The Critique of Civilisation

Texts against the capitalist Death Machine

Part I:

Against the Megamachine

by David Watson

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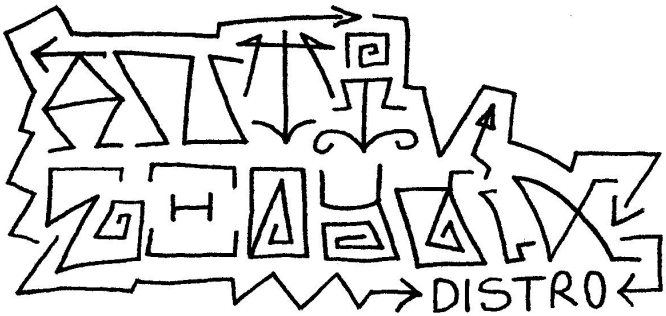

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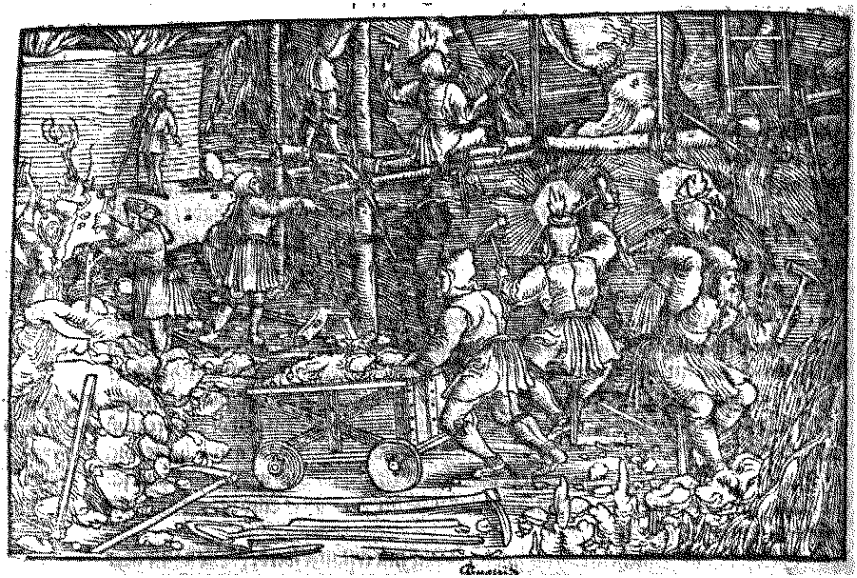


David Watson,

Against the Megamachine:

Essays on Empire & its Enemies

How do we begin to discuss something as immense and pervasive as technology? It means to describe the totality of modern civilization — not only its massive industrial vistas, its structural apparatus; not only its hierarchy of command and specialization, the imprint of this apparatus on human relations; not only the "humble objects," which "in their aggregate … have shaken our mode of living to its very roots," as Siegfried Giedion has written; but also in that internalized country of our thoughts, dreams and desires, in the way we consciously and unconsciously see ourselves and our world.

Questioning technology seems incoherent in the modern world because, invisible and ubiquitous, it defines our terrain, our idea of reason. You cannot "get rid of technology," you cannot "destroy all machines"; we are dependent upon them for our survival. In any case, the story goes, technology has always been with us. When an ape pries termites out of a tree with a twig, that, too, is supposed to be technology. Everything changes, and yet stays the same. Plugging into a computer is no more than an improvement on prying termites out of bark. Therefore, one is expected never to discuss technology as a totality but only specific styles or components of technology, which are to be embraced or discarded according to the criteria of the technological religion: efficiency, velocity, compatibility with the entirety of the aggregate.

No one denies that different modes of life existed; but they have been, or are rapidly being, forgotten. Hence the idea they must have been defective, backward, underdeveloped, and eventually surpassed by progress. You can't "go back," "return to the past" — "you can't stop progress." When mercantile capitalism emerged, the individualistic, entrepreneurial spirit was thought the essence of human nature. Even non-western and indigenous societies came to be judged mere preparatory stages of modern market society. As mechanization took command, humanity was seen fundamentally as the "tool user," Homo faber. So ingrained was this notion of human nature that when the paleolithic cave paintings at Altamira were discovered in 1879, archaeologists considered them a hoax; Ice Age hunters would have had neither the leisure (due to the "struggle for existence") nor the mental capacity (since sophistication is demonstrated first of all by complex technical apparatus) to create such graceful, visually sophisticated art.

Taking the part for the whole — ignoring the complex languages, symbolic exchange, rituals, and dreamwork of diverse peoples, while fetishizing their technics—this ruling idea continues to see all cultural evolution as only a series of advances in technical activities. There is never any suspicion of qualitative difference; the mathematics, techniques, and technical implements of early peoples are seen only as incipient versions of modern cybernetics, rational mastery, and industrial apparatus.

Technology is a way of life

To define technology as any and every technical endeavor or artifact, to think of it as the means by which human beings do everything from picking fruit to firing missiles into space, is to render the word meaningless. This ideology can make no sense of the dramatic changes that have occurred in life; it conceals the fact that technology has become a way of life, a specific kind of society. It assumes that a society in which nearly every sphere of human endeavor is shaped by technology is essentially the same as a society with a limited, balanced technics embedded in the larger constellation of life.

Just as capital has been reductively confused with industrial apparatus and accumulated wealth, when it is more importantly a set of social relations, so has technology been reduced to the image of machines and tools, when it, too, has become a complex of social relations—a "web of instrumentality," and thus a qualitatively different form of domination. Technology is capital, the triumph of the inorganic — humanity separated from its tools and universally dependent upon the technological apparatus. It is the regimentation and mechanization of life, the universal proletarianization of humanity and the destruction of community. It is not simply machines, not even mechanization or regimentation alone. As Lewis Mumford pointed out in Technics and Civilization, these phenomena are not new in history; "what is new is the fact that these functions have been projected and embodied in organized forms which dominate every aspect of our existence." (Thus critics of technology are commonly accused of being opposed to tools, when in reality modern industrial technology destroyed human-scale tools, and in this way degraded human labor.)

The constellation of terms related to the Greek root techne (meaning art, craft or skill) has changed over time. Words such as technique, technics, and technology tend to overlap in meaning. They are not static, universal, neutral terms, as a simple dictionary definition might suggest; they reflect actual social relations as well as a process of historical development.

In his Autonomous Technology: Technics-out-of-Control as a Theme in Political Thought, Langdon Winner observes that the once limited, specific meaning of the word technology as "a 'practical art,' 'the study of the practical arts,' or 'the practical arts collectively,'" has in the twentieth century come to refer to an unprecedented, diverse array of phenomena. The word now "has expanded rapidly in both its denotative and connotative meanings" to mean "tools, instruments, machines, organizations, methods, techniques, systems, and the totality of these and similar things in our experience" —

A shift in meaning that can be traced chronologically through successive dictionary definitions.

There is no clean division between what constitutes technique (which in its earliest usage in French meant generally a certain manner of doing something, a method of procedure), a technics which is limited and culture-bound, and a technological system which tends to swallow up every activity of society. A provisional definition of terms might be useful, describing technique as that procedural instrumentality or manner in which something is done, whether spontaneous, or methodical, which is shared by all human societies but which is not necessarily identical in its motives or its role in those societies; technics as technical operations or the ensemble of such operations using tools or machines — again, not necessarily identical from society to society, and not necessarily either methodical or spontaneous; and technology as the rationalization or science of techniques, an idea close to the dictionary definitions - the geometric linking together, systematization and universalization of technical instrumentality and applied science within society. This last definition underscores technology's emergence as a system, hence as an autonomous power and social body. While such definitions may not be perfect, they make it possible to explore better the complex nature of the technological phenomenon and modern civilization's intrinsically technological codes.

A certain procedural instrumentality is shared by a painter applying paint to a canvas (or cave wall), a farmer planting seeds, and an electronics technician testing the strength of some metal in a nuclear device. That doesn't make the character of their activities identical. As Jacques Ellul observes in The Technological Society, "It is not … the intrinsic characteristics of techniques which reveal whether there have been real changes, but the characteristics of the relation between the technical phenomenon and society." Ellul uses the French word technique in a way which overlaps with the use of "technics" and "technology" in this essay, and which he defines as "the totality of methods rationally arrived at and having absolute efficiency (for a given stage of development) in every field of human activity."

Whereas previously limited, diversified, local technics bore the stamp of the culture and the individuals from which they emerged, technology now changes all local and individual conditions to its own image. It is gradually creating a single, vast, homogenous technological civilization which smashes down "every Chinese wall," and generating a dispossessed, atomized and de-skilled human subject more and more identical from Greenland to Taiwan.

A world of means

The wide diversity of primal and archaic societies is evidence that though these societies can be said to share a basic level or repertoire of techniques and tools (containers, horticultural and gathering techniques, food preparation, weaving, etc.), each manifestation is unique, independent, culture-bound, kinship bound. Neither technique in general nor specific technical activities or objects entirely determines how these societies live.

"Because we judge in modern terms," argues Ellul, "we believe that production and consumption coincided with the whole of life." But in traditional societies "technique was applied only in certain narrow, limited areas … Even in activities we consider technical, it was not always that aspect which was uppermost. In the achievement of a small economic goal, for example, the technical effort became secondary to the pleasure of gathering together … The activity of sustaining social relations and human contacts predominated over the technical scheme of things and the obligation to work, which were secondary causes." Technical activity played a role in these societies, he argues, "but it had none of the characteristics of instrumental technique. Everything varied from man to man according to his gifts, whereas technique in the modern sense seeks to eliminate such variability."

As society changed, the notion of applied science emerged as a central motivating value, along with an unquestioning allegiance to quantification, time-keeping, progressive mechanization and ever increasing, ever accelerating production — reflecting not simply a change in technical means but an entire new world of meaning and means. The accompanying religious impulse — the worship of technical prowess, the fascination with technical magic linked to the crude, materialist pragmatism of efficiency of means—tended to conceal the meaning of technology as a system. Ellul: "The techniques which result from applied science date from the eighteenth century and characterize our own civilization. The new factor is that the multiplicity of these techniques has caused them literally to change their character. Certainly, they derive from old principles and appear to be the fruit of normal and logical evolution. However, they no longer represent the same phenomenon. In fact technique has taken substance, has become a reality in itself. It is no longer merely a means and an intermediary. It is an object in itself, an independent reality with which we must reckon."

According to the official religion, technology, rooted in a universal and innate human identity, is paradoxically somehow no more than a simple tool or technique like all previous tools and techniques, a static object which we can manipulate like a hammer. But society has become more and

more the sum of its own technical organization (notwithstanding the dysfunctional imbalances which are the residues of the collapse of archaic societies and of uneven development). People have lost their traditional techniques and become dependent upon an apparatus: mass production produces masses. Technology is not a tool but an environment — a totality of means enclosing us in its automatism of need, production and exponential development.

As Langdon Winner argues, "Shielded by the conviction that technology is neutral and tool-like, a whole new order is built piecemeal, step by step, with the parts and pieces linked together in novel ways — without the slightest public awareness or opportunity to dispute the character of the changes underway." What results is a form of social organization — an interconnection and stratification of tasks and authoritarian command necessitated by the enormity and complexity of the modern technological system in all of its activities. Winner observes, "The direction of governance flows from the technical conditions to people and their social arrangements, not the other way around. What we find, then, is not a tool waiting passively to be used but a technical ensemble that demands routinized behavior."

No single machine, no specific aspect of technology is solely responsible for this transformation. Rather, as Ellul puts it, it is the "convergence … of a plurality, not of techniques, but of systems or complexes of techniques. The result is an operational totalitarianism; no longer is any part of man free and independent of these techniques." A process of synergism, a "necessary linking together of techniques," eventually encompasses the whole system. One realm of technology combines with another to create whole new systems at a rapid rate. The many previously unanticipated "spin-off" developments, for example in fields like cybernetics and genetics, make this description of synergy clear.

A depopulated world of matter and motion

Technology has replaced the natural landscape with the dead, suffocating surfaces of a modern technopolis, a cemetery of "bounded horizons and reduced dimensions." Space has undergone an "inverse revolution." Time, too, since the rise in the use of the weight-driven clock, is bounded and quantified. "The clock, not the steam engine," writes Lewis Mumford in Technics and Civilization, "is the key machine of the modern industrial age." With the clock, "Time took on the character of an enclosed space."

The quantification of knowledge and experience takes place on several levels—in the rise of standardized weights and measures, which accompanies the rise of the centralized state; in the spread of clocks and time-keeping; in the "romanticism of numbers," which accompanies the rise of the money economy and its abstract symbols of wealth; in the new scientific methods foreseen by Galileo, confining the physical sciences to the so-called "primary qualities" of size, shape, quantity and motion; and in the methods of capitalist book-keeping and the reduction of everything to exchange value. "The power that was science and the power that was money," writes Mumford, "were, in the final analysis, the same kind of power: the power of abstraction, measurement, quantification."

"But the first effect of this advance in clarity and sobriety of thought," he continues, "was to devaluate every department of experience except that which lent itself to mathematical investigation … With this gain in accuracy went a deformation of experience as a whole. The instruments of science were helpless in the realm of qualities. The qualitative was reduced to the subjective: the subjective was dismissed as unreal, and the unseen and unmeasurable non-existent … What was left was the bare, depopulated world of matter and motion: a wasteland."

Did new technologies and time-keeping spur early capitalist mercantilism, or was the reverse the case? In fact, technical growth and capitalism went hand in hand, bringing about the technological civilization of today. This system expands both by the impulse of economic accumulation and by the mechanization and "rationalization" of all life according to normative, technical criteria. Both processes reduce a complex of human activities to a series of quantifiable procedures. Neither formal, juridical ownership of the apparatus, nor the characteristics of specific machinery or particular materials used in production, is determinative. Rather, modern urban-industrial civilization is a socially regimented network of people and machines — an industrialized production-commodity culture which tends toward the absolute

destruction of local communities and technics, and the penetration of the megatechnic system into every aspect of life.

Ellul writes, "When André Leroi-Gourhan tabulates the efficiency of Zulu swords and arrows in term of the most up-to-date knowledge of weaponry, he is doing work that is obviously different from that of the swordsmith of Bechuanaland who created the form of the sword. The swordsmith's choice of form was unconscious and spontaneous; although it can now be justified by numerical calculations, such calculations had no place whatsoever in the technical operation he performed." Technology transforms swordmaking into a more efficient, more rationalized industrial process (or dispenses with it altogether for more "advanced" modes), and all the swordsmiths into factory hands.

In the factory we see the process of mechanization at its height. Siegfried Giedion comments in Mechanization Takes Command, "Mechanization could not become a reality in the age of guilds. But social institutions change as soon as the orientation changes. The guilds became obsolete as soon as the rationalistic view became dominant and moved continually toward utilitarian goals. This was the predestined hour for mechanization." Similarly, Murray Bookchin argues in Toward an Ecological Society, "Of the technical changes that separate our own era form past ones, no single 'device' was more important than … the simple process of rationalizing labor into an industrial engine for the production of commodities. Machinery, in the conventional sense of the term, heightened this process greatly, but the systematic rationalization of labor in ever-specialized tasks totally demolished the technical structure of self-managed societies and ultimately of workmanship, the self-hood of the economic realm … The distinction between artisan and worker hardly requires elucidation. But two significant facts stand out that turn the transformation from craft to factory into a social and characterological disaster. The first fact is the dehumanization of the worker into a mass being; the second is the worker's reduction into a hierarchical being." (The process was hardly "simple," but Bookchin's description of the emerging factory suggests the possibility of critiquing technology without opposing tools or technics altogether.)

Technology is not "neutral"

The common notion of technology's "neutrality" does not recognize that all tools have powerful symbolic content, are suggestive models for thought and action which affect their users. More importantly, the idea of neutrality fails to see that massification and accelerated, synergistic integration of technology would engender corresponding human structures and modes of thought and experience. Culture and technology interact dynamically, each spurring transformations in the other.

Technology is not neutral because it brings with it its own rationality and method of being used. A network of computers or a steel mill cannot be used variously like a simple tool; one must use them as they are designed, and in coordinated combination with a network of complex support processes without which their operation is impossible. But design and interrelated dependencies bring manifold unforeseen results; every development in technology, even technical development which seeks to curb deleterious technological effects, brings with it other unpredictable, sometimes even more disastrous effects. The automobile, for example, was seen as simply a replacement for the horse and carriage, but mass production techniques combined with Ford's new conception of mass distribution gave the automobile a significance no one could foresee. Ford's revolution actually came at the end of a long period of technical preparation. Mass assembly line production and interchangeability of parts dated back to the end of the eighteenth century; by the end of the nineteenth century the process of mechanization was relatively stabilized, and produced a rise in expectations (reflected in the popularity of the great international expositions on industry) which created the terrain for the automobile's enthusiastic reception as an object of mass consumption. The expanding role of the state was also critical, since it was only the state which would have the means to create a national automobile transportation system.
The automobile is thus hardly a tool; it is the totality of the system (and culture) of production and consumption which it implies: a way of life. Its use alone makes its own demands apart from the necessities inherent in production. Nor could a highway system be considered a neutral instrument; it is a form of technical giantism and massification. Considering the automobile, who can deny that technology creates its own inertia, its own direction, its own cultural milieu? Think how this one invention transformed our world, our thoughts, images, dreams, forms of association in just a few generations. It has uprooted communities, undermined farmlands, contributed to vast changes in our dietary habits, shifted our values, contaminated our sexual lives, polluted our air both in its manufacture and use, and created a generalized ritual of sacrifice on the assembly line and on the road.

But the automobile is only one invention, if a key one, of thousands. Who would have thought that within just a few decades of the invention of television millions of human beings would spend more time in from of the cathode ray tube than in almost any other waking activity, deriving their very sense of reality from it? Who would have thought that the world would become a radioactive nightmare "wired for destruction" within a few years of the Manhattan Project? And who can say what emergent technologies have in store for us?

In this light, it is much more important to analyze the distinctions between, say a spear and a missile, than to concentrate on their common traits. It is important to ask what kind of society they reflect — and help to bring about. In the first case we see a hand tool made locally with a specific, unique and limited technique, and that technique embedded in a culture. Each tool is unique and reflects the individuality of its user or maker. In the latter case we see an entire social hierarchy, with an extremely complex division of labor. In such an alienated, compartmentalized, instrumental system, each functioning member is isolated by complex social and procedural opacity, and thus blind to the overall process and its results.

In the first case the creator works directly with the materials, which is to say, in nature. In the second case, the worker is alienated from the materials of nature. Nature is not only depleted and destroyed by exploitation and objectification, by the inevitable destruction to be unleashed by the instrument, but, as Ellul observes, "by the very establishment of technology as man's milieu." In the case of the spear, human limits are implied (though human beings could choose to organize themselves as a machine to do greater destruction, as they did in the ancient state military machines). In the case of the missile, however, the organization of human beings as a machine, as a network of production and destruction, is fundamental to what is produced, and the only limit implied is that attained with the ultimate annihilation of the human race by its technology. If there is an underlying perversity in all instruments of violence or war, whether primitive or technological, we can see that in the former the kind of war which takes places is a limited, personal, sporadic activity, which, along with peace-making, gift exchange and intermarriage, is a moment in a network of reciprocity tending toward the resolution of conflicts. The missile production — which begins at the point where community dissolves and the military phalanx is first organized — is an unlimited, depersonalized, institutional system which now magnifies human destructiveness to the point of omnicide.

The convergence of social hierarchies and their ever more powerful and all-encompassing tools renders the distinction between capital and technology at least problematic. Both terms are metaphors — partial descriptions which represent the modern organization of life. The state is an apparatus of administrative technique which cannot be separated from the corporate organizations of centralized, technological hierarchy. Economic planning and the market are submerged in technique, technique in both bureaucratic planning and the chaos of the market. Technological automatism and remote control, standardization and mass propaganda are leaving classical bourgeois society behind; it has therefore become crucial to look at the nature of the mass society which only mass technics could have generated.

The myth of a technology separate from its use assumes that means are simply instruments — factories, supertankers, computer networks, mass agrosystems—and not that universe of means: the daily activities of the people who participate in these systems. It fails to understand that such ubiquitous means themselves eventually become ends, requiring their inevitable characterological internalization in human beings — in other words, that human beings must obey and thus become the slaves of their mechanical slaves. As Lewis Mumford warned in The Pentagon of Power, "It is the system itself that, once set up, gives orders." This "self-inflicted impotence" is "the other side of 'total control.'"

Technology—systematized, "rationalized" mass technics — is more than the sum of its parts; this totality undermines human independence, community and freedom, creating mass beings who are creatures of the universal apparatus, standardized subjects who derive their meaning from the gigantic networks of "mass communication": a one-way barrage of mystification and control. Even those ostensibly directing the machines are themselves its creatures, each one isolated in a compartment of the giant, opaque hive, so such "control" is ambiguous. The conspiratorial notion of "technocracy" is inadequate, if not entirely outmoded. The blind, centrifugal complexity of the system defies conscious control, coming more and more to resemble a locomotive with no throttle hurtling toward an abyss.

A fundamental mutation has occurred

It is now a familiar truism that modern technologies diversify experience. But mechanization has in many ways narrowed our horizons by standardizing our cultures into a global techno-monoculture. This is evident in the mechanization of agriculture, one example being the cultivation of fruit trees. As Giedion points out, "The influence of mechanization … leads to standardization of the fruit into new varieties … We have seen an orchard of 42,000 Macintosh trees; and the apples were so uniform that they might have been stamped out by machine."

Such standardization was not always the case. Giedion mentions a noted landscape architect of the first half of the nineteenth century who lists 186 varieties of apple and 233 varieties of pear for planting by arborists, and who for the keeper of a small orchard recommends thirty different kinds of apple "to ripen in succession." He adds, "the large red apple, which attracts the customer's eye, is especially favored, and bred less for bouquet than for a resistant skin and stamina in transit. The flavor is neutralized, deliberately, it would seem." Giedion's example seems quaint today as transnational corporations maneuver to take control of world seed and genetic material, and a multitude of localized varieties are replaced by agricultural monoculture.

With modern communications technology, another fundamental mutation has occurred or is occurring. The media have usurped reality itself. After Jorge Luis Borges, Jean Baudrillard takes as his metaphor for this state of affairs the fable of a map "so detailed that it ends up covering the territory." Whereas with the decline of the Empire comes the deterioration of the map, tattered but still discernible in some remote places, "this fable has come full circle for us," writes Baudrillard, "and if we were to revive the fable today, it would be the territory whose shreds are slowly rotting across the map. It is the real, and not the map, whose vestiges subsist here and there, in the deserts which are no longer those of the Empire, but our own." (Simulations)

Since the emergence of mechanization, with the invention of the telegraph perhaps as a representative point of departure, communication has been degraded from a multifaceted, ambivalent, contextually unique and reciprocal relationship between human beings to an abstract, repetitive and homogenized "message" passing between a unilateral transmitter and a passive receiver.

It is this one-dimensional transmission which is the starting point of the mass media and computers. The simulated, ostensibly "interactive" response that such technology allows has little or nothing in common with genuine human communication.

But the discourse has shifted — reality has come to resemble this model. As Ellul remarks in The Technological System, "It is the technological coherence that now makes up the social coherence." Previously the forces of domination were never able to gain hegemony over all of society; people maintained forms of solidarity and communal discourse which resisted and excluded power (village, religious and neighborhood communities, proletarian culture, bohemianism, for example, which continue to exist in pockets only in extremely attenuated form). The preeminence of technology, particularly meaning-creating "communication" technology, changes this, and all of human intercourse tends to be restructured along the lines of this petrified information and its communication. Seven hundred and fifty million people now watch the same televised sporting event one evening and spend the next day talking about it.

According to the disciplines of mechanization, the exponentially expanding volume of artistic, intellectual, and scientific production—of films, recordings, books, magazines, gadgets, scientific discoveries, art, web sites, all of it — implies that subtle human values and a plenitude of meaning and well-being are accumulating at a tremendous rate, that we can now experience life more rapidly, in greater depth, and at a greater range. As a journalist comments, "If the average person can have access to information that would fill the Library of Congress or can control as much computing power as a university has today, why should he be shallower than before?" (Paul Delany, "Socrates, Foust, Univac," New York Times Book Review, March 18, 1984) Electronic communications are even said to enhance human values based on family, community and culture. Writes Marshall McLuhan in The Medium is the Message: "Our new environment compels commitment and participation. We have become irrevocably involved with, and responsible for, each other."

Of course, such computer power is not available in any significant way to most people. But this is secondary. More importantly, two realities — human meaning and mediatization, the territory and the map — are incommensurable, and cannot long coexist. The media undermine and destroy meaning by simulating it. We are no longer merely victims of a powerful, centralized media; we are that and more. We are in a sense becoming the media. Baudrillard writes in Simulations that we are "doomed not to invasion, to pressure, to violence and to blackmail by the media and the models, but to their induction, to their

infiltration, to their illegible violence."
In such a world, choice is not much different from switching tv channels. The formative experience of using information will tend to be the same everywhere.

A person participates in this structure by parroting the code. Only the Machine, the Master's Voice, actually speaks. The parasite must finally consume its host, the model be imposed once and for all. When computer enthusiasts brag that communications technology has increased the density of human contact, they turn the world on its head, describing an artificial world in which human contact has no density at all. Individuality itself becomes a commodity or function, manufactured and programmed by the system. One participates in mass society the way a computer relay participates in the machine; the option remains to malfunction, but even rebellion tends to be shaped by the forms technology imposes. This is the individuality toward which computerized life drifts: a narcissistic, privatized, passive-aggressive, alienated rage, engaging in a sado-masochistic play far removed from the consequences of its unfocused, destructive impulses.

Meaning has been reshaped

Information, now emerging as a new form of capital and wealth, is central to the new "hyperreality." While the demand for information, the "democratic" distribution of "facts" is the battle cry of those outsiders who struggle to recapture the machinery of media from the centralized institutions of power, it is at least in part the nature of the fact — and finally of masses of facts transmitted on a mass scale as information — which lies behind the problem of the media.

Not that facts have no reality at all, but they have no intrinsic relation to anything: they are weightless. The fact is a selection, hence an exclusion. Its simplification mutilates a subtle reality which refuses to be efficiently packaged. One set of facts confronts another, orchestrated as propaganda and advertising. The fact achieves its ultimate manifestation in trivia and in statistics, to which society is now addicted. Ellul writes in Propaganda: The Formation of Men's Attitudes, "Excessive data do not enlighten the reader or listener, they drown him." People are "caught in a web of facts." Whatever specific message is transmitted by the media, the central code is affirmed: meaning must be designed and delivered. "Everywhere," writes Ellul in language evocative of Orwell or Wilhelm Reich, "we find men who pronounce as highly personal truths what they have read in the papers only an hour before… ." The result is an amputated being — "nothing except what propaganda has taught him."

The information in which industrial capitalism trades is not neutral; meaning itself has been reshaped. The scope of thought is bounded by the computer and its clarity can only be of a certain kind — what a fluorescent lamp is, say, to the entire light spectrum. Rather than increasing choices, the technology imposes its own limited range of choice, and with it the diminishing capacity to recognize the difference. (Thus a person staring at a computer screen is thought to be engaged in an activity as valuable as, even perhaps superior to, walking in the woods or gardening. Both are thought to be gathering or making use of "information.")

Equally naive is the idea that the "information field" is a contested terrain. The field itself is in reality a web of abstract, instrumentalized social relations in which information expands through alienated human activity, just as the system of value reproduces itself through the false reciprocity of commodity exchange. It therefore constitutes subtle relations of domination. Be they critics or promoters, most writers on technology see this information field as an emerging environment of human discourse.

Even the desire to transform society through "democratic" access and "rational" selection tends to be colonized as a media message, one competing set of facts among many. In a world dominated by loudspeakers, where political action is reduced to the pulling of lever A or lever B, nuance is lost. In the media, what moves the receiver is not so much truth, or nuance, or ambivalence, but technique. And technique is the domain of power, gravitating naturally toward established ideology — the domain of simulated meaning. Real meaning—irreducible to a broadcast — disintegrates under such an onslaught. As Nazi leader Goebbels remarked, "We do not talk to say something, but to obtain a certain effect." People predisposed to accept such counterfeit as reality will follow the lead of the organization with the biggest and best loudspeakers, or succumb, resigned, to the suspicion that nothing can be knowable, and nothing can be done.

The media: capital's global village

The alienated being who is the target of Goebbels' machinery can now most of all be found in front of a television set — that reality-conjuring apparatus which is the centerpiece of every modern household, the emblem of and key to universality from Shanghai to Brooklyn. Everywhere people now receive television's simulated meaning, which everywhere duplicates and undermines, and finally colonizes what was formerly human meaning in all its culture-bound manifestations.

People and events captured by communications media, and especially by television, lose what Walter Benjamin called their aura, their internal, intersubjective vitality, the specificity and autonomous significance of the experience — in a sense, their spirit. Only the external aspects of the event can be conveyed by communications media, not meaning or experiential context. In his useful book, Four Arguments for the Elimination of Television, Jerry Mander describes how nature is rendered boring and two-dimensional by television, how subtle expressions of emotions become incoherent — for example, how the ceremonies of a group of tribal people, or their subtle motives for protecting a sacred place, are lost when captured by the camera and embedded in a context of televised images.

Although television, through its illusion if immediacy and transparency, seems to represent the most glaringly destructive example of the media, the same can be said of all other forms. The cinema, for example, generates social meaning through the so-called content of the film (as manipulation) and through the act of film-going itself (as alienation) — a spectacularized social interaction mediated by technology. In a movie theater, modern isolation is transposed by the passive reception of images into the false collectivity of the theater audience (which can also be said of modern mass sporting events). As in modern social life itself, like all media, film-going is "a social relation mediated by images," as Guy Debord described modern spectacular society in The Society of the Spectacle. (Nowadays the sheer quantity of films, the act of frequent film-viewing, either on videos or in movie theaters, also has its troubling effect on human sensibilities.)

But it is no longer a question of the loss of aura in art and drama. Modes of being are expanded and imploded by their constant surveillance. Today one can experience emotions and drama every day for the price of a ticket. But how can these emotions and human values resist trivialization and ironic inversion when they are not grounded in anything but the mechanical transmission of images exchanged as a commodity?

When hundreds of media outlets provide any image, any titillation, any pseudo-experience to the point of utter boredom? We surveil ourselves, luridly, as on a screen.

And isn't it also obvious that electronic media works best at duplicating high contrast, rapid, superficial and fragmentary images — which is precisely why the new cultural milieu is overwhelmingly dominated by rapid channel-switching, frenetic computer games, the speed of machines, violence and weapons, and the hard-edged, indifferent nihilism of a degraded, artificial environment? The technofascist style prevalent today, with its fascination with machines, force and speed, works well in the media, until there is no separation between brutalization by power and an internalized, "self-managed" brutalization.

A sky reminds us of a film; witnessing the death of a human being finds meaning in a media episode, replete with musical score. An irreal experience becomes our measure of the real: the circle is completed. The formation of subjectivity, once the result of complex interaction between human beings participating in a symbolic order, has been replaced by media. Some argue that this makes us free to create our own reality — a naive surrender to the solipsism of a mirrored cage. Rather, we are becoming machine-like, more and more determined by technological necessities beyond our control. We now make our covenant with commodities, demand miracles of computers, see our world through a manufactured lens rather than the mind's eye. One eye blinds the other — they are incommensurable. I think of a photograph I saw once of a New Guinea tribesman in traditional dress, taking a photograph with an instamatic camera. What is he becoming, if not another cloned copy of what we are all becoming?

The fact that everyone may someday get "access" to media, that we have all to some degree or another become carriers of media, could be the final logic of centralization spinning out of orbit — the final reduction of the prisoners to the realization that, yes, they truly do love Big Brother. Or the realization that nature does not exist but is only what we arbitrarily decide to organize, or that we do not experience a place until we have the photograph. The age of the genuine imitation. The paleolithic cave walls are redone to protect the originals which themselves are shut forever — these imitations are "authentic," of course, but the spirit of the cave has fled. Even the copies will inevitably become historical artifacts to be preserved; this is "art," do you have your ticket, sir? There is no aura. For an aboriginal tribal person, the mountain speaks, and a communication is established. For the tourist, it is domesticated, desiccated — a dead image for the photo album.

Though print media are being eclipsed by television and computers, they now function similarly, with their spurious claim to "objectivity," their mutilating process of selection and editing, their automatic reinforcement of the status quo, their absolute accumulation. The greater the scope, the more frequent the publication, the more newspapers and magazines in particular impose their model of fragmented, ideologized reality. While the corporate (and in some places the state) press functions as part of a Big Lie apparatus, it distorts the information it transmits both in the content and in the context in which it presents it. Newspaper-reading and addiction to news in general have become another version of the imperial circus, a kind of illiteracy which makes people as much the creatures of rumor and manipulation (through advertising and public relations) as they were prior to modernization and the rise of a public education system which was supposed to make informed citizens of them. In fact, as the techniques and scope of media have expanded, people have tended to become more manipulated than ever.

Ellul writes, "Let us not say: 'If one gave them good things to read … if these people received a better education …' Such an argument has no validity because things just are not that way. Let us not say, either: 'This is only the first stage'; in France, the first stage was reached half a century ago, and we still are very far from attaining the second … Actually, the most obvious result of primary education in the nineteenth and twentieth centuries was to make the individual susceptible to propaganda."

But how do people confront centralized power, with its machinery of deceit, without resorting to media? Even those who oppose totalitarianism need to marshal information to spread their ideas, win and inform their allies. Yet people's capacity to resist the structures of domination is undermined by the overall effect of media. Can we possibly defeat the empire in a penny-ante game of facts when a single pronouncement by that media image called a "President" — say, this week's enemy nation is "terrorist" and must be destroyed — drowns out the truth? If people can be moved to resist domination only by means of mass media, if they can only be directed to resist as they are now to obey, what can this portend for human freedom? The "global village" is capital's village; it is antithetical to any genuine village, community or communication.

A revolution in human response

Technology transmutes our experience — won't it also result in undermining our very organism, rather than continually improving upon it, as it promises? In a wisecracking, hucksterish tone, one celebratory popularization of the new technologies, The Techno/Peasant Survival Manual, describes an electrode helmet hooked up to a microcomputer capable of analyzing and measuring the activity of the human brain, "studying its electrical output in units of 500 milliseconds … With this ability to quantify human thought, the technocrats are not only learning how we think, they are in the process of challenging our very definitions of intelligence."

Of course, computers say little or nothing about how people think, because human thought is not quantifiable or reducible to computer operations. What is happening is that fundamental attitudes are changing, and with them, a definition of something the technocratic structure cannot really comprehend without transmuting its very nature. New communications environments socialize people in ways far different from age-old customs and modes in which they once learned to think, feel and behave like human beings; thus, technological structures are "revolutionizing" human response by forcing life to conform to the parameters of the machines. This quantification will reshape thought, which is potentially mutable; it will become "true" by force, as the railroad became more true than the buffalo, and the sheep enclosure more true than the commons.

Even the shape of the child's developing brain is said to be changing. Children were formerly socialized through conversation in an intimate milieu; now, in the typical family living room with its television shrine, the areas of the child's brain once stimulated by conversation are increasingly developed by passively consuming the visually exciting (but kinesthetically debilitating or distorting) images of tv and video games. No one can say exactly what this means, though at a minimum, increased hyper-activity and decreased attention span may be two consequences. (Instead of urging caution, the education philosopher I heard relate this disturbing story went on to propose more computer- and video-based "interactive" technology in schools to teach this changing child.)

What can conform to the computer, what can be transmitted by the technology, will remain; what cannot will vanish. That which remains will also be transformed by its isolation from that which is eliminated, and we will be changed irrevocably in the process. As language is reshaped, language will reshape everyday life. Certain modes of thinking will simply atrophy and disappear, like rare, specialized species of birds. Later generations will not miss what they never had; the domain of language and

meaning will be the domain of the screen. History will be the history on the screens; any subtlety, any memory which does not fit will be undecipherable, incoherent.

Our total dependence on technology parallels our dependence on the political state. New technologies, "interfaced" with the technical-bureaucratic, nuclear-cybernetic police state, are creating a qualitatively new form of domination. We are only a step away from the universal computerized identification system. Technology is already preparing the ground for more pervasive forms of control than simple data files on individuals. As forms of control such as total computerization, polygraph tests, psychological conditioning, subliminal suggestion, and electronic and video eavesdropping become part of the given environment, they will be perceived as natural as superhighways and shopping malls are today.

But while there is reason for concern about computerized threats to privacy, a deepening privatization, with a computerized television in every room as its apotheosis, makes police almost superfluous. Eventually computer technology may have no need of the methods it employs today. According to Lewis M. Branscomb, Vice President and Chief Scientist of IBM, the "ultimate computer" will be biological, patterned on DNA and cultivated in a petri dish. "If such a computer could be integrated with memory of comparable speed and compactness, implanted inside the skull and interfaced with the brain," the Diagram Group authors of The Techno/Peasant Survival Manual enthuse, "human beings would have more computing power than exists in the world today." Genetic engineering, cloning, integrating the human brain into cybernetic systems—is there any doubt that these developments will render human beings obsolete just as industrial technology undermined earlier human communities? There may be no longer any need to monitor an anarchic, unruly mass, since all the controls will be built in from the start. The "irrational" aspects of culture, of love, of death will be suppressed.
Mechanization penetrates every province

If technology is effective in creating, directly or indirectly, ever more powerful modes of domination in its wake, it is not nearly as successful when used to curb its own development and the conflicts, devastations and crises which ensue. It suppresses "irrationality," which then takes its revenge in the greater irrationalities of mass technics. (One can only imagine what manner of disaster would follow an absurd attempt to "interface" a computer with a human brain.) According to the technocrats, technology can be curbed and made to serve human needs through "technology assessment." "Futurist" Alvin Toffler (futurist being a euphemism for high-paid consulting huckster) argues, for example, that it is "sometimes possible to test new technology in limited areas, among

limited groups, studying its secondary impacts before releasing it for diffusion."

Toffler's reification of technology into a simple system used in an isolated area, at the discretion of experts and managers, fails to understand how technology transforms the environment, and most importantly, how it is already trapped within its own procedural inertia. Clearly, the new technologies appearing everywhere simultaneously cannot be isolated to study their effects — the effects of the whole system must be taken into account, not the laboratory effects of an isolated component. Laboratory experiments on a given geographical area or social group performed by a powerful bureaucratic hierarchy of technicians and managers are themselves technology and carry its social implications within them.

Discussing the mechanization of bread baking, Giedeon shows how technology, becoming trapped within its own instrumentality and centered on the hyperrationality of procedure, not only shifts an activity beyond the control of individuals, but ultimately undermines the very ends it started out to accomplish. He asks, how did bread, which was successfully produced locally and on a small scale, succumb to large mechanization? More importantly, how was it that public taste was altered regarding the nature of the "stuff of life," which had changed little over the course of centuries, and which "among foodstuffs … has always held a status bordering on the symbolic"?

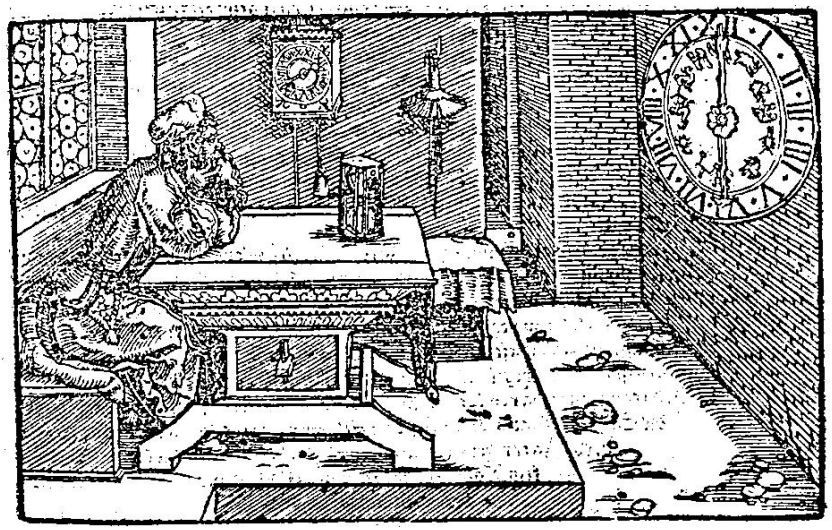
Mechanization began to penetrate every province of life after 1900, including agriculture and food. Since technology demands increasing outlays and sophisticated machinery, new modes of distribution and consumption are devised which eclipse the local baker. Massification demands uniformity, but uniformity undermines bread. "The complicated machinery of full mechanization has altered its structure and converted it into a body that is neither bread nor cake, but something half-way between the two. Whatever new enrichments can be devised, nothing can really help as long as this sweetish softness continues to haunt its structure."

How taste was adulterated, how "ancient instincts were warped," cannot be easily explained. Again, what is important is not a specific moment in the transformation of techniques, nor that specific forms of technology were employed, but the overall process of massification by which simple, organic activities are wrested from the community and the household and appropriated by the megamachine. Bread is the product of a large cycle beginning with the planting of wheat. Mechanization invades every sector of the organic and undermines it, forever altering the structure of agriculture, of the farmer, of food. Not only is bread undermined by mechanization; the farmer is driven

from the land. Giedeion asks, "Does the changing farmer reflect, but more conspicuously, a process that is everywhere at work? … Does the transformation into wandering unemployed of people who for centuries had tilled the soil correspond to what is happening in each of us?"

The Diagram Group gushes, "Technology … will change the quality, if not the nature, of everything. Your job and your worklife will not be the same. Your home will not be the same. Your thoughts will not be the same … We are talking about an increase in the rate of innovation unprecedented in human history, what some scientists are now calling spiral evolution." Says Robert Jastrow, Director of NASA's Goddard Space Institute: "In another 15 years or so we will see the computer as an emergent form of life."

Over a hundred years ago, Samuel Butler expressed the same idea as satire in his ironical utopian novel Erewhon, lampooning the positivist popularization of Darwinism and the widespread belief that mechanization would usher in paradise, and suggesting that the theory of evolution was also applicable to machines. "It appears to us that we are creating our own successors," he wrote. "We are daily adding to the beauty and delicacy of their physical organization; we are daily giving them greater power and supplying by all sorts of ingenious contrivances that self-regulating, self-acting power which will be to them what intellect has been to the human race." No longer does Butler's humor seem so humorous or far-fetched. What begins as farce ends in tragedy. Perhaps humanity will find itself even further reduced from being a mere appendage to the machine to a hindrance.



HOMO FABER

Nowhere do we see this possibility more clearly than in the emerging biotechnology, the latest frontier for capital, which reduces the natural world to a single monolithic "logic" — capital's logic of accumulation and control. As Baudrillard puts it in Simulations, "that delirious illusion of uniting the world under the aegis of a single principle" unites totalitarianism and the "fascination of the biological … From a capitalist-productivist society to a neo-capitalist cybernetic order that aims now at total control. This is the mutation for which the biological theorization of the code prepares to ground."

"We must think of the media as if they were … a sort of genetic code which controls the mutation of the real into the hyperreal," writes Baudrillard. The destruction of meaning in the media foreshadows the cannibalization by capital of the sources of life itself. The "operational configuration," "the correct strategic model," are the same: life defined by information, information as "genetic code," no longer necessarily "centralized" but molecular, no longer exactly imposed but implanted — a "genesis of simulacra," as in photography, in which the original, with its human aura, its peculiar irreducibility to this technocratic-rationalist model, vanishes — or is vanquished.

In another context, Frederick Turner (not to be confused with the author of Beyond Geography) writes in what can only be described as a techno-spiritualist/fascist manifesto ("Technology and the Future of the Imagination," Harper's, November 1984), that "our silicon photograph [or circuit] doesn't merely represent something; it does what it is a photograph of—in a sense it is a miraculous picture, like that of Our Lady of Guadalupe: it not only depicts, but does; it is not just a representation, but reality; it is not just a piece of knowledge, but a piece of being; it is not just epistemology but ontology."

What the Great Chain of Being was for medieval society, and the clock-like universe for the mechanical-industrial revolution, the genetic code, the molecular cell, and the clone or simulacrum are for the Brave New World looming today. The invasion by capital into the fundamental structures of life can only result in dangerous homogenization in the service of "total control," and, inevitably, the collapse of complex life systems on this planet.

Once more the enemy hides behind a "humane" cloak — this time not religious salvation, nor simply progress or democracy, but the conquest of disease and famine. To challenge this further manifestation of progress, according to the ruling paradigm, is to oppose curing disease, to

turn away from the hungry. Once again only technology and its promise — a totally administered world—can supposedly save us. And once more, it all makes "perfect sense" because it corresponds to the operational configurations of the culture as a whole.

If engineered genetic material corresponds to the silicon photograph, a proper response might be learned from Crazy Horse, the Oglala mystic of whom no photograph was ever taken, who answered requests to photograph him by saying, "My friend, why should you wish to shorten my life by taking from me my shadow?" Now all our shadows are in grave danger from more ferocious "soul catchers," sorcerers and golem-manufacturers, ready to unleash a final paroxysm of plagues.

Or is the ultimate plague a nuclear war? Modern technological development has always been embedded most deeply in expanding war and competing war machines. As propagandists lull us to sleep with promises of cybernetic technotopia, other technicians study readouts for their attack scenarios. Ultimately, it makes no difference whether a final war (or series of wars) is initiated by system errors or by the system's proper functioning; these two possible modalities of the machinery represent its entire range. No computer warns of impending annihilation — the life force is not, and cannot be programmed into them. And just as human society is tending to be reduced to the circulation of reified information, so is it falling under the sway of a bureaucratic apparatus which has turned the "unthinkable" — nuclear megacide, ecological collapse — into business-as-usual. No human considerations influence its imperative or momentum; no dramatic descriptions of the consequences of its unremarkable, everyday acts appear in the readouts. No passion moves the technicians from their course. As the archetypical nuclear bureaucrat Herman Kahn once wrote (in Thinking the Unthinkable), "To mention such things [as nuclear holocaust] may be important. To dwell on them is morbid, and gets in the way of the information." Where the discourse is curtailed to less than a shadow, so too are human beings. Only the circuitry acts; human response is suffocated.

Skepticism toward progress is typically dismissed as dangerous, atavistic and irrational. In The Existential Pleasures of Engineering, one professional apologist for technology, Samuel C. Florman, writes, "[F]rightened and dismayed by the unfolding of the human drama in our time, yearning for simple solutions where there can be none, and refusing to acknowledge that the true source or our problems is nothing other than the irrepressible human will," people who express luddite worries "have deluded themselves with the doctrine of anti-technology." increasing popularity of such views, he insists, "adds the dangers inherent in self deception to all of the other dangers we already face."

While indirectly acknowledging the significant dangers of mass technics, Florman apparently feels that declining technological optimism is responsible for technology's ravages, rather than being a symptom or consequence of them. The "other dangers we already face" — dangers which of course are in no way to be blamed on technology — are simply the result of "the type of creature man is." Of course, the "type of creature man is" has made this dangerous technology. Furthermore, Florman's reasoning coincides with the attitudes and interests of this society's political, corporate and military elites. "So fast do times change, because of technology," intones a United Technologies advertisement, "that some people, disoriented by the pace, express yearning for simpler times. They'd like to turn back the technological clock. But longing for the primitive is utter folly. It is fantasy. Life was no simpler for early people than it is for us. Actually, it was far crueler. Turning backward would not expunge any of today's problems. With technological development curtailed, the problems would fester even as the means for solving them were blunted. To curb technology would be to squelch innovation, stifle imagination, and cap the human spirit."

It doesn't occur to these publicists that curbing technology might itself be an innovative strategy of human imagination and spirit. But to doubt the ideology of scientific progress does not necessarily signify abandoning science altogether. Nor does a scientifically sophisticated outlook automatically endorse technological development. As another possibility, Ellul points to the ancient Greeks. Though they were technically and scientifically sophisticated, the Greeks were suspicious of technical activity because it represented an aspect of brute force and implied a want of moderation … In Greece a conscious effort was made to economize on means and to reduce the sphere of influence of technique. No one sought to apply scientific thought technically, because scientific thought corresponded to a conception of life, to wisdom. The great preoccupation of the Greeks was balance, harmony and moderation; hence, they fiercely resisted the unrestrained force inherent in technique, and rejected it because of its potentialities.

One could argue that the convenience of slavery explains the anti-technological and anti-utilitarian attitudes of the Greeks. While slavery as a system was certainly related — among a multitude of factors — to the low regard in Greek culture for manual labor and the lack of utilitarian values among its elites, to reduce a cultural outlook to a single factor is absurd. One could just as easily claim that the philosophical quest, the notion of tragedy, and other cultural aspects were the results of slavery. But slavery has existed in many societies and cultures, including the expanding industrial civilization of the United States.

That the Greeks could have a scientific outlook without a technological-utilitarian basis proves, rather, that such a conception of life is possible, and therefore a science without slavery and without mass technics is also possible.

Defenders of scientific rationality usually paint themselves in Voltairian hues, but it is they who rely in outmoded formulas which no longer (and perhaps never did) correspond to reality. The contemporary scientism of the great majority, with its mantra that progress is unstoppable and its weird mix of mastery and submission, is little more than an accumulation of unsubstantiated platitudes—the general theory of this world, its logic in a popular form, its moral sanction, its universal ground for consolation and justification. As technological optimism erodes, its defenders invoke a caricature of the Enlightenment to ward off the evil spirits of unsanctioned "irrationality."

Yet what modern ideology stigmatizes as irrational might be better thought of as an alternative rationality or reason. In the eighteenth century, a Delaware Indian who came to be known as the Delaware Prophet, and whose influence on the Indians who fought with Pontiac during the uprising in 1763 is documented in Howard Peckham's Pontiac and the Indian Uprising, "decried the baneful influence of all white men because it had brought the Indians to their present unhappy plight. He was an evangelist, a revivalist, preaching a new religion. He was trying to change the personal habits of the Indians in order to free them from imported vices and make them entirely self-dependent. He gave his hearers faith and hope that they could live without the manufactures of the white men."

This critic of technology wasn't worrying about possible future effects of the manufactured products bestowed by traders on his people, he was announcing the actual decline of native communal solidarity and independence. Pontiac quoted the Delaware Prophet to his followers in April 1763 as saying, "I know that those whom ye call the children of your Great Father supply your needs, but if ye were not evil, as ye are, ye could surely do without them. Ye could live as ye did live before knowing them … Did ye not live by the bow and arrow? Ye had no need of gun or powder, or anything else, and nevertheless ye caught animals to live upon and to dress yourself with their skins...."

"Primitive fears"

Such insights, and particularly any reference to them now, are usually dismissed as romantic nostalgia. "It took time and experience," writes that well-known devotee of industrialism, Marx, "before the workpeople learnt to distinguish between machinery and its employment by capital, and to direct their attacks, not against the material instruments of production, but against the mode in which they are used." (Capital) But despite the historical justifications of marxist and capitalist alike, both the mode and the increasingly ubiquitous machinery managed in time to domesticate the "workpeople" even further, transforming them as a class into an integral component of industrialism.

Perhaps they should have been good marxists and gone willingly into the satanic mills with the idea of developing these "means of production" to inherit them later, but their own practical wisdom told them otherwise. As E.P. Thompson writes in his classic study, The Making of the English Working Class, "despite all the homilies … (then and subsequently) as to the beneficial consequences" of industrialization—"arguments which, in any case, the Luddites were intelligent enough to weigh in their minds for themselves—the machine-breakers, and not the tract-writers, made the most realistic assessment of the short-term effects … The later history of the stockingers and cotton-weavers [two crafts destroyed by industrialization] provides scarcely more evidence for the 'progressive' view of the advantages of the breakdown of custom and of restrictive practices...."

Thompson is correct in assessing the basic rational practicality of the luddites, who resisted so fiercely because they had a clear understanding of their immediate prospects. But it's clearer now that they also anticipated, as well as anyone could in their time and place, the eventual, tragic demise not only of vernacular and village society but of the classical workers movement itself, along with its urban context — to be replaced by an atomized servitude completely subject to the centrifugal logic and the pernicious whims of contemporary urban-industrial, market-dominated, mass society.

The romantic reaction against mechanization and industrialism has also been maligned, and must be reappraised and reaffirmed in light of what has come since. No one, in any case, seriously argues a literal return to the life of ancient Greeks or eighteenth century Indians. But the Greek emphasis on harmony, balance and moderation, and the Indians' stubborn desire to resist dependence, are worthy models in elaborating our own response to these fundamental questions.

At a minimum, they make it reasonable for us to challenge the next wave, and the next, and the next—something the ideologies of scientism and progress have little prepared us to do.

If some tend to look to previous modes of life for insights into the changes brought about by modern technology and possible alternatives to it, others dismiss the insights of tribal and traditional societies altogether by bringing up those societies' injustices, conflicts and practices incomprehensible to us. No society is perfect, and all have conflicts. Yet modernization has in fact superseded few age-old problems; for the most part it has suppressed without resolving them, intensified them, or replaced them with even greater ones.

Traditional societies might have resolved their own injustices or done so through interaction with others without causing vast harm to deeply rooted subsistence patterns; after all, ancient injustices have social and ethical bases and are not a function of the relative level of technical development. But modernizing missionaries have for the most part only succeeded in bursting traditional societies and laying the basis for dependency on mass technics. In the end the natives are "converted" to democracy, or to socialism, at the point of a gun. When the process is completed—no democracy, no socialism, and no natives. The impulse to dissect and improve small, idiosyncratic, subsistence societies, to turn them into modern, secular, industrial nation-states—be it from the optic of universal (western) reason, or the dialectic, or "historical necessity" — results in monocultural conquest and integration into global industrial capitalism.

The related dogma that "underdeveloped" societies were in any case fatally flawed, and therefore poised to succumb not only derives its strength from a pervasive sense of powerlessness to preserve former modes of life and communities, no matter what their merits; it also provides ongoing justification for the obliteration of small societies still coming into contact with urban-industrial expansion. It is a species of blaming the victim. But their demise is more readily explained by the technical, economic and military might of the invading civilization and its power to impose relations of dependence. As Francis Jennings observes in The Invasion of America (to provide one example), it was not the defects in indigenous North American societies that caused them to be undermined by European mercantile civilization, but (at least in part) their virtues. Their gift economy, Jennings writes, made it impossible for them to understand or conform to European business practices. Their culture allowed them to become traders, but they could never become capitalists. "[I]n a sense one can say that the Indians universally failed to acquire capital because they did not want it."

The indigenous refusal of economic relations — neither wholly rational nor irrational, neither wholly conscious nor unconscious, but a dialectical interaction between these polarities — parallels the ancient Greeks' refusal of technology. Their notions of life were utterly foreign to the economic-instrumental obsession by which modern civilization measures all things. And in the case of the Indians, because of the overwhelming power of the invaders, they succumbed — as societies, cultures, languages, innumerable subsistence skills and subtle ecological relationships continue to crumble. Thus in a sense the luddites remain the contemporaries of ranchers in Minnesota who felled power line pylons built across their land in the 1970s, and the anti-development, anti-toxics and anti-nuclear movements that have flourished at the end of the twentieth century. The Delaware Prophet is the contemporary of the Waimiri Atroari people in Brazil, who consistently fought invasions by missionaries, Indian agents, and road-building crews in the 1960s and 1970s, and of Indians in Quebec fighting the Canadian government for their lands since the increase of oil and gas exploration there.

In Quebec, a Montagnais Indian, speaking for all, testified, "Our way of life is being taken away from us." The Montagnais had been "promised that with houses and schools and clinics and welfare we could be happy." But the promise was not fulfilled. "Now we know it was all lies. We were happier when we lived in tents." No cheerful bromide about the ultimate benefits of progress can respond adequately to this somber recognition.

Technology out of control

Devouring the otherness of the past has not saved modern civilization from deepening crisis. The civilization that promised to abolish all previous forms of irrationality has created a suicidal, trip-wire, exterminist system. Technological runaway is evident; we do not know if we will be destroyed altogether in some technologically induced eco-spasm, or transmuted into an unrecognizable entity shaped by genetic, cybernetic and pharmacological techniques. The managerial notion of "technology assessment" by which technocrats try to rationalize technological growth is comparable to attempting to stop a car careening out of control by referring to the driver's manual. Technology's efficiency is inefficient, its engineering obtuse and myopic.

The highly divided, centrifugal nature of the technical-bureaucratic apparatus undermines its own planning, making it chaotic. Each technical sector pursues its own ends separate from the totality, while each bureaucracy and corporate pyramid, each rival racket, pursues its own narrow social interest. There is never enough information to make proper decisions; the megamachine's complicated, multiple inputs undermine its own controls and methods. A computer coughs in some air-conditioned sanctum, and thousands, perhaps millions, die. Knowledge is undermined by its own over-rationalization, quantification and accumulation, just as bread is negated by its own standardization. Who can truly say, for example, that they are in control of nuclear technology? Meanwhile the system speeds along at an ever faster pace.

Even defenders of technology admit that it tends to move beyond human control. Most counter that technology is not the problem, but rather humanity's inability to "master" itself. But humanity has always grappled with its darker side; how could complex techniques and dependence on enormously complicated, dangerous technological systems make the psychic and social challenge easier? Even the question of "self-mastery" becomes problematic in the face of the changes wrought in human character by technology. What will define humanity in a hundred years if technology holds sway?

In The Conquest of Nature: Technology and Its Consequences, R.J. Forbes argues that while "it is possible to see a tendency in the political-technological combination to take on a gestalt of its own and to follow its own 'laws,'" we should rely on "the inner faith of the men who make the basic inventions."

That scientific-technological rationality must finally rely on an undemonstrated faith in its ability to harness demons it wantonly unleashes — a faith in technicians already completely enclosed in their organizations and practices — is an irony lost on Forbes. We have relied on their "inner faith" for too long; even their best intentions work against us.

"There are no easy answers," announces an oil company advertisement. "Without question, we must find more oil. And we must learn to use the oil we have more efficiently. So where do we start?" Without question — such propaganda promotes the anxiety that we are trapped in technology, with no way out. Better to follow the program to the end. An IBM ad says, "Most of us can't help feeling nostalgic for an earlier, simpler era when most of life's dealings were face-to-face. But chaos would surely result if we tried to conduct all of our dealings that way today. There are just too many of us. We are too mobile. The things we do are too complex — and the pace of life is too fast."

A technological culture and its demands serve to justify the technology which imposes them. Those who doubt are cranks, while the calm, reasoned logic of military strategists, technical experts, bureaucrats and scientists is passed off as wisdom. Thus, during the 1979 partial meltdown at Three Mile Island nuclear power plant in Harrisburg, Pennsylvania, at the moment in which it was unclear what was going to happen to the bubble in the reactor container, a typical headline read, "Experts optimistic." Aren't they always? "Without question, we must find more oil," and create more energy, mine more minerals, cut more trees, build more roads and factories, cultivate more land, computerize more schools, accumulate more information … If we accept the premises, we are stuck with the conclusions. In the end, technology is legitimated by its search for solutions to the very destruction it has caused. What is to be done with chemical and nuclear wastes, ruined soils and contaminated seas? Here the technicians insist, "You need us." But their "solutions" not only naturalize and prolong the original causes of the disaster, they tend to aggravate it further. To decline to join the chorus is to seek "easy answers."

True, there are no easy answers. But we can at least begin by questioning the idea of technology as sacred and irrevocable, and start looking at the world once more with human eyes and articulating its promise in human terms. We must begin to envision the radical deconstruction of mass society.

Toward an epistemological luddism

I recognize the contradictions in even publishing this essay. I am not sure how to move beyond the code; in order to do so, with tremendous ambivalence and doubt, I partake in it in a limited, awkward, conditional way. It is an act of desperation. Perhaps to some degree it is a question of orientation; I think it fair to distinguish between using established technical means to communicate out of pragmatic necessity, and volunteering to help construct the latest means. We need the courage to explore a process of change in our thinking and practice — to learn how we might become less dependent on machines, less linked to "world communications," not more.

Of course, one can't wish mass society away; a simplistic, monolithic response to the daunting technical problems confronting us, added to the social crisis we are experiencing, would be pointless and impossible. But it is the technological system which offers "easy answers" — starting with unquestioning surrender to whatever sorcery it dishes up next. We can respond without accepting its terms. We can swim against capital's current. Abolishing mass technics means learning to live in a different way — something societies have done in the past, and which they can learn to do again. We have to nurture trust, not in experts, but in our own innate capacity to find our way.

In Autonomous Technology, Langdon Winner suggests that a possible way to halt the decaying juggernaut would be to begin dismantling problematic technological structures and to refuse to repair systems that are breaking down. This would also imply rejecting newly devised technological systems meant to fix or replace the old. "This I would propose not as a solution in itself," he writes, "but as a method of inquiry." In this way we could investigate dependency and the pathways to autonomy and self-sufficiency. Such an "epistemological luddism," to use Winner's term, could help us to break up the structures of daily life, and to take meaning back from the meaning-manufacturing apparatus of the mass media, renew a human discourse based on community, solidarity and reciprocity, and destroy the universal deference to machines, experts and information. Otherwise, we face either machine-induced cataclysm or mutilation beyond recognition of the human spirit. For human beings, the practical result will be the same.

For now, let us attend to first things first — by considering the possibility of a conscious break with urban-industrial civilization, a break which does not attempt to return to prior modes of refusal (which would be impossible anyway), but which surpasses them by elaborating its own, at the far limits of a modernity already in decay. We begin by annunciating the possibility of such a decision

— a very small step, but we begin where we can. A new culture can arise from that small step, from our first awkward acts of refusal to become mere instruments. Of course, such a culture wouldn't be entirely new, but would derive its strength from an old yet contemporary wisdom, as ancient and as contemporary as the Delaware prophet and the Chinese philosopher Chuangtse, who said: "Whoever uses machines does all his work like a machine. He who does his work like a machine grows a heart like a machine, and he who carries the heart of a machine in his breast loses his simplicity. It is not that I do not know of such things; I am ashamed to use them." When we begin listening to the heart, we will be ashamed to use such things, or to be used by them.

quod esset
demonstrandum

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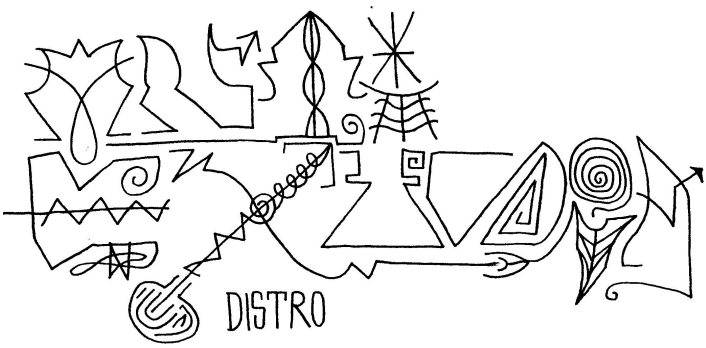

What is our modern technological world? How does it shape our understanding of the world?

This text engages on a fundamental level with these questions and is a good introduction into the critique of civilization & technology.

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