doing to Our Brains*. The problem goes way beyond multitasking, writes Carr; it's the use of TDs in general. McLuhan had argued that the brain takes on the characteristics of the technology it uses, and we now see this in the cultural shift from print media to screens. For the Internet's emphasis is on searching and skimming, not on genuine reading or contemplation. As a result, given what we now know about the relative plasticity of the brain, the ability to reflect or to grasp the nuance of a situation is pushed to the margins. The Net, he says, is literally rerouting the pathways in our brains, making our thought processes increasingly shallow. It breaks up the content of a text into searchable chunks and surrounds it with other content. This is why a page online is very different from a page of print. The concentration and attention factor are high for the latter, low for the former. Then there are links, which encourage us not to devote our attention to any single thing but rather to jump from item to item. Our attachment to any single item is thus provisional and fragmented. The Net is basically an "ecosystem of interruption technologies."⁴²

Print, on the other hand, has a quality of calm attentiveness. "The quiet was part of the meaning," as the poet Wallace Stevens put it. When a printed text is transferred to an electronic device, says Carr, it turns into something like a web site; the calm attentiveness disappears. Instead, the Net delivers repetitive, intense, and addictive stimuli, promoting very superficial understanding. Basically, you don't really read on a screen; it's a different kind of activity: browsing, scanning, keyword spotting, and so on. And the better you get at multitasking, the less able you are to think deeply or creatively. We are, he concludes (quoting the

playwright Richard Foreman), turning into “pancake people”—spread wide and thin.⁴³

The lack of interest in printed material, and the corresponding upswing in interest in TDs, is especially pronounced among the young. In 2009 the average American teenager was sending or receiving 2,272 text messages a *month*. I remember watching an interview on TV (sorry) with two sixteen-year-olds who each said that they exchanged more than two hundred such messages per day (they were quite proud of this). Meanwhile, the amount of time the average American between twenty-five and thirty-four years of age devoted to reading print in 2008 was forty-nine minutes a week. As Maryanne Wolf of Tufts University cogently puts it, “the digital world may be the greatest threat yet to the endangered reading brain as it has developed over the past five thousand years.” Collectively, adds Christine Rosen, this is the end point of the tragedy we are now witnessing:

Literacy, the most empowering achievement of our civilization, is to be replaced by a vague and ill-defined screen savvy. The paper book, the tool that built modernity, is to be phased out in favor of fractured, unfixed information. All in the name of progress.⁴⁴

As the Googlification of society proceeds apace, we might want to take note of the fact that the “religion” of the Google corporation, according to Carr—that is, its intellectual ethic—is Taylorism: “progress” personified. The prime value here is efficiency, even in thought. The company itself has said that its goal is to get users in and out quickly; in fact, its profits are tied to that process. Prolonged engagement with an argument or narrative is their enemy. “The last thing the company wants is to encourage leisurely reading or slow, concentrated thought,” writes Carr. “Google is, quite literally, in the business of distraction.”

Following Frederick Taylor, Google believes that intelligence is merely the output of a mechanical process. There is little room in this world, Carr points out, for “the pensive stillness of deep reading or the fuzzy indirection of contemplation.” In Google’s Tayloresque world, he goes on to say, “Ambiguity is not an opening for insight but a bug to be fixed.” The cultural impact follows upon the individual one, then: what we are witnessing is the replacement of a complex inner diversity with a new kind of self, one devoid of any sense of cultural inheritance. It may not be too much to say that TDs are generating a nation of buffoons.⁴⁵

Buffoon behavior, as the reader well knows, is particularly encouraged by the use of these devices. Much of this is intentional—passive-aggressive behavior—but it also (again) lies in the nature of the technology, which is extremely addictive. As Dick Meyer writes in *Why We Hate Us* (already referred to in chapter 2), “People touch their portable devices like rosary beads. They are compelled to check their e-mail when they could be talking to you face-to-face.” These “techno-boors,” he continues, are oblivious to others in public space, all of which has created a “rude zombie world.” Wireless technology, he maintains,

allows people to hook into the Internet umbilical all over, so coffee shops, airports, parks, and bookstores are populated by laptop hooligans. An expert can commandeer a large space. This kind of behavior signals an egomaniacal message like “I’m very, very important. I am more important than you. I must be connected at all times.”

Thus someone on a cell phone in a store doesn’t have to thank the cashier or even acknowledge their existence, and this kind of social disrespect has actually become acceptable (you see it

every day). What this amounts to, Meyer concludes, is “techno-aggression,” hugely destructive of common decency and the social capital of our society.⁴⁶

Christine Rosen, in her article “Our Cell Phones, Ourselves,” contends that TDs function as what psychologists call “transitional objects” from childhood—the blanket or teddy bear. This is undoubtedly the source of their enormous addictive power, rooted as they are in issues of deep psychic insecurity. “We are constantly taking them out, fiddling with them, putting them away, taking them out again, reprogramming their directions, text messaging.” Cell phones enable us to advertise our (ostensible) emotional fulfillment to everyone in the environment: “Look how much I’m in demand, how full my life is.” (Incredibly sad, when you think about it.) Rosen agrees with Meyer regarding the boorish aspect of it all, because the use of the phone (again, inherent in the technology) enables us to dominate public space, to violate it, in effect, and thus demonstrate to others (now rendered invisible) that there is absolutely nothing they can do about it. Kenneth Gergen has called this behavior “absent presence,” in which your body is there but your mind is somewhere else. It’s a way of treating the world as a backdrop, of effecting a “radical disengagement from the public sphere,” and of devaluing those around you. And it’s everywhere now: across the nation, cell phones interrupt movies, concerts, lectures, and theater performances. At any given moment, at least 25 percent of the people you see walking down the street have them glued to their ears, oblivious of their surroundings. “The language of wireless technology itself,” says Rosen, “suggests its selfishness as a medium.” The vulgarity and narcissism of such a society can hardly be overestimated.⁴⁷

The fact that individual brains are changing under the impact of TDs results in yet another cultural change: the general “frenzy” of technological society, in Heidegger’s telling phrase.

The collective effect of these devices is that the hustling quality of American life increases exponentially—and as we have seen, it was pretty high to begin with. In the pathological climate of “techno-social Darwinism,” as Rosen calls it, there is no time for stillness. All of these brave new people lack the ability to be alone with their thoughts or to appreciate the importance of silence. The buzz of all this crap drowns out everything else. Some time ago I was riding around Mexico City with a colleague of mine when we saw a huge billboard ad for some cell phone, with the caption, in three-foot-high block capitals (in English, for some strange reason), KILL SILENCE. “Well,” I said to him, “at least they are being honest about it.” “Oh,” he quipped, “you are fixated on technology.” True, this is a guy who is on his Blackberry 24/7; but I couldn’t help thinking how even the brightest people don’t get it, and typically have no idea what George Steiner meant when he called modernity “the systematic suppression of silence.” Silence, after all, is the source of all self-knowledge, and of much creativity as well. But it is hardly valued by societies that confuse creativity with productivity, and incessant noise with aliveness. In reality, it is *society* that is fixated on technology, but since it practically constitutes the air we breathe, the fixation seems “normal.” As a result, we don’t notice that fundamental aspects of being human are disappearing. During his time at Yale, William Deresiewicz asked his students what place solitude had in their lives. In response, they seemed to be puzzled that anyone would want to be alone. “Young people today,” he concluded, “seem to have no desire for solitude, have never heard of it, [and] can’t imagine why it would be worth having. In fact, their use of technology . . . seems to involve a constant effort to stave off the possibility of solitude.” The world of creativity, of imagination, of depth of the self, is closing down. The society envisioned in *Brave New World* is clearly on the horizon.⁴⁸

This brings us to the only question that really matters, as far as technology is concerned: what *is* progress, when you finally get down to it? Some years ago the Swiss artist Jörg Müller created a portfolio of eight plates called *The Changing City*, illustrating the “evolution” of a typical Swiss or German town over the period 1953–76. Under the pressure of technology and market forces, the *gemeinschaft* of the original town is slowly transformed into the final *gesellschaft* nightmare: a collection of elite hotels, superhighways, and parking lots, with hardly a human being in sight. The place that was originally imbued with character and purpose now has none at all; it’s completely soulless. Who in their right mind would label this “progress”? But the answer to that is easy: Americans.⁴⁹

Octavio Paz, in *The Labyrinth of Solitude* (1950), observed that for Americans, progress was basically novelty. “They enjoy their inventions,” he wrote, but “their vitality becomes a fixed smile that denies old age and death but that changes life to motionless stone.” Progress hardly, in the United States, has much to do with quality of life. Rather, it’s just about “the impertinent dynamic of ‘more,’” as Joyce Appleby characterizes it; more of anything, of everything. There is no point to it at all, on this definition; it’s basically mindless. Hustling, fueled by the religion of technology, has taken us to an impoverished place devoid of meaning. The critics of this way of life are completely ignored; the airwaves are filled with exhortations to keep doing what we are doing. Yet underneath the frenetic activity is a great sadness, which hustling and technology are designed to repress—which they do, but they probably won’t be able to do it forever. As the above discussion suggests, the facade is already breaking up.⁵⁰

It is sobering to realize that in American history, there has been only one political opponent of any consequence to bourgeois liberalism and the driven way of life, and that has been the

American South. Because of the stigma of slavery—and I don’t wish to play it down in any way—there has been a huge resistance, outside of the South, to recognize the value of the South as an alternative way of life. The truth is that although the Civil War was fought over slavery, the conflict went much deeper than that; it represented a “clash of civilizations.” Of course, Southerners could not have anticipated men such as Frederick Taylor and Lloyd Blankfein; but in a way, they did. They knew the type, so to speak. With the election of the Lincoln Republicans in 1860, they understood that the hustling that increasingly characterized the North, with its misguided notion of progress and its inability to appreciate the leisurely life, could only get worse, and that the outcome of all this would be to reduce the South to the status of an economic colony. And so—they “took their stand.”