Neo-Luddites and Lessons from the Luddites

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IN MARCH 1990, a New Mexico psychologist named Chellis Glendinning published "Notes toward a Neo-Luddite manifesto," an attempt to give legitimacy to those who in one way or another are troubled by, and resistant to, the technology of the second Industrial Revolution, and to prepare the ground for a statement that would articulate their critique and goals.

"Neo-Luddites have the courage to gaze at the full catastrophe of our century," she began, which is that "the technologies created and disseminated by modem Western societies are out of control and desecrating the fragile fabric of life on Earth." And to underscore the link of present with past, she added, "Like the early Luddites, we too are a desperate people seeking to protect the livelihoods, communities, and families we love, which lie on the verge of destruction."

Arguing that effective resistance to this destruction "requires not just regulating or eliminating individual items like pesticides or nuclear weapons" but "new ways of thinking" and "the creation of a new worldview, " she set out three basic principles of neo-Luddism:

> 1. Opposition to technologies "that emanate from a worldview that sees rationality as the key to human potential, material acquisition as the key to human fulfillment, and technological development as the key to social progress. "

> 2. Recognition that, since "all technologies are political, the technologies created by mass technological society, far from being "neutral tools that can be used for good or evil," inevitably are "those that serve the perpetuation" of that society and its goals of efficiency, production, marketing, and profits.

> 3. Establishment of a critique of technology by "fully examining its sociological context, economic ramifications, and political meanings... from the perspective not only of human use" but of its impact "on other living beings, natural systems, and the environment. "

She ended with a "program for the future" that envisioned "the dismantling" of nuclear, chemical, biogenetic, electromagnetic, television, and computer technologies; the creation of new technologies, by those who "use them and are affected by them," that promote "political freedom, economic justice, and ecological balance," community-based, decentralized, organic, and cooperative; and the achievement of a "life-enhancing worldview" that would let "Western technological societies restructure their mechanistic projections and foster the creation of machines, techniques, and social organizations that respect both human dignity and nature's wholeness."

"We have nothing to lose except a way of living that leads to the destruction of all life," she concluded. "We have a world to gain. "

Glendinning's remarkable document was inspired by her experiences in writing a book she had finished only a few months before called *When Technology Wounds*, the result of an in-depth study of what she called "technology survivors," people who had suffered injury or illness in recent years after being exposed to various toxic technologies in their homes and workplaces. All had succumbed to technological assault inflicted under the guise of some advance of progress or other – nuclear radiation, pesticides, asbestos, birth-control devices, drugs – and they had all begun to question not only the processes that maimed them but the world that forced those processes on them with such unfounded promise and such blithe indifference. These people know, "in the most intimate and compelling way," Glendinning found,

> what dangerous technologies can do to life. They know the disruption, loss, and uncertainty. They feel the breach of trust, and these experiences can catalyze them to question accepted beliefs about technological progress... They see them as symptoms of a whole system gone awry.

This is what made Glendinning think of the original Luddites, people who similarly suffered from technology, saw themselves as the victims in a "system gone awry," and were engaged in "an ideological

struggle" against an onrush of progress that was a threat to "longlived social relations." These modern-day survivors were, as she saw it, legitimately in the Luddite line, part of a new Luddistic movement.

The idea that there might be such a movement right here in the Land of Technophilia is not as far-fetched as it might seem at first, for the second Industrial Revolution has always had its critics and skeptics, always had an underside of anxiety and distrust. Even in the societies that have succumbed to the new technologies most fervently – or perhaps especially there – a persistent feeling of disquiet, edging toward fear, has always existed about their immense power and sweep, their capacity for accident and misuse.

In part this anxiety goes back to the 1950s and the reaction, at the fringes of the culture at least, to science's awesome and awful achievements at Hiroshima and in the German death camps. Postwar science fiction was dominated by notions of technology gone awry, either out of control or in the hands of evil forces, and postwar films, particularly of the horror genre, by stories of irradiated monsters or invasions by outer-space species even more technologically developed than earthlings. The apprehension was fed by revelations of environmental dangers in the 1960s and '70s – DDT and other everyday chemicals, oil spills, cigarettes, PCBs, toxic wastes, radiation leaks, and so on – which called the wisdom and the truth of scientists, experts, and official government sources into question, producing a partial dissociation from the ruling technocracy for many. At the same time a considerable coterie of disenchanted intellectuals on both sides of the Atlantic produced the analyses that served to challenge the technocratic mainstream: Lewis Mumford beyond all others, particularly with his masterful *Myth of the Machine* (*Technics and Human Development*, 1967, and *The Pentagon of Power*, 1970), Paul Goodman, Jacques Ellul, E. F. Schumacher, W. H. Ferry, George Parkin Grant, Rachel Carson, Ivan Illich, Herbert Marcuse, Doris Lessing, Robert Jungk, Henry Geiger, and some few others.

When the 1980s brought the two most disastrous failures of modern technology to date, the 1984 Bhopal plant explosion in India and the 1986 Chernobyl nuclear plant disaster in Ukraine, followed by revelations of global warming and destruction of the ozone layer, both by technological by-products that had once been touted as harmless, the sphere of disquiet and apprehension certainly enlarged, global now in scope and touching all levels of society. Again this was reflected in several elements of popular culture, in the novels of Kurt Vonnegut, Thomas Pynchon, Farley Mowat, and Edward Abbey, and particularly in movies like *ET*, *War Games*, *Gremlins*, and above all *Return of the Jedi*, the climax of the *Star Wars* series. (In which, be it remembered, the triumph of the natural, not to say the primitive, over the machine is manifest in the Ewoks' use of sticks and stones to defeat the supertechnocratic forces of the Evil Empire.) And again there was the learned support of a new wave of technology critics, now from an even wider range of disciplines and with even greater impact, academics like Langdon Winner, Stanley Diamond, and David Noble, ecologists like Edward Goldsmith, David Ehrenfeld, and Arne Naess, activists like Dave Foreman and Jeremy Rifkin, and Wendell Berry, Jerry Mander, Carolyn Merchant, John Zerzan, Theodore Roszak, Susan Griffin, Gary Snyder, Paul Brodeur, Stephanie Mills, Thomas Berry, Bill McKibben, Paul Shepard, and a surprising number of others, trenchant and occasionally widely received commentators.

Within this context, then, it is not surprising that we should be able to identify something that, if perhaps not always so purposeful as a movement, gives expression in many ways and with growing force to a range of ideas and sentiments that are unquestionably Luddistic. If this neo-Luddism is apt to demonstrate its resistance to technology and the forces of modernism behind it less by actual machine breaking than by opposing the corporation making the machines, nevertheless it is directly linked to the spirit of King Ludd and to the underlying motives and causes of his original followers.

This contemporary neo-Luddism, strongest and most self-conscious in the United States but indeed global in scope, can be seen to span a considerable spectrum – ranging from narrow single-issue concerns to broad philosophical analyses, from aversion to resistance to sabotage, with much diversity in between – that is pertinent to examine at some length.

It can start with those of Glendinning's "survivors" who have organized to send out warnings about technological assaults (almost always denied by the assaulters, usually for decades) and have successfully formed a variety of networks to trade information, plan strategies, raise funds, hire experts, and fight legal battles. There are probably three dozen such groups on a national scale in the United States alone, among them the Asbestos Victims of America, Aspartame Victims and Their Friends, Citizens Against Pesticide Misuse, Dalkon Shield Information Network, DES Action National, National Association of Atomic Veterans, National Committee for Victims of Human Research, National Toxics Campaign, and the VDT Coalition. Their members are people who in the course of healing their own wounds have come to a Luddistic sensibility that the problem lies not only with the particular industrial "advance" inflicted on them but with the wider addiction of society to what one DES mother calls "technological hubris." Or, as one man who got lung cancer after exposure to asbestos on the job put it to Glendinning, "What I learned is that our technology is killing us."

Next along the spectrum are members of those groups that have grown up to resist one computer age technology or other not as victims but as concerned and fearful citizens – as for example the campaigns against toxic wastes, biotechnology, incineration, pesticides, clear-cut logging, automobiles, animal testing, and industrial chemicals. The most successful here have been the antinuclear activists who have been opposing nuclear weapons and nuclear power for decades, and more recently nuclear wastes. Their tactics have included everything from mass marches and demonstrations to scientific papers and legal suits, and some have had a distinctly Luddite air: the attack by a woman in 1987 against a missile-system computer at the Vandenberg Air Force Base in California with a crowbar, bolt cutters, and a hammer, for example, and the fifty "Plowshare" actions since 1980 in which pacifists have used hammers and paint to attack planes, missiles, submarines, and weapons at various military bases. The reasons for the comparative success of the nuclear-power part of this movement, particularly in the United States, where no new nuclear plants have even been commissioned since 1978, are especially instructive: for one thing, it managed always to show the connections between nuclear reactors and the larger industrial culture, its militarism (nuclear weapons), its pollution (nuclear wastes), and its authoritarianism (planning power stations without public participation); for another, it could always point to the "worst-case scenario" of the obliteration of two Japaneses cities by nuclear explosions, whereas most other technologies are introduced in clouds of unequivocal acclaim without their dangers or difficulties ever being so fully exposed. Thus it has been one of the few movements that can actually claim to have retarded, if not altogether halted, a major technology favored by the powers that be.

Another kind of opposition has been directed not against whole technologies as such but against specific projects on the general high-tech menu. In the United States, for example, active resistance, in some cases with explicit Luddistic overtones, has been directed against the supersonic transport plane, synthetic fuels, the antiballistic missile system, the supercollider, the Strategic Defense Initiative, food irradiation, bovine growth hormone, and any number of high-tech dam projects. Even with a Congress willing to buy into almost any technological boondoggle, and corporate and big-science establishments promising moons, victories have been won in a remarkable number of instances, most notably against the SST and supercollider projects and dams in Grand Canyon and James Bay. The surprisingly vigorous opposition to the North American Free Trade Agreement as it was being extended to Mexico in 1993 – shown in some polls to be joined by two thirds of the public – was another project-specific fight, and specifically Luddistic in that so much of it was instigated by a fear over a loss of jobs to a Mexico where not only are wages lower but resistance to new labor-displacing technologies is negligible. In that opposition, accounting for an unusual alliance between Ross Perot conservatives and liberal populists, was also a strong sense that only powerful multinational corporations stood to benefit, a tacit comprehension that in the industrial culture it is the corporation, the technological form created by 19th-century industry, that reaps the rewards.

Something of that same sense animated similar protests in Europe against two specific agreements that were seen as promoting large-scale technocratic, particularly antitraditional and antilocal, interests, destroying regional and communal associations and doing away with jobs and pastimes that have

endured for centuries. The first, resistance to the European Union formed in I992, was expressed in many countries throughout the subcontinent – most vociferously in Scandinavia, Ireland, and Britain – and the Maastricht Treaty certifying that union was passed by very narrow majorities and only after dubious high-pressure campaigns by corporate and government forces. This was followed by even greater opposition to the General Agreement on Tariffs and Trade, widely viewed as a boon to corporations that could cross borders in a nanosecond and move jobs and products and profits around the world at their whim, leaving workers and communities at their mercy. Here protests broke out into active demonstrations against the Uruguay-round provisions, most vividly in France in 1992 and 1993. French farmers, their existence threatened by agribusiness provisions in GATT that would do away with the subsidies that have kept them small and independent, set up barricades of burning tires and hay bales, or ran their trucks across the road to disrupt traffic, sometimes clashing with police; and they were at the core of the 40,000 farmers from all over Europe and parts of Asia that massed before the European Parliament in Strasbourg in December 1992 to burn an effigy of the U.S. GATT negotiator for agriculture policy. They were naturally derided in press and parliament for being Luddites, antimodern and antiprogress – and in some real sense they are, arguing for other values than those of capitalist enterprise, including rural communities and rural lifeways, just as their English predecessors had – but, confoundingly, this stance met with enough sympathy to win them wide popular support and help them gain some concessions on subsidies in the final agreement.

It is in the non-Western countries, however, where GATT's effects are likely to be most strongly felt – free trade, we must remember, is free only for those who run the trade – and where the greatest protests have been waged in recent years, and it is here that today we most often see a clash of industrial modernity and organic tradition that bears many resemblances to the experience of the original Luddites. Farmers in Korea, India, Ceylon, and Malaysia have marched, demonstrated, and petitioned against GATT provisions that they see as allowing a "genetic invasion" from the West, enabling such American grain-marketing giants as Cargill and W R. Grace to appropriate indigenous seeds and species, alter them in some minor way, and then patent and sell the resulting variety back to the farmers, even forcing them to pay royalties. In India the Cargill offices in Bangalore were raided in 1992 and its files set on fire, a Cargill seed factory under construction was burned down in June 1993, and in October 1993 half a million people demonstrated in the state of Karnataka against the GATT provisions, the largest outcry against the effects of free trade – and specifically against the incursion of multinational technologies – anywhere in the world.

Indeed, it has been in the non-Western world that the Luddite spirit has been particularly vigorous in recent years against the industrial world's invasions, very often led by indigenous peoples who are trying to resist not only the machines and projects of industrialism but its culture as well. Peasants have refused to take part in various "development" schemes foisted on them by pliant governments usually at the behest of the World Bank or U.S. State Department, as for example the farmers in Mali in the early 1980s who destroyed dams and dikes being built for a rice-growing program they wanted no part of. Communities have mobilized to stop dam projects that threatened to drown their age-old settlements, sometimes successfully, as in the case of the villagers who protested the Narmada Dam in India in the early 1990s, sometimes less so in many other cases, as with the people of eastern Java who marched against the Nipah irrigation dam that was to flood their homeland, four of whom were killed by Indonesian security forces in 1993. Tribes have organized to fight tree-cutting and road-building schemes that invaded their territories, most famously with the Chipko "tree-hugging" movement in India in the 1970s and '8os, which eventually halted government clear-cutting efforts there; similar protests have also taken place in Malaysia, Australia, Brazil, Costa Rica, Solomon Islands, and Indonesia, among others. And at places all around the Indian subcontinent, in Malaysia and Indonesia, and several ports along the Pacific shore of South America, including Ecuador and Colombia, traditional fishermen have taken actions against industrial fishing fleets invading their waters and threatening their catch, even ambushing and setting fire to the mechanized trawlers in several instances.

5

These kinds of protest actions do not necessarily involve the destruction of machinery, though sabotage is not unknown (as in the destruction of a high-tech chemical plant in Thailand in 1986), but the motivating sentiment behind them is exactly Luddistic in its desire to maintain a traditional way of life and livelihood, in the face of an industrial capitalism that intends to draw them into a wage-and-market system. A more exact parallel is found in a story from eastern India (there are probably many such, but few become international news) of a joint Indian-Australian mining project at Piparwar, on the Damodar River. People there have been resisting outside destruction of their cultures for two centuries – what used to be done to them in the name of "civilization" is now done in the name of "development" – but in the late 1980s the Indian government forced many of them off the common lands from which they had wrested a self-sufficient living for generations and began opening up the hillsides for highly mechanized – and highly polluting – coal extraction. The project naturally promised jobs to the locals, an available workforce now that their lands had been confiscated, but in the event only a few of the positions were for unskilled workers and most of the men had to be assigned to other government projects outside the region, forced to leave their families behind. One of the few nonmechanized jobs available was loading coal onto railway cars at a siding, which men would do with large baskets on their heads, but late in 1990 this task too was mechanized. The affected workers and some fifteen thousand local supporters immediately began a ten-day sit-in, stopping all work at the siding, and did not resume work again until January. On January 22, when some of the workers started loading coal with baskets, ignoring the detested machinery, company officials called in the police, who opened fire on the crowd, killing one man and wounding six. Sometime in the next two days the mechanical loaders were disabled (one would like to think by the great Enoch hammers, though the means are not specified), but they were eventually repaired or replaced and, despite protests at the site for the next two years, the coal loaders, like the croppers, were out of work forever.

This kind of resistance in the non-Western countries has led one writer, Claude Alvares, a Goa-born journalist and farmer, to argue recently that "it is the luddite response of the third world that is the most instructive and indicative of future directions." He believes that it is against "the dual oppression of science and development" that this Luddite opposition will be mounted and that the power behind such a movement comes on the one hand from traditional religious beliefs that reject the "scientific rationality" of the West and on the other from a general antagonism to "further colonization of popular consciousness" at levels both popular and intellectual in all these countries. Indeed, he is impressed enough by such resistance to predict that these forces are powerful enough to succeed in defeating some projects of the Western nations in the short run and that "eventually all may succeed, aided by modern science's own crumbling foundations."

There is no question that an anti-Western sentiment and disenchantment with Western industrial culture has informed many of the rebellious movements in parts of that "third world" in recent decades. In all the Moslem fundamentalist movements, from Morocco to Pakistan, a pronounced anti-Western strain operates as well as a thoroughgoing critique of Western rationalism and science, even if it seldom extends to a rejection of Israeli machine guns or American oil rigs or Japanese transistor radios. And some of the armed uprisings in such places as Somalia, Algeria, Egypt, Nepal, Indonesia, Central America, and the Philippines have stated their opposition to Western industrialism, its specific corporate agents, and the regimes forcing it upon them. A leader of the Zapatista rebellion in Mexico, for example – which began, not coincidentally, on the day that NAFTA became official, January I, 1994 – was explicit in announcing its effort as "against the whole neo-liberal project in Latin America," by which he meant foreign trade, privatization of state enterprises, agriculture for export rather than local consumption, and free-market capitalism. It may be that such sentiments are only contributary as motive forces in these rebellions, but there seems no doubt that antipathy to the industrial nations' "neo-liberal project" plays a role seldom acknowledged.

But it is not only in the non-Western world that examples from this part of the neo-Luddite spectrum are to be found. In the West, and even in the North American core, protest against industrialism in

general and environmental onslaughts in particular has spawned an active resistance that goes by the name of "ecotage."

Starting in the 1970s, environmentalists of several stripes began to sabotage the machinery and products connected with industrial projects that threatened to invade wilderness areas, clear-cut old-growth forests, block free-running rivers, or interfere with settled lives and homes. In the mid-1970s farm families in northern Minnesota, in protest against power lines that represented both health and environmental risks, used bolt cutters to try to topple the electric towers being forced through their area and were defeated only by arrests, beatings, and a daily police presence. A few years later a man in Chicago known only as "the Fox" drew some attention with his environmental sabotage, plugging polluting factory smokestacks and shutting off industrial waste-drain systems without ever being caught.

It was in the 1980s, though, that ecotage was raised to an art, largely through the efforts of Earth First!, a radical environmental organization whose slogan was "No compromise in defense of Mother Earth." Its strategy was to stop environmental intrusions by any means available, legal and otherwise, including slashing tires and disabling engines of earth-moving machines used to cut timber roads, blocking roads to prevent logging trucks from entering wilderness areas, and, most famously, drilling spikes into trees in wilderness forests to prevent them being logged by chainsaws. The specific purpose of these actions, as outlined in the group's freely available publications (their works were printed, not coincidentally, by Ned Ludd Books and their bookshop carried T-shirts saying "Ned Ludd Lives!"), was "the dismantling of the present industrial system," as one Earth Firster said (shortly before being arrested for trying to topple an electric-power tower), not just to protect nature but to "throw a monkey wrench" into the industrial machine. They have not quite achieved that, although one estimate in 1990 was that they were doing the industrial system between $20 million and $30 million worth of damage a year.

Other environmental groups have also employed forms of ecotage in these years. Some animal-rights groups invaded laboratories where animal experiments were being performed, destroying cages and other equipment and in most cases freeing the animals when they could. Activists protesting the hunting of seals and seal cubs in the Arctic disabled hunters' vehicles and in one instance attacked and disarmed a group of men employed to club seals to death. Perhaps the most outstanding work of this kind has been done by Paul Watson and his Sea Shepherd Conservation Society, which has taken responsibility for incapacitating at least seven vessels engaged in illegally hunting whales, including sinking two of Iceland's four whaling ships in Reykjavik harbor in 1986 and inflicting $2 million worth of damage on the country's whale-processing plant; Sea Shepherd has also used ecotage against ships hunting for dolphins in Japanese waters and loggers attempting to clear-cut Canadian forests.

Ecotage has also surfaced elsewhere in the industrial world, sometimes spontaneously, sometimes in direct imitation of American Earth First! tactics. In Australia protesters challenging the cutting of the Big Scrub forest in New South Wales in the 1980s tied cables between trees in the hopes of disabling earth-moving equipment and camped out in trees to prevent their being cut, actions that eventually forced the government to make the forest a national park; elsewhere, damage to heavy equipment said to amount to more than $1 million forced some timber contractors to close down. In Europe protests against nuclear power plants have involved ecotage against power lines and transmitters at sites in France, Germany, Portugal, and Scandinavia, and a Basque attack on a nuclear station in Bilbao in the late 1970s was said to have done more than $70 million worth of damage and caused the death of two plant workers. Spontaneous actions by villagers in both Spain and France have led to the sabotage of heavy equipment at several places where locals objected to high-tech plants being built in their areas.

About here on the spectrum one might expect to find those who, directly affected by automation and technical displacement, have turned to forms of sabotage at least as inventive as the environmentalists' in trying to secure their jobs and livelihoods. In fact, though, the economic dislocations of the second Industrial Revolution are taking place with – so far – very little of the indignant fire and fierceness that marked the first.

It is true that in the earliest days of automation in the United States in the late 1950s, some union protests were effective in slowing down the pace of worker displacement or, more often, in providing compensation for those laid off as a result – the 1959 steel union strike of 116 days was largely over this issue, and was largely successful – but there was never any serious attempt to attack the machines themselves. And in the second wave of automation in the early 1970s there were isolated incidents of resistance that occasionally included sabotage, the most famous being at the General Motors assembly plant in Lordstown, Ohio, in 1970, where workers used "creative sabotage" to disrupt parts of the new automated production system for nearly a year, and at *The Washington Post* in October 1975, when pressmen threatened with the loss of their jobs to computer-run "cold type" technology broke into the pressroom and damaged most of the old hot-type presses. But these incidents, though having clear overtones of Luddism (*Time* called the *Post* pressmen "Washington Luddites"), were not made part of any larger union campaign and were isolated because they failed to build this instance of technological displacement into a larger political issue about the general impact of technology in the workplace.

There was enough workplace resistance to automation by this time, however, to prompt the federal government to devise a national policy. "The impact of technology has been acutely felt by the blue-collar workers," reported a special Health, Education, and Welfare task force in 1973, resulting in markedly low productivity, "as measured by absenteeism, turnover rates, wildcat strikes, sabotage, poor quality products, and a reluctance of workers to commit themselves to their work tasks." The corporate response, HEW advised, should be to give workers thus threatened more "participation" in decision-making and to reassure them about the positive gains in productivity that "will come about mainly through the introduction of new technology."

Remarkably, American workers and their unions bought in to this strategy almost without a peep. One after another, unions threatened with sharp job losses from automation sought merely to ensure that the bulk of the workers who would be fired would have financial cushions and the rest of them "participation." The longshoremen's union, for example, once one of the most powerful, rolled over in the face of automation, negotiated handsome deals by which their workers would get guaranteed annual wages for life whether they were on the job or not, and allowed shipping companies (strongly backed by the Pentagon) to use containerization on the docks and cut the workforce by 90 percent. There was no protest from the ranks, no sabotage by loading hook, and the union proceeded complacently, as one rank-and-filer later observed, to "run interference for the new technology. " As it happened, the union very quickly became powerless as the shipping companies expanded their profits and operations, the few remaining men on the job (mostly crane operators) were given less and less responsibility, eventually succumbing to computerization themselves, and the lively shoreside communities that once surrounded the work sites and hiring halls (cf. *On the Waterfront*) atrophied and died. (A decade later, longshore union leaders eventually acknowledged that the whole thing had been a mistake.) Whether by agreement or coercion, the American workforce quite quickly succumbed to mechanization, with only a brief flurry of strikes in the early 1970s to show its resistance. In 1974, the number of strikes reached its highest level since the 1930s – with automation at the core of many of them – but the number of walkouts and of workers involved plummeted sharply after that, down to less than half the 1974 figure by 1980, and a tenth by 1990. Unions, diminished, were increasingly impotent – in 1994 they represented just 13 percent of the workforce – and the second Industrial Revolution swept on as powerfully as the first.

Of course isolated examples of machine breaking in the workplace can be found, corks bobbing in the ocean. Many plant and office managers will tell, off the record, stories of petty sabotage of new machines that either deskill tasks or permit speedups, but they try to keep news of such actions from spreading around to other workers and only rarely is it publicized. Occasionally a few stories surface, like the one about a computer in the Department of Justice in Washington that was disabled by being saturated with urine, or the farmworkers in California who put sand in the gas tank and incapacitated one of the first automatic tomato-pickers. But nowhere on the record is there any serious concerted machine breaking challenge to the new technologies of the computer revolution, not even from the 6

million people terminated in the doldrum years of 1988-93, most of whom did not find other comparable work.

Somewhat more opposition surfaced in Europe and Australia as computerization took hold there in the 1970s and early 1980s, largely because the union movements were traditionally stronger, but even there the usual weapon was only the strike and the usual outcome defeat. In Australia telecommunications workers went on strike in 1977 against a new computer system that threatened a number of jobs – "Our members will not move over for a computer," the union boasted – and an officer of one of the unions even summoned up "that spectre, that special understanding of the Luddite Martyrs" now "coming back to haunt the heirs of those who transported them in irons to the shores of Botany Bay." That dispute ended in a brief moratorium on new machines; but the computers were eventually installed with a few job-termination trade-offs. In England, workers at the Lucas Aerospace plant, famous for their attempts in 1980-81 to convert their work from military to civilian products, were also involved in efforts to influence the pace and design of new computerized machines in their shops, but the best they too could get was a moratorium that lasted less than a year. In Denmark, when in 1982 municipal workers in the town of Farum struck to demand veto power over new technology, they gave expression to an idea that was quite widespread then in Scandinavia, although their central union and the government refused to support their action and it eventually collapsed. In the end, the failure of central unions to align themselves against new technologies turned out to be as common, and as devastating, in Europe as it was in the United States.

A study carried out in the 1950s by Clark Kerr and a team of scholars and published in 1960 as *Industrialism and Industrial Man* found that "protest was not such a dominant aspect of industrialization, and it did not have such an effect on the course of society, as we once thought." Everywhere around the world, they found, resistance to industrialism, whether the machine or the factory or the culture, is likely only at the start and only where traditional values are strong and communities intact. But in light of the sophisticated ways that corporations have to control or suppress protest, workers tend to concentrate more on how to accommodate to the industrial order and get a share of its pie. "Experience has tempered visionary aspirations and sobered expectations" among all types of workers, they concluded, "thereby constraining worker protest. " In the succeeding thirty-five years their analysis has held largely true, and there's no reason to think it won't hold for the near future as well.

Last along the spectrum comes a diverse set of social critics, activists and intellectuals for the most part, who accept the neo-Luddite label without demur and are consciously working to adapt certain of the Luddite fundamentals to contemporary politics. A good many of them have been drawn into a loose "neo-Luddite" group first put together in 1993 by the Foundation for Deep Ecology in San Francisco, coordinated by two antitechnology veterans, Jerry Mander, the author of *Four Arguments for the Elimination of Television* and *In the Absence of the Sacred*, a scathing attack on "megatechnology," and Helena Norberg-Hodge, whose work to preserve the Ladakhi culture of the Himalayas has led her to a broad-ranging campaign against the invading Western monoculture there and its technological and economic penetration everywhere.

A roster of some of those in this rough circle suggests the range of contemporary neo-Luddism. John Mohawk is a Seneca activist and lecturer in American Studies at the State University of Buffalo, New York, who was the principal author of the Irokwa Confederacy's recent statement setting out Indian culture's defiance of industrial society and its assertion of a biocentric, animistic, organic worldview. Jeremy Rifkin is the president of the Foundation on Economic Trends, a Washington citizens' lobby fighting the spread of biotechnologies and the threat of global warming, and the author of a number of books attacking the foundations of industrial society. Vandana Shiva, who has a doctorate in quantum mechanics, has been an activist in southern Asia for more than twenty years, where she has worked to resist the penetration of Western culture, particularly its science, and its destruction of local agriculture, genetic diversity, and traditional communities. Sigmund Kvaloy, a farmer and writer in Norway, is a critic of industrial society who has been instrumental in developing the Green movement in Scandinavia

and in leading resistance to Norway's participation in the European Community. Charlene Spretnak, an early leader of the U.S. Green movement (and co-author with another neo-Luddite, Fritjof Capra, of an early analysis of Green politics), has been an ecofeminist critic of modernism through teaching and writing. George Sessions, a professor of philosophy at Sierra College, California, is the leading American spokesman for the ideas of deep ecology, which teaches the equality of all species and the need for the human to live in greater harmony, and in far fewer numbers, with the rest of nature. A disparate but distinguished lot indeed, and there may be another several dozen of similar stature and mind.

Now it must be said that what links these diverse people is essentially a philosophical kind of Luddism. Although many have been involved in direct-action protests of one kind or another, they are not known as people who have gone out and broken offending machines, or burned down noisome factories, nor for the most part are their livelihoods immediately threatened by the onrush of high-tech industrialism, however much they realize their societies and environments are. Indeed, that may be what makes them fittingly neo-Luddites, as Chellis Glendinning's definition suggests, rather than true replicas of the originals. Charles Cobb, an economist with the Society for a Human Economy ("Economics as if people mattered"), has drawn the distinction this way:

> Neo-Luddites do not propose to overcome subtle forms of enslavement to technology by physically smashing machinery. In contrast to the original Luddites, who focused on the particular effects of particular machines, the Neo-Luddites are concerned about the way in which dependence upon technology changes the character of an entire society. They are asking us to reflect on the entire configuration of modern technology instead of isolated pieces of it.

Of course the original Luddites were feeling the changes in the character of their society as well, and more keenly perhaps because they knew the old ways so intimately, but they were able to see only two decades of the industrial onslaught rather than two centuries of it and probably had greater faith, at least at the start, in the ability of frame breaking to stop it. The neo-Luddites understand the protean and far-flung nature of the technosphere, its pervasive power shot horizontally and vertically through modern society, in ways that the originals could not have begun to, and that is why their work takes them in so many different directions: Green politics, ecological restoration, anti-GATT organizing, wilderness preservation, alternative technology, cultural survival, food safety, historical research, and much else besides.

That is also why so many of them are willing to use, at least in the near future, the technologies at the heart of the system they oppose, including telephones, faxes, jet planes, and photocopiers; as John Davis says, though he is one of the neo-Luddites and editor of *Wild Earth* quarterly, he "inclines toward the view that technology is inherently evil" but "disseminates this view via E-mail, computer, and laser printer." It is a contradiction and a compromise, however, that sits easily with no one and is justified only in the name of the urgency of the cause and the need to spread its message as wide as possible. For there is another understanding that neo-Luddites generally share: that there is, in Jerry Mander's words, "an intrinsic aspect of technologies" that affects what happens regardless of who uses them or with what benign purposes; any technology, any artifact, has certain inherent attributes, its givens, impossible to change or correct, and these, the product of the political context that gives them birth, inevitably determine the ways it is used and the consequences it has. As Mander says, you can't have a "good" nuclear power plant, even if saints are in charge of it, because it will be fragile, dangerous, expensive, large, centralizing, and environmentally noxious by its essential nature – any more than you could have a "good" bomb or a "good" pesticide or a "good" automobile. This also means that in a real sense every use of a technology, particularly such a piece of quintessentially high technology as the computer, no matter how supposedly benevolent the ends, embeds its "intrinsic aspect" deeper and deeper into the soul of the user however wary or self-conscious, in fact embeds the values and thought processes of the society that makes that technology, even as it makes the user insidiously more and more a part of those

values and processes. The neo-Luddite dilemma, then, is that though it may not be possible to avoid all aspects of the industrial world and still function effectively, there is a real question as to how effectively one can ever fight fire with fire.[1]

Indeed, among the neo-Luddites are some who, in reaction to this dilemma, take a stronger, more purist position. Wendell Berry, the essayist and poet who also runs a small farm in Kentucky, says, "As a farmer, I do almost all of my work with horses. As a writer, I work with a pencil or a pen and a piece of paper in the daytime, without electric light. " Of course the fact that his manuscript is then typed by his wife on an old Royal type-writer – she criticizes as she goes along, and they work together in what he calls "a literary cottage industry" – somewhat diminishes this technological purity, and the typescript is subsequently put through any number of computers in setting, printing, and marketing it. Nonetheless there is a certain logic to Berry's method: he won't use a computer because it represents the system he opposes in his writing. "I do not see," he says, "that computers are bringing us one step nearer to anything that does matter to me: peace, economic justice, ecological health, political honesty, family and community stability, good work." It hardly comes as a surprise to hear Berry say, in his soft mountain drawl, "I am a Luddite. "

Actually that kind of claim is not as rare in the last years of the century as one might think. Fritjof Capra, who is a physicist by training, has said it. Katharine Temple of the Catholic Worker movement has said it, calling on her comrades to "find even more ways to be latter-day Luddites." Thomas Pynchon, the novelist whose pervading paranoia applies also to the technological realm, has said it, adding that he takes comfort "however minimal and cold" from Byron's lines after the Loughborough raid, "Down with all kings but King Ludd!" And even Joseph Weisenbaum, a professor at the Massachusetts Institute of Technology, has said it, thus:

> I think we need a period of detoxification with respect to our science and technology. They have become toxic to our spirit. We need a moratorium on progress. If such thoughts are Luddite, then I am a Luddite too.

And who knows how many there may be, troubled by the onrush of arcane technologies and esoteric systems, bewildered by procedures unknown but a decade before, threatened by machines that make them exposed or servile or useless, or worried by a world growing every day more anxious, unstable, and befouled, who have said, perhaps only to themselves, "I am a Luddite."

The neo-Luddite spectrum, then, is surprisingly broad and far more multifarious and interesting than one might have been led to think. Not yet an ordered movement, perhaps, but it contains multitudes of those who have in common an awakening from the technophilic dream and resistance to one aspect or other of the industrial monoculture, and that is a sociological fact of considerable importance. It also seems capable of developing along more self-conscious lines in the years ahead, particularly as the kinds of tenuous links now being made among previously separate groups grow stronger and as the sorts of issues once regarded as distinct – biotechnology and free trade, clear-cutting and tribal extinction – are increasingly seen parts of the same rough beast.

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[1] About computers, over which much dispute rages, it suffices to say that they have two fundamental, fatal flaws-quite apart from the fact that a great deal of pollution and sweatshop labor is involved in their manufacture, some real risks to health and bodily functions are connected to their operation, considerable deskilling and job displacement result from their corporate use, and increasing surveillance and invasion of privacy attend their proliferation. First, in the hands of the large centralizing corporations and bureaucracies that devised and perfected them in the first place, and in service to the goals of production, profitability, and power, computers are steering the world toward social inequity and disintegration and toward environmental instability and collapse, and doing so with more speed and efficiency with every passing year-regardless of how many people on the Internet believe they are saving the planet. Second, computers interpose and mediate between the human and the natural world more completely than any other technology- they are uniquely capable of reproducing another nature through biotechnology and many "virtual" ones-and are the instruments that primarily energize the technosphere that not merely distances this civilization from nature but sets it at war with nature for its daily sustenance. Next to that it is quite insignificant whether some individuals find that the values of a technological society-speed, ease, mass information, mass access, and the like-are served and enhanced by such machines.

It is impossible to put a figure on the number of people who could potentially be drawn into such a movement. The only attempt I know of was made in 1992 by a Russian scholar, Dr. Felix Rizvanov of the Russian Academy of Sciences, who estimated that there were as many as "approximately 50 to 100 million people in the USA, Russia, Europe and worldwide, who have rejected the scientific, technocratic Cartesian approach with its 'laissez-faire' economy." Whether that figure has any validity, and how many of those who have made that rejection would see themselves as purposeful neo-Luddites, it is not possible to say. But even from a survey as limited as the one I have attempted here, it is not unreasonable to think that the audience for a neo-Luddite message is wide and must be growing daily – or even that a resuscitation and new appreciation of the original Luddites might provide exactly the kind of instructive parallel from which such an audience might learn how to become rebels against the future they face, and find a world to gain.

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