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TECHNOLOGY AND BASIC NEEDS: PROPOSAL FOR A DEBATE ON FUNDAMENTAL CRITERIA

1. TECHNOLOGY AND THE FORCES OF PRODUCTION

The critical account put forth here does not rest on any doubt about or underestimation of the role of technology in the progress of humanity. At the same time its role in advancing the forces of production for the benefit of humanity may have been perverted from its fundamental universality and placed in the service of a power struggle against the human majority.

Human beings have modified nature to satisfy their needs. In this modification they early on created technical means to enhance productivity. It is in this ambit of the means of the forces of production that technics have evolved to a high technological level within industrial capitalism. Productivity itself has undertaken a new qualitative leap since implementation of the so-called "scientific-technological revolution."

For this reason contemporary humanity cannot avoid confirming the irreplaceable value of technology in the development of the forces of production, and with this development attempt to satisfy the basic needs of all humanity. Without technology it would be impossible to plan for the fulfillment of such fundamental human needs, which are the inalienable rights of human beings because of their inherent dignity.

If we demonstrate the complexity of the problem and the inevitable contradictions that confront us, it is in no way to diminish the importance of technology but rather to indicate, justly, that in order for technology to serve humanity and not a system that exploits humanity, it is necessary to take into account many concrete historical and structural factors that are not in themselves technological.

An abstract consideration of technology, in its intrinsic rationality as itself a productive force, can be unrealistic if it does not take into account the total concrete history in which technology is found and from which it derives its meaning.

Carl Mitcham (ed.), Philosophy of Technology in Spanish Speaking Countries, 101-109.

2. THREE SOCIAL CONTEXTS OF TECHNOLOGY

The history of technology has not been without its ups and downs. There have been periods of great creativity, of stagnation, and even regression. What is certain is that since the eighteenth century technological progress within the framework of capitalism has been overwhelming.

In the *central capitalist countries* (United States, Europe, and Japan), where technological advances manifest themselves primarily in the leading sectors (such as electronics, chemistry, energy), science is used more and more as a privileged means, aspiring to a productivity and control of processes never before dreamed of. Science thus increases in instrumental connection with technology; technology is not a mere application of science. Instead this technological connection responds to the needs of management and control, obligatorily bringing into the debate over technology issues of global economic coordination, security, and militarism. It is a known fact that an extremely high percentage of scientists and technologists work on jobs that are directly related to military production.

International capitalism is currently undergoing a crisis, perhaps the most profound in its history. Attention must be paid to how capitalism confronts this crisis and what it means in the field of science and technology. In relation to this, what we see happening in capitalist countries is the question of technology confronting concrete problems that are not those of humanity as a whole but are specifically capitalistic, and which can be reduced to three:

— The issue of the exhaustion of non-renewable resources because of continual growth.
— Ecological preservation, which is threatened by the development of capitalism itself.
— The requirements for new technology in the process of the internationalization of production, and in the productive processes demanded by worldwide capitalist accumulation with its tight bonds to the demands of global control.

In this case technology is a necessary means within the capitalist system directly tied to greater income-yield capacity.

We find countries which develop in a *socialist ambit* in a very different situation. The adaptation of technology, in the Cuban process for example, was preceded by a revolutionary change in economic and political structures. In contrast to those countries dependent on a capitalist system, in Cuba the whole work force is simultaneously committed to the priorities of creating a technology adequate for development and a technology that plays a role in satisfying the basic

needs of the whole population — objectives that capitalist dependency has not been able to reach. It is only now, after economic and political transformation, that it is completely justifiable to give technology a high priority. The revolutionary global project, in the heart of which technology plays a role, is oriented toward humanity and its full realization.

By contrast, in the *capitalist dependent countries*, such as the rest of Latin America as well as greater parts of Africa and Asia, the issue of technology already has a different meaning that is framed by a different situation. In this case the fundamental technological issues are the following:

— What kind of technological development would satisfy the basic needs of the whole population?
— Is technological development or a change in economic and political structure the highest priority for the fulfillment of basic needs?

Or, from another angle, the issues that come strongly to the fore are these:

— What impact does technical progress and "continuous technological change" in the dominant powers have on the economic systems of dependent countries, including, among others, the ecological destruction of cleared land and the alarming figures of unemployment and underemployment?
— What do technologies and sponsors of development contribute to the support of social transformation in favor of the majority?

3. AN OVERVIEW OF TECHNOLOGICAL EVOLUTION IN LATIN AMERICA

The current situation of technology in our countries is historically dependent on the various phases of their incorporation into the worldwide capitalist system.

In the last decades of the nineteenth century, some Latin American countries (such as Argentina, Chile, Brazil, Mexico) began to experience the initial phases of manufacturing production, but only in a framework dominated by "development toward the outside." It is only since the crisis of capitalism between the two wars, and especially since 1929, that the creation of governments responsible to the partial hegemony of a national bourgeoisie permitted the awakening of certain technologies that were always dependent but nevertheless partially controlled by a project of national capitalism — or at least pretended to be so controlled.

At the end of World War II, a developmentist attitude emerged in the dependent countries that consisted essentially of the supposed

necessity of counting on capitalist aid and foreign technology, principally North American, to make development possible. From this option, firmly in force during the 1960s, the developmentism of Frondizi, Betancourt, the Christian Democrats, etc., defined the technology of the central capitalist countries as a privileged means of development. Thus was born the myth of technologism. The ideology of a universal technology gained a foothold in the capitalist dependent countries in which the transnationals began their rapid expansion.

The technological issue considered on an abstract level — as if it were valid for the whole world — forms the basis of the ideology which, with the best of intentions and without a bad conscience, becomes a privileged means for the domination of capitalism over dependent countries. The "universality" of the technology of transnationals conceals a mechanism that must be examined.

4. THE REAL AMBIT OF TECHNOLOGICAL OPTIONS

Technologically embodied wealth constitutes the substance beneath the style of accumulation that has characterized the majority of our capitalist dependent countries during the last decades. This style was defended by the ideologies of the dominant classes, which permitted the generation of a "modern" economic subsector that has as its nucleus transnational corporations. This pattern of accumulation reinforced the dependency of our economies, and generated a circle of production, distribution, and conspicuous consumption — nourished almost exclusively by the expropriation of surpluses, and a growing regressive distribution of income that puts majorities at the margins of basic necessities for living a dignified life.

In other words, more than being just an incomplete "transfer" of technical progress, what has happened is the appropriation of this progress by and for the benefit of the privileged sectors and of the reigning power. This process develops through the functional logic of the worldwide capitalist market. On the basis of this logic the criteria for the selection of technologies are not arbitrarily determined. The fact of *wanting* to apply intermediate or traditional technologies does not mean that they *can* be applied.

Capitalist entrepreneurs make decisions concerning the application of technologies, although their decisions are firmly conditioned. When making a technological decision, they apply a conditioned norm: income-yield capacity. The entrepreneurs cannot decide on the application of one technology when another promises higher income yield. From this point of view the most adequate technology is necessarily the most

income producing.

Income-yield capacity is an institutionalized norm incorporated into the functioning of the capitalist market itself. This norm is objective and obligatory, and the very competition for capital imposes it and admits the application of other criteria only within very narrow limits.

Therefore the selection of technologies in keeping with the norm of income-yield capacity is not an issue that depends on the good or bad faith of entrepreneurs. Within the framework of competition for capital, the corporation — no matter how large it is — cannot survive unless it adheres to this fundamental norm in the functioning of a capitalist market.

Therefore this situation also marks the limits of possible political action on the part of the bourgeois state. State action cannot influence the technical process above and beyond the framework imposed by the central institutionalized norm, the income-yield capacity of capital.

From this it follows that in a greater or lesser degree, the current technological process is that which most strictly corresponds to the criterion of income-yield capacity. If this is true, it can be determined as well that the technological process is susceptible to reorientation only to the extent that the criterion of income-yield capacity is susceptible.

5. THE DIFFERENT LANGUAGES OF BASIC NEEDS

In spite of the unavoidable persistence of income-yield capacity as the base of capitalist logic, references to basic human needs have become obligatory in discussions about technology.

Technological discourse is structured, for the most part, around promises concerning the satisfaction of basic human needs. At the same time, the most pressing problems of the majority of humanity are problems related to the failure to satisfy these basic needs. But in this field word and concept are notoriously different. So it becomes urgent to distinguish between the logic of certain technologies and their illusory projects and those that attempt to increase, in realistic terms, the rights of oppressed peoples.

The *ideological language* of technology defines basic needs as beginning with *subsistence* (the consumption of foods to live), and gradually adds other minimum conditions, to better life and make it more bearable or more "humane," thus enlarging subsistence to include health, housing, education.

This hierarchical order — beginning with food and not with jobs for all — serves ideologically to conceal the question of whether there will or will not be employment for all. It simultaneously permits the setting

up of this basic promise: "We are in a position to create food possibilities so that all can survive (at least through their productive years)." Thus it is only a fundamentally providential view that would seek to put aside or de-hierarchize the problem of human dignity — dignity that can only be effectively satisfied beginning with the right to work.

Under this conception, the satisfaction of basic needs seems like a generous concession and not like a *fundamental right* that can and should be organically structured through participation and the exercise of a power fundamentally located in a real right of the people.

It is important to denounce the limitations in the satisfaction of basic needs that this discourse before-hand presumes acceptable, beginning with its inverted scale of priorities, with its emphasis on minimum subsistence on through subsidies given to those who are not offered the possibility of employment.

The *language of the people of the dependent nations* is structured beginning with the *right to work*, which sees the human as a productive, creative, and dignified being.

The rights to food and to shelter, equally fundamental, derive from and are shaped by the right to dignified work. Welfare is only exceptionally and supplementarily accepted — never as a normal proposition restricted to mere sustenance.

This language refers to the fundamental rights to *life* and not to mere subsistence or mere reproduction of work forces, and includes in these basic rights all that which is implied in the fundamental right to human life: health, education, peace, security.

It defines liberty beginning with justice, that is, with the fundamental premise of being a worker with the right to enjoyable work, dignified housing, attention in the areas of health and education — and all this in social rather than individual terms.

This block of fundamental rights that is set up with work serving a mediating function in relation to all other rights, is not an ahistorical and disconnected group of abstract rights. On the contrary, it is a concrete program of priorities that serves as a *source of the criteria* needed to define a corresponding strategy of development and a new vision of society.

Therefore this perspective considers that more basic than human needs are *fundamental human rights* whose lack of fulfillment goes much further than a lamentable accident of the malfunctioning of the economy.

In conclusion, the inability of the developmental projects to satisfy these basic needs, the conscious perception of these as fundamental rights, the clear vision in respect to the growing failure to satisfy these needs and the consequent violation of these rights, implies a *political*

and not only a technical vision of the projects or solution plans proposed, in the international arena as well as in the national.

The discussion of specific technological options must be framed by the criteria and priorities that derive, first, from the correct ordering of basic needs understood as fundamental rights, which are: work, food, shelter, health, education, etc., and not food and shelter without work. Second, the discussion of specific technological options must include appreciation of the real meaning of the break implied in this focus in relation to the ideological view of technology.

6. BASIC NEEDS AND THE TECHNOLOGICAL PROJECT

The current forms of absorption and utilization of the technological process, as determined by the existent conditions of power control, are incompatible with satisfaction of the basic needs of the worldwide population: work, food, and shelter.

The task is to transform the technological complex so that each human being can, through work, assure himself or herself of a dignified life compatible with the developmental level of the existent forces of production in his or her own context.

Achieving this task involves the application of criteria for technological selection that assure a configuration of the technological complex oriented toward the satisfaction of basic needs. Such a configuration assumes, in turn, for the Latin American countries, a combination of leading-edge technologies, second-hand technologies, intermediate technologies, and traditional technologies.

However, this satisfaction of basic needs constitutes a criterion that is in conflict with the criterion of income-yield capacity. Therefore, the need to reorient the technological process in a direction different from the current one necessarily means that we must talk of the demand to substitute for the criterion of income-yield capacity the criterion of the satisfaction of basic needs right at the level of the management of the complex of the economic process. It consequently implies reference to a substitution for economic relations of a new kind in the capitalist market. From this derives the demand for another way of development that must be recognized from our perspective; it involves, as a non-postponable priority, the needs of the majority of the population.

This requires profound changes in the content of a technology tied to the production of massive wealth, involving the reorientation of the production of capital wealth to increase efficiency in the productive processes that correspond to such wealth.

These demands imply the need to produce actions that tend to

establish the bases of power necessary for this new type of economic management.

It would be a sin of naivete to put forth the above-mentioned issues without certain declarations from the beginning. A project of this nature requires profound changes in the structures of power that permit the state to make its own the task of technological research; and the assignment of resources that the established alternative demands is a condition *sine qua non* for this to be viable.

After all is said, we firmly adhere to the vision of a just society, participative and viable (realizable). Our conviction concerning the requirements for such viability extends further than mere consideration of physical and technological resources. In this we include as well those social and political conditions capable of securing this viability which tend to satisfy fundamental rights and demands for human dignity.

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The preceding is the translation of a text prepared for a meeting on technology in the Third World held in Oaxtepec, Mexico, in early 1979. This meeting in turn was preparatory for the World Council of Churches conference, "Faith, Science, and the Future," held at the Massachusetts Institute of Technology in July 1979. It was included as an appendix to my *Filosofia de la produccion* (1984).

Let me take this opportunity, following the collapse of the Soviet empire (1988-1991) and the ensuing triumphalist reaffirmations of capitalist theory and practice, to reconsider some of its theses. The collapse of the Soviet Union and the collapse of real socialism in Eastern Europe — but not in the Third World — leave a lot unclear about the technological issue.

I think that in the 1960s the Soviet Union had begun to feel the effects of a system that attempted "total planning" (Katorovich) — which is as impossible as "perfect competiton" (F. Hayek) — and of the non-acceptance since 1921 (the New Economic Plan) of some competition as a necessary moment in the market. In effect, competition is a mechanism that transfers value from one capital formation, area, or nation to another capital formation, area, or nation. In this manner, the one that has better productivity (technology) creates products with less value that are therefore in the end less expensive. In this way, in the market, it can destroy its competitors. With the disappearance of capital formations with low productivity, obsolete technology also disappears. The Soviet economy did not have this possibility. In a bureaucratic regime it is the high ranking employee who makes the decision to

employ new technology. But what bureaucratic advantage can such an employee gain by implementing a new technology? If it turns out to be adequate, the merit will be given to others of a higher rank; if it is inadequate he will be criticized for having proposed it. In this way a bureaucratic system does not risk technological innovation.

The collapse of real socialism in the Soviet Union and in Eastern Europe leaves unclear, then, the technological issue, but it in no way destroys the possibility and necessity of the best planning possible, using the strategic criteria so necessary in the Third World, in the peripheral world of the South, that have been outlined here.

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