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## Technology from the Underside, edited by Cariño

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## Book Reviews

TECHNOLOGY FROM THE UNDERSIDE. (Vol. VI, No. 1 of TUGON).  
Edited by Feliciano V. Carino. Quezon City: National Council of Churches  
in the Philippines, 1986. 107 pages.

The biblical reference to the "dominion of man over the earth" has often been misinterpreted as the subjugation of nature. Man uses nature to his own end, and it is technology which provides him with the methods. Thus, science and technology (S&T) have often been criticized as tools for promoting the interests of big corporations and oppressing the masses, as areas of expensive, esoteric experiments with little relevance to society, and as studies divorced from humane and ethical practices. Many examples illustrate these. Developed countries devote large budgets to research for warfare, for drugs, or for areas in which any direct use to society is still in question. Meanwhile, many third world countries continue in their suffering as victims of war, exploitative industrial systems, and indiscriminate destruction of their habitat.

It is thus understandable that many view S&T with skepticism, if not rejection. The healing side of technology is often lumped together with the villainous intent of power groups. Underdeveloped countries usually know S&T only as it has been transferred to them. It retains a foreign taste, a lack of integration with their culture.

These disturbing issues, backed with specific examples mostly from the Southeast Asian region, are discussed in the special issue of *Tugon*. It serves as documentation of the consultation on new technology, work and environment sponsored by the National Council of Churches in the Philippines and the World Council of Churches in Geneva, Switzerland. In the words of guest editor David Gosling, it is important to realize that "the title of the book . . . represents a victim's viewpoint, and should not be interpreted as a blanket negotiation of technology as such" (p. vii).

Jaime L. Cardinal Sin sets the atmosphere of the consultation and analyses to follow, in an article that discusses the role of man both as laborer and philosopher. The laborer, whether a physical or intellectual worker, is also "co-creator with God in [the] building up of society" (p. 4). The dignity and honor inherent in the work should transform the laborer into a responsible and creative element of society, whose life is deeply affected by nature. The person evolves as steward of the environment. These inseparable, rather dialectic roles determine the humanization of labor, of economic and political systems, of technology. They should also be the basis for man's harmonious relationship with his environment. Unfortunately, these are violated by existing practices in the workplace, such as unjust remuneration, loss of dignity for the laborer, and exploitative destruction of natural resources. The call for justice and liberation, based on the life of Jesus Christ, demands urgent response.

This response takes form in the reevaluation of our technological practices.

Alternatives to the existing technology and lifestyle in India are proposed by T.K. Oommen in "Technology and Environment: Facts and Alternatives from India." Technology operates within an environment; thus, its effects have to be viewed in *toto*. The author shows how social forestry, human displacement from dam sites, and health hazards in the chemical industry, have put technology over and above the human factors. One alternative to this is Mahatma Gandhi's idea of villagism—a self-contained village where lifestyle is closely integrated with nature. It is an expression of the nonviolent preservation of persons and environment. While there is a move towards a more primitive set-up in society, there is no outright rejection of technology. Steps towards the development of such a system are suggested: low-energy lifestyle, recognition of the positive aspects of *both* traditional and alternative technologies, decentralization, promotion of the continuum between urban and rural lifestyles, rejection of affluence and consumerism, preservation of diversity in the environment, redefinition of the concept of property, adoption of a holistic approach in problem-solving.

The disparity of societies with their environment is probably presented most dramatically in the destruction of forests. Forest services are strongly felt; supply of forest products, regulation of floods and droughts, water supply for irrigation and domestic use, control of soil erosion, and control of typhoons and storms are part of the complex web of relationships among persons, work ethics, and environment. Dr. Norman Myers, a consultant ecologist from the United Kingdom, tackles this issue in "Deforestation and Development in Asia." Both commercial logging and smallscale farming (due to inequitable land distribution) have been accused of being, and have proven to be, culprits. In both cases government intervention through national development policies should be implemented.

The critical issue of nuclearization has become very real for the people near the nuclear testing sites in the Pacific, and for countries where such technology has yet to be learned and controlled. In a brief but touching address, Micronesian nurse Darlene-Keju Johnson exposes the fears and struggles of her people who, like herself, have been affected by radiation from the nuclear tests in the Pacific. "Nuclear Power: Its Perpetual Legacy of Death," written by Filipino physicist Achilles del Callar, discusses in detail the negative effects of nuclear technology. From radioactive waste to operational safety of nuclear power plants, the arguments against nuclearization in the Philippines far outweigh its advantages. On the other hand, Dr. Liek Wijardo, professor of nuclear physics in Indonesia, explains the open attitude of the Indonesian government to nuclear power despite its oil resources. Whatever the decision may be, the participation of the people in decision-making is emphasized. After all, the effects will be borne by the society and its different generations.

Militarism also develops when the environment, the sociological and cultural elements of a people are trampled upon. The case of the Cordilleras in the Philippines is presented by Dr. Masaki Endo, showing how forced development can displace people and destroy things sacred to them.

The advent of the electronic industry has also led to many injustices. Dr. Chris Bloore, a computer consultant from New Zealand, discusses in "The Electronics Revolution - Some Side Effects," how the high-risk industry has led to the ruin of smaller business enterprises, the lack of standardization of consumer electronics, and the degeneration of moral standards as exemplified in fraud and software piracy. Malaysian journalist Wajir-jahan Karim, on the other hand, tackles the exploitation of women in the electronics industry. The submissive stance of the Malaysian Moslem women is easily taken advantage of by the bigger corporations for their own profits.

The chemical industry is a potential source of danger to society, especially if standards and safety designs are not well met. Cecile de Sweemer reviews the Bhopal industrial disaster—the release of toxic gases by the Union Carbide plant in Bhopal in 1984, killing about 2,500 people and affecting up to about 200,000—illustrating the vulnerability of such plants, the responsibility of transnational corporations, and the role the government plays.

The toxic wastes of the chemical and related industries also continue to cause death and disease. Examples of these are well-known, and reviewed by Dr. Twesukdi Piyakarnchana in marine pollution and by Prof. Koa Tasaka in Japan's chemical industries.

Sources of marine pollution involve lack of sewage treatment systems, pollution from food and beverage manufacturing, textile and paper mills, oil-drilling operations and oil spills. Furthermore, depletion of marine resources also comes with the introduction of new fishing practices such as

the otter board trawler fishing. These problems are regional, meaning that effects are carried into areas other than its place of origin. Thus, they also require a regional solution, a cooperative effort among the affected countries.

The Japanese experience contains a formidable list of disastrous effects of the chemical industry. The Ashio Copper mining industry's release of poisonous wastes into the river destroyed farmlands. Cadmium poisoning from Kamioka mining caused brittle bones and intense pain for people in the area. Organo-mercury compounds led to nerve-poisoning in both people and animals around Minamata bay (thus, the name Minamata disease). The atomic bombs of World War II continue to have their effects felt through diseases related to radioactive fall-out and waste. Steel plants still pollute air and water systems, while some pesticides have been shown to have degenerative effects on animals. These frightening effects reflect injustice embedded in the social structure, and can only be addressed by an exchange of information on chemical contamination, the promotion of real development with appropriate technology, and a change in the social structure.

Food additives, such as monosodium glutamate (MSG) may also be a source of disease, as discussed by Thai chemist Phichai Tovivich. Aside from the scientific discussion on the physiological damages of MSG, the real issue is the profit-oriented structure of large corporations which ignore the possible harm of their product through promotional programs.

All these issues involve the tight linkage of technology, work ethics, and the environment. They reflect the need for justice, peace and integrity. The absence of one of these leads to suffering, as examples of Dr. Yong Bock Kim show. They further demonstrate that these conditions lead to new reflections and visions, for which the Asian perspective should be developed.

The inevitable conclusion to these discussions is that the tragic aspect of technology, which gives rise to unjust working conditions and environmental annihilation, overshadows its benefits to society. The promotion of justice, peace, and integrity in all aspects of creation is the concern of the Church; thus, it needs to redirect the priorities of society. Three major goals are defined: a) the exposure of economic and political structures perpetuating technologies which dominate, rather than serve, people; b) the establishment of resources and programs which transform the ill effects; and c) the creation of solidarity among the victims of technology, specifically in the Asian and Pacific regions. The Church and society must strive towards the creation of a better environment based on the harmony of person and nature.

The issues linking environment, ethics and S&T are definitely major concerns of societies today. The analyses in *Technology from the Underside* were done by professionals in their respective fields, and this is reflected in the careful selection of details supporting the case studies. Although some

cases could be presented more positively, as in the MSG analysis, there is no haphazard conclusion typical of ideological propaganda.

While the sequence of articles could be improved to give better continuity and cohesiveness to the issues in question, the book is still able to give the reader a unified idea of the major concerns. The magnitude of the problem leaves a note of despair, but also a note of hope in the rethinking of values by people practising technology. The challenge to reevaluate technologies and relate them to just and humane working practices is no easy task, and requires the contribution of both scientists and nonscientists. What should probably be more emphasized in the book is the role of the latter. The fate of technology is actually determined by politicians, economists, businessmen, and others. S&T develops through their support; S&T is used for their ends. It is, therefore, important for each member of society to realize the social responsibility each one carries. S&T should develop according to society's needs, and should be reintegrated with the culture. Above all, the actual practice of S&T can be influenced by Christian work ethics, by principles of justice, peace and integrity. Spelling out this commitment is the difficult part.

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THE ARMED FORCES IN CONTEMPORARY ASIAN SOCIETIES. Edited by Edward A. Olsen and Stephen Jurika, Jr. Boulder, Colorado: Westview Pres Inc., 1986. viii, 368 pages.

If the August 28 coup d'état in Manila led by Col. Gringo Honasan is to be at all credited with any achievement, perhaps its biggest contribution to the political situation in the country today is that it has helped sharpen focus on the issue of military roles in government.

The tradition of civilian supremacy in Philippine government was first undermined by the imposition of martial law in the country in 1972, and the subsequent close political partnership between the dictator Marcos on the one hand and his loyal troops and ominous intelligence network on the other. The subsequent expansion in the powers and functions of the Armed Forces of the Philippines (AFP), the spillover of its influence into the political and economic arenas, and even the astounding growth in numbers of its members as well as officer corps have created new realities that have to be cautiously dealt with by the civilian leadership. The armed forces must now be recognized as a distinct power center, having a clear stake in local politics, anxious and, as