Chapter 1

ECOLOGY AND FREEDOM

1. Ecological Realism

Growth-oriented capitalism is dead. Growth-oriented socialism, which closely resembles it, reflects the distorted image of our past, not of our future. Marxism, although irreplaceable as an instrument of analysis, has lost its prophetic value.

The development of the forces of production, which was supposed to enable the working class to cast off its chains and establish universal freedom, has instead dispossessed the workers of the last shreds of their sovereignty, deepened the division between manual and intellectual labor, and destroyed the material and existential bases of the producers' power.

Economic growth, which was supposed to ensure the affluence and well-being of everyone, has created needs more quickly than it could satisfy them, and has led to a series of dead ends which are not solely economic in character: capitalist growth is in crisis not only because it is capitalist but also because it is encountering physical limits.
It is possible to imagine palliatives for one or another of the problems which have given rise to the present crisis. But its distinctive character is that it will inevitably be aggravated by each of the successive and partial solutions by which it seeks to overcome them.

While it has all the characteristics of a classical crisis of overproduction, the current crisis also possesses a number of new dimensions which Marxists, with rare exceptions, have not forescena, and for which what has until now been understood as "socialism" does not contain adequate answers. It is a crisis in the relation between the individual and the economic sphere as such; a crisis in the character of work; a crisis in our relations with nature, with our bodies, with our sexuality, with society, with future generations, with history; a crisis of urban life, of habitat, of medical practice, of education, of science.

We know that our present mode of life is without future; that the children we will bring into the world will use neither oil nor a number of now-familiar metals during their adult lives; that if current nuclear programs are implemented, uranium reserves will be exhausted by then.

We know that our world is ending; that if we go on as before, the oceans and the rivers will be sterile, the soil infertile, the air unbreathable in the cities, and life a privilege reserved for the selected specimens of a new race of humans, adapted by chemical conditioning and genetic programming to survive in a new ecological niche, carved out and sustained by biological engineering.

We know that for a hundred and fifty years industrial society has developed through the accelerated looting of reserves whose creation required tens of millions of years; and that until very recently all economists, whether classical or Marxist, have rejected as irrelevant or "reactionary" all questions concerning the longer-term future—that of the planet, that of the biosphere, that of civilizations. "In the long run we shall all be dead," said Keynes, wryly asserting that the temporal horizon of the economist should not exceed the next ten or twenty years. "Science," we were assured, would find new paths; engineering would discover new processes undreamt of today.

But science and technology have ended up making this central discovery: all productive activity depends on borrowing from the finite resources of the planet and on organizing a set of exchanges within a fragile system of multiple equilibriums...

The point is not to defy nature or to "go back" to it, but to take account of a simple fact: human activity finds in the natural world its external limits. Disregarding these limits sets off a backlash whose effects we are already experiencing in specific, though still widely misunderstood, ways: new diseases and new forms of dis-ease, maladjusted children (but maladjusted to what?), decreasing life expectancy, decreasing physical yields and economic pay-offs, and a decreasing quality of life despite increasing levels of material consumption.

The response of economists up to now has essentially consisted of dismissing as "utopian" or "irresponsible" those who have focused attention on these symptoms of a crisis in our fundamental relation to the natural world, a relation in which all economic activity is grounded. The boldest concept which modern political economy dared envisage was that of "zero growth" in physical consumption. Only one economist, Nicholas Georgescu-Roegen, has had the common sense to point out that, even at zero growth, the continued consumption of scarce resources will inevitably result in exhausting them completely.

The point is not to refrain from consuming more and more, but to consume less and less—there is no other way of conserving the available reserves for future generations.

This is what ecological realism is about.

The standard objection is that any effort to arrest or reverse the process of growth will perpetuate or even worsen existing inequalities, and result in a deterioration in the material conditions of those who are already poor. But the idea that growth reduces inequality is a faulty one—statistics show that, on the contrary, the reverse is true. It may be objected that these statistics apply only to capitalist countries and that socialism would produce greater social justice; but why then should it be necessary to produce more things? Would it not be more rational to improve the conditions and the quality of life by making more efficient use of available resources, by producing different things differently, by eliminating waste, and by refusing to produce socially those goods which are so expensive that...
they can never be available to all, or which are so cumbersome or polluting that their costs outweigh their benefits as soon as they become accessible to the majority.

Radicals who refuse to examine the question of equality without growth merely demonstrate that “socialism,” for them, is nothing but the continuation of capitalism by other means—an extension of middle class values, lifestyles, and social patterns (which the more enlightened members of that class, under pressure from their daughters and sons, are already beginning to reject).

Today a lack of realism no longer consists in advocating greater well-being through the inversion of growth and the subversion of the prevailing way of life. Lack of realism consists in imagining that economic growth can still bring about increased human welfare, and indeed that it is still physically possible.

2. Political Economy and Ecology: Marx and Illich

Political economy, as a specific discipline, applies neither to the family nor to those communities small enough to settle by common agreement the cooperation of their members and their exchange (or pooling) of goods and mutual services. Political economy begins only where free cooperation and reciprocity cease. It begins only with social production, i.e., production founded upon a social division of labor and regulated by mechanisms external to the will and consciousness of individuals—by market processes or by central planning (or by both).

“Economic man,” i.e., the abstract individual who underpins economic reasoning, has the unique characteristic of not consuming what he or she produces and not producing what he or she consumes. Consequently he or she is never troubled by questions of quality, usefulness, charm, beauty, happiness, freedom, or morality, but is affected only by exchange values, flows, and quantitative aggregates and balances.

Economists do not concern themselves with what individuals think, feel, and desire, but only with the material processes which, independently of their own will, human activities give rise to in a (social) context of limited resources.

It is impossible to derive an ethic from economic reasoning. Marx was one of the first to understand this. The choice he discerned was, very schematically, as follows:

- either individuals manage to unite and, in order to sub-ordinate the economic process to their collective will, replace the social division of labor with the voluntary cooperation of associated producers;
- or else they remain dispersed and divided, in which case the economic process will prevail over people’s aims and goals, and sooner or later a strong central state will, in the pursuit of its own rationality, impose by force the cooperation which the people were unable to achieve for themselves. The choice is simple: “socialism or barbarism.”

The ecologist stands in the same relation to economic activity as the economist to the convivial cooperation which rules family or community activities. Ecology, as a specific discipline, does not apply to those communities or peoples whose ways of producing have no lasting or irremediable effects on the environment—natural resources appear inexhaustible, the impact of human activity negligible. In the ideal case, the stewardship of nature is, like the art of healthy living, based on the unwritten rules of generally accepted wisdom.

Ecology does not appear as a separate discipline until economic activity destroys or permanently disturbs the environment and, in so doing, compromises the pursuit of economic activity itself, or significantly changes its conditions. Ecology is concerned with the external limits which economic activity must respect so as to avoid producing effects contrary to its aims or incompatible with its continuation.

In the same way that economics is concerned with the external constraints that individual activities give rise to when they generate unwanted collective results, ecology is concerned with the external constraints which economic activity gives rise to when it produces environmental alterations which upset the calculation of costs and benefits.

In the same way that economics belongs to a realm beyond reciprocity and voluntary cooperation, ecology belongs to a realm beyond that of economic activity and calculation, but...
without including it—it is not the case that ecology is a superior rationality which subsumes that of economics. Ecology has a different rationality: it makes us aware that the efficiency of economic activity is a limited one and that it rests upon extraneous economic conditions. It enables us to discover, in particular, that the economic effort to overcome relative scarcities engenders, beyond a certain threshold, absolute and insurmountable scarcities. The returns become negative: production destroys more than it produces. This inversion occurs when economic activity infringes upon the equilibrium of primary ecological cycles and/or destroys resources which it is incapable of regenerating or reconstituting.

To this type of situation, the economic system has in the past invariably responded by additional productive efforts; it tries to compensate with increased production for the scarcities engendered by increased production. It does not recognize that this response necessarily exacerbates such scarcities: that, beyond a certain threshold, measures favoring the circulation of automobiles increase congestion; that the increased consumption of medicine increases morbidity, while displacing its causes; that the increased consumption of energy creates forms of pollution which, as long as they remain uncontrolled at their source, can only be fought in ways which involve a new increase in energy consumption, itself polluting, and so on.

To understand and overcome these “counterproductivities,” one has to break with economic rationality. This is what ecology does: it reveals to us that an appropriate response to the scarcities and disease, to the bottlenecks and dead-ends of industrial-civilization, must be sought not in growth but in the limitation or reduction of material production. It demonstrates that it can be more effective and “productive” to conserve natural resources than to exploit them, to sustain natural cycles rather than interfere with them.

It is nevertheless impossible to derive an ethic from ecology. Ivan Illich is one of the first to have understood this. The alternatives which he sees before us can be stated schematically as follows:

- either we agree to impose limits on technology and industrial production so as to conserve natural resources, preserve the ecological balances necessary to life, and favor the development and autonomy of communities and individuals (this is the convivial option);
- or else the limits necessary to the preservation of life will be centrally determined and planned by ecological engineers, and the programmed production of an “optimal” environment will be entrusted to centralized institutions and hard technologies (this is the technofascist option, the path along which we are already halfway engaged). The choice is simple: “conviviality or technofascism.”

Ecology, as a purely scientific discipline, does not necessarily imply the rejection of authoritarian, technofascist solutions. The rejection of technofascism does not arise from a scientific understanding of the balances of nature, but from a political and cultural choice. Environmentalists use ecology as the lever to push forward a radical critique of our civilization and our society. But ecological arguments can also be used to justify the application of biological engineering to human systems.

3. Ecology and the Inversion of Tools

The preference for natural, self-regulating systems over systems relying on experts and institutions need not imply a quasi-religious exaltation of nature. It is not impossible for artificial systems to be, in certain respects, more efficient than natural ones. The preference for the latter should be defended as a rational choice, in both political and ethical terms—a preference for decentralized self-regulation over centralized other-regulation. The field of “health policy” provides us with a particularly striking example, which can serve as a paradigm.

Natural selection is the perfect case of decentralized self-regulation. It can be circumvented by the increasingly sophisticated interventions of the medical-care apparatus, which can save the lives of babies who would otherwise die in their first days or months. These individuals, however, will in turn tend to have offspring of whom a growing proportion will display hereditary defects or diseases. The resulting deterioration of the
genetic stock is already leading some geneticists to advocate a state-enforced policy of eugenics—that is, a regulation of the freedom to mate and procreate.

The abolition of natural self-regulation thus leads to the necessity for administrative regulation. Natural selection is in the end to be replaced by social selection.

The latter can, in certain respects, be regarded as more efficient than the former; eugenics would prevent the conception of deformed or non-viable individuals, whereas natural selection eliminates them only after conception or, often, only after birth. But there is another difference: natural selection occurs spontaneously, without any planned intervention. Eugenics, on the other hand, assumes a technobureaucracy capable of enforcing the administrative norms which it lays down. Natural self-regulation can only be replaced by regulating authority.

This example, in no way fanciful, is intended to illustrate the ecological principle that it is better to leave nature to work itself out than to seek to correct it at the cost of a growing submission of individuals to institutions, to the domination of others. For the ecologist's objection to system engineering is not that it violates nature (which is not sacred), but that it substitutes new forms of domination for existing natural processes.

Politically, the implication is obvious: the ecological perspective is incompatible with the rationality of capitalism. It is also wholly incompatible with the authoritarian socialism which (whether it relies on central economic planning or not) is the only kind which exists in the world today on a governmental level. The ecologist's position is not, by contrast, incompatible with a libertarian or democratic socialism: but it should not be confused with it. The ecologist's concern is working at another and more fundamental level: that of the material prerequisites of the economic system. In particular, it is concerned with the character of prevailing technologies, for the techniques on which the economic system is based are not neutral. In fact, they reflect and determine the relations of the producers to their products, of the workers to their work, of the individual to the group and the society, of people to the environment. Technology is the matrix in which the distribution of power, the social relations of production, and the hierarchical division of labor are embedded.

Societal choices are continually being imposed upon us under the guise of technical choices. These technical choices are rarely the only ones possible, nor are they necessarily the most efficient ones. For capitalism develops only those technologies which correspond to its logic and which are compatible with its continued domination. It eliminates those technologies which do not strengthen prevailing social relations, even where they are more rational with respect to stated objectives. Capitalist relations of production and exchange are already inscribed in the technologies which capitalism bequeaths to us.

The struggle for different technologies is essential to the struggle for a different society. The institutions and structures of the state are to a large extent determined by the nature and weight of its technologies. Nuclear energy, for example—whether "capitalist" or "socialist"—presupposes and imposes a centralized, hierarchical, police-dominated society.

The inversion of tools is a fundamental condition of the transformation of society. The development of voluntary cooperation, the self-determination and freedom of communities and individuals, requires the development of technologies and methods of production which:
- can be used and controlled at the level of the neighborhood or community;
- are capable of generating increased economic autonomy for local and regional collectivities;
- are not harmful to the environment; and
- are compatible with the exercise of joint control by producers and consumers over products and production processes.

Of course, it can be objected that it is impossible to change the tools without transforming society as a whole, and that this cannot be accomplished without gaining control over the state. This objection is valid providing it is not taken to mean that societal change and the acquisition of state power must precede technological change. For without changing the technology, the transformation of society will remain formal and illusory. The theoretical and practical definition of alternative technologies, and the struggle of communities and individuals to win, collec-
tively and individually, control over their own destinies, must be the permanent focus of political action. If they are not, the seizure of state power by people calling themselves socialists will not change fundamentally either the system of domination or the relations of men and women to each other and to nature. Socialism is not immune to technofascism. It will, on the contrary, fall prey to it whenever and wherever it sets out to enhance and multiply the powers of the state without developing simultaneously the autonomy of civil society.

This is why the ecological struggle is, in its present form, an indispensable dimension of the struggle against capitalism. It cannot be subordinated to the political objectives of socialism. Only where the left is committed to a fully decentralized and democratic socialism can it give political expression to ecological demands. The organized left, in the United States as in other countries, has not yet reached this stage; it has not incorporated ecological principles in either its practice or its program. It is for this reason that the ecological movement must continue to assert its specificity and its autonomy.

Ecological concerns are fundamental; they cannot be compromised or postponed. Socialism is no better than capitalism if it makes use of the same tools. The total domination of nature inevitably entails a domination of people by the techniques of domination. If there were no other options, it would be preferable to have a non-nuclear socialism than to have a nuclear socialism, for the former would weigh less heavily upon future generations.

4. Ecology and the Crisis of Capitalism

All production is also destruction. This fact can be overlooked so long as production does not irreversibly deplete natural resources. Resources may then appear inexhaustible. They regenerate themselves naturally—the grass grows back, along with the weeds. The effects of destruction appear wholly productive. More precisely: this destruction is the very condition of production. It has to be repeated again and again.

This process is unavoidable. The earth is not naturally hospitable to humankind. Nature is not a garden planted for our benefit. Human life on earth is precarious and, in order to expand, it must displace some of the natural equilibriums of the ecosystem. Agriculture is the first organized expression of this: it alters not only the balance between plant species but also between plant and animal ones. In particular, it entails a struggle against pests and diseases, a struggle which can be carried out by biological as well as chemical means—that is, by favoring certain species, considered “desirable,” so that they will control others, considered “undesirable.” In this way agriculture reshapes the surface of the earth.

Nature is not untouchable. The “promethean” project of “mastering or “domesticating” nature is not necessarily incompatible with a concern for the environment. All culture (in the double sense of this word) encroaches upon nature and modifies the biosphere. The fundamental issue raised by ecology is simply that of knowing:

- whether the exchanges, which human activity imposes upon or extorts from nature, preserve or carefully manage the stock of nonrenewable resources; and
- whether the destructive effects of production do not exceed the productive ones by depleting renewable resources more quickly than they can regenerate themselves.

On both counts, there is little doubt that ecological factors play a determining and aggravating role in the current economic crisis. This does not mean that these factors should be regarded as the primary causes of the crisis: we are dealing, rather, with a crisis of capitalist overaccumulation, intensified by an ecological crisis (and, as we shall see, by a social one).

To make this clearer, I shall deal separately with the different levels of this crisis:

a. The crisis of overaccumulation. In its advanced stages, the development of capitalism rests principally on the replacement of workers by machines, of living labor by dead labor. The machine, in effect, is work that has been accumulated and embodied in an inert, inanimate form capable of being expended in the absence of the worker. But machines are costly to produce; the investment of capital which they represent must be profitable,
which means: the investor expects a return greater than the cost of the installation. Insofar as it serves to produce this surplus, through the mediation of the workers who operate it, the machine is capital. The logic of capital is the pursuit of constant growth.

Grow or perish, that is the law of capital. Except in periods of prolonged stagnation, when the firms in a given sector reach an agreement to share the market and charge the same prices (which is usually called a cartel), the various enterprises compete with one another. They do this in the following manner: each tries to make its machines pay off as quickly as possible so as to be able to install even more efficient ones—machines which can produce the same volume of production with a smaller number of workers. This is called “increasing productivity.”

Thus, as advanced capitalism develops, more and more sophisticated and costly machines are operated by fewer and fewer workers, who are less and less skilled. In the costs of production the share of direct wages decreases, while the share of capital increases (which is to say: the amount of profit which must be made in order to pay off and renew the machines increases). In Marxist terminology, the “organic composition of capital” increases. Another way of describing this is to say that industry becomes more and more capital-intensive: it uses an increasing amount of capital to produce the same volume of commodities. It must therefore produce a larger mass of profits to replace and renew the machines, while at the same time compensating the investment capital (in large part loaned by banks) at a rate of interest satisfactory to the lenders.

Marx demonstrated that, sooner or later, the average rate of profit must decline: the more capital is used to produce the same volume of commodities, the more the profit which can be derived from this production diminishes in relation to the mass of capital employed. In other words, this mass cannot keep increasing without eventually reaching a limit.

But from the moment that the rate of profit begins to decline, the whole system is jammed: the machines cannot be made to turn out goods which yield the usual profit, nor, consequently, can they be replaced at the same rate as before; hence the production machinery (amongst other things) begins to fall off and the decline in production progressively spreads. In Marxist terms, there is “overaccumulation”: the share of capital in production has become so great (its organic composition so heightened) that it cannot reproduce itself at a normal rate. The “productivity” of capital declines. The value of the fixed capital, which cannot be made to yield a sufficient profit, declines to zero. This capital will, in fact, be destroyed: machines are discarded, factories closed down, workers laid off. The system is in crisis.

In order to avoid this crisis, the managers of capitalism are constantly forced to work against the tendency of the rate of profit to fall off. There are basically two means available to them:

- increasing the quantity of goods sold;
- increasing not the quantity but the price (the exchange value) of the goods sold, e.g., by making them more elaborate and sophisticated.

These two approaches are obviously not mutually exclusive. In particular, it is possible to increase sales by making products less durable, thus forcing people to change them more often; at the same time, these products can be made more complicated and expensive.

This is the nature of consumption in affluent societies; it ensures the growth of capital without increasing either the level of general satisfaction or the number of genuinely useful goods ("use values"), which people have at any given point in time. On the contrary: it requires an increasing quantity of products to provide the same level of need-satisfaction. Increasing amounts of energy, of labor, of raw materials, and of capital are "consumed" without people being significantly better off. Production becomes more and more destructive and wasteful; the destruction or obsolescence of products is built into them—their rapid deterioration is programmed.

Thus we have seen tin cans replaced by aluminum ones, which require fifteen times as much energy to produce; rail transport replaced by road transport, which consumes six to seven times as much energy, and uses vehicles which must be replaced more often; the disappearance of objects assembled with bolts and screws in favor of welded or molded ones, which
are thus impossible to repair, the reduction of the durability of stoves and refrigerators to around six or seven years; the replacement of natural fibers and leather with synthetic materials which wear out faster; the extension of disposable packaging, which wastes as much energy as non-returnable glass; the introduction of throwaway tissues and dishes; the widespread construction of skyscrapers of glass and aluminum, which consume as much energy for cooling and ventilation in the summer as for heating in the winter; and so on.

Predictably, this type of growth turned out to be a forward flight, not a lasting solution. Advanced capitalism sought to avoid falling rates of profit and the saturation of markets by an accelerated circulation of capital and the planned obsolescence of consumer products. We shall see that it thereby created effects contrary to its original objectives (which economists call “side-effects” or “disutilities”) while at the same time generating new relative scarcities, new dissatisfaction, and new forms of poverty.

This forward flight, which was in any event bound to culminate in economic crisis, came to a stop with the so-called oil crisis. The latter did not cause the economic recession; it merely revealed and aggravated the recessory tendencies which had been brewing for several years. Above all, the oil crisis revealed the fact that capitalist development had created absolute scarcities; in trying to overcome the economic obstacles to growth, capitalist development had given rise to physical obstacles.

b. The crisis of reproduction. Under capitalism, absolute scarcity is normally reflected in soaring prices before it appears as physical shortage. According to the doctrine of liberal (or neoclassical) economics, the rising price of a scarce good results in the increased production of that good, for this production is becoming more profitable. This line of reasoning assumes however that the scarce good is always producible. But the scarcities which have appeared or been aggravated since the middle of the 1960s are principally those of non-producible goods. Increased human activity is not capable of making these goods available in greater quantities; they are scarce because they are to be found only in limited quantities in nature.

This applies to the availability of land in heavily industrialized areas; to air, water, and the natural fertility of the soil; to forests, fisheries, and an increasing number of raw materials. The explosive rise in prices served only to aggravate the economic crisis or rather to hasten its arrival, for it contributed to the falling rate of profit in two ways:

- When air, water, and urban land become scarce, it is impossible to produce greater quantities of them no matter what price is assigned to them. They can only be shared or redistributed in a different way. As far as land is concerned, this means building highrises or underground, or paying higher and higher prices for agricultural land on which to build factories, cities, and roads. In the case of air and water, it means that the available supply must be recycled. This has become necessary not only in Japan but also in the Rhine valley: the German chemical industry has had to forego expansion because the investments required for atmospheric recycling would have been too great.

The need for such recycling has a precise economic significance: it means that from now on it has become necessary to reproduce that which was previously abundant and free. Air and water, in particular, have become means of production like any others: industries must now assign a portion of their investments to antipollution equipment in order to restore to the air and water some of their original properties. The consequence of this requirement is a further increase in the organic composition of capital (i.e., the share of capital per amount of commodities produced). But there is no corresponding increase in the amount of merchandise produced; the air and water recycled or depolluted by the chemical industry cannot be resold. The falling rate of profit is thus aggravated; the productivity of capital encounters physical limits. And those limits created by pollution are not the only ones.

- The exhaustion of the most accessible mineral deposits, i.e., those which cost the least to exploit, constitutes a second physical limitation to the ability of industrial capital to return a profit. In effect, new deposits of raw materials cannot be discovered and exploited except at the cost of higher investments than in the past. The financing of these investments implies a
higher price for primary products; the higher price of such products in turn bears on the profits of the manufacturing industries at a time when these are tending to decline for the reasons already outlined.

Moreover, mineral prospecting and extraction will in the future require even heavier investment than at present. In view of the rapidly rising prices of the raw material recovered at these higher costs, processing industries must begin developing new technologies which make more efficient use of primary products, including energy. This also requires further investments.

This helps to explain the original and seemingly paradoxical characteristics of the present crisis: despite existing over-capacities, despite the declining rate of profit, and despite the recession, investment remains at an unusually high level and prices continue to rise. Traditional economic reasoning is incapable of accounting for this paradox, which only becomes intelligible when looked at in terms of the underlying physical realities.

Capital, under these conditions, encounters unavoidable difficulties in financing further investments—it becomes incapable of ensuring its own reproduction. The replacement of industrial capital (which is to say, _grosso modo_, of the physical apparatus of production) can no longer be accomplished by the transfer of a surplus levied upon consumption—the reproduction of the system simply costs more than it yields. In other words, _industry consumes more for its own needs_: it delivers fewer products to the final consumer than it used to. Its efficiency has diminished; its physical costs have increased. This is where we are today.

The chain of events which led up to this situation can be broken down into two principal phases:

- During the first phase, production becomes increasingly wasteful, i.e., destructive, in order to avoid a crisis of over-accumulation. It speeds up the destruction of the non-renewable resources on which it depends; and it overconsumes resources which are in principle renewable (air, water, forests, soil, etc.) at a pace which rapidly renders them scarce as well.
- During the second phase, confronted with the depletion of pillaged resources, industry makes frantic efforts to overcome the scarcities engendered by increased production by further increasing production. But the products of this additional production are not added to final consumption; they are consumed by industry itself.

From the point of view of the final consumer, it is as if industry has to produce more—and hence to consume more, in the form of wealth and resources—in order to maintain the same level of consumption for the population. The balance between production and consumption is shifted at the expense of the latter. The overall efficiency of the system goes down. The altering of property relations (i.e., by nationalization) is incapable of remedying this decline in efficiency. It can at most—and during a limited period—facilitate the transfer of resources from consumption to investment. But _nationalization cannot initiate a new phase of sustained growth in material consumption_. For the obstacles to growth have become substantive ones.

In summary, we are dealing with a classical crisis of over-accumulation, aggravated by a crisis of reproduction which is due, in the final analysis, to the increasing scarcity of natural resources. The solution to this crisis cannot be found in the recovery of economic growth, but only in an inversion of the logic of capitalism itself. This logic tends intrinsically towards maximization: creating the greatest possible number of needs and seeking to satisfy them with the largest possible amount of marketable goods and services in order to derive the greatest possible profit from the greatest possible flow of energy and resources. But the link between “more” and “better” has now been broken. “Better” may now mean “less”: creating as few needs as possible, satisfying them with the smallest possible expenditure of materials, energy, and work, and imposing the least possible burden on the environment.

This can be done without impoverishment or social injustice, without reducing the quality of life, providing we are prepared to attack the source of poverty. This source is not the lack of production as such but the nature of the goods produced, the pattern of consumption which capitalism promotes, and the inequality which drives it. I shall try to show this in greater detail in the following two sections.
5. The Poverty of Affluence

A richer life is not only compatible with the production of fewer goods, it demands it. Nothing—other than the logic of capitalism—prevents us from manufacturing and making available to everyone adequate accommodation, clothing, household equipment, and forms of transportation which are energy-conserving, simple to repair, and long-lasting, while simultaneously increasing the amount of free time and the amount of truly useful products available to the population.

The connection between “living better” and “producing less” seems to be already well understood by a large segment of the population. In France, according to one recent survey:
- 53% of the population would accept a reduction in growth and material consumption, providing it was coupled with changes in lifestyles;
- 68% would prefer more classical and longer-lasting clothes to those which must be discarded after a single season;
- 75% consider throwaway packaging and non-returnable containers needlessly wasteful;
- 78% would welcome one night a week without television as an opportunity to spend time with each other and have face-to-face conversations.13

In industrially advanced societies, people do not stay poor for lack of a large enough supply of consumer goods, but because of the nature of the goods produced and the way of producing them. To eliminate poverty we no longer need larger quantities of goods but only different goods, to be produced in a different way.

The persistence of poverty in advanced industrial societies cannot be ascribed to the same factors as the existence of poverty in the so-called underdeveloped countries. Whereas the latter can, in the final analysis, be attributed to physical shortages, which can be overcome by the development (under specified conditions) of the forces of production, the persistence of poverty in rich countries must be attributed to a social system which produces poverty at the same time it produces increasing wealth. Poverty is created and maintained, that is to say produced and

reproduced, at the very pace at which the level of aggregate consumption rises.

Before explaining the mechanisms underlying this reproduction, it is important to recognize that the scarcity of natural resources is not experienced in the same way when these resources are equitably distributed as when their distribution is inequitable. Marshall Sahlin has convincingly demonstrated that poverty and inequity are mutually exclusive: physical scarcity, as in the so-called primitive societies, may create frugality or even utter destitution, but it cannot cause “poverty” as long as those resources which do exist are equally accessible and distributed to everyone.13 Poverty entails, by definition, the privation of wealth available to others: the rich. Just as there are no poor when there are no rich, so there can be no rich when there are no poor: when everyone is “rich” no one is, and the same is true for poverty. As opposed to destitution, which refers to a shortage of the necessities of life, poverty is essentially a relative condition.

Following these definitions, we can distinguish three major causes of poverty in industrialized societies:

a. Detrimental appropriation (accaparement). This is the most obvious cause of poverty: the rich monopolize resources which would otherwise be available in sufficient quantities for all. A typical instance of this is the amassing of land and water rights where these are in principle sufficient to meet the needs of everyone—the equitable distribution of such resources is openly denied. The monopolization of these resources by the few cannot be accounted for by the fact of scarcity—which, on the contrary, follows from it—but only by the domination of one class or caste over another.14

b. Exclusive access. We speak of exclusive access when the dominant minority bars the rest of the people from access to those naturally-occurring resources which, either because of their scarcity or because of their intrinsic character, cannot be equally distributed or made available to everyone at the same time. A typical example is the establishment of rights of access to natural areas whose attractiveness might be destroyed if “invasion” by large numbers of people; or exacting a price for natural amenities such as clean air, natural light, or silence, which cannot be
preserved in a given location without restricting access to it.

The establishment of exclusive rights is most often achieved by the industrialization of access: to get access to a beach, one has to rent a hotel room, buy a meal in a beach restaurant, or purchase a villa; to enjoy sunlight or quiet, it may be necessary to rent or purchase a dwelling which is more expensive because of the limited availability of these resources, although they are in themselves free.

In these instances, exclusive access does not itself create the scarcity—scarcity is real, and there may be no remedy for it. Exclusive access must not, therefore, be regarded as an ultimate obstacle to equitable distribution; it really preserves something which if equally distributed would disappear, and for which, therefore, such distribution is not possible. But this preservation is accomplished, in most societies, for the exclusive benefit of a minority for whom this exclusive access also constitutes a symbol of wealth and power.

The example of the availability of light and quiet also demonstrates the possibility of developing new inequalities—and thereby new divisions between the rich and the poor—by creating artificial scarcities in otherwise abundant resources. This creation of artificial scarcities is one of the principal mechanisms by which poverty is reproduced. By destroying, without apparent necessity or advantage, previously abundant resources, and then instituting rights of access to or commercializing those which remain, capitalism creates new forms of privilege and poverty, and prevents the elimination of poverty conditions.

c. Distinctive consumption. We use this term to refer to the consumption of goods and services of doubtful use value but which, because of their limited availability or high price, confer status or prestige upon those who have access to them. Distinctive consumption may entail detrimental appropriation, but need not invariably do so. Travelling by supersonic aircraft, for example, involves a detrimental and wasteful expenditure of resources. The Concorde represents the detrimental use of a huge quantity of labor which, in principle, could have been devoted to purposes beneficial to the society as a whole; moreover, each flight involves the detrimental appropriation of large quantities of fuel, thus contributing to the further depletion of the world’s oil reserves.

The Concorde is at the same time a source of poverty independent of the detrimental appropriation of social resources which it implies; it conspicuously demonstrates the inequality of desires and of the power to fulfill them. The desire to fly at twice the speed of sound in order to save four hours between Paris and New York is above all the desire for something exceptional, which designates as exceptionally important and powerful those who obtain it. People who utilize this means of transport do not choose it simply for the pleasure or benefits which it provides (subsonic travel is in fact more comfortable) but to assert their distinctive right to a scarce good, reserved by definition to the privileged and the powerful.

Distinctive consumption is the second major mechanism involved in the reproduction of poverty. Once a product enters into common usage, it is time to launch a new product. The product, which is initially scarce and expensive because of its very novelty, enables the rich—indeed all the superiority of the new product over the old one—to distinguish themselves as rich and to reestablish the poverty of the poor. This is again what Ivan Illich calls “modernization of poverty.”

The elimination of poverty will thus never be accomplished by increasing production. What is required is a reorientation of production according to the following criteria:

- socially produced goods must be available to everyone;
- their production must not entail the destruction of naturally abundant resources;
- they must be designed in such a way that, by becoming available to all, they do not cause pollution or bottlenecks which destroy their use value.

But that’s not all. The reorientation of production to conform to these criteria also presupposes a “cultural revolution”: poverty will only disappear if the inequalities of power and rights, which are its principal source, are also eradicated. Indeed, differences in consumption are often no more than the means through which the hierarchical nature of society is expressed. In extreme cases, the one and only purpose of distinctive consump-
tion is to constitute others as poor, not to acquire anything which is intrinsically desirable. This is the case, for example, in the consumption of precious stones or high fashion articles. These conspicuous goods do not even procure pleasure, power, or comfort: they simply demonstrate the power of acquiring things which are beyond the reach of others. The only function of these things is to make social inequality tangible.

Consequently, equality in consumption can only be the result of, and not a means to, the achievement of social equality. The latter depends upon the abolition of hierarchical order. If a hierarchy of powers and functions persists, it will soon reestablish both material and symbolic inequalities (as has occurred in authoritarian socialist societies). If it is abolished, material inequalities will lose their social significance.

6. Equality and Difference

Material inequality ceases to be a major preoccupation when it ceases to be the symbol of hierarchical stratification: material well-being is neither insulting nor impoverishing for others when it is not accompanied by invidious distinctions or power over other people's lives. Physical poverty is not humiliating when it proceeds from choosing to be satisfied with less and not from being relegated to the lower ranks of society.

The unwillingness of many contemporary Marxists to recognize these facts demonstrates to what extent their own cultural universe and value-system have been flattened by commodity relations; inequality for them signifies not merely that people are “different” but that they are “higher up” or “lower down,” depending on whether they earn “more” or “less”. It is, however, this one-dimensionality of values, lifestyles, and individual goals which has permitted the extension of commodity relations and wage-labor to all domains of human activity. Competition, resentment, and acquisitiveness in the name of equality or “social justice” are only possible in a socially homogeneous universe where differences are of a purely quantitative and hence measurable character. The categories of “more” and “less” presuppose a sociocultural continuum in which inequality is conceived only as an economic difference between inherently equal individuals.

This spurious definition of inherent equality is the cultural foundation of capitalism: it is what gave rise to, or at least made plausible, the monetary evaluation of all differences and their translation into income inequalities. Hence the fierce repression, associated with the rise of the bourgeoisie, of those minorities and cultural deviants who—by their attachment to the uniqueness and otherness of their values—threatened the one-dimensionality of the sociocultural system essential to the dominance of commodities. Hence the idea of universal compulsory education, which we now recognize, tends by its very uniformity to favor the most privileged. Hence the growing antipathy of the government to the claims of professional ethics—the tradition of principled autonomy which the members of different professions could invoke to refuse the sale or hire of their skills.

The meaning and the content of each activity have thus been suppressed and replaced by a monetary “compensation,” that is to say, by a certain exchange value. Increasing the amount of this compensation becomes the overriding objective of all productive social activity: of “work.” Work is thus emptied of all substance, reduced to a tribute measured by its duration, and purchased from the worker like any other commodity. It is our income which determines our worth, not our activity—which is stripped of all independent purpose. Alienation of labor makes money (purchasing power) into the principal aim of the individual.

This is what lies behind the unending pursuit of an ever-receding equality: those in each income category seek parity with those at the next level of income who, in turn, attempt to “catch up” with those above them. Beyond a certain level, increases in income are sought not for their own sake or for the additional consumption which they represent. Interestingly, they reflect above all the demand that society recognize us as having the same rights, the same standing, and social value we see attributed to others. In a society based on the unequal remuneration of jobs equally devoid of meaning, the demand for equality is the hidden source of the continuing escalation of consumer demand, dissatisfaction, and social competitiveness.

The stabilization of the level of consumption will thus re-
main impossible until:
- all socially necessary tasks receive equal social recognition (and rewards); and
- the possibility is given to everyone to actualize the infinite diversity of abilities, desires, and personal tastes through an unlimited variety of free individual and collective activities.

The reduction of the duration of socially necessary labor and the possibility of using one's free time in productive ways are the essential preconditions for the disappearance of commodity relations and competition. Different standards of living and lifestyles will cease to signify inequality when they are the result not of differences in income but of the diversity of pursuits by communities and individuals during their free time.

7. Social Self-Regulation and Regulation from Outside: Civil Society and the State

The rift between production and consumption, between work and "leisure," is the result of the destruction of autonomous human capabilities in favor of the capitalist division of labor. This rift enables the sphere of commodity relations to be perpetuated and indefinitely extended. Having been deprived of all possibility of control over the purpose or the character of labor, the realm of freedom becomes exclusively that of non-work periods. But since all creative or productive activity of any social consequence is nevertheless denied during "free" time, this freedom is itself reduced to a choice amongst objects of consumption and passive distractions.

The destruction of the autonomous capacities of the worker does not therefore result solely from the fragmentation of work and the elimination of skills introduced by the "scientific organization of labor." It is not enough to attack the organization of labor. The destruction of autonomous capacities is carried out prior to the division of labor; it is accomplished by schooling.

The basic lessons taught in school are that there is a competent authority for every question and a specialist for every task; that the "all-sided" individual, whom Marx refers to as "integral" because his or her capabilities have been fully developed, can never be

anything but a " dilettante" or a "dabbler." Schooling discourages independence and versatility in favor of graded "qualifications," which have the essential characteristic of having no use value for the person who acquires them, but only an exchange value in the marketplace. You can't do anything for yourself with what you learn in school. The only way to make use of the qualifications bestowed by schools is through the mediation of a third person, by trying to sell oneself on the "job market."

Schools do not teach us how to speak foreign languages (or even our own, for that matter), how to sing or use our hands and feet, how to eat properly, how to cope with the intricacies of bureaucratic institutions, how to look after children or take care of sick people. If people do not sing any more but buy millions of records to have professionals sing for them, if they don't know how to nourish themselves but pay doctors and the pharmaceutical industry to treat the symptoms of an improper diet, if they don't know how to raise children but only how to hire the services of childcare specialists "certified by the state," if they don't know how to repair a radio or fix a leaky faucet or take care of a strained ankle or cure a cold without drugs or grow a vegetable garden, etc., it is because the unacknowledged mission of the school is to provide industry, commerce, the established professions, and the state with workers, consumers, patients, and clients willing to accept the roles assigned to them.

The institutional function which has been passed on to the school is to perpetuate and confirm—not to counter or correct—the disintegrating, infantilizing, and deculturing action of society and the state. In an educative civil society—that is to say, one underpinned by a living culture—the school could not have the effects that it has or be what it is today. It is what it is because it participates in the general process whereby knowledge, culture, and autonomy are expelled from work, from life outside work and the space in which it is lived, from the relations between people and with nature, to be concentrated in specialized institutions where, inevitably, they become institutional specialties.

Unemployment, i.e., the inability to produce other than by working for someone else, is the final absurdity of a system based on regulation from outside.

The destruction of autonomous capabilities is thus to be
understood as part of a process, in part deliberately planned, tending to strengthen the domination of capital—or of the state which assumes its functions—over the worker not only as a worker but also as a consumer. By making it impossible for individuals to produce, within the extended family or the community, any of the things which they consume or aspire to, capitalism (and the state) forces them to satisfy the totality of their needs by commodity consumption (i.e., by the purchase of institutionally produced goods and services); at the same time, capitalism reinforces its control over this consumption.

This destruction of autonomous capabilities and the cultural uniformity which it brings about are necessarily associated with the destruction of civil society by the state. By "civil society" I mean the web of social relations that individuals establish amongst themselves within the context of groups or communities whose existence does not depend on the mediation of institutional authority of the state. It includes all relations founded upon reciprocity and voluntarism, rather than on law or judicial obligation.

It includes, for example, the relations of cooperation and mutual aid which can arise in communities, neighborhoods, or among residents of the same building; the cohesion and solidarity of older working class areas; the voluntary associations and cooperatives created by people themselves in their common interest; the family relations and larger domestic communities; in short, the totality of exchanges and communications which constitute or once constituted the "life" of the neighborhood or small town.

This whole web of self-regulating and noninstitutional social relations is dislocated by the social and territorial division of labor which accompanies industrialization. Rural depopulation destroys village communities, swells the suburbs and juxtaposes isolated individuals in dormitory cities whose physical design presents further obstacles to communication and personal exchange. The length of travel between home and work increases fatigue. And the crowding of cities, streets, and transit systems makes of us "all" that pure quality of anonymous humanity which, by its very density, constitutes an obstacle to the comfort and mobility of "each."

Work itself is suffered rather than accomplished, the workers being shaped by the machine served rather than making it serve themselves in the shaping of inanimate matter. This work blunts their faculties and leads to the atrophy of their capacity to produce for themselves.

Fatigue, lack of space, lack of time, and lack of neighborhood interactions contribute to the decline of mutual aid: commercialized services—eventually supplemented by public agencies, household appliances, and subsidized facilities—come to fulfill the roles previously assigned to parents, relatives, and neighbors.

This decline of civil society is everywhere accompanied by a reinforcement and an expansion of the institutional activities of the state. Disconnected individuals call on the state to compensate, by an ever-greater social presence, for the disappearance of their capabilities to help each other, to protect each other, to care for each other, and to raise their own children. The extension of institutional responsibility promotes further professionalization, specialization, and the subversion of all activities—hence accelerating the decline of civil society.

This displacement of civil society by the state corresponds, at the political level, to the replacement of self-regulation by regulation from outside. What has been said about natural selection applies equally here. Regulation from outside can indeed be more efficient than self-regulation: the concentration of production in large units, central planning (whether by corporate management or by the state), the fragmentation of work, and the resulting quasi-militarization of the workforce can be accompanied at least up to a certain point by increased efficiency.

Industrial concentration entails, however, an inevitable geographical concentration and specialization of functions. The result is that each geographical collectivity—neighborhood, town, city, region—no longer functions in relation to its own needs but produces to serve the totally abstract needs of faraway and anonymous users. No one consumes what he or she produces or produces what he or she consumes. The production of large specialized factories is necessarily regulated externally by the "market" and/or the state, which is to say by other large
institutions (banks, brokerages, sales offices, administrative agencies) specializing in regulation from outside. 23

The improvement in efficiency thus has as its counterpart a proliferation of bureaucracy which entails growing costs, rigidities, and slowdowns of its own; increases the centralization of power and the uniformity of the individual; and—beyond a certain point—leads inevitably to wastefulness, squandering of energy and resources, and eventually diminished efficiency. The withering away of civil society under the aegis of the state thus initiates the withering away of basic freedoms and the establishment of a more or less militarized social system in which the state runs everything. It is customary to call such societies “totalitarian” because in them the state has wholly supplanted civil society and has become a “total state.” 21

We have virtually reached this stage today. No social or cultural activity, no civic improvement or productive process can be initiated by those directly concerned without the intervention, authorization, regulation, or supervision of some “competent authority.” No initiative can be taken from below without designating someone as “responsible”—responsible not to fellow citizens but before the law. No work can be done or carried out unless it is assigned, i.e., unless its character and purpose have been established by an institutional “employer.” No voluntary association of individuals can be formed without having to give an institutional account of itself, without having the established leadership attempt to subsume its activities or circumscribe its objectives.

With needs determined by a series of institutions, professions, prescriptions, and rights, the citizen is invited to behave primarily as a consumer, a customer, a client who is legally entitled to a series of services, facilities, and forms of assistance. The citizen no longer consumes those goods and services which correspond to the autonomous needs which he or she feels, but those which correspond to the heteronomous needs attributed to him or her by the professional experts of specialized institutions. 22

The divergences between contending political parties are mainly over the character and extent of institutional treatment to be meted out for institutionally defined needs. In politics, too,

citizens are treated as consumers of policies devised and implemented for them by those “in charge”; they can choose between political parties in the same way they can choose between different brands of detergent. Let an individual refuse this choice and he or she will be dismissed as “apathetic.” Discouraged from doing anything by or for themselves, deterred from associating with others in order to create—according to their own preferences—their own way of working, of housing themselves, of producing, moving about, consuming, living, people are encouraged instead to seek new forms of assistance, “from above,” to fill up the last spaces left open to their own initiative.

Against this fundamental tendency, the limited “self-management” of municipalities or factories is helpless to withstand or counteract the increasing hegemony of the state. What is required at the same time is that the size, functioning, and organization of communities and institutions be opened up to provide new spaces for free action which permit self-regulation to bear upon the what and not only the how.

Local self-management of centrally regulated units is an absurdity, or at least a mystification. Such “self-management” is necessarily instituted by the system or by the state itself, and hence has lost its autonomy even before it has gained it. It can in no way obviate or even significantly modify the hazards and constraints inherent in large systems, whose very scale and complexity require the coordination and external regulation of their various units.

Self-management is meaningless in a concentrated and specialized economy. Large cities which have specialized in the production of a single commodity, such as steel or tires, are dependent on business cycles and market fluctuations beyond their influence or control. Demands for local self-determination and/or worker management of factories are vacuous when big business corporations, or even worse, a single specialized subsidiary, are the sole employers and by far the main taxpayers.

Self-management necessarily entails social and economic units that are small enough and diverse enough to provide the community with outlets for a wide variety of human talents and capacities, with the basis for a rich diversity of human exchanges and interactions, and with the possibility of adjusting at
least part of the production to local needs and preferences, thus ensuring a basic minimum of self-reliance.

In short, self-management presupposes tools capable of being self-managed. The creation of these tools is technically feasible. It is not a question of reverting to cottage industry, to the village economy, or to the Middle Ages, but of subordinating industrial technologies to the continuing extension of individual and collective autonomy, instead of subordinating this autonomy to the continuing extension of industrial technologies.23 In Illich's terms, "the value of the system of tools depends on its ability to integrate the outputs of heteronomous production with the spontaneous desires and personal needs of the people."

The redefinition and redistribution of the system of tools evidently presupposes a restructuring of societal institutions and of the state. There can be no question of abolishing the latter by a single stroke, but only of making it wither away through the expansion of civil society.24 Against the centralizing and totalitarian tendencies of both the classical Right and the orthodox Left, ecology embodies the revolt of civil society and the movement for its reconstruction.

8. Seven Theses by Way of Conclusion

A number of conclusions can be drawn from the partial analyses which make up this essay. I shall try to state them succinctly here, as theses, and then illustrate them in the form of a utopia for modern society.

1. The causes of the current crisis of capitalism are the over-development of productive capacities and the destructiveness of the technologies they are based on; this over-development and destructiveness aggravates existing scarcities while generating new ones. The crisis cannot be overcome except by a new mode of production which, breaking with current economic rationality, is based on the careful stewardship of renewable resources and the decreasing consumption of energy and raw materials.

2. The overcoming of current rationality and the reduction of material consumption can be brought about by technofascist central regulation as well as by convivial self-management. Technofascism cannot be prevented except by the expansion of civil society, which depends in turn on the expansion of tools and technologies which foster the sovereignty of the individual and the community.

3. The connection between "more" and "better" has been broken. "Better" may now mean doing with less. It is possible to live better by working and consuming less, provided we produce more durable things as well as things which do not destroy the environment or create insurmountable scarcities once everyone has access to them. Social production should be reserved for those things which remain useful to each when distributed to all—and vice versa.

4. Poverty in wealthy countries is caused not by insufficient production but by the kinds of goods produced, the methods used to produce them, and their inequitable distribution. Poverty will not be eradicated until there is an end to the social production of scarce luxuries, that is, to say, of goods which are reserved and exclusive by nature. Only that which neither privileges nor deems anyone deserves to be produced socially.

5. Unemployment in wealthy societies reflects the decreasing amount of socially necessary labor time. It demonstrates that everyone could work less provided everyone worked. The equal social recognition and remuneration of all socially necessary work is the essential condition for both the elimination of poverty and the distribution of work amongst all those capable of it.

6. Once social labor is limited to that required for socially necessary production, the reduction of working hours can be accompanied by the expansion of self-directed and freely chosen activities. Over and above the essentials guaranteed by social production, people will be able to use their free time to produce, individually or collectively, whatever else seems appropriate to them. The production of an unlimited variety of goods and services by neighborhood cooperatives and in neighborhood facilities will ensure the expansion of the realm of freedom and the decline of commodity relations—the expansion of civil society and the withering away of the state.
7. The uniformity of consumption patterns and of lifestyles which characterizes present society will disappear with the disappearance of social inequality. Individuals and communities will distinguish themselves and diversify their patterns of living beyond anything conceivable today. These differences will, however, be the result of the different uses to which they put their time and resources, and not of unequal access to power and social rewards. The development of autonomous activities during the free time available to everyone shall be the only source of distinction and of wealth.

To illustrate these theses, I shall describe one of several possible utopias. The conclusions stated above could of course be given a different expression from the one suggested here: its only function is to liberate the imagination as to the possibilities for change.

When they woke up that morning, the citizens asked themselves what new turmoil awaited them. After the elections, but during the period of transition to the new administration, a number of factories and enterprises had been taken over by the workers. The young unemployed, who for the previous two years had been occupying abandoned plants in order to engage in “wildcat production” of various socially useful products, were now joined by a growing number of students, older workers who had been laid off recently, and retired people. In many places, empty buildings were being transformed into communes, production cooperatives, or “alternative schools.” In the schools themselves, the older pupils were taking the lead in practicing skills for self-reliance and, with or without the collaboration of the teachers, establishing hydroponic gardens and facilities for raising fish and rabbits; in addition, students were beginning to install equipment for woodworking, metalworking, and other crafts which had for a long time been neglected or relegated to marginal institutions.

The day after the new government came into office, those who set out for work found a surprise awaiting them: during the night, in most of the larger cities, white lines had been painted on all the major thoroughfares. Henceforth these would have a corridor reserved for buses, while on the sidestreets similar corridors were set aside for bicyclists and motorcyclists. At the major points of entry to each city, hundreds of bicycles and mopeds were assembled for use by the public, and long lines of police cars and army vans supplemented the buses. On this morning, no tickets were being sold or required on the buses or suburban trains.

At noon, the government announced that it had reached the decision to institute free public transportation throughout the country, and to phase out, over the next twelve months, the use of private automobiles in the most congested urban areas. Seven hundred new tramway lines would be created or reopened in the major metropolitan centers, and twenty-six thousand new buses would be added to city fleets during the course of the year. The government also announced the immediate elimination of sales tax on bicycles and small motorbikes, thus reducing their purchase price by twenty per cent.

That evening, the President of the Republic and the Prime Minister went on nationwide television to explain the larger design behind these measures. Since 1972, the President said, the GNP per person in France has reached a level close to that of the United States—the difference varying between five and twelve per cent according to the fluctuations in the value of the franc, which has been notoriously undervalued. “Indeed, my fellow citizens,” the President concluded, “we have nearly caught up with the U.S. But,” he added soberly, “this is not something to be proud of.”

The President reminded his listeners of the period, not so distant, when the standard of living of Americans seemed an impossible dream to French men and women. Only ten years ago, he recalled, liberal politicians were saying that once the French worker began earning
American wages, that would be the end of revolutionary protests and anticapitalist movements. They had been, however, profoundly mistaken. A large proportion of French workers and employees were now receiving salaries comparable to those being paid in the U.S. without this having diminished the level of radical activism. "On the contrary. For in France, as in the United States, the people find themselves having to pay more and more to maintain an increasingly dubious kind of well-being. We are experiencing increasing costs for decreasing satisfactions. Economic growth has brought us neither greater equity nor greater social harmony and appreciation of life. I believe we have followed the wrong path and must now seek a new course." Consequently, the government had developed a program for "an alternative pattern of growth, based on an alternative economy and alternative institutions." The philosophy underlying this program, the President stated, could be summed up in three basic points:

1. "We shall work less." Until now, the purpose of economic activity was to amass capital in order to increase production and sales, and to create profits which, reinvested, would permit the accumulation of more capital, and so on. But this process must inevitably reach an impasse. Beyond a certain point, it could not continue unless it destroyed the surplus which it had created. "We have reached that point today," the President said. "It is, in fact, only by wasting our labor and our resources that we have managed in the past to create a semblance of the full employment of people and productive capacities."

In the future, therefore, it was necessary to consider working less, more effectively, and in new ways. He said that the Prime Minister would spell out the details of proposed measures for change in this direction. Without going into them, the President nevertheless stated that they would give substance to the following principle: "Every individual will, as a matter of right, be entitled to the satisfaction of his or her needs, regardless of whether or not he or she has a job." He argued that once the productive machinery reaches the level of technical efficiency where a fraction of the available workforce can supply the needs of the entire population, it is no longer possible to make the right to a full income dependent on having a full-time job. "We have earned," the President concluded, "the right to free work and to free time."

2. "We must consume better." Until now, products had been designed to produce the greatest profit for the firms selling them. "Henceforth," the President said, "they will be designed to produce the greatest satisfaction for those who use them as well as for those who produce them."

To this end, the dominant firms in each sector would become the property of society. The task of the great firms would be to produce, in each area, a restricted number of standardized products, of equal quality and in sufficient amounts, to satisfy the needs of all. The design of these products would be based on four fundamental criteria: durability, ease of repair, pleasantness of manufacture, and absence of polluting effects.

The durability of products, expressed in hours of use, would be required to appear alongside the price. "We foresee a very strong foreign demand for these products," the President added, "for they will be unique in the world."

3. "We must re-integrate culture into the everyday life of all." Until now, the extension of education had gone hand in hand with that of generalized incompetence.

Thus, said the President, we unlearned how to raise our own children, how to cook our own meals and make our own music. Paid technicians now provide our food, our music, and our ideas in prepackaged form. "We have reached the point," the President remarked, "where parents consider that only state-certified professionals are qualified to raise their children adequately." Having earned the right to leisure, we appoint professional buffoons to fill our emptiness with electronic entertainment, and content ourselves with complaining about the poor quality of the goods and services we consume.

It had become urgent, the President said, for individuals and communities to regain control over the organization of their existence, over their relationships and their environ-
ment. "The recovery and extension of individual and social autonomy is the only method of avoiding the dictatorship of the state."

The President then turned to the Prime Minister for a statement of the new program. The latter began by reading a list of twenty-nine enterprises and corporations whose socialization would be sought in the National Assembly. More than half belonged to the consumer goods sector, in order to be able to give immediate application to the principles of "working less" and "consuming better."

To translate these principles into practice, the Prime Minister said it was necessary to rely on the workers themselves. They would be free to hold general assemblies and set up specialized groups, following the system devised by the workers of Lip, where planning is done in specialized committees, but decisions are taken by the general assembly. The workers should allow themselves a month, the Prime Minister estimated, to define, with the assistance of outside advisers and consumer groups, a reduced range of product models and new sets of quality standards and production targets. New management systems had already been devised by a semi-clandestine group of Ministry of Finance officials.

During this first month, said the Prime Minister, production work should be done only in the afternoons, the mornings being reserved for collective discussion. The workers should set as their goal the organizing of the productive process to meet the demands for essential goods, while at the same time reducing their average worktime to twenty-four hours a week. The number of workers would evidently have to be increased. There would, he promised, be no shortage of women and men ready to take these jobs.

The Prime Minister further remarked that the workers would be free to organize themselves in such a way that each individual could, for certain periods, work more or less than the standard twenty-four hours for the same firm. They would be free to have two or three part-time jobs, or,

for example, to work on construction during the spring and in agriculture towards the end of the summer—in short, to learn and practice a variety of skills and occupations. To facilitate this process, the workers themselves would be helped to set up a system of job exchanges, taking into account that the 24-hour week, and the monthly salary of 2000F ($500) to which they would be entitled, should be regarded as an average.

Two people, said the Prime Minister, should be able to live quite comfortably on 2000F a month, considering the range of collective services and facilities which would be available to them. But no one need feel restrained by this: "Luxuries will not be prohibited. But they must be obtained by additional work." As examples, the Prime Minister cited the following: a secondary residence or summer cottage represented about three thousand hours of labor. Anyone seeking to acquire one would work, in addition to the twenty-four hours a week, three thousand hours in the building and construction sector, of which at least a thousand hours would need to be completed before a loan could be raised. Other objects classified as non-necessities, such as private automobiles (which represented about six hundred hours of labor), could be acquired in the same fashion. "Money itself will no longer confer any rights," the Prime Minister stated. "We must learn to determine the prices of things in working hours." This labor-cost, he added, would rapidly decline. Thus the individual with some do-it-yourself skills would soon be able to acquire, for only five hundred hours of additional work, all the elements needed to assemble his or her own house, which should not take more than fifteen hundred hours to put up.

The government's economic aim, the Prime Minister stated, was to gradually eliminate commodity production and exchange by decentralizing and scaling down production units in such a way that each community was able to meet at least half of its needs. The source of the waste and frustration of modern life, the Prime Minister noted, was that "no one consumes what he or she produces and no
one produces what he or she consumes."

As a first step in the new direction, the government had negotiated with the bicycle industry an immediate thirty percent increase in production, but with at least half of all the bicycles and motorcycles being provided as kits to be put together by the users themselves. Detailed instruction sheets had been printed up, and assembly shops with all the necessary tools would be installed without delay in town halls, schools, police stations, army barracks, and in parks and parking lots.

The Prime Minister voiced the hope that in the future local communities would develop this kind of initiative themselves: each neighborhood, each town, indeed each apartment block, should set up studios and workshops for free creative work and production; places where, during their free time, people could produce whatever they wished thanks to the increasingly sophisticated array of tools which they would find at their disposal (including stereo equipment or closed-circuit television). The 24-hour week and the fact that income would no longer depend on holding a job would permit people to organize so as to create neighborhood services (caring for children, helping the old and the sick, teaching each other new skills) on a cooperative or mutual-aid basis, and to install convenient neighborhood facilities and equipment. "Stop asking, whenever you have a problem, "What is the government doing about it?"" the Prime Minister exclaimed. "The government's vocation is to abdicate into the hands of the people."

The cornerstone of the new society, the Prime Minister continued, was the rethinking of education. It was essential that, as part of their schooling, all young people learn to cultivate the soil, to work with metal, wood, fabrics, and stone, and that they learn history, science, mathematics, and literature in conjunction with these activities.

After completing compulsory education, the Prime Minister went on, each individual would be required to put in twenty hours of work each week (for which he or she would earn a full salary), in addition to continuing with whatever studies or training he or she desired. The required social labor would be done in one or more of the four main sectors: agriculture; mining and steelworks; construction, public works, and public hygiene; care of the sick, of the aged, and of children.

The Prime Minister specified that no student-worker would, however, have to perform the most disagreeable jobs, such as collecting garbage, being a nurse's aide, or doing maintenance work, for more than three months at a time. Conversely, everyone up to the age of forty-five would be expected to perform these tasks for an average of twelve days a year (12 days a year could mean one day per month or one hour per week). "There will be neither nabobs nor pariahs in this country any more," he remarked. In a matter of two years, six hundred multidisciplinary centers of self-learning and self-teaching, open day and night, would be put within easy reach of everyone, even of people living in rural areas, so that no one would be imprisoned in a menial occupation against his or her choice.

The student-workers would also be expected, during their last year of work-education, to organize themselves into small autonomous groups to design and carry out an original initiative of some kind, which would be discussed beforehand with the local community. The Prime Minister expressed the hope that many of these initiatives would seek to give new life to the declining rural regions of France, and serve to reintroduce agricultural practices more in harmony with the ecosystem. Many people, he said, were unduly worried by the fact that France depends on foreign sources for gasoline and industrial fuel, when it was far more serious to be dependent on American soybean meal to raise beef, or on petrochemical fertilizers to grow grains and vegetables.

"Defending our territory," the Prime Minister said, "requires first of all that we occupy it. National sovereignty depends first of all on our capacity to grow our own food." For this reason the government would do everything possible to encourage a hundred thousand people a year to establish themselves in the depopulated regions of the
country, and to reintroduce and improve organic farming methods and other "soft" technologies. All necessary scientific and technical assistance would be provided free for five years to newly established rural communities. This would do more to overcome world hunger, he added, than the export of nuclear power stations or insecticide factories.

The Prime Minister concluded by saying that, in order to encourage the exercise of imagination and the greater exchange of ideas, no television programs would be broadcast on Fridays and Saturdays.

NOTES

1. See the chapter below, "Reinventing the Future."
2. See the chapter below, "The Social Ideology of the Motorcar."

A well-organized elite, vocally promulgating an antigrowth orthodoxy, is indeed conceivable. It is probably now forming. But such a programmatic antigrowth elite would be highly undesirable. By pushing people to accept limits to industrial output without questioning the basic industrial structure of modern society, it would inevitably provide more power to the growth-optimizing bureaucrats and become their pawn. One of the first results of transition toward a stable-state industrial economy would be the development of a labor-intensive, highly disciplined, and growing subsector of production that would control people by giving them jobs. Such a stabilized production of highly rationalized and standardized goods and services would be—if this were possible—even further away from convivial production than the industrial-growth society we have now.

5. I borrow this expression from Illich (Tools for Conviviality, p. 23), who defines it as follows:

For a hundred years we have tried to make machines work for men and to school men for life in their service. Now it turns out that machines do no "work" and that people cannot be schooled for life at the service of machines. The hypothesis on which the experiment was built must be discarded. The hypothesis was that machines can replace slaves. The evidence shows that, used for this purpose, machines enslave men. Neither a dictatorial proletariat nor a leisurely mass can escape the domination of constantly expanding industrial tools.

The crisis can be solved only if we learn to invert the present deep structure of tools; if we give people tools that guarantee their right to work with high, independent efficiency, thus simultaneously eliminating the need for either slaves or masters and enhancing each person's range of freedom.
6. And not just with that of growth-oriented capitalism. The end of the growth-oriented form does not necessarily sound the death-knell of the capitalist system: capitalism has already survived long periods of stagnation and crisis (1874-1893, 1914-1939). It requires the accumulation of capital; but when this becomes structurally impossible, far from crumbling, it works to make it possible again. Which may entail the massive destruction of capital and/or wars.

7. Cf., André Gorz, ed., Division of Labour (London: Harvester, 1977), and see the chapter below, "From Nuclear Electricity to Electric Fascism."

8. See the chapter below, "Science and Class: The Case of Medicine."

9. See the chapter below, "From Nuclear Electricity to Electric Fascism."

10. See the chapter below, "Socialism or Ecofascism."

11. See the chapter above, "Two Kinds of Ecology."


14. Socialists traditionally place exclusive emphasis on this form of appropriation, as though it could explain all social and economic ills. It must be carefully pointed out, therefore, that not all (private) appropriation is detrimental, and that private property is not the only nor the most important cause of poverty in industrialized societies.

15. It can also be done, as in the Soviet Union or China, by a political attribution of access rights.

16. On this point, see the chapter below, "Socialism or Ecofascism."

17. Tools for Conviviality, op. cit. See also the chapter below, "Reinventing the Future."


19. For a comparison of the older working class neighborhood with the modern comforts of newer highrise developments, see the interview with a worker from the Batiignonies rehoused in 1971, in Les Temps Modernes, no. 314-315 (September-October 1972), pp. 616-625. This document, of an exceptional quality, was part of a survey carried out by students at the Nantes School of Architecture.

20. See the chapter below, "From Nuclear Electricity to Electric Fascism."

21. It was Nazism—National Socialism—which first proclaimed itself der totale Staat.

22. This is an idea taken from Illich, who develops it in detail in Disabling Professions (London: Marion Boyars, 1977). William Klein illustrates a similar concept in his film The Model Couple.

23. This is essentially what Illich is suggesting in the latter parts of Medical Nemesys, op. cit., especially in the section entitled "Specific Counterproductivity," and in Tools for Conviviality, where he picks up and expands the idea of synergy between autonomous and heteronomous production. This synergy occurs when industrial products (such as bicycles, telephones, transistor radios, video-cassettes, etc.) facilitate the development of autonomous activities rather than obstructing them. [This discussion is considerably expanded in the French edition of the book; see Néméis médicale, Le Seuil, 1975, section 3—translator's note.]