

# A Pride of Prophets on Our Technological Future

Denis Goulet

The most serious analyst of the danger of technical determinism is still Jacques Ellul. As far back as 1965 this French philosopher, lawyer, and social prophet argued that "The technical phenomenon has assumed an independent character quite apart from economic considerations, and that it develops according to its own intrinsic laws...., following its own intrinsic causal processes, independent of external forces or human aims."

Frequent accusations to the contrary notwithstanding, Ellul replied that he "never intended to describe any inexorable process of inevitable doom." In fact he insists "that if we can be sufficiently awakened to the real gravity of the situation, man has within himself the necessary resources to discover, by some means unforeseeable at present, the path to a new freedom."

More recently, in 1973, Ellul reaffirmed the possibility of controlling technology in terms of

...the conflict between hope and the dominance of technology. The latter can neither tolerate the future-eternity relation nor the intervention of a future composed in the present. Technology is expressed by means of necessity through cause and succession. It is incapable of entertaining any other prospect. We now are called to another prospect, but that in no way implies a condemnation of technology! It implies simply the observation that salvation is not to be had from that source, since technology unstructures time and blocks the movement of hope.

What we have eventually to do as Christians is certainly not to reject technology, but rather, in this technological society and at the price of whatever controversy, we have to cause hope to be born again, and to redeem the time in relation to the times.

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*Ellul's chief lesson to his contemporaries is that technology cannot be controlled if one assumes it is easy to control.* Bertrand de Jouvenal, a pioneer in the study of "futuribles," future possibles, brands this view "impotent and paradoxical technophobia." According to Jouvenal:

Membership in a technologically advanced and advancing society is unquestionably a privilege. It is true of all privileges that they can be put to good or bad use. In this case it is quite clear that the privilege is collective by nature, that is the benefits and the evils depend a great deal more upon aggregate behavior than upon individual decisions.

The monumentally important fact is that the entire world seeks membership in this society, although privilege is not automatically conferred upon new national entrants to the technological club. Aggregate behavior will no doubt decide whether technology will be harnessed to human ends or allowed to subvert those ends. "Subversion" is not too strong a term, for, as Everett Reimer notes, "science and technology violate nature, including human nature." Technology *need not* violate nature: It will simply continue to do so unless humans force it to impinge differently upon nature. To achieve control over determinism humans must first free themselves from their hypnotic fascination with technology's benefits. As Ellul wrote in 1963:

...all men must be shown that Technique is nothing more than a complex of material objects, procedures, and combinations, which have as their sole result a modicum of comfort, hygiene, and ease.... Men must be convinced that technical progress is not humanity's supreme adventure.... As long as man worships Technique, there is as good as no chance that he will ever succeed in mastering it.

A few prophets, philosophers, and poets have, it is true, tried to immunize society against the idolatry of what Ellul calls Technique. But prophets usually lack

a sufficient knowledge of technology's inner dynamisms that is necessary if one is to avoid mere extrinsic critiques of technology, let alone to make practical recommendations for "humanizing" it. What has been lacking is an ethics rooted in critical understanding of the values of alternative courses of social action and concrete policy. Such an ethic enters inside the dynamism of any instrument and bends that dynamism to the service of desired values. It would avoid mere moralizing about technology as well as simple technological "fixes" that only reinforce the technological imperative. If Ellul is even partly right, contemporary societies can master technology only if they are willing to forego specific technologies or their "benefits" when these violate more essential values. What is required is not to give up all technology but to resist a purely technological vision of efficiency. Paradoxically, modern technology can best be controlled by individuals and societies that do not enthrone technology as their primary source of values. They must, in effect, will to adhere to notions of rationality, efficiency, and problem-solving that "put technology in its place."

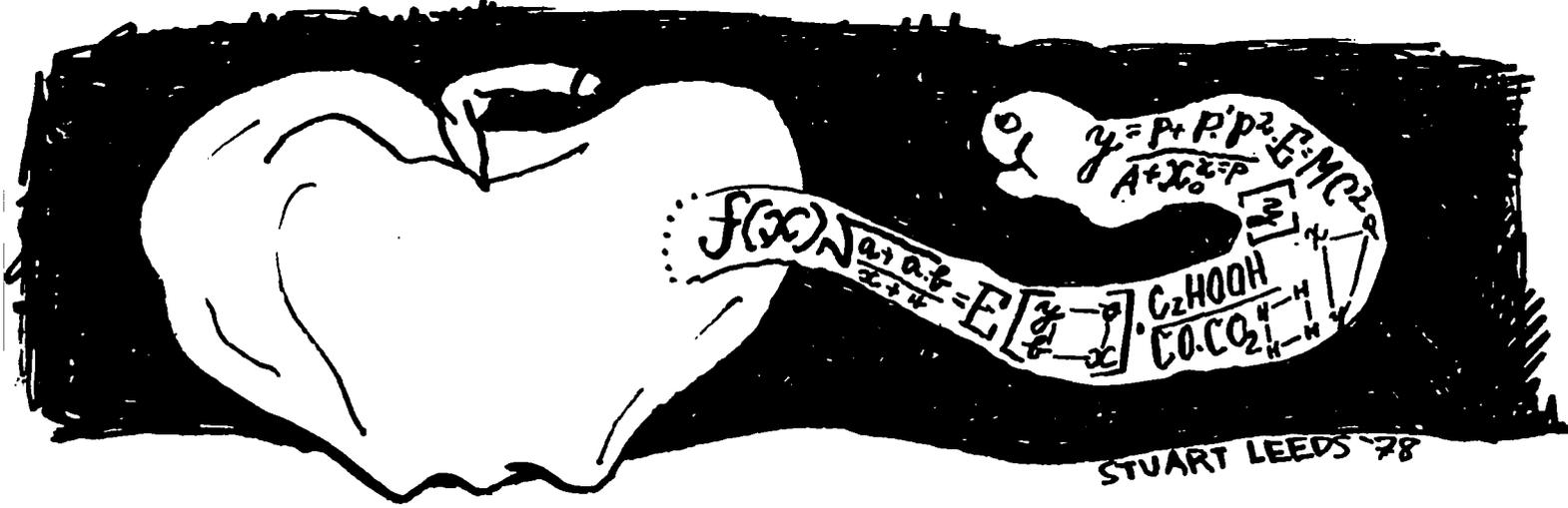
What, then, are the specific values that might control the technological processes? Certain societies list these values as the defense of their cultural integrity, the achievement of institutional reciprocity in dealing with others, and obtaining decent material sufficiency for all their people. Dissident countercultures in rich lands emphasize a manageable scale of operations, psychological satisfactions in work, and simple communitarian living. Socialist revolutionaries, in turn, stress the creation of revolutionary consciousness as a prelude to building "the new man." Because ideology is itself a major source of social values, a sharp break must be made with the "technological ideology" if social mastery of technology is to become possible. "Technological ideology" would make technology the norm for all perceptions of social reality. Consequently, whenever "technology assessment" fails to posit valid counternorms for perception, it disqualifies itself as an instrument of responsible social planning. In its broadest sense technology assessment is, in the somewhat bureaucratic language of a U.S. Senate

subcommittee: "the thorough and balanced analysis of all significant primary, secondary, indirect and related consequences of impacts, present and foreseen, of a technological innovation on society, the environment or the economy." Although popular images of technology assessment stress the adverse effects of technology, the assessment is equally concerned with expected benefits. Assessment is not a mechanism designed to halt the advance of technology but, rather, to determine whether or not a given technology should be employed. This procedure is best conceived, in Alexander King's words, "as a tool of technology management, as a necessary link between research and development and the needs of society."

The essential problem is not technology itself but its successful management. Such management calls for wisdom and clarity about what kind of society we desire and how technology can help construct such a society. At their best, technology assessors anticipate the probable effects of technologies in such areas as employment, ecological health, urban concentration, alienation at work, distribution of benefits, and transformation of specific behavior. They generally aim at making "wise" decisions regarding technology. They use a battery of diagnostic instruments, most of them favoring a systems approach in their efforts to find the best way to brief decisionmakers (politicians, managers, or the public).

Special difficulties attend the practice of technology assessment. The first danger stalks all highly specialized operations, namely, losing touch with the real world. Specialists who juggle models, scenarios, and other abstractions easily lose their sense of what is real and what is not. Only by great effort can technology assessors keep in touch with the people who are supposed to benefit from their decisions. One experiment to link up experts and masses has been described by the German scientist Helmut Krauch:

This simulation was run three times in differing modes. First, we instructed the role-players to create an ordinary rational debate. The second mode was a little more sophisticated, more psycho-dynamic; it was an ordinary polite debate. In the third case, we instructed the role-players to fight and to try to smash the underlying assumptions of their opponents. The results were quite striking. The judges said that only



the third approach really enlightened them and enabled them to make a decision.

Another experiment led the experts to submit their working assumptions to the judgment of representative citizens before final decisions were made. Initial evidence suggests that technical experts can be made accountable to a general public. Krauch and his colleagues seek to involve all members of society in what Valentina Borremans and Ivan Illich call "political control of the technological characteristics of industrial products." Indeed, modern political communities ought to debate the technological ceiling under which they choose to live. Only thus can "expert" decisions avoid the twin evils of manipulative élitism and technological determinism. Moreover, placing technology assessment under public controls may be the best way of subordinating technology to other values.

François Hetman thinks that "if social aspirations are to orient technology in new directions, social goals must be stated in terms of objectives and feasible tasks. This can be done only through a truly participatory exchange of ethical and political principles and aspirations." Obviously the general public needs a scientific basis to inform its political decisions. But any scientific basis for decisions is too narrow and one-sided when applied by experts alone. Besides, scientific rationality will suffer from the same defects when it is extended to larger numbers of people. Therefore some kind of "wisdom to match our sciences" must be created. But whence will such wisdom come? Have not science and technology led adepts away from the paths of wisdom, that special unity achieved only after crossing diversity?

**M**any pretechnological societies doubtless generated certain forms of wisdom. Through language and symbols these societies initiated members to a synthesis of all the experience, direct and vicarious, that fell within their ken. This synthesis, expressed in festivities and rituals, brought to daily existence a sense of mystery, of transcendence, even of gratuity—a spontaneous summons to cherish life and beauty for their own sake. More important, ancient wisdoms conferred patterns of meaning to birth, to daily routine, to change, to suffering, and to death itself.

Unfortunately these wisdoms were imperfect and fragile and suffered from three defects: They were provincial, static, and naive. The present technological age, however, is characterized by traits directly opposed to ethnocentric parochiality, to fixity, and to naiveté. As a result, uncritical wisdoms quickly grow obsolete and crumble under the onslaughts of modern science and technology. By revolutionizing humanity's reflective consciousness in three crucial domains, Darwin, Marx, and Freud have in effect buried ancient wisdoms. Darwin made it impossible to view nature ever again as a static system: evolutionary process is its very "essence." And thanks to Marx history can never again be viewed as linear progress or as cyclic repetition; it is a conflictual process rooted in competing interests. To these demystifications Freud added a third—the demon-

stration that the overt intentions of human agents habitually mask, in unconscious realms, profound self-delusions. How then can any wisdom be "functional" nowadays, if it is static, ahistorical, or ingenuous? Whatever values they may still retain, ancient wisdoms must confront the challenges posed by modern consciousness, itself so powerfully reflected in technology.

Equally difficult problems confront technologically "advanced" societies. For the most part these societies have abdicated the very quest after wisdom; their analytical triumphs have been paid in the coin of an atrophied ability to grasp totality. Worse still, the fetishistic worship of empirical verification has blinded these societies to the depths of being and meaning hidden beneath the surface realities. Modern societies glibly substitute verification for truth and embrace narrow forms of rationality that leave no room for gratuity, for value criteria to govern choices, or for wisdom itself.

Thanks to its seemingly boundless power to dominate nature and satisfy humanity's material wants, technology poses mighty challenges to ancient wisdoms: It raises troubling questions about the ultimate sources of knowledge and power. Nevertheless, modern critics acknowledge that science itself needs to be informed by a new wisdom, some architectonic vision of holistic meanings. But never again can holistic structures of meaning be framed in dogmatic or ethnocentric terms. Hence a wisdom for our times calls for numerous creative dialogues in discourse and in social practice. Such exchanges will fail unless genuine reciprocity presides over them: "old" and "new" mentalities must talk as equals.

Yet reciprocity in cultural dialogue can be achieved only if prevailing patterns of economic, social, and political domination are eliminated. More specifically, scientific "experts" must come to acknowledge that they are not experts in the twin domains of dialogue and of weaving disparate values into unified patterns of meaning. Nonetheless, they would be derelict if they did not radically challenge traditional wisdoms as to their assumptions regarding nature and human possibilities. In turn these wisdoms will need to criticize the value premises of the scientific vision. Neither party to the discourse can do without the other. At stake lies the answer to the perennial question: Can human beings create their own history? Or are citizens of all societies condemned to remain mere objects of history, tossed about by social, political, and conjunctural forces they cannot control?

**S**ocial planners and futurists in growing numbers now reflect on the philosophical dimensions of that ambitious enterprise called "managing technology." In a paper entitled "Toward a Technology of Values" delivered at the Rome Special World Conference on Futures Research in September, 1973, Arthur Harkins warned "experts" against determinism and urged them not to forget that new models can break the bonds of existing systems. Since all previous societies have viewed themselves as complex, Harkins added, the complexity of the present age does not argue in favor of unmanageability. He stated further that one

important source "of informed, collective wisdom in developing and managing social/cultural/personal inventions" will be participatory democracy.

The quest for a new wisdom to manage technology reflects the judgment of the late English historian Christopher Dawson. Dawson wrote in *Dynamics of World History*:

the true makers of history are not to be found on the surface of events among the successful politicians or the successful revolutionaries: these are the servants of events. Their masters are the spiritual men whom the world knows not, the unregarded agents of the creative action of the Spirit.

Dawson's conclusion is not that a new developmental wisdom should renounce politics or condemn revolution but that it ought to infuse both with spiritual wisdom, which can be born only in the deeper waters of spirit and the ultimate recesses of humanity. Although ethics is not sufficient, it is necessary. Unless ethics as a "means of the means" can be incorporated organically into the dynamics of technological management, wisdom will lack its minimum infrastructure. Lacking ethics, the best one can hope for is mechanistic problem-solving elevated to the pseudo-dignity of sophistication, thanks to the use of electronic computers or elegant input models.

Notwithstanding the claims of some enlightened futurists, most technology assessment suffers from just such mechanistic. Few futurists grasp the need to build their models in function of that special unity called "wisdom," which comes only after crossing complexity. This unity, always painfully and precariously achieved, is an indispensable antidote to the modern expert's problem-solving hubris and infatuation with fads. Therefore scientists and technicians who seek wisdom in their efforts to manage future technology will need to be initiated into desiring and accepting "traditional" and "nonscientific" subjective values like personal suffering and indifference to fame. Unfortunately, these attitudes have now been banished from the roster of "modern" virtues—or, at best, relegated to the inner sanctum of private living. Accordingly, pre-technological societies still have much to teach moderns regarding the importance of rendering disciplines like silence, solitude, contemplation, communion with the rhythms of nature, and respect for the dignity of the cosmos socially respectable. Without these disciplines no society and no group of social planners can liberate itself from that worship of Technique that prevents it from harnessing technique to human ends.

Can technology be controlled? There is only one answer to this question: Yes, *if* multiple new dialogues among disciplines, cultures, and strata of population are effectively launched. *If* praxis—critical reflection allied to reflective practice—by decisionmakers overcomes elite class barriers and answers the deepest aspirations of the populace. *If* moderns discover a wisdom to match their sciences. *If* traditions revitalize their ancient wisdoms in the face of the challenges posed by modernity. And *if* a new alliance

between political and mystical messianism is effectuated.

Control over technology is vital because it cannot be deemed possible, given the instruments human societies presently have at their disposal. Paralysis is reflected in the division of expert opinion over the question of whether any continuity can be found between the structure of a technology and its effects. For William Kuhns, writing in *The Post-Industrial Prophets*, the theme of determinism "is the single most important question raised by the new environments...all of them [i.e., thinkers discussed in his book] suggest some dimension of technology where control is impossible or futile. Kuhn lists three schools of thought on the issue of technology and determinism. Lewis Mumford, Siegfried Giedion, Ellul, and Norbert Wiener belong to what he calls the "Encroachment of the Machine" school, Harold Adams Innis and Marshall McLuhan to the "Media Dictates Culture" school, and Buckminster Fuller to the "Technology Breeds Utopia" school. The latter is especially intriguing to Kuhns because "Fuller's implied slogan, 'Technology Breeds Utopia,' means that we have nothing to fear from technology but that anachronistic response, fear itself. Fuller is so sanguine that his determinism hardly appears to be a determinism at all, but a promise of technological cornucopia."

Yet even Buckminster Fuller in his optimism cannot stop inquiry or exorcise fear. There are, as French philosopher Pierre Ducassé notes, good reasons why all thinking humans now fear the loss of the human possibility of critical thought. Philosophers understand the soporific effects arising from the failure to recognize what Søren Kierkegaard termed the "sickness unto death." For the nineteenth-century Danish existentialist despair is the sickness unto death, and the most tragic state of the disease is that lack of inward alertness that prevents most people from even acknowledging their state. To lack "the riches of inwardness," he wrote, "is like squandering money upon luxuries and dispensing with necessities, or, as the proverb says, like selling one's breeches to buy a wig. *But an age without passion has no values, and everything is transformed into representational ideas.*"

Humanity needs the warnings of Mumford and Ellul that technology transforms everything into representations. For technology is the vital arena where cultures and subcultures will either survive or be crushed; here their absorptive capacity will be tested. The ultimate challenge posed by technological determinism is to culture itself. Is only one culture possible in the future—a technological culture? Or is technology the death of culture, the very antithesis of civilization?

Margaret Mead sees the future as "the appropriate setting for our shared worldwide culture, for the future is least compromised by partial and discrepant views." In truth, however, the future is compromised by "partial and discrepant views." Competitors vie for control over the evolutionary process toward a new future. They place different values at the heart of culture, and none can avoid asking the two perplexing questions:

Can technology be controlled? and  
Is technology compatible with civilization?