

The emergence of technobureaucracy

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Translation of the original essay, “A emergência da tecnoburocracia”, publicado originalmente in *Tecnoburocracia e Contestação*, Petrópolis: Editora Vozes, 1972.

Man, in this century, has often multiplied his knowledge and power over nature and social systems, and at the same time has multiplied his degree of uncertainty about his own destiny, his fundamental values and beliefs. On the one hand, he elevated to heights never before reached rationalism and humanism. On the other hand, he became involved in the most bloodthirsty and irrational wars, and used means of mass extermination, from bacteriological warfare to chemical warfare, nuclear warfare, and the gas chamber. He has developed a democratic conception of the world based on freedom, respect for basic individual rights and political representation, but he has established overtly dictatorial and totalitarian regimes in almost every country in the world. He fought for a democratic and open socialism that would be marked by equal opportunity and the full realization of human potentialities, and in its place established bureaucratic and closed regimes. It has achieved economic and technical progress rates never imagined, and yet maintains two-thirds of the world's population in a state of misery. He preached cooperation and equality among nations, created the League of Nations and the UN, but continued to guide international relations through conflicts between superpowers in the name of national prestige and power, and through open or disguised imperialism.

At the same time, in a rational and irrational world, the most mismatched theses find den. The rationalism of the Western world, initiated by the Greeks, marked by Christianity and by its Thomist perspective, gained momentum with the Renaissance and the emergence of the bourgeoisie and commercial capitalism; it became victorious with the Enlightenment, liberalism and the Industrial Revolution; was confirmed by both the socialist theses and the scientism of the nineteenth century; portrayed in Western technobureaucratic capitalism and in statism labeled Soviet socialism; defined by the growing dominance, both in one and in another system, of a totalitarian technobureaucracy; guided by the principle of efficiency, but steeped in waste and consumerism - this rationalism without reason led the world to a crisis and a state of revolution.

In this essay I will discuss some aspects of this crisis and this revolution. In this first part, in addition to a general description of the problem, I shall examine in particular the emergence of technocracy or technobureaucracy, and make a rapid incursion into the counterculture, which is critical of it. I will use the historical and dialectical method throughout this essay. The social process is eminently dynamic. The world we live in today is the result of what happened

before. History changes as technology evolves, the means of production and communication gain new forms. The means of production are essential in understanding the historical process insofar as they enable man to work more productively. Now labor, the economic activity, is the center of all human action. It is he who enables man to achieve most of his goals, from well-being and health, to prestige, power and safety. In these terms, technological development, by perfecting the economic system, plays a fundamental historical role. The technological development of the media also plays a decisive role in history, not only insofar as they are also means of production, but because they directly give men a new perception of the world. The technological development of the means of production is a new fact, which forces man to reorganize his system of production. New technology implies a new production organization, in new command and subordination systems. As a consequence, the whole political social system is transformed. Social organization and institutions change. New systems of domination are emerging, and there is a need for new values and beliefs, new ideologies that legitimize the position of the new power holders.

The technological development of the media, from the creation of language and the alphabet to the electronic mass media and the means of communication for decision - the computer - allow for knowledge and information. This phenomenon not only confirms the importance of technology in the definition of the historical process, but also allows for a modification of the potentialities of social control, be it at the level of global society or at the level of bureaucratic organizations, increasing the proportion of power in dominant groups that control the media. The control of these means and the means of production are interdependent. Who controls these, controls those. And the basic character of the social structure will be defined by the type of factor of production that is historically strategic in the face of technological development. The political power and nature of the system of domination will be defined by the control of the strategic means of production. John K. Galbraith defined recently this thesis on the strategic factor function in the definition of social and political structure. The strategic character of the factor of production depends on its relative scarcity, whether provoked or natural. As Galbraith says:

It is now clear what gives power to a factor of production or to those who own or control it. Power goes to the factor that is harder to get or replace. In precise language, it adheres to the one who has the highest supply inelasticity at the margin.¹

This is another non-orthodox way of expressing the Marxist thesis that technological development determines the relations of production, that is, the relations of power in a society. The factor is strategic or not, depending on the degree of development of the productive forces. When technological development results in a change in the relative importance of factors of production, there is a concomitant change in the relations of production existing in society. Now, to the extent that the whole of society is governed by the economic principle of scarcity, the relations of production dominate and determine other social relations, including relations of power. The change in the strategic factor of production thus implies a change in the power system of society. The story enters a new stage. New are the rulers, the institutions, the ideologies.

This macrosocial analysis is also consistent with the principles of social psychology related to group dynamics and the leadership process. The best definition of leadership that the authors who study this matter have found affirms that the leader is one who has the means to meet the needs of the members of his group. It is not necessary for him to use these means always for the benefit of his followers. He will often use them mainly for his own benefit. Group members, however, depend on the leader to meet their needs. By transposing the problem into the macrosocial plan, ownership or control of the strategic factor of production gives power to its holders, as factors of production are the means par excellence of satisfying human needs. This problem is further strengthened by the fact that the same people and social groups tend to control the mass media. The control of the press, radio and television guarantees a homogeneity of values and beliefs, a conformity to the current system of power, which complements the power conferred by the control of the factors of production.

It is clear that the technological development of the factors of production and the means of communication is not limited to changing the power relations existing in society. The historical process is a global and interdependent process. New methods of production and new means of communication mean new living standards, new consumption habits, new social organizations, new conceptions of the world, new values and beliefs, new political ideologies, new clothing for religions, new myths, new utopias. And all this superstructure, fundamentally conditioned by the technological infrastructure and the respective relations of power, on these are reflected, sometimes legitimating them, sometimes contradicting them, always influencing them.

The new is always at odds with the old. History has a meaning and a backside. It is a process that is permanently contradictory and therefore dialectical. The present moment is nothing more than the result of the contradictions that have occurred in the past and which continue to occur at every moment. Analyzing a social phenomenon outside its historical and dialectical context, immobilizing social phenomena in time, as the physical-mathematical sciences legitimately do, constitutes a violence against the facts. We must not only recognize this historical and dialectical character of the social process but use a historical and dialectical method to study it.

The inspiration in the historical materialism of what we are proposing is evident. Like Galbraith, however, I do not intend to observe any orthodoxy about it. Quite the opposite. If in relation to the method of analysis we are close to Marxist thought, inasmuch as the problems of methods are relatively independent of the historical moment in which they were formulated, in relation to the historical and political analysis performed with the aid of that method we shall see that the distance is large. Not only more than a hundred years separate one analysis from the other, making the object of study profoundly modified, as are the ideological influences and social determinants to which the respective analyzes are subjected.

The stages of history: a critic

In the analysis of the historical process that humanity has gone through, our first need is to divide it into stages or phases. The non-linear historical process is not realized through a

continuum. The Victorian view of a harmonious and balanced world, evolving always through gradual transformations, under the aegis of natural law and a rationality inherent in everything around us, has no meaning today. History never had this tranquility. The world has always been marked by wars, revolutions, violent contradictions of interests and technological transformations that are increasingly rapid and revolutionary. At a given time the contradictions generated by technological change, by the struggle for power, by the interests of classes and socioeconomic groups became so acute that history enter a new stage. Marx, within this perspective, asserted that the history of mankind could be divided into six major phases: primitive communism, slavery, feudalism, capitalism, socialism, and communism.

The transition from primitive communism, tribal or clan societies to slavery was possible when agricultural and livestock production techniques allowed the creation of a minimum of economic surplus, so that a worker would be able to produce more than was necessary for their survival. At that moment the slave became an economic good. It was better to enslave than to kill the prisoners of war. The strategic factor of production was human labor. Anyone who had weapons or land to control labor, keeping slaves, would be in the ruling class. As far as agricultural techniques are concerned, however, as the best land is being occupied and production is increasingly dependent on a minimum of motivation on the part of the workers, feudalism emerges. Not only is the strategic factor of production, scarce at the margin, no longer labor but the land, but also the slave labor ceases to be economically interesting and is replaced by the system of servitude. The possession of the land was now the source per excellence for power and wealth.

It is from there that Galbraith does his analysis. The power granted to landowners runs through the entire Middle Ages and is still present for a long time in the Modern Age. As Galbraith says:

In the New World, as in the Old, it was presumed that power belonged, as a right, to men who owned lands. Democracy, in its modern meaning, began with a system that gave the right to vote to those who proved their worth by acquiring real-estate and no other.²

But by the end of the Middle Ages, a new class and a new economic system were emerging that would change the face of the world: the bourgeoisie and capitalism, respectively. Technological development was now increasingly embedded in man-made means of production. The process of capital accumulation was beginning to become decisive. Initially it is the development of transport technology that will allow the development of commercial capitalism. The new system, however, only became dominant in Western Europe and the United States from the nineteenth century, with the Industrial Revolution.

This, begun in England in the middle of the previous century, and then extending to France, Belgium, and, later, the United States, Germany, is one of the most dramatic evidences that history is not a continuous and gradual process of evolution. The Industrial Revolution effectively revolutionizes the whole history of the world. With the introduction of mechanized production, labor productivity multiplies many times. Just as slave labor has been replaced by servile labor, it is now replaced by wage labor. The strategic factor of production ceases to be the land. The secondary sector of the economy is gaining prominence over the agricultural and

extractive sector in terms of national income distribution. Moreover, while primary production is divided among a large number of landowners, industrial production is concentrated in a relatively small number of capitalist entrepreneurs, who control factories and industrial equipment. The strategic factor of production is no longer the land, it has passed into capital. Political power was transferred from the landed aristocracy to the industrial bourgeoisie. We arrived to the phase of capitalism, which, on a political level, tends to adopt the formula of bourgeois democracy, which at the same time guarantees a reasonable degree of freedom to individuals and flexibility to the political system, and holds political power firmly in the hands of the capitalist class.

While describing primitive communism, slavery, feudalism, and capitalism, Marx was making history, and although we may criticize the excessive degree of abstraction in which his analysis was carried out, his basic assertion is indisputable. In fact, it is a genius analysis for its great simplicity and immense explanatory capacity. The only danger it poses is that it takes hasty analysts to imagine that it is a universal and necessary model, so that all the countries of the world must necessarily go through the same steps. Especially after the world underwent a process of economic integration, in the last century, as a result precisely of the Industrial Revolution, the history of underdeveloped countries became decisively influenced by the developed countries through the international division of labor and imperialism. In these terms, the underdeveloped countries are passing through stages different from those that the developed countries have passed.

Avoiding this gross mistake, however, the analysis dividing history into stages - primitive communism, slavery, feudalism, capitalism - is undoubtedly remarkable. Until then, however, Marx was only analyzing the past. When, however, he also defined socialism and communism as historical steps, he was no longer analyzing past history but predicting the future. And their predictions, although partially faithful to the method employed and endowed with internal logic, were also deeply marked by the generosity of those dedicated to building utopias. In the Critique of the Gotha Marx Program he predicted that communist society, which succeeded capitalism, would effectively be divided into two stages. The first would be the socialist, or simply the first phase of communism, as Marx prefers, with the proletariat's seizure of power, the extinction of private ownership of the means of production, and the establishment of the dictatorship of the proletariat. The state and the law still survived, as bourgeois interests and values would continue in place. Wages would still be paid according to labor productivity, not only because the world was still to achieve plenty, but because bourgeois habits were still ingrained. Prevails at this stage equality, defined by the fact that each one receives according to what he produced. But this equality is unjust, according to Marx, because men are not equal to each other: some are stronger, some are more capable, others less, some have more children than others, and in this way the final result of equality in wages is inequality.

This phase would be replaced, within an undefined term, by communism, which would be marked by abundance, by the absence of State, by the freedom and full realization of human potentialities, by the remuneration according to the needs of each one. In Marx's words:

At a higher stage of communist society, when the enslaving subordination of individuals to the division of labor has disappeared and with it the opposition between

intellectual and manual labor; when work is not only a means of life but becomes the first vital necessity; when, with the development of the individual in all its aspects, the productive forces have also grown and the springs of collective wealth are flowing in their fullness, only then can the narrow horizon of bourgeois law be completely overcoming it and society inscribe in their banners: "From each according to his ability, to each according to his needs." ³

In this paragraph is the synthesis of the Marxist utopia. The distinction between manual labor and intellectual labor, the fundamental basis of class distinctions, now disappears. The other, private ownership of the means of production, had already disappeared during socialism. Economic development would have been such that we came to the time of abundance. Work remains necessary, but more than a social necessity, it is an individual need, it is a means par excellence of personal fulfillment of each one. The state and the law will lose importance until they disappear, replaced by the self-control of each one. Man, whose nature is essentially good (Marx, in this respect, is clearly in Rousseau's line that man is essentially good, thus conflicting with the opposite concept, immortalized by Hobbes in the phrase "homo lupus hominis est"), will be performing all their potential. True equality will prevail, defined by the division of social product according to the needs of each. The disappearance of the state will finally guarantee freedom. Freedom and state are incompatible. Democracy itself is a form of government in which freedom is limited by the existence of the state. This disappearing, there will be freedom. And the disappearance of the state will occur thanks to the self-control exercised by each one, possible by the reigning abundance, by the disappearance of the social classes and by the disentangling of the individualistic and egoistic habits of the previous times.

It is not possible to say categorically that Marx was wrong about his prediction about communism. It is an optimistic dream and it will always be possible to say that its time has not yet come. The history of the last hundred years certainly does not warrant such optimism. The Orwellian view of 1948, or of Huxley in *Brave New World*, or of the more recent *Colossus* of O. F. Jones, with all its load of pessimism, seems closer to reality. However, there is always the possibility of affirming that the time of communism has not yet arrived, the same cannot be said in relation to socialism. For Marx, socialism would succeed directly to capitalism. It was this perspective that led to the Bolshevik revolution of 1917 and to the other communist revolutions of this century. And in none of the countries where the private ownership of the means of production has been extinguished has the socialism foretold by Marx turned reality, even if the new rulers sought to follow his ideas. Classless society, remuneration according to the merits of each one, the domination of the working class or the "soldiers, workers and peasants", the tendency of an ever-greater freedom - none of this occurred. On the contrary, taking the Soviet Union as a model, what happened was the installation of a totalitarian system of government, in which the most elementary freedoms of individuals are denied, was the establishment of an economic system almost as based on privileges as the capitalist, was the political and economic domain of a technobureaucracy, supported by the Communist Party and the upper management, public and state enterprises, which is a dramatic and lively testimony that socialism is not the historical stage immediately after capitalism.

Instead of socialism, what we see in the world today, whether in countries that still retain private ownership of the means of production or in those that have already abolished it, is the

political and economic power to focus on a new socioeconomic group - the group of technobureaucrats - and thus arise in a new political and economic system: technocracy, or technobureaucracy, or techno-structure, terms for us synonyms, although they may have somewhat different connotations. In these terms, the stage immediately after capitalism is the technobureaucracy. The history of the world today is that of the transition from capitalism to technobureaucracy and not to socialism. This, in terms very different from those predicted by Marx, is likely to still occur, but at the moment we see the private and public technobureaucrats and the military taking power of the world, not the workers. Just as in the late eighteenth and first half of the nineteenth century we witnessed the rise of bourgeois power, we see today, even though in very different ways, according to the various countries of the world, the emergence of technobureaucrats to control the economic and political system.

Marx failed in his prediction about the advent of socialism because he was not fully faithful to his own method of analyzing history. On the other hand, in his method he gave too much emphasis to the class struggle and did not distinguish the class struggle from the possibility of a group outside the economic and social system to rise. The essence of Marxist methodology lies in the dialectical relationship between technological development and the organization of production in terms of property, or in other words between the degree of development of the productive forces and the relations of production. The dialectical relationship between the infra and the social superstructure is also essential. To this basic nucleus, however, is added an element to which Marx, probably for political reasons, gave excessive importance: the class struggle. And it was mainly based on this last aspect that Marx foresaw the advent of socialism.

Marx certainly must have been influenced by the workers' struggles which, in the middle of the last century, gained particular importance, not only because of the exploitation to which the working class was subjected, but also because of the fact that it was only at this time that the workers began to organize trade unions. In fact, however, class struggle, though it should be considered an important component of history, is far from being its main engine. This role should be reserved for the development of the productive forces, that is, technological development. Moreover, Marx did not take into account that, historically, the dominated class has never become the ruling class in the subsequent economic system. In other words, the "internal" class struggle does not become revolutionary. The slaves did not become the masters after feudalism, let alone the serfs became the entrepreneurs of the capitalist system. It would therefore be strange that the workers of the capitalist system would become the dominant group of the economic system immediately afterwards. The new dominant group usually appears in the dominated group. But it emerged as a group apart, which managed to differentiate itself from the rest of the dominated class and gradually took control of the new strategic factor of production that the technological development was at the moment determining. In other words, the new class, which will dispute power with the ruling class to ultimately assume it, is not the dominated class, but a subgroup, historically with the same origin, but which has been differentiated through time, so as to constitute in a totally different group of the dominated class. To the extent that this new group is taking over the new strategic factor that new technological advances are determining, this group will tend to assume economic and political power, giving rise to a new type of economic system, and therefore to a new historical stage.

The class struggle thus becomes historically revolutionary when it is “external”, when it starts from a group outside the system.

This is what happened in the passage from feudalism to capitalism. The bourgeoisie had origins attached to the serfs of the land, who were the dominated class of the feudal system. In the middle of the Middle Ages, however, the bourgeoisie differed from the serfs, formed a distinct socioeconomic group, adopted values and beliefs, habits and patterns of behavior, defined an area of its own within the structure of production, constituted an intermediate group between the dominant and the dominated classes. And for centuries this situation has remained. The bourgeoisie was not the ruling class, but it was far from being the dominated class. It served the aristocracy, it got strengthened economically and politically. Economic influence naturally preceded politics, but in the end both became dominant. A class struggle undoubtedly took place between the emerging bourgeoisie and the decadent aristocracy, but this struggle was not always clear and definite. On many occasions the bourgeoisie cooperated actively with the aristocracy, or with the sectors of the bourgeoisie, to the extent that this cooperation was of interest to them. The most evident case in this sense was the great support which the absolute monarchies of the seventeenth and eighteenth centuries received from the bourgeoisie in their struggle against feudal privileges.

Another correlative feature of the historical process of replacing dominant elites or of changing production relations is that the dominated class is an integral part of the current system, growing and declining along with the respective elite, to the extent that the new class that goes assuming power represents an innovation or a rupture within the system. Thus, in the case of the transition from feudalism to capitalism, the serfs were an integral part of the feudal system. The figures of the serf of and even of the artisan appear and disappear with the appearance and the disappearance of feudalism. For a long time, traces remain of them, but there is no doubt that the decadence of the feudal aristocracy corresponds to the decadence of serfs and corporations, just as the decadence of the slave masters of antiquity corresponded to the disappearance of the slave.

The same phenomenon occurs today when capitalism declines and tends to be replaced by the technobureaucratic system. The working class, the urban proletariat engaged in manual labor in manufacturing, also tends gradually to disappear. The working class was the specific fruit of industrial capitalism. The emergence of the industrial bourgeoisie to power corresponded to the emergence of the working class, which immediately assumed the role of a dominated class par excellence, and the rural workers and peasants were marginalized from the new system. As capitalism begins to be overcome by a new system, which has as one of its essential characteristics the automation, the number of manual workers not specialized in the manufacturing industry begins to decrease not only in relative but also absolute terms, mainly in developed countries, but also in underdeveloped countries, where this reduction tends to occur only in relative terms.

In an excellent study, Gláucio Dillon Soares shows that in the United States the share of unskilled manual workers in cities in the total workforce increased from 9% in 1870 to 14.2% in 1910, and then down to 8, 3% in 1950. ⁴ This curvilinear form of participation of the unqualified workers in the labor force was also verified in underdeveloped countries. If we take

the semiqualfied workers, we observe the same phenomenon, only with a time lag, so that the reduction of their participation in the labor force begins to occur a little later than that of the unskilled workers. In Latin America itself, this trend towards the decline of the working class as a whole, including skilled workers, is already evident. In 1930 the participation of industrial workers in the non-agricultural sector was 10.6%; increased to 11.6 per cent in 1935; 14.9% in 1945. In 1950 there was already a broth to 14.8% and in 1955 to 14.2%.⁵

In these terms, just as serfs and artisans tended to disappear, as traditional society was replaced by capitalism, we now also witness the decline of the working class as capitalism is replaced by another system economic and political. In the words of Gláucio Dillon Soares.

The fate of the working class does not seem much more promising than that of the craft class. A post-script of the history of the industrial working class may emphasize its short meaning. be it numerical, political or any other.⁶

All this was not enough, we have yet to realize that the working class, insofar as it is an integral part of the capitalist system, ended up sharing the benefits of the system. This phenomenon has not occurred since the beginning of capitalism. Until the end of the Industrial Revolution in each of the capitalist countries, the increase in the rate of capital accumulation to more than 15 percent of the income necessary for the establishment of industrial capitalism was possible thanks to the determined exploitation of the manual workers by the emerging business class, and, consequently, thanks to a strong concentration of income in the hands of this class, leaving the urban workers marginalized of all the benefits of the system. In many cases a deterioration in the standard of living of the population occurred, which, from a healthy work and reasonable living conditions in the countryside, went to subhuman working conditions in the cities, with women and children working 16 hours a day.

However, after the Industrial Revolution in each of the developed countries, the subsequent economic development became increasingly dependent on the increase in the purchasing power of the working class. On the other hand, it was organized in powerful unions. The result was that the working class began to see their wages and living standards grow as capitalist economies developed and increased their productivity. It thus became a beneficiary of the system, and entered into a process of political accommodation, which deprived it of any revolutionary possibility.

We have, therefore, three reasons for not confirming Marx's predictions that capitalism would succeed socialism. His prediction was based on the idea of the class struggle and the taking of power by the working class, by the urban proletariat. Now, as we have just seen, (a) the dominated class in an economic system never becomes the ruling class of the subsequent system, leaving an external group, differentiated from the dominated class, the revolutionary role; (b) the dominated class, within an economic system, appears and tends to disappear within this system, as happened with the artisans, and now is happening with the workers; and (c) the working class became beneficiaries of the capitalist system and it accommodated itself politically.

I do not intend to make the epitaph of socialism. We are only realizing that, under Marx's terms, it could not occur. It will have to be profoundly reformulated, especially in the chapter

of its inevitability, and that of the leadership of the working class. It should be borne in mind that in the last century and a half of human history the most generous and morally more legitimate aspirations of a large number of young people, intellectuals, and even workers, are directly related to the cause of socialism. And even today, as we shall see later in this essay, the idea of socialism is far from dead. It is deeply imbued with all the contestatory movements of the established order existing in the world today. In one way or another, the counterculture is socialist, students in revolt, and part of the Church in revolution are socialists. It is, however, a very different socialism from that predicted by Marx and absolutely opposed to the socialism allegedly practiced in the Soviet Union.

It is true that many young people and intellectuals, especially in the underdeveloped countries and in Europe, continue to reason in the classical left and right terms, identifying the left with the working class, which is supposed to be revolutionary. However, this kind of confusion, which the young people of May 1968 did not escape in France, tends to gradually disappear. When this occurs in a general way, the reformulation of socialism, in terms of the second half of the twentieth century and the anti-technocratic counter-culture that emerges in it, will be turning into reality.

Technical knowledge, the new factor of production

If Marx was faithful to the core of his historical method, and not to a relatively minor aspect of it, such as the internal class struggle, it would probably not have predicted that the working class would defeat the bourgeoisie and implant socialism in the world. It was difficult, however, to have predicted that, during the twentieth century, capitalism would tend to be replaced by technobureaucracy. Much less could he imagine that this phenomenon would occur more rapidly in countries where a socialist-Marxist revolution was attempted. He could not make this prediction because, in his time, he did not have the data we have today. If he had them, it is quite probable that his predictions would have been very different and much less optimistic.

For us today, it is relatively easy to see the rise of the technobureaucratic class to power. This is a historical phenomenon that is occurring today and can be the object of simple verification. Moreover, if Marx had data on the technological process that would take place in the last century, and at the same time, if he remained true to his own dialectical-historical method, he would have to conclude that it would be a technobureaucracy the new economic and political system that would replace capitalism. Nevertheless, it is the confusion of the dialectical-historical method with the Marxist analysis of the political and social phenomena of his time that makes much of the left throughout the world deny the emergence of technobureaucracy.

It is not for another reason that the application of the Marxist method to arrive at the confirmation of the emergence of the technobureaucracy had to be done by an intellectual who, although highly influenced by Marx, is strictly heterodox in relation to Marxism.

I have already referred to the concept of Galbraith, relative to the strategic factor of production. Applying this concept, Galbraith showed that capitalism became the dominant system in the world when, with the industrial revolution, capital replaced land as a strategic factor of production. More recently, due to the immense technological progress that has been taking place, technical and bureaucratic knowledge began to replace capital as the strategic factor of production. And with the

change of the strategic factor also changes the economic and political system. Capitalism is being replaced by “techno-structure” that I call technobureaucracy. Initially Galbraith shows why capital has lost its strategic character:

The last chapter has shown that in the industrial system, although capital is used in large sums, it is, at least in peacetime, more abundantly offered. The tendency toward excess savings and the need for a state compensation strategy is a well-established and well-known aspect of Keynesian economics. The savings we have seen are supplied to them by industrial companies as part of their planning. There is a high degree of certainty about its availability, because this is the purpose of planning.⁷

The relative abundance of capital in developed countries is therefore, first of all, due to the tendency of investment (ie the demand for capital) not to fully cover savings (ie the supply of capital). This tendency is not merely conjunctural, as a hasty analyst of Keynes's work might conclude, but it is an intrinsic tendency to the capitalist economic system. And it occurs even in underdeveloped countries, as in the case of Brazil or Argentina, where a relatively integrated capitalist subsystem has already emerged. Its fundamental cause is related to the tendency to concentration of income, that is to say, to the increase of the participation of the profits in the income more than proportional to the one of the wages, that is accentuated whenever the capitalist system is going through the ascensional phase of the economic cycle. Even the unequal distribution of income, which is always present within the system, independently of the stage of the economic cycle in which we find ourselves, hampers the perfect absorption of the great economic surplus produced by the industrial economy, making the capital available in society relatively abundant.

Secondly, access to capital is perfectly under the control of the companies themselves. Contrary to all orthodox economic theory (both neoclassical and Keynesian), capital markets play a secondary role in the capitalization of firms. In general, more than three-quarters of the capital used by companies comes from their own profits, is the result of self-financing. In these terms, companies not only have capital in relative abundance and under the control of their administrations, but shareholders lose much of their importance as suppliers of capital. A third argument could have been added by Galbraith to justify the relative abundance of capital in modern industrial society: capital-saving innovations. Technological innovations are not simply labor-saving per product produced. Most of them are also capital-saving by physical product produced. Many modern machines not only save labor, but in addition save capital as new machines have a higher output-capital ratio. In extreme but not infrequent cases, the high technological sophistication incorporated in the new machine allows its production to increase while its cost is reduced in absolute terms. This is what happened, for example, with third-generation electronic computers compared to second-generation electronic computers.

In these terms, either because savings tend to be larger than investments, only equalizing afterwards, either because the great majority of companies' capital is the result of self-financing, or because technological innovations become increasingly capital-saving, capital is losing its strategic character and the capitalists are losing importance and power within the system. Capital's loss of importance, however, is necessarily a relative phenomenon. It only makes sense as another factor of production begins to become strategic. The emergence of a new strategic factor, which is gaining increasing importance in the process of production of the so-called modern industrial societies, is one of the most significant phenomena of the twentieth century. This new strategic factor is technical and organizational knowledge. Today, no doubt,

it already outnumbers capital (which is therefore no longer strategic, although it remains essential, as are land and unqualified labor). Galbraith calls this new strategic factor "specialized talents" and "organized information":

At the same time (where capital lost importance), the demands of technology and planning greatly increased the need for industrial talent and the organization of such talent. In general, the industrial system has to supply these talents from external sources. Unlike capital, this is not something the firm can provide itself. To be effective these talents also need to be put into an effective association with themselves, that is, they must form an organization. Given a competent organization, capital is available today. The mere possession of capital, however, is no longer a guarantee that the required talents can be obtained and organized. From past experience, one can expect to discover a new shift of power in the industrial enterprise, it is now capital for organized information. And one can also expect that this change is reflected in the displacement of power within society in general.⁸

Galbraith uses the expression "to wait" because he is using the historical method, whose logical conclusion is the one he is presenting. So that, soon after, he goes on to verify the fact:

Actually, this has already happened. It is a shift of power similar to that occurring among the factors of production, equal to that which began two hundred years ago, from land to capital, in developed countries. It is an event of the last fifty years and it is still happening.⁹

As evidence of his thesis, Galbraith cites the loss of power of shareholders, the impregnable character of the boards of professional managers of large American corporations, the loss of prestige of the big capitalists and of Wall Street, the growing demand for talent for the industries, and the growing prestige of education and educators.¹⁰

Galbraith is evidently taking the model of American capitalist society in the process of transformation as the model for its analysis. The phenomenon of the emergence of a new strategic factor of production, however, is more general. It includes all the countries where, in this century, modern industrial societies have been or are being installed. It includes, therefore, not only the industrialized capitalist countries, but also the communist countries and all the underdeveloped countries which, under the influence of the modern western culture, are trying to install industrial societies in their countries. Before examining this phenomenon in the three planes mentioned above (developed capitalist countries, communist countries, underdeveloped countries) the problem must be put in the broader terms of modern industrial society.

Why would organizational and technical knowledge be becoming the strategic factor of production in modern industrial societies? On the technical level the answer is obvious. The world, in this century, has been experiencing unprecedented technological development.¹¹ The pace of scientific discoveries applicable to production increases every day in geometric proportion. From the domain of electricity by man, we enter into a process of taking advantage of the potentialities of this new source of energy that seem inexhaustible, not only because of its enormous strength, but also because of its immense malleability. Electricity directly supplies a tremendous amount of energy, which multiplies many times not only the human and animal energy of the pre-industrial period, but also the mechanical energy of the steam engine, which marked the Industrial Revolution. In addition, electricity, thanks to its quality as an extremely

sensitive means of control, allowed the emergence of the explosion engine, radio, television, computers and atomic energy itself. In these terms, while the steam engine marked the mechanical phase of the First Industrial Revolution, electricity defined the electronic phase of the Second Industrial Revolution.

This development in geometric rhythm of technical knowledge, from the domain of man over electricity, was naturally making this technical knowledge increasingly important within the production process. While in the early days of the First Industrial Revolution the machines were mere imitations of the processes of human and manual production, and the productive techniques were greatly simplified, so that mere elementary mechanics were able to dominate them after the Second Industrial Revolution and their control became extremely complex. To build and manage them now is not enough the old practical mechanic, who learned his profession in his own work. Often even engineers graduating from higher education courses are not enough. To control the most modern technology are generally required highly specialized engineers and scientists who have undertaken one or more graduate courses. But even these men do not have the conditions, alone, to build or operate the new machines, so complex are they. This should be the work of technical teams.

The fundamental difference between the "mechanical" technology of the First Industrial Revolution and the "electronic" technology of the Second Industrial Revolution is that the former is only far-fetched in scientific development, while the latter is entirely based on the development of science. This results in a much greater complexity for electronic technology than mechanical technology, whose traditional foundations were still predominant. In this regard Paul Bairoch tells us:

This increasing complexity will progressively lead to a break with the traditional technique, which will become truly total in the early years of the twentieth century with the widespread introduction of electricity and the explosion of the engine.¹²

Although Bairoch does not realize that electricity is much more than the engine of the explosion, which depends on it, the element of rupture that gives rise to the revolutionary process of the Second Industrial Revolution, it is clear to him that this rupture and its relation to the introduction of electricity. This will have a revolutionary role. Not only because it will enable a huge increase in labor productivity and an extraordinary development of communication techniques, but also because it will lead technological development to a growing complexity. This growing complexity of technology, requiring the work of highly specialized teams of technicians and scientists, is the basis of the transformation of technical knowledge into a strategic factor of production. The monopoly of this knowledge by a group of technobureaucrats, whose supply is naturally limited, despite all the advances and massification of education in industrial societies, is naturally increasing the power of these technobureaucrats.

In addition to becoming increasingly complex, technology becomes increasingly important in the production process. Just as before and even during the Industrial Revolution the classical economists who then laid the foundations of economic theory tend to play a secondary role to the capital among the factors of production¹³, inasmuch as, effectively, labor, and land were the prime factors in agricultural and artisanal activity, neoclassical economists of the nineteenth

and first half of the twentieth century tended to give relatively small importance to technology among factors of production. In addition to the isolated case of Schumpeter with his theory of innovation, one of the only exceptions to this tendency was that of Marx, who not only attached great importance to the accumulation of capital, but also to technological development in his dynamic model of the capitalist economy. In general, however, the static models developed by the classical and mainly neoclassical economists, including by their great contestant, Keynes, tended to leave technology behind, as it was incorporated in the two factors considered more productive capital and labor. In addition, since they were static models, which did not consider the time factor, technological development was actually secondary.

Since The Second World War, there has been a renewed interest in economic development in all sectors, including, of course, among economists. Dynamic models of development began to be formulated. But early models, particularly those of Harrod and Domar, still gave capital accumulation the most important role in the process of economic development. More recently, however, in the face of evidence of the great importance of technological development in increasing productivity, economists have begun to worry more and more about the problem. It was perceived that technological development was the qualitative element par excellence in the development process. The difference between unskilled labor and skilled labor is not merely degree. It's essential. The simple accumulation of capital, without new techniques being introduced, little development would provoke. It is the incorporation of new technology into the accumulation of capital that promotes development. This fact was even verified empirically by a series of econometric studies carried out, among others, by Solow and Abramovitz, which revealed that the simple accumulation of capital, without new techniques being introduced, would have been responsible for 1/10 to 1 / 6 of the productivity increase occurred, with the remaining 5/6 to 9/10 of the productivity increase being applied through the technological development incorporated in the new machines. ¹⁴

This recognition of technology as an important factor of production, and technological development as the main driver of economic development did not come about before the middle of the twentieth century. A century earlier this kind of analysis could not normally have occurred because of the simple fact that technology and technological development were not so important at that time. We were at the height of capitalism. Capital was necessary and effectively the production factor par excellence and the accumulation of capital, the dynamic factor of economic development. A century later, however, economic conditions had changed. Technology has had such a development that it has outgrown capital itself in importance. The introduction of electronic technology represented a decisive qualitative leap in relation to old mechanical technology. The increased efficiency and complexity embodied in this new technology were so great that this became the relatively new relatively scarce factor of production. The knowledge of this technology by a relatively small number of men gave their highly specialized work an increasing importance. The new digital technology, or, more simply, the technical knowledge became the new strategic factor of production.

It is not only the strict technical knowledge but also the organizational knowledge that defines the new strategic factor of production. We could include organizational knowledge in the concept of technical knowledge. There really is no essential difference between one and

the other. But we prefer to explicitly include organizational knowledge so that we can properly emphasize its importance. I understand by organizational knowledge the technology needed to manage large modern bureaucratic organizations, both at the micro-social level of corporations and other bureaucratic organizations, as well as at the macrosocial level of the management of the modern state. It includes not only Economics and Administration, which constitute its operational core, but also, on the one hand, Sociology, Psychology, Anthropology, and on the other, formal sciences, Mathematics, Statistics, Accounting, Research Operational, which represent, respectively, the social base and the methodological basis of organizational knowledge.

One of the essential transformations that the modern world has undergone, and which has not often been given the necessary importance, is the emergence of bureaucratic organization as a dominant social phenomenon. It is common to talk about the technical and scientific revolution that the world has gone through in the last hundred or two hundred years. We marvel or become apprehensive, but in any case, we always have in our minds the extraordinary technical transformation that the world is going through every day. Airplanes, radio, television, computers, the domain of nuclear energy, antibiotics, space explorations are revolutionary phenomena that do not escape anyone's observation.

As important as this techno-scientific revolution, however, is what I will call the Organizational Revolution. Both are extremely connected. The Organizational Revolution is largely a function of the Technoscientific Revolution, is undoubtedly a product of electronic technology that began in the late nineteenth century. Both are part of the general process of rationalization, of the systematic attempt to rationalize and render more efficient production, which has dominated the world since the victory of rationalist ideology, with the emergence of the bourgeoisie and the Industrial Revolution. Organizational Revolution is the process that in the last hundred years has transformed bureaucratic organization into the type of social system that dominates industrial societies. Throughout the pre-industrial period, up to and including the First Industrial Revolution, bureaucratic organizations played a minor role within the social system.

Traditional, non-rational types of social system prevailed, such as the tribe, the clan, the fief, the court, the unit of family production, be it artisanal, agricultural, or even industrial in the early days, where technology was simply mechanical. Insofar as technology did not require it, no bureaucratic organizations were constituted. There are some classic exceptions. The Egypt of the pharaohs and China of the mandarins came to form expressive state bureaucracies. The Catholic Church is a celebrated example of a multiseular bureaucracy. In a more recent period, the earliest nation-states, in the seventeenth and eighteenth centuries, and the respective armies are also examples of bureaucracies. But not only were they not yet fully defined bureaucracies, but they were also exceptions within the larger social system, all of which consisted of minor social systems with a traditional basis.

It was only after the Second Industrial Revolution that the growth of production units determined the emergence of large bureaucratic enterprises. The economies of scale that technological progress accentuated, with the introduction of innovations such as assembly line, integrated flow production and automation, forced companies to become larger and more

complex. On the other hand, the development of the media, crowned with the computer, made viable the efficient administration of ever greater social systems. On the one hand, the new production technology required the growth of companies, and on the other, the new communications technology allowed these organizations to be efficiently managed. Prior to the advent of electronic communications media centralized management of large organizations was extremely difficult. The production system was necessarily formed by an infinity of small independent production units. Now, with electronic technology, it became possible and necessary to concentrate production on large companies. Besides the companies, that is, of the production sector, in the other sectors bureaucratic organizations were also developed. Clubs, class associations, trade unions, political parties, all products of industrial society, also grew, were also complex, and were also able to remain cohesive thanks to the development of communications technology. Finally, the state itself, which has grown enormously in importance and power, is also bureaucratic. In fact, it is not just the state that is bureaucratic. It is the whole social system that tends to bureaucratize under the aegis of the state, which was one of the first to bureaucratize. Modern bureaucracies arise with national states. This is why bureaucracy is often confused with government. From the rise of electronic technology, however, and especially after The Second World War, it is no longer just the bureaucratic state, but society itself that is bureaucratizing. Under the direction of the state, social relations tend to be rationalized, that is, to bureaucratize. A process of global bureaucratization of society begins.

In the process of rationalizing a given social system, managers define precise objectives to be achieved and determine the most adequate means, more consistent with the aims. The defined objectives are in principle economic, but there is no logical need for them to be economic. There are cases, such as that of the Churches, where the economic objective is not the main objective. Historically, however, what has characterized bureaucracies in the rationalist and materialist world constructed by capitalism and complemented by socialism is the definition of economic objectives for bureaucratic organizations.

For society as a whole to be bureaucratic, it also needed definite goals. In the second half of this century modern societies, within the general process of bureaucratization that assails the world, have found a definite goal to be achieved: economic development. Until The Second World War the world had not been awakened to the problem of economic development. There was the concept of progress and people talked in increasing wealth, but in general the various peoples of the world had not been fully aware of the disparities in existing development, nor had it been a dominant objective to raise the standard of living of the population. It is only from the second half of this century that economic development becomes the goal of societies. Then they turn to the more efficient, more rational means of achieving this goal. Economic planning is generalized. The underdeveloped societies themselves tend to bureaucratize, albeit not always very successfully. They adopt economic planning in the context of autocratic governments with the explicit aim achieving economic development by increasing productivity, capital accumulation and technological progress.

The ideal type of bureaucracy, brilliantly developed by Max Weber at the beginning of this century, becomes, at all levels of social life, the dominant form of social system. The

bureaucracy, or bureaucratic organization - defined as a rational social system, that is, as a social system managed according to efficiency criteria, which define precise objectives to be achieved and choose the most adequate, efficient means to achieve those objectives - becomes the historical form of social grouping of our century. A bureaucratic organization, insofar as it is a rational social system, is a technical organization, which can only be managed by technobureaucrats. Managing a bureaucratic organization efficiently requires a great deal of technical expertise, which is becoming a monopoly of professional managers. On the other hand, to manage society as a whole in terms of economic development, it takes a whole new set of knowledge, which is gradually becoming a monopoly of economists. Professional managers and economists, therefore, are more and more dependent on the bureaucratic world in which we live, leading bureaucratic organizations and global society itself in a process of total bureaucratization.

In these terms, managers and economists are as technical as engineers, or physicists, chemical, or biologists. Or rather, the identification of managers as technicians is often more adequate than in the case of the professions just quoted. The physicist, or the biologist, for example, may be much more scientific than technical, may be much more concerned with the development of knowledge than with increasing efficiency. On the other hand, the manager is always a technician, inasmuch as he puts as his basic objective the efficiency, the use of the most adequate means to perform a certain task. In fact, when one denies the bureaucratic manager the quality of technician is focusing on a confusion that has two origins. First, it is thought that the technician is necessarily a specialist. Now, the manager is not exactly an expert in the classical sense of the term. He does not specialize in any particular and narrow sector of knowledge. He has undoubtedly a specialized knowledge, he has learned and knows how to manage organizations. But this knowledge implies a particular arrangement of an immense range of knowledges, or, in other words, implies a knowledge of an extremely varied range of areas, all seen under a particular approach: the administrative one. It is common to hear that the manager is an expert in generalities. He must be well acquainted with the basic principles of social science, sociology, psychology, and economics. He should feel comfortable with mathematics, statistics, logic, and formal methods of decision-making. He must have a solid base with accounting, know production, marketing, finance, financial planning, costs, industrial relations, commercial law, tax and labor, and, especially, must know the theory of organizations, and understand how organizations operate, how they are dependent on the technology employed, the various types of market in which they operate, and the economic, political and social system in which they are present.

Secondly, the quality of the manager is denied because many managers do not possess the knowledge listed above, yet they hold management positions in organizations. Indeed, within the bureaucratic organizations, not only technical capacity is sufficient. You need to know the rules of how to be successful in an organization. It takes some degree of flattery and opportunism. It is necessary to conform to the values and norms of the organization. You have to be flexible. One must know how to live with others and especially with the bosses. One must be independent, without falling into the extremes of arrogance or "yes sir." It is necessary to know how to adapt to the social standards of the superiors. It needs to be ambitious and calculated. One must have the capacity for social mobility, detachment from relatives and

friends who have lagged behind, and find new relationships in the higher social stratum. In short, it is necessary to have a series of personality traits, which are not necessarily technical.

15

In addition to these personality traits, however, the professional manager must possess a technical knowledge, which becomes increasingly complex, as bureaucratic organizations grow, pressures for greater efficiency increase, and the theory of management and organizations develops. To deny the manager a technical character because he must also possess certain particular characteristics of personality, which are not always the most recommendable from the point of view of the current morality, reveals simply an attitude of idealization of the figure of the technobureaucrat. The technobureaucrat is also a man with the qualities and defects common to all men. To imagine the technobureaucrat as a kind of superman, who exists only in function of his specialized technical knowledge, is an ideological attitude very common in the modern world, which I shall examine later, within the context of technocratic ideology.

At the moment, I hope to have made it clear that the bureaucratic manager is a technobureaucrat like any other. More than this, it dominates a type of technical knowledge - organizational knowledge - that is becoming increasingly important or strategic, as production and social life itself are increasingly realized within bureaucratic organizations. We are witnessing, therefore, a historical process of transformation, in which one factor of production, capital, ceases to be strategic, while another factor, technical and organizational knowledge, is gaining this character. The technology, incorporated into other factors of production, has always existed. The differentiating factor of land, labor, and capital has always been technology. The continuous and progressive technological development, however, implied a qualitative leap. Technology ceased to be a mere appendage, no longer a mere garment of which the earth, the labor and capital were clothed, to gain a life and a mass of its own.

In fact, technology has become not only more complex, not only more decisive in the process of economic development, not just the new strategic factor of production but has become the dominant phenomenon of the time in which we live. Technique has been so embedded in the life of modern man that it has acquired a preponderant role in determining our own life. Jacques Ellul¹⁶, in a remarkable and pioneering work on the problem, published in 1954, shows how the technique took over the modern world, becoming the main configurator of our civilization.

We have two alternative ways of approaching technique. According to an optimistic conception we can imagine technique as a neutral element, which has always existed throughout history, and is used by man freely, according to his own will. According to this view technique would be a mere element between man and his instruments of production. It would be the way man manufactures and uses his means of production. This technique would always be evolving through history, but under the control of the human will, to which technique would be subjugated. The other alternative is to consider technique as possessing an entity of its own, as possessing an autonomy in relation to the man who creates it, and as being bearing objective characteristics that, far from making it valuatively neutral, transform it into a decisive

element in the process of history. Jacques Ellul opts decisively for the second alternative, stating:

In effect, the technique took on a body of its own, became a reality in itself. It is no longer a means and an intermediary, but an object in itself, an independent reality with which to count.¹⁷

It is not, however, an abstract choice. The option starts from a historical analysis of the problem. If the technique always existed, it did not always have the importance it has today. The techniques were initially confused with magic. All the productive acts of traditional societies are loaded with magical elements, as has already been exhaustively demonstrated in anthropological studies. Slowly, the techniques evolved and escaped their magical connotations. They have, however, one basic feature: they were traditional. The techniques of production were transmitted from parents to children without major criticism. Its legitimacy was based on tradition, on the fact that past generations had always done so. It is only from the beginning of the Modern Age, with the advent of commercial capitalism, and particularly since the Industrial Revolution, that techniques lose their traditional character in order to gain rational characteristics. The techniques then begin to develop at an incredibly faster pace than at the time of magical techniques or traditional techniques. The development of the technique begins to take place in geometric progression. At that moment we are witnessing the phenomenon that Marx and Engels called a change of quantity into quality. The simple quantitative development of the technique implied, after all, a qualitative change. And as a result, as Jacques Ellul observes: "the current technical phenomenon has almost nothing more in common with the technical phenomenon until modern times."¹⁸

Technique, through its quantitative development, gives, after all, a qualitative leap. It gains its own mass and meaning. It becomes universalized, becomes autonomous in relation to the men themselves, becomes the main agent of the society in which we live, progresses, in a necessary and geometric way, and, from mere servant of man, is transformed into his tyrant. Yet in the terms of Jacques Ellul, who defines the problem dramatically, "this is the startling twist we have seen: we have seen that throughout the course of history, without exception, the technique belonged to a civilization; was an element of civilization, engulfed in a multitude of non-technical activities. Today the technique encompasses all civilizations."¹⁹

And in what terms does the technique encompass all civilization? Simply turning our civilization into a technical civilization.

This means that our civilization is constructed by technique (which is part of civilization only what is the subject of the technique), which is built for technique (everything in that civilization should serve a technical purpose) that is exclusively technical (excludes everything that is not, or reduces it to its technical form).²⁰

Technique, therefore, becomes not only the new strategic factor of production, but the very defining element of the world in which we live. Man developed the technique, created his little monster; he grew up, became independent, and eventually swallowed up his own creator. Initially the technique, although not an accidental element, was a secondary element that modified the work and the capital. Technological development, however, was of such a

magnitude, the technique spread so comprehensively, technology gained such power over men, and technological development gained such autonomy in relation to the men themselves that the qualitative leap occurred. The technique took on a reality in itself. It has become an independent factor of production, such as labor or capital. Or rather, it has become the most important factor, relatively scarcer, has become the strategic factor of production of our time. Even more than that, technique has become the main element in shaping the economic infrastructure, and the cultural superstructure of modern industrial societies.

Communist revolutions

The first session of this essay was an attempt at theoretical analysis. We did a quick critical review of historical materialism and examined the importance of the strategic factor of production in defining the great stages of history. The second session was more descriptive or factual. It showed the technique as a new strategic factor of production. It demonstrated its pervasive character, penetrating into all sectors of the modern world and dominating everything. He sought to make clear that our concept of technique and technicians is broad, including organizational knowledge and therefore the professional managers of large bureaucratic organizations. Accepting the premises of the first two sessions, the necessary conclusion we must reach now is that we are entering a new stage in history: that of the technobureaucracy. If the strategic factor of production is the defining element of the great stages of history, and if this factor is ceasing to be the capital to become the technical knowledge or simply the technique, we must obligatorily admit that we are entering a new phase of story.

However, the arguments based on the conception of a "historical necessity" are extremely dangerous. They are often the result of naive determinism. They almost always serve to justify or give strength to the ideologies of those who characterize "historical necessity". Marx's foreseeing the inevitability of the advent of socialism, for example; although it cannot be accused of the fruit of naive determinism, is, undoubtedly, a translation of Marx's political aspirations and values. What is certainly inevitable is the disappearance of capitalism, like that of any other socioeconomic system. By the time Marx lived, however, he was not in a position to predict with certainty what system would replace capitalism. He predicted socialism and unfortunately missed. Today, a century elapsed, we have more elements to make a prediction. Or rather, a finding, since it is not exactly a forecast. The revolutionary process of historical phase change is under way. Capitalism has not yet disappeared from the world, but it is in the process of decay. The forces of technobureaucracy are clearly present. They are discernible with the naked eye. In some fields they have already become predominant. In others they still work in an advisory capacity. But in all sectors the growth of its influence and power is undeniable.

We must distinguish, in the analysis of the emergence process, the developed capitalist countries, the underdeveloped countries and the so-called socialist or communist countries. I will examine this problem in this and the next two sessions, in which I will discuss communist revolutions, military revolutions, and the managerial revolution. The communist countries are

simply those in which capitalism was suddenly liquidated through a proletarian and supposedly socialist revolution, but effectively technobureaucratic revolution. In making this statement, we are basically modeling the Soviet Union. I know these generalizations are dangerous. Therefore, for the other countries, and particularly for China, it will be necessary to make the necessary changes to the general idea that I am presenting.

In the same way that the French Revolution initially had a popular character, and then to be enthused by the bourgeoisie, the Communist Revolution also had its thermidor. It was idealized by Marxist politicians and intellectuals, who led it. They obtained the support of urban workers and a large portion of peasants and soldiers. It has undoubtedly become an eminently popular revolution. It seemed, indeed, a socialist revolution. Eventually, it was a technobureaucratic revolution. For socialism the world was not yet ripe. For a classless, democratic society in which there was freedom and equality of opportunity, the scarcity still existing in the world did not offer conditions. Scarcity accentuates the natural selfishness of men; rationalist utilitarianism sacraments it. And conflict, institutionalized by capitalism through competition, gained new connotations in technobureaucratic society, but cooperation was not able to replace it as socialism requires. Socialism is based, by definition, on cooperation between men. It is not possible to imagine a socialist system without a high degree of cooperation among all. In 1917, as perhaps still today, the world was not yet prepared for an economic system based on that.

For technobureaucracy, however, the world was getting ripe. The development of the Soviet revolution is a clear demonstration of this fact. Initially, the revolution was led by radical middle-class politicians and intellectuals, full of idealism, who in a short time intended to establish social justice, equal opportunities, freedom in a classless society. The control of the most important government offices and business administration was handed over to these politicians and intellectuals and to the workers who had most actively collaborated with the revolution. The criteria for the distribution of power were eminently political. Fidelity to the cause of revolution was the essential element. The October Revolution had an eminently popular character. It had the determined support of the working class and, at the beginning, of the peasant class itself. As Isaac Deutscher says:

The socialist revolution was sincerely supported by the urban working class ... No class of Russian society and no working class in any part of the world acted with the energy, the political intelligence, the capacity for organization and the heroism with which the workers Russians acted in 1917 and then during the civil war.²¹

Therefore, despite the leadership of middle-class intellectuals and politicians, the October revolution was undoubtedly a proletarian revolution. And once accomplished, a large number of workers took on key positions in the new power system. Everything indicated that we were really facing a socialist revolution. In a short time, however, the ideal of socialism became a mere slogan. The first step in this direction was the creation of the single party. Lenin's death and the rise to power of an autocratic and unscrupulous leader like Stalin hastened the process. The revolution continued to be celebrated. The seizure of power by the working class continued to be affirmed. And in the meantime, a totalitarian technobureaucratic system in which all

freedom was abolished, where new privileges were constituted, in which the greatest crimes were committed, in the name of the proletarian revolution.

There are many possible explanations for this betrayal of the October Revolution. Among current explanations, at least four should be mentioned. Some claim that the revolution was betrayed because Lenin died prematurely, being replaced in power by an intrinsically despotic and immoral man like Stalin. The weakness of this kind of statement is obvious. It is the fruit of a naive historical personalism. Others prefer to generalize a little more and attribute the problem to the thirst for power that characterizes men, and to the corrupting character of power. It is also a personalistic view of history, which is often supplemented by the assertion that this is the fate of all revolutions. Still others, whose ideological intentions are obvious and need no commentary, claim that the result of socialism is necessarily Soviet bureaucratic totalitarianism. A fourth, more respectable type of argument, attributes the failure of the 1917 revolution in instating an effective socialist system to the premature character of this revolution. Russia was not ready for a socialist revolution. The bourgeois revolution had barely begun. The working class was not yet numerically respectable. The economic system had not yet reached a level of integration and social production, scarcity was still a phenomenon too generalized, so that there would be conditions for a socialist revolution. In the words of Isaac Deutscher:

The Marxist sees in the full development of the social character of the productive process the principal and historical antecedent condition of socialism. Without it, socialism would be a castle in the air. Trying to impose social control on a mode of production that is not inherently social is as incongruous and anachronistic as the maintenance of private or sectional control over a productive process that is social ... The forms of socialism were forged [in the Soviet Union; before the required content, the economic and cultural substance; and, as the content was produced, the forms deteriorated or were distorted.²²

And concludes Isaac Deutscher, summing up in one sentence the Russian Revolution:

In the beginning, the political-social institutions created by the Revolution rose far above the real level of the material and cultural existence of the nation; then, when that level went up, the social-political order was reduced by the weight of bureaucracy and Stalinism.²³

The argument on the premature character of the Soviet revolution is more acceptable but must be properly completed to avoid the personalism that is present in Isaac Deutscher's argument - the error of attributing to the bureaucracy and Stalinism the ultimate fault of noncompliance with the ideals of revolution of 1917. It must be added to this argument the fact that, if the Russian society was not ripe for socialism, was reasonably ready for the establishment of a technobureaucratic regime. When the Soviet revolution was realized, technological development in the world had already been enough to make technical and organizational knowledge the strategic factor of production. The revolution liquidated with the capitalist system but continued to deal with the problem of scarcity and underdevelopment. No society to date in the world has solved the problem of scarcity. Not even the American. Not, for sure, the Russian in 1917, which, moreover, had had its precarious economy destroyed by world war and civil war.

The vacuum of power created by the liquidation of the capitalist and feudal system was therefore to be filled by something that could cope with the existing scarcity, manage the country's economy, and promote its industrialization. As scarcity continued to exist, the economic problem remained dominant. The Soviet revolution could only effectively replace capitalism if it were capable of carrying out the tasks relative to the production of wealth that capitalist entrepreneurs and the capitalist state had done. The new system should manage social production at least as effectively as the capitalist system. If possible, with greater efficiency. Or rather, the whole theoretical formulation of the socialist economists showed that the capitalist economic system was inefficient, marked by disorganization and waste. Within the rationalist view in which socialism, as much as or more than capitalism, was conceived, one of the main arguments in favor of socialism was that it was a more efficient, more rational system than the capitalist system. Now that a capitalist revolution had taken place, it was an essential condition of their survival that these theses should be proved.

The only alternative for this to happen, apart from capitalism itself, was to “rationalize” the social system, that is, to bureaucratize it. It was a basic bureaucratic organization - the Communist Party - and, from it, organize the state bureaucracy and productive bureaucratic organizations - the soviet companies. And for this it was no longer possible to appoint politicians, intellectuals and revolutionary workers to key posts. These could be harnessed to the extent that they were technically capable and were able to fit into the new system - a rigid, inflexible, and closed system in which political conformism was integral. In a system governed by efficiency and fear. Now, revolutionaries are idealists who generally do not fit into this type of system. It is not surprising, therefore, that many have rebelled. And that have been summarily expurgated. The result of this was the emergence of a "new class," in the expression of Milovan Djilas, a class of technobureaucrats, who took power in an oligarchic way, suppressed all freedoms, and created a series of privileges for herself.

It is no longer the politicians, much less the working class, who control power. This is in the hands of the technobureaucracy, basically composed of professional managers who, by adopting the role of politicians, administer the Party, the Government and the companies. They are politicians in that they are faithful to the interests of the group of technobureaucrats themselves and to the extent that they are able to use official political jargon: a counterfeit of Marxism-Leninism. Essentially, they are bureaucrats, who are admitted by their peers insofar as they possess the qualities of a professional administrator: decision-making ability, imagination, capacity to control his own ambition, need for achievement, and at the same time a high degree of adaptability, conformism and strict loyalty to the system.

Djilas, in *The New Class*, makes a remarkable analysis of the technobureaucracy of the communist countries. His criticism is often passionate and unilateral. It emphasizes more the political qualities required from the bureaucrat than the technical competence required. He did not realize that the two issues are similar but distinct. He admits, however, that in addition to loyalty, the bureaucrat must be capable. He tells us about the criteria for ascension to the new class:

The new class is being created with the lowest and the widest layer of the people, and it is constantly transformed ... Theoretically, the way to the top is open to all. The only

requirement made to cross the road is full and sincere loyalty to the party or to the new class. Wide at the base, it becomes narrower and narrower as it approaches the top. It is not enough to wish to rise, it is necessary to be able to understand and perfect doctrines, to be firm in the fight against antagonists, exceptional dexterity and intelligence in the internal struggles of the party and talent to strengthen the class.²⁴

In short, the revolution of 1917 failed to establish a true socialist regime because; once it happened, its own survival condition was to betray itself and to become technobureaucratic. It was premature to the extent that the strategic factor of production remained the fundamental element of history, and to the extent that this strategic factor was shifting from capital to technical and managerial knowledge, thus continuing to exist. It was the technobureaucracy that killed the revolution, but it was not deliberate work. If, instead of Stalin, we had had another leader in the Soviet Union, things might have been a bit different, but not much. Once capitalism was eliminated, the dominance of technobureaucracy was inevitable.

Revoluções militares

Communist revolutions have happened only in underdeveloped countries. In some Eastern European countries, such as Czechoslovakia and East Germany, which were already relatively developed, the presence of the Soviet Union was a decisive factor and we could not properly speak of revolution. Beyond the communist revolutions, however, another type of revolution has become increasingly frequent in underdeveloped countries: military revolutions. My hypothesis is that these military revolutions, like communist revolutions, are an aspect of the emergence of technobureaucracy in the modern world.

No doubt militarism is a very old phenomenon in the world. Assyria was a militarist state. Sparta still remains an example of militarism, that is, of political domination of the military over civilians. Universal history is often confused with military history, revealing the importance that, in one way or another, the military has always had in the direction of public affairs. In Latin America, since the independence period, the rule of almost all countries has been in the hands of the military. The Middle East, within the Muslim tradition, was always under the dominion of caliphs, whose power had religious and military origin. In all countries of the world the power of arms has always been extraordinarily great, and the influence of the soldiers has always been decisive. This power, however, was not exercised in its own name. Military power was an instrument at the service of the traditional power of the aristocratic landowners, or of the economic power of the capitalist. Traditional power was often confused with military power. They were the landlords, the nobles, the caliphs, the shoguns, the mandarins, the military themselves. The military career was the career par excellence of the children of the aristocrats. In some cases, it was the military force that gave rise to the aristocratic position. This is the case par excellence of the medieval knights or the samurai. In others, military power juxtaposed with traditional power, it was allied, as it happened with so many caudillos, in Latin America during the nineteenth century.

It is not this militarism we are referring to when we say that the military revolutions of the second half of the twentieth century are an aspect of the emergence of technobureaucracy in the world. It is always necessary to remember that economic, political and social phenomena are eminently historical. New facts, new instruments and techniques of production, new

relations of production are always arising, and historical phenomena are always in transformation. A decisive transformation, in relation to militarism, and the role of the military in politics, occurred with the emergence of modern armies. A broad conception of the army would lead us to imagine it as having its origin in immemorial time. Indeed, if we define the army simply as a set of men and weapons aimed at armed struggle, there have always been armies in the world. However, within a narrower conception, armies can be defined as bureaucratic organizations permanently made up of professional soldiers, trained for war, obeying a defined hierarchy, and written, formal, and impersonal regulations. Within this bureaucratic conception of the army, this is a recent phenomenon, which has its origin particularly in the Prussia of Frederick the Great, in the eighteenth century, and then, in the period of capitalism, during the nineteenth century, is generalized by the other nations of the world. In the words of Morris Janowitz:

Mercenary officers existed in the sixteenth century and rudimentary forms of professionalism were clearly discernible in the eighteenth century; however, one cannot speak of the emergence of an integrated military profession until after 1800.²⁵

Within this conception, the professional armies appear as an instrument of the nation-states, which arise in Europe, from the absolute monarchies, with the purpose of assuring the internal order and carrying out the defensive or aggressive wars that would build the domestic markets on the interest of the capitalist bourgeoisie that then was becoming the new ruling class. Armies, therefore, are the fruit of the emergence of capitalism, just as absolute monarchies and national states were. They aimed at the combat to the feudal system, and to secure conditions for the development of the national bourgeoisie.

It was, therefore, with capitalism that modern armies arose. It was with capitalism that the professional soldier became generalized and that political power was separated from the military. Before capitalism, traditional power was closely related to military power. The military were the aristocrats themselves. With capitalism, the military is being recruited more and more into the middle class. The military is no longer confused with aristocrats or capitalists. In the last century, to the extent that developed countries are adopting a liberal ideology, the army is reserved an essentially non-political role. The military is reserved essentially military functions.²⁶ The political control of society is reserved for politicians and capitalists.

This conception, which subordinates the military to politicians and capitalists, still remains in the liberal democracies of Western countries, though in the second half of the twentieth century it is less and less true. It was correct during the last century and the first half of this century, but in the developed capitalist countries of more deeply rooted liberal traditions the influence of the military is increasing. In the underdeveloped countries, already in this century, the professional armies begin to organize themselves. In Africa, Asia and Latin America, professional armies are beginning to emerge. In Latin America, for example according to Jacques Lambert, the first professional army to be structured was that of Chile, around 1880.²⁷ At about the same time, partly as a result of the Paraguayan War, it emerges as an effective bureaucratic organization the Brazilian army, which until then had been insignificant in comparison to the militias or provincial national guards, which represented the local oligarchies.²⁸

Armies do not necessarily arise as independent bureaucratic organizations. In Brazil, for example, it took about half a century for the army to organize itself in the form of a bureaucracy. But, from the Prussian model, the bureaucratic vocation of the armies is irreversible. The greater efficiency achieved in both war and peace by a disciplined army with a defined hierarchy, regulations, and a precisely established career, consisting of professional officers, trained in military academies, becomes so evident that no other model can be imagined of army.

This bureaucratic vocation of the modern armies is accentuated with the technification of the war. All the immense technological development that has been taking place in the twentieth century is reflected directly in the military technique. In fact, much of the research and development of science in our time is due to military interests. The development of nuclear research and space-station research are two significant examples of the military motivation of contemporary scientific development. As war becomes more technological, the bureaucratization of armies becomes more and more necessary. Bureaucracy is a social system run by experts, that is, by technically competent managers. The increasing complexity of military technology requires increasingly trained officers, some as specialists themselves, others as general managers; all as professional technobureaucrats. In addition, modern armies are getting bigger, which, again, points in the direction of bureaucratic organization. When a social system grows large, it is practically a condition of its survival that it becomes bureaucratic.

Whether it be the character of military life, discipline, hierarchy of routines and regulations, whether by the increasing technological complexity of armaments and military tactics, or by the increasing size of armies, its bureaucratic vocation is indisputable. The bureaucratic organization of modern armies in developed countries, specifically in the United States, was the subject of extensive research by Morris Janowitz.²⁹ Janowitz shows us how the American army, initially aristocratic and traditionalist, was transformed into a vast bureaucratic enterprise. Military elites, initially recruited from the upper-upper class, gradually changed their recruiting base to the middle class. On the other hand,

The new tasks of the armed forces require the professional officer to develop more and more common qualifications and guidelines for civilian managers and managers. A large segment in the military institution resembles a civil bureaucracy with regard to research, development and logistics problems.³⁰

In the underdeveloped countries research has not been carried out with the same depth, but the bureaucratic character of the armies is clear. The adopted army model is always that of developed countries. US, French, British, German, Soviet military missions are in charge of implementing modern military technology in those countries. In addition, the use of modern weapons is a condition the modernization of military organizations in underdeveloped countries. Contrary to what happens in developed countries, however, armies in the underdeveloped countries precede, rather than being the result of the modernization of the economies of these countries. In industrialized countries we have already seen that the armies were the fruit of capitalism, they were the result of the process of industrialization and bureaucratization that will reach the whole of society. In underdeveloped countries the army is often the first modern bureaucratic organization to establish itself. It is usually the most

structured and efficient of bureaucratic organizations. Perhaps because of this bureaucratic vocation, intrinsic to modern armies, and certainly because of the armaments and training they receive from developed countries, the fact is that it has been much easier to organize an army in a modern bureaucratic way than other organizations. In the words of Lucian W. Pye:

Compared with the efforts that have been made to develop, for example, civil administrations and political parties, it seems that it is somewhat easier to create modern armies in transitional societies than other forms of modern social structures.³¹

This process of bureaucratization of armies in underdeveloped countries received a tremendous boost after the Second World War. At the same time, and concomitantly with the liberation of the colonial yoke of a large number of African and Asian countries, economic development, that is, the modernization and industrialization of the peripheral countries become their political objective number one. A number of factors, which need not be discussed here, have transformed economic development since the second half of the twentieth century into the fundamental aspiration of all the countries of the world, including the underdeveloped countries. We have thus two phenomena that occurred at the same time, from The Second World War: on the one hand, the armies became the most developed and modern bureaucratic organization of the underdeveloped countries; on the other, these countries began to aspire, first and foremost, to economic development. The result of the combination of these two factors is the military revolutions, is the seizure of power, in almost all the underdeveloped countries of Africa, Asia and Latin America, by the modern military oligarchies. To cite only a few countries, military revolutions take place in the post-war period in Egypt, Syria, Iraq, Sudan, Algeria, Thailand, Indonesia, Korea, Pakistan in Senegal, Congo, Togo, in Chad, in Nigeria, in Brazil, in Argentina, in Paraguay, in Bolivia, in Peru.

In relation to the Latin American countries it could be objected that this is not a new fact. Military interventions have always been in Latin America. In the process of bureaucratization and professionalization of the armies we have been examining, it is necessary to distinguish interventions from the past, often carried out by caudillos rather than by armies, or by an army that has not yet been bureaucratized, which simply served the interests of rural oligarchies, of the most recent ones, especially of the interventions in Brazil and Peru, which have a defined technobureaucratic character. The military, insofar as they are bureaucratically organized, insofar as they are professional managers or specialists in the most varied activities, not only military but also civilian, they constitute a technobureaucracy. Initially, accepting the liberal model proposed by the developed countries, power is handed over to local politicians who are associated to the local economic oligarchies. Soon, however, the military realize that these political and economic oligarchies are unprepared for the exercise of power, in addition to having no popular bases. In fact, neither the population is prepared for democracy nor the elites reveal the ability to democratically lead the country on the path of economic development. The military, in turn, as well as having technical and organizational capacity, as part of a modern bureaucratic organization, still have the power of arms. Hence for the technobureaucratic military revolution and for the establishment of an authoritarian regime is a step.

Technobureaucratic military dictatorships have, thus, rapidly spread by underdeveloped countries. The military increases political power not only in the name of its power and its

supposed but not necessarily true managerial competence. This does not mean that civilian groups do not necessarily have the competence to manage themselves. In a country like Brazil, for example, the first military revolution of the type we are analyzing here occurred in 1930. But soon the military returned the power to civilians. In 1964, when the civilian power and the political scheme established in 1930 went into crisis, and a vacuum of civilian leadership was established in the country, the military, now fully technobureaucratic, took power with the intention of keeping it indefinitely. The military, insofar as they are professional managers, they are able to apply their technical knowledge to the administration of the most varied types of bureaucratic organizations. The generalist, non-specialized character of the manager is also present in the professional military man who is trained to administer the military organization. In addition, the military, even before a military revolution, has already begun to be called upon for a wide variety of tasks in the civilian sector. As Jacques Lambert observes:

In underdeveloped countries lacking professional managers, armies are called upon to perform functions of all kinds in the economic or political field. Public managers and private companies are few and often ill-prepared; as has been pointed out in a number of reports, the army is the institution that most quickly acquires a solid and well-structured structure, and officers often receive technical training.³²

Thus, even before assuming political control of the country, the military is already beginning to occupy a large number of positions in the civilian administration, public enterprises and even private companies. They do not occupy these positions simply because politicians and businessmen bow to military power, as the anti-militarists claim, but because they have a basic competence to perform such tasks, insofar as they have been trained in an organization modern bureaucracy. Assuming these civilian functions, the military is training and acquiring experience. At a time when they feel strong enough, not only militarily, but also administratively, and they find that their bureaucratic ideals of rationality and efficiency are not being followed by civil power, either because it represents the interests of traditional oligarchies (in Brazil, in 1930, in Peru, in the whole Middle East), or because the civil political system has entered into crises of social character (Brazil in 1964 is the paradigm of this case, which also has an illustration in Indonesia with the deposition of Sukarno in 1967), at that moment the military carries out a technobureaucratic military revolution. Their natural desire for power is an ingredient in revolutionary motivation. But the essential element is the technobureaucratic belief of the professional military that, by assuming authoritarian power, they will give the economy and politics of the country greater organization, more security and greater efficiency.

These revolutions take on a rightist or left-wing character, insofar as they reveal a more or less condescending attitude towards internal and external capitalism. Thus, Egypt, Algeria, or Peru would be examples of left-wing military revolutions, while Brazil in 1964, post-Peron Argentina, or Suharto's Indonesia are examples of right-wing military revolutions. In fact, however, this distinction between left and right, in the case of these revolutions, is not significant. The similarities between them are much greater than the distinctions. All of them tend to be dictatorial, tend to place internal security and economic development as main objectives, tend to be modernizing and efficient; tend to put professionals in the key political and economic posts. In other words, the military revolutions are technobureaucratic, rather than

left or right. The classification between left and right, on which analysts and political scientists continue to insist, is poorly adapted to the political choices of the military as well of all other technobureaucrats. As Arnaldo Pedroso d'Horta observes in relation to the military.

The military, not being embedded in the economic organization as a class with specific interests, can pass, indifferently, from right to left and from left to right.³³

Depending on the circumstances, the interests of the military may be met in a regime in which the capitalist class is maintained and in another where it is suppressed or reduced. The military revolutions of the second half of the twentieth century, in the underdeveloped countries, are one of the clearest and most decisive symptoms of the emergence of technobureaucracy worldwide power. The new military, in assuming power, do so with the definite goal of establishing a more modern and efficient order in the country. They judge themselves to be the only organized group and holder of modern technology in the underdeveloped country in which they carry out their revolution. General Edgardo Mercado Jarrin, the chancellor of Peru, for example, during his visit to Brazil in 1971, stated in an interview:

The Peruvian military came to the conclusion at one point that they were the sole holders of modern technology. Their equipment was modern and financed by developed countries. However, the rest of the population did not follow these military developments. It was then that the military embarked on a movement to extend the benefits of development to Peruvian civilians.³⁴

As soon as they take office, the military call to assist them civilian technobureaucrats. This was done, for example, in Brazil in 1964. A large number of technobureaucrats, mainly economists and engineers, were called in to take power, while politicians, businessmen, union leaders, students and to the extent that they did not possess a technobureaucratic origin such as the military and civilian technobureaucrats, were excluded from power.

Finally, it must be made clear that the military takes power not only because of its technical competence but also as a simple result of its military strength and will to power. In this respect, the military, as well as the communist technobureaucrat, uses its technical-professional competence as a *justification* for its seizure of power. To the extent that they control the new strategic factor of production - technical and organizational competence - they tend to assume political power. But since they are not the only ones to have this competence, the simple and old desire for power, added to the force of the arms, become important elements.

Technobureaucracy and Capitalism

Now, after examining communist revolutions and military revolutions, we must examine the emergence of technobureaucracy in advanced capitalist countries. Our model for this analysis will be the United States, although it is largely valid for the others. The theme of this session contains in itself a contradiction - technobureaucracy and capitalism - that expresses well what has been happening in this area. Paradoxically the most technologically advanced countries are those in which technobureaucracy has made less progress. Through one of these

typical jumps to which history is subjected, communist countries and underdeveloped countries are establishing technobureaucratic regimes, replacing capitalist systems that have not yet been able to achieve structure and assure social order. In certain cases, a definite capitalist stage did not even come into being when a technobureaucratic revolution took over. Meanwhile, in countries where capitalism is already mature, technobureaucratic progress is much slower. Social order is already in place making the resistance of the capitalist system much stronger. In addition, the liberal ideology has deep roots, especially in the Anglo-Saxon countries, making even more difficult the emergence of technobureaucracy, whose ideology is eminently authoritarian.

Nevertheless, it was in the advanced capitalist countries, and particularly in the United States, that the thesis of the technobureaucracy was first raised. The first significant placement of the question was made by Berle and Means in their major survey of the separation between ownership and control in the large US corporations.³⁵ In the first chapter of the 1932 book, *The Modern Corporation and Private Property*, the authors put the basic thesis of the book: the property system is in transition. With the concentration of capital in large corporations and the democratization of capital distributed among thousands and thousands of shareholders, the capitalist industrial system entered a phase of profound changes. Companies are no longer controlled by individuals or small groups, in terms of individualistic capitalism of the nineteenth century. It separates the control of the companies from its property. Corporate control goes on to a group of professional managers, while ownership is divided among absentee shareholders.

Next, the authors show that an extraordinary movement of concentration of economic power occurred in the United States. At the time the survey was conducted, (1929) the top 200 companies controlled 49 percent of the wealth of US companies. In order for this concentration to be possible, it was necessary to resort to the savings of an increasing number of people. The authors distinguish five types of control of the companies and classify the 200 companies surveyed according to these types. We would thus have 44% of the companies would be under the control of professional administrators; 21% under legal control (pyramid system, non-voting shares, shares with greater voting power than others, etc.); 23% under the control of the capital minority; 5% under majority control, and 6% under virtually total control of one or a few individuals. The dividing line between control by professional managers and control by minority was arbitrarily established in 20% of capital control. On the basis of these data, the authors concluded that an extraordinary process of concentration of capital in the hands of a few large corporations was taking place in the United States, at the same time as the capital of these companies became more democratic, their owners lost power, was increasingly concentrated in the hands of professional managers (technobureaucrats, according to our terminology). The control and ownership of the companies were thus separated. These became bureaucratic. The capitalists lost power. And at the conclusion of his work Berle and Means affirmed:

It is conceivable - indeed it seems almost essential for the large corporations' system to survive - that control of large corporations will come into the hands of a perfectly neutral technocracy, which would balance the demands of the various groups in the

community and each a part of the income stream on the basis of a public policy rather than on private greed.³⁶

The ideological character of the position of Berle and Means, regardless of their scientific value, is evident. Some liberal social scientists sought to see the end of capitalism and the establishment of a more just and rational society from the peaceful takeover of power by a neutral technocracy. Realizing that capitalism would necessarily disappear, they preferred to see it gradually replaced by a system dominated by professional technobureaucrats and managers. Technocracy thus became the heir to capitalism. More than this, it became the logical consequence of the success of capitalist development. It was capitalism that became more rational; were the capitalists who gave the direction of their companies to competent professional managers. It was the technobureaucratic ideology that was being built.

Before that the technobureaucratic ideology had time to define itself, a pioneering idea emerged that would put the problem of the technobureaucratic revolution for the first time in a clear and precise way. In 1941, James Burnham published an extraordinary book that would have enormous repercussions and would cause deep irritations: *The Managerial Revolution*. In this book Burnham presents us with a great picture of the technobureaucratic revolution. He claims that in relation to the future of the capitalist system we can adopt three alternative theories: that capitalism will remain forever, that capitalism will be replaced by socialism, and finally that capitalists will be replaced by the managers. After analyzing and discarding the first two alternatives, Burnham opts for the third. According to this theory, we live in a period of extremely rapid and profound social, political, economic and cultural transition.

This transition starts from a type of society that we call capitalist or bourgeois to a type of society that we will call managerial ... What is happening in this transition is a struggle for social dominance, power and privilege, in search of the position of the dominant class, waged by the social group or class of managers (managers).³⁷

Burnham had been a militant Trotskyist, knew the Marxist historical-dialectical method, and employed it systematically. But he broke with Trotskyism and adopts in his book a position of personal independence that would irritate all currents. It would make unhappy the conservative capitalists, because he foresaw the end of its system. It would annoy socialists of all shades in that it envisaged technocracy and not socialism as a substitute for capitalism. It would irritate the ideologues in emergence of the technobureaucracy because, although predicting its victory, it did not show them any sympathy. In fact, Burnham had already put the technobureaucrats of modern capitalist societies into the nasty company of the fascists, Nazis, and Stalinists. For Burnham, fascism and Leninism-Stalinism are manifestations of the managerial revolution as well as the gradual seizure of power in the United States by professional managers. In fact, the first two cases, marked by the centralization of power and totalitarianism, would be more specific situations of a managerial society than the American one, in which capitalism was still in force, although in a process of decay.

Burnham's book sparked a great deal of discussion. The technobureaucratic ideologues, intransigent advocates of the American political and social system, agreed to the central thesis of the book, welcomed the managerial revolution, but were outraged by the placing in the same boat of the seizure of power by professional managers in the United States and by the Nazis

and Stalinists, respectively in Germany and the Soviet Union. It was impossible for them to conceive the hypothesis that, in the final analysis, the three movements had deep features in common: they were governments of technobureaucrats, originating in the middle class, who set out to rationalize and make more efficient the social system. No doubt American managers have never approached totalitarianism and disrespect for the individual rights that marked Nazism and Stalinism. But recent history has shown that even a government marked by deep democratic traditions, such as the American, when it comes to be dominated by a technobureaucracy, whether civilian and / or military, is capable of committing violence against democracy itself, on behalf of efficiency and national security.

Marxist intellectuals, however, rejected Burnham's thesis altogether. They refused to accept the thesis that the managerial revolution was taking place in the United States. In this sense, they began to reject the validity of the conclusions of Berle and Means' research, contrasting it with other research. One of the leaders of this position in the United States was Paul Sweezy, who cites a study conducted in 1940 by Goldsmith and Parmelee, based on research conducted by the Securities and Exchange Commission,

In about 140 of the 200 companies (the largest non-financial corporations in the United States), the number of shares held by a single interest group was large enough to justify, along with other indications such as representation in management, classification of such companies as being more or less definitely under the owners' control.³⁸

To this figure Paul Sweezy adds the observation that among smaller companies, the proportion of companies under owner control should be much higher. On the other hand, he adds, professional managers,

Although possessing a small proportion of shares, they almost always own absolutely large quantities of them, so that their interests show to a large extent, identical to that of the proprietary group.³⁹

He concluded by citing Fortune magazine that after reviewing the results of the survey conducted by the Securities Exchange Commission, states:

It is clear that the idea of absentee property, as generally interpreted, is a great fable.⁴⁰

In another paper published in the same book, Sweezy, taking also the 200 largest non-financial corporations in the United States and the 50 largest banks, conducted a study in 1939, at the invitation of the National Resource Committee, on interest groups in the US economy. The conclusion reached was that these 250 corporations which controlled much of the US (95%) public utility (34%), utility (75%) and rail assets (95%) were ultimately controlled by only eight groups: Morgan-First National Group, Rockefeller Group, Kuhn-Loeb Group, Mellon Group, Chicago Group, Du Pont Group, Cleveland Group and Boston Group.⁴¹

The conclusion of the left, systematically reproduced in all the texts in which Marxist intellectuals analyze contemporary capitalism and its tendencies, is that the separation of ownership and control of enterprises, the managerial revolution, the emergence of a technocracy that is gradually being replaced by techno-bureaucratism, are simply myths. Company control remains in the hands of the large landowners, who would continue to be the

dominant class par excellence of the industrialized western countries. The Marxist thus adopts a position imbued with a significant immobilism, which clashes sharply with the dynamic conception of history on which it was supposed to be based. To substantiate their position, they call for research, which sometimes has the power to suggest exactly the opposite of what they are trying to prove. Ralph Miliband, for example, examines a survey by Robert Sheehan, which would indicate that of the top 500 US companies, 150 would still remain under the control of individuals or families.⁴² Based on these 30% that would still be in the hands of the capitalist owners, Robert Sheehan comments:

Evidence that 30% of the 5 largest industrial enterprises are clearly controlled by identified individuals or by family groups ... suggests that setting aside the traditional American owner is a slight exaggeration and that the much-publicized triumph of the organization is far from total.⁴³

However, if this counterattack constitutes in itself an admission of the technobureaucratic revolution is underway in the United States, the following observation is definitive in this respect. The control criterion used was, according to Sheehan and Miliband, is very conservative. Companies in which a shareholder or a group of shareholders representing a family owned 10% or more shares were considered under the control of an individual or a family. Let's not discuss percentages here. We admit that in many cases it is possible to control a company with less than 10% of its shares. This fact is known. But it is at the same time clear that the process of replacing landowners with managers in the United States has already reached great depth. Only 30 percent of the top 500 US companies would still be under the control of capitalist owners, as long as we accept that 10 percent of a company's stock is enough to control it.

Finally, we have a research that seems definitive, not only illustrating the great power and autonomy already achieved by the professional managers in the United States, but also the dynamic character, with a tendency to become more accentuated in this process of emergence of technobureaucracy. In 1963, Robert J. Larner carried out a research to update the data of Berle and Means' original research, cited in 1929. To distinguish among the 200 largest North American companies, what type of control exists to adopt the same criteria of Berle and Means. It was only a little more conservative in establishing the distinction between minority control and control by professional managers. Berle and Means established that if no group owned more than 20% of the shares of a company, that company would be considered to be controlled by professional managers. Larner lowered the dividing line to 10%. Nonetheless, the results he obtained showed a huge increase in the number of companies controlled by professional managers. We saw that in 1929, 44% of the companies were controlled by professional managers. By 1963 this percentage had increased to 84.5%. In contrast, the other types of control had been drastically reduced. No other company was owned by one or a few individuals as against 6 per cent in 1929; 2.5% of the companies were controlled by majority, 9% by minority of shares and 4% by legal device, compared with 5%, 23% and 21% respectively in 1929, and 1% in an indefinite situation.⁴⁴

These data are impressive. It will always be possible to argue that even with less than 10% of a company's shares, it is possible for a capitalist group to control it. In one case, in the

mentioned survey, this was verified and the company was considered as being controlled by the minority and not by professional managers. However, even if we admit that the survey overestimates the number of companies controlled by professional managers, it certainly underestimates the change, having lowered the dividing line from 20% to 10%. And yet the change was radical. The increase in the number of companies controlled by professional managers has been so expressive that it becomes a powerful argument for the thesis that the managerial revolution or the emergence of technobureaucracy is occurring at a rapid pace.

Despite these data, however, Marxist social scientists continue to take a firm stand against the idea of technocracy. Paul Sweezy, as one of his great leaders, gave the basic tonic of criticism. Managers, professional managers, and technical personnel have a certain amount of power. But they are mere assistants, mere advisors to the capitalists. They serve the capital before anything else. And from this they derive personal benefits. They do not, however, have real power, nor represent the process of liquidation of the capitalist system. Paul Sweezy states:

Managers are the highest paid wage earners under capitalism. Their insights and objectives are entirely linked to those of their superiors, and their greatest ambition is to become genuine employees of capital, either as damages or as managers. In short, they are totally unprepared for training and social position to adopt an independent historical position.⁴⁵

In the same vein, says Robert Fossaert:

The technocracy does not really exist; it is not a ruling class at a step to dislodge the bourgeoisie. There are certainly technocrats as technicians capable of directing the apparatus of the state or the economy. These, however, cannot appear while the mastery of the bourgeoisie remains unchallenged: it integrates them into their business, interests and families.⁴⁶

The same thesis was defended by Carlos Estevam Martins, whose title is already highly indicative of its content: "Technocracy or Techno-consulting".⁴⁷ In this article, after restricting the concept of technician in a very radical way, excluding managers and military, the author makes a broad and rigorous analysis of the problem, trying to demonstrate that: a) the technocrats simply advise the existent capitalist, bureaucratic or military power; b) technocrats are not chosen according to criteria of competence, but according to the degree of "ideological kinship"; c) decisions are often not made on a technical basis; d) technocracy does not constitute a specific social grouping. And he concludes:

So far as is known, for lack of technocrats, no government has died or will die. Whatever the objectives pursued by the governmental elite, whatever means it may deem useful to achieve what it has in mind, there is always, in the quantity and quality desired, a satisfactory supply of experts eager to build for their own the technocratic facade that the government elite wishes to display in the eyes of the general public.⁴⁸

This is a position similar to the one aken by the Marxists, when they analyze the problem of technocracy and the revolution of managers. Jean Meynaud sums up their view.

According to them, the aim of this category is to establish a smoke screen under which capitalist leaders manipulate national life for their own benefit. In short, for them the

proclamation of the "era of the organizers" aims to conceal the monopolistic phase of capitalism.⁴⁹

And Jean Meynaud himself, who is not a Marxist, but prefers a cautious approach to the problem, refuses to accept the thesis that technocrats are taking over in capitalist societies. His power and influence have grown greatly. His rise has brought about profound changes within the capitalist system, but this is still in force. According to Meynaud:

Modern capitalism has undoubtedly undergone many modifications in relation to the old practices: however, if the methods of recruitment of the ruling circle have undergone remarkable transformations, neither the unity nor the homogeneity of this group seems to me seriously compromised - the observed differences in behavior, without negligible, are on average simply tactical in order.⁵⁰

This discussion about the reality or not of the technobureaucratic revolution is not yet over, and it will probably take some decades to complete. The old left has good reason to refuse the thesis. First, a technobureaucratic revolution, the gradual but firm assumption of power by a group of bureaucratic technicians-bureaucrats, managers, and military-from the middle class profoundly runs counter to Marx's political analysis (not the method) in "The 18 Brumaire of Napoleon Bonaparte". Analyzing the attempted alliance against the big bourgeoisie of petty bourgeois and workers through the Social Democratic Party in 1848, Marx shows that the middle class tends to be idealistic and alienated in its political action insofar as its interests are subordinated those of the great bourgeoisie. It also shows how the capitalist class and its representative, Luis Bonaparte, rely on the middle class. In Marx's words:

With the executive authority that has become an independent power, Bonaparte considers his mission" to safeguard the bourgeois order ". But the strength of this bourgeois order is in the class.⁵¹

Secondly, this is in general a conservative thesis. It is effectively a way in which the ideologues of the status quo claim that the capitalist economic and social system is peacefully evolving in a sense of greater rationality, greater efficiency, and greater social justice. It is often really a disguise of the capitalist system still prevalent in many areas. Thirdly, the old left repudiates the technobureaucratic thesis because, indeed, it has often been exaggerated. Berle and Means on one side and Burnham on the other have incurred this error. Burnham, as the pioneer launcher of the technobureaucratic revolution hypothesis, brought it to its ultimate consequences. He was enthusiastic about the idea from the intellectual point of view, although he had no moral enthusiasm for it. Berle and Means and all the ideologues of Western capitalist society (Peter Drucker in *The New Society*⁵², Fourastie and Laleuf in *Revolution in the West*⁵³, Andrew Hacker in *The Corporation Take Over*⁵⁴, among many others) have also become strong advocates of the thesis of the technobureaucratic revolution, in so far as it is identified by the monopoly capitalism of the twentieth century. In fact, many American intellectuals, except the Marxists, began to adopt the thesis of the technobureaucratic revolution. Some more decidedly others less. Often using other names such as "industrial society", "mass consumer society". However, under the leadership chiefly of Adolf Berle; who, after his classic book with Gardner Means, has published a series of political works that define American official ideology (in particular, *Power without Property* and *The American Economic Republic*⁵⁵), conservative or

liberal American intellectuals have adopted the thesis of the technobureaucratic revolution in a typically ideological attitude, which, naturally, disgusts the Marxists. The managerial revolution is seen as an improvement. On the other hand, the old liberal capitalist ideology in full decay has no means by itself to justify the current system. Technobureaucratic ideology thus becomes a means of justifying the status quo. The extension already reached by the technobureaucratic revolution is then both exaggerated and exalted. Scientific analysis gives way to ideological analysis.

It is true that intellectuals who defend the thesis of a technobureaucratic revolution are beginning to emerge, but they are not enthusiastic about it. On the contrary, they criticize it. As we have seen, Burnham has been in this category since the 1940s. More recently this position has been generalized by the new left. Galbraith, for example, in *The New Industrial State* (1967), already reveals a position bitterly critical of the technostructure. Theodore Roszak, one of the spokesmen for the counterculture and the new radical American thought, is even more determined in his criticism. In *The Making of Counter Culture*⁵⁶, technocracy is seen as the distinguishing mark of our time and as the number one enemy to be fought by the young, the new left, the underground movement, the counterculture. Technocracy is everywhere, it dominates our whole life and all our consciences. In his words,

Technocracy is not the exclusive product of the old capitalist devil. Rather it is the product of a mature industrialism in the process of accelerated transformation. The pursuit of profit could be eliminated; the technocracy would remain in power. The key problem we have to solve is the paternalism of technicians within a socioeconomic system inextricably attached to technique.⁵⁷

This position, however, which at the same time admits the occurrence of a technobureaucratic revolution and criticism as an evil or a danger, is in general incomprehensible to the intellectual of the traditional left and to the orthodox Marxist. These two characters, who are usually confused, are largely also victims of the technobureaucratic ideology, which they criticize so much. Marxism and socialism of the nineteenth century are both fruits of rationalism, whose most pure and perfect expression in the twentieth century is technobureaucratism. The representative of the traditional left is first and foremost a champion of the economic rationalism that has dominated the world since the Renaissance. In these terms, he is deeply attracted to the technobureaucratic ideal of a rational and efficient society, directed according to the standards set by technical ability. In these terms, to admit the technobureaucratic revolution is to admit that something good is happening to the capitalist system in a spontaneous and peaceful way. It is renouncing the socialist revolution. Ultimately, it is synonymous with its adherence to the capitalist system. Therefore, since the intellectual of the traditional left is incapable of criticizing the technocracy, which fits perfectly into its rationalist ideal, its only recourse is to deny its existence. He flatly denies the existence of a technocratic power, reduces as much as possible the meaning of the technobureaucratic revolution, insofar as it is incapable of criticizing it, insofar as accepting its existence means adhering to it. However, it seems that the debate over the existence or not of the technobureaucratic revolution in the advanced capitalist countries will increasingly tend to lose its meaning as this revolution progresses. There is no doubt that it is far from finished. We have already seen that, paradoxically, it is in the advanced capitalist countries that it lags behind.

We have also seen that their ideologists tend to exaggerate the depth already achieved. It is indisputable, however, that in all sectors of economic, social and political life the technobureaucratic power is advancing in rapid steps.

Capitalism remains in force. The capitalist class remains in power. But he is no longer the only one to participate in it and is probably not the most important. Under Wright Mills, the power elite has diversified. The old capitalists were joined by professional business managers, the military, politicians, and bureaucratic officials. In the heart of the capitalist class itself, according to Mills, it was the participation of the managers who, along with the great owners, became the "rich associates".

What occurred, I think, was the reorganization of the proprietary classes, along with high-paid officials, forming a new associated world of privileges and prerogatives ... The rich associates, therefore, understand the members of the 400 metropolitan, the rich nationals who have enormous American fortunes, as well as the top executives of large corporations. The class of the owners, at a time when property is divided into several, has become the class of wealthy associates and associates has consolidated its power and attracted to its defense in men of more executive and more political substance.⁵⁸

Mills, therefore, while still included among those who deny the technobureaucratic revolution, had already admitted in 1956 that capitalism was undergoing profound transformations. Owners were joined by managers in the control of the economic system and its privileges. On the broader plane of politics, however, Mills, after refusing the Marxist simplification that power is exclusively in the hands of businessmen, and the liberal simplification, that this same power is in the hands of politicians⁵⁹, creates the expression "power elite". And he defines it:

Its members are scattered all over the country, it's a coalition of generals in the role of corporate directors, politicians dressed as generals of economic leaders acting as politicians, public servants who become majors. of Vice Admirals who are also assistants to a Cabinet officer, who is, by the way, an authentic member of the ruling elite. Neither the idea of a ruling class, nor of a simple monolithic rise of bureaucratic politicians, nor of a "military church" is adequate. The power elite understands the sometimes difficult coincidence of economic, military, and political power.⁶⁰

Mills, therefore, while denying it, is close to the thesis of the emergence of technobureaucracy. If he had realized that the new factor that unites private, public and military managers is technical and organizational knowledge, would have detected the technobureaucratic revolution. I would have noticed that in the industrialized Western countries the system is still capitalist, but this capitalism rapidly fades, tending to transform itself into a technobureaucracy. Managers enter into a process of co-optation with the owners, identify with them, serve them, but end up starting to defend their own interests, which are not exactly the same as those of the capitalists. On the other hand, the power of the military, economists, and public managers grows rapidly, as the state becomes more important and broadens its functions (which is essential for technobureaucratic power to assert itself), as the economic planning becomes crucially important for the survival of governments. As armies not only become bureaucratic but also grow large in the war economy which defines the technobureaucratic-capitalist mixed system of the second half of the twentieth century.

The technobureaucratic revolution is therefore a reality - a reality that is not very encouraging, not a source of optimism, but a reality. It has not been completed yet. Old capitalism still resists, and the new technobureaucrats are in no hurry and no interest in exterminating it. As the bourgeoisie has done with feudalism for centuries, where capitalism is strong they prefer to live with it and benefit from it. Even in underdeveloped countries, where capitalism is much more fragile, technobureaucrats tend to preserve it. Only the communists, for obvious reasons, did not. Capitalism is not the enemy of technobureaucracy. It is simply its predecessor, its matrix. Technobureaucracy is the fruit of capitalism. It knows that it will eventually exterminate capitalism and establish its own system of power and privilege, but, rather reformist than revolutionary, prefers to go slow.

Technicians and Technobureaucracy

Now I believe that we may discuss some definitions regarding technicians and technobureaucracy. A Cartesian-type logic would probably recommend that definitions be placed at the beginning of the essay. Deliberately, however, I left the definitions to the end. I adopt a historical method, analyze the problems within the dynamics of history, so that the definitions, the basic concepts, would arise naturally. In this way concepts come to life and meaning, rather than being restricted to abstract definitions, which make little or no sense when disconnected from a historically situated economic, political and social context. It should be clear at this point that our concept of technician or manager is broad. Managers are individuals who seek to rationalize production methods. They are technicians who possess a systematized and in depth knowledge about any technique and use that knowledge in a professional manner. This knowledge may have been obtained exclusively through experience, but as a rule it will be based on a formal training process at any university or para-university level. Technical knowledge must therefore have a reasonably high level of sophistication. Otherwise we cannot distinguish the technician from a worker.

Technique is distinguished from science insofar as science is concerned with the development of knowledge regardless of the costs involved, while the technique is concerned with the most efficient way of performing a given task. The technique is by definition operational, practical, aims at maximum results with a minimum of effort. Science has as its main objective the truth; for the technique the basic criterion is that of efficiency. In order to satisfy this criterion, the technique will certainly seek subsidies in science, in addition to developing systems of knowledge specific to the technique itself. In the same way that the technique is distinguished from science, the technician is distinguished from a scientist, the one concerned with efficiency, this with truth. It is therefore a mistake to identify scientists with technicians or a technobureaucrat. A scientist can also be a technician. But this will be the exception. Therefore, it does not make any sense to refute the thesis of the technobureaucratic revolution with the demonstration that scientists are still a long way from political power. In fact, they are. But they are not the technobureaucrats. There are many more managers than scientists. Managers not only include those who are able to handle machines and raw materials more efficiently (engineers), but also those who run other men. Professional managers,

economists, and professional military personnel fall into this category. There is a tendency for some analysts not to consider such professions as technical. But a professional manager, for example, is much more typically a technician than a scientist, as his key concern is efficiency.

The legitimacy of a technobureaucrat is conferred to him in the face of his supposed technical knowledge. Especially among civilian or military managers, there are many cases of incompetence, insufficient knowledge and administrative capacity. Does this mean that they are no longer technical? No way. They remain technobureaucrats in that they aim at efficiency and as legitimacy of their position their intended competence. Within the same line of reasoning, it does not matter that your career has not been made solely on the basis of your technical competence. Other criteria are adopted, which, as long as they do not become, as a rule, dominant, do not rob the manager or the military of his technical character. Among the other criteria, that of antiquity, typical of bureaucracies, especially mismanaged ones, personal trust, conformism, loyalty, the ability to live and survive within an organization are the most typical. Of course, we know that there is a tendency on the part of many authors to distinguish technicians from bureaucrats within modern organizations. Technicians would be the engineers, the researchers, the 'social engineers', always specialists, while the bureaucrats would be the managers. Better yet, technicians would be efficient, while inefficient bureaucrats ... This position is expressed, though not adopted, by Jean Meynaud:

A number of specialists and practitioners want to distinguish the technocrat, who would be characterized by a concern for optimal technical management and a disinterested view of the public good, of the bureaucrat, who would have the sole criterion of defending his career interests and would be characterized by demoralizing habits in terms of efficiency (avoidance of responsibilities, refusal to innovate, paperwork ...) ⁶¹

This position adopts a vulgar conception of bureaucracy, which has nothing to do with Max Weber's model, identifying bureaucracy with its dysfunctions. Bureaucracy is simply a rational social system, an impersonal, hierarchical social system run by professional managers, according to efficiency criteria. Its dysfunctions, its deviations are the paperwork, the refusal to innovation, the adherence to the regulations. Moreover, this perspective clearly reveals a technocratic ideological position. The technocrat is placed in opposition to the bureaucrat, so that his positive qualities are enhanced. For us, however, this distinction is unacceptable: technocrats and bureaucrats are identified. The most we could admit is the existence of a certain distinction between specialists, who would be the strictly technical, and generalist, who would be managers or bureaucrats. This distinction, however, seems to us dispensable in the level of abstraction in which we are working. It is inadmissible, however, to admit a valuation classification, identifying efficient and efficient specialists and managers as inefficient as bureaucrats. Putting the problem in these terms, it is clear that the concept of technician has no value sense. There is no positive or negative connotation in the figure of the technobureaucrat. Positive connotations are due to the technobureaucratic ideology, which I will examine ahead. To the extent, however, that this ideology is deeply diffused, it will probably be difficult for many to grasp this position. The technician has an eminently positive image in the modern world. He is often confused with the scientist. He is always identified with reason, logic, ideological neutrality, and efficiency. In this perspective, placing it on the same plane as a manager, or, worse, a bureaucrat (although both terms are almost synonymous, with the only

difference that managers are bureaucrats in higher positions) is shocking. In the same way, to include among the technicians the incompetent, the careerists, may seem strange. And it will really be strange for all those who are influenced by technobureaucratic ideology - that is, for the vast majority. In reality, however, insofar as we are attempting to carry out a scientific and not an ideological analysis of a particular sociological type - the technician - and not of a being idealized in our fantasies and aspirations, there will be nothing strange in admitting the existence of technicians who are incompetent and careerists. What defines the technobureaucrat is the role assigned to him in any social system and, more specifically, in a bureaucratic organization. If this role is technical, if one expects professional competence, efficiency, rationality, the one who is performing it will be a technobureaucrat, notwithstanding all his personal imitations.

Finally, we must situate the technobureaucrat socially. As a rule, he belongs to the middle class. Access to the category of manager by the lower class is still very low in most capitalist countries. The technobureaucrat, therefore, within a country that still retains many of its capitalist features, including the capitalists themselves, is part of the middle-class. In a communist country, where capitalism has been eliminated, it does not make sense to speak of the middle class. In this case the technobureaucrats, within a very broad concept of social class, which is confused with that of social stratum, would constitute the upper class. The social background in the middle class of professional managers has been the subject of a large number of surveys. We ourselves participated in a survey in Brazil, where it was verified that about 72.5% of the directors of the companies of Greater São Paulo had origin in the upper middle class (22.5%), average (30%) or lower (20%). Among the others, 20% originated in the upper class and only 7.5% in the lower class.⁶² One should not therefore imagine that the advent of technobureaucratic societies would imply a much greater social mobility, much less equal opportunity. There is no doubt that there is a significant increase in mobility when compared to a pure capitalist system, but this increase does not significantly influence low-class access opportunities.

Access criteria, although technical, continue to be influenced by family and social constraints. Especially the latter remain important. The manager should be able to assimilate upper class behavior patterns if he wants to climb. Those who already belong to this upper class or the upper-middle class will therefore have much more ability to go up in the hierarchical ladder than an individual from the lower class. Recent surveys carried out in communist countries, for example, clearly reveal this fact. As technobureaucracy consolidates its power in these countries, social mobility is reduced. This fact is reinforced by the fact that technobureaucrats at the top have more frequent contacts with members of their own social class, resulting in greater opportunities for their own children. Finally, it is important to remember that access to technobureaucratic positions depends essentially on the level of formal education received. Now, the children of the upper and middle classes still have many more educational opportunities, despite all the progress that has been made in this sector in both capitalist and communist countries.

The concept of technobureaucracy stems from that of technician. Technobureaucracy is the government of technobureaucrats. It is the political system in which power is in the hands of

technicians, be they economists, engineers, public managers and private or professional military. Placed in these terms, technobureaucracy would be a type of oligarchy: the oligarchy of technicians. It therefore opposes other political systems, particularly democracy. Technobureaucracy is by its very nature undemocratic. The technician assumes power not according to the will of the people, expressed through the vote, but in the name of his technical and organizational competence. Their decisions, once in government, are not made in consultation with the people, but in function of their intended rationality. The criteria of rationality are, of course, defined by the technobureaucracy itself, inasmuch as only technicians consider themselves capable of doing so. The population in general is considered, by definition, incapable of making decisions of a technical nature. Now, in a world where everything has been reduced to technique, people's government is also a technical problem, a problem to be decided by technically capable economists, professional managers, and military.

The politician, strictly speaking, has no function. It can be maintained, whether by tradition or convenience, or because democratic ideals still make sense. But whenever possible, he will be demoralized, accused of incompetent demagogue, of dishonesty. And its power will be systematically reduced as the technobureaucracy emerges. But it is not only the politicians who lose their function as the technobureaucracy emerges. All the political institutions of a democracy are losing their meaning. If decisions are technical there is no longer any reason for political parties. The option for a single party is a logical consequence. Likewise, the role of the press ceases to be to inform and discuss problems in order to transform themselves into mere instruments of technobureaucratic management that dominates the state. This administration needs to communicate and explain its technical or supposedly technical decisions (it is indifferent) to the population. The press fits this function. There is no sense, therefore, of freedom of the press, which, like the multiplication of political parties and alternatives can only serve as an obstacle to the rationality of technical decisions.

Within the technobureaucratic system a basic rule for the management of public affairs is the secret. Only technobureaucrats must have access to the information necessary for political decisions. Open discussion of problems, besides inefficient, endangers security. In totalitarian Communist countries this rule is absolute. However, in countries with strong democratic traditions, such as the United States, for example, the tendency to secrecy and exclusion of the people in the most important decisions is also manifest, such as the publication of secret documents of the Vietnam War in 1971, by *The New York Times*, made it clear. In the industrialized Western countries, however, an indication that the technobureaucracy has not yet become the dominant system is the fact that neither total secrecy nor single party nor censorship of the press has been established.

Technobureaucracy is for me synonymous with technocracy. I prefer the first word because it expresses better the system that I intend to define, including expressly among technicians the civil and military bureaucratic managers. Moreover, the term technobureaucracy does not have the positive ideological connotations that the term technocracy has been gaining in a world dominated more and more by the ideology ration technobureaucratic list. In today's world, 'technical' and 'good' become almost synonymous. Defending the thesis of the emergence of technocracy in the modern world, as a historical phenomenon to be scientifically analyzed,

means for almost all the same thing as adopting a favorable position that this emergence of the technocracy definitely materializes. To the extent that the great majority of humanity in modern industrial society is dominated by the technobureaucratic ideology, the defense of a scientific hypothesis about the emergence of technocracy and its political defense is confused. Burnham, for example, was the victim of this injury. For having defined and defended the hypothesis of the revolution of the managers, it is concluded that he was politically a defender of the new system.

I prefer, therefore, an expression, more complete, ideologically less dangerous, as a technobureaucracy. It is not, of course, the ideally neutral expression that would be desirable. Technobureaucracy has a negative connotation, insofar as the term bureaucracy is commonly mistaken for inefficiency and paperwork. However, if we mean by bureaucracy the pure or ideal type of social system and political domination classically defined by Max Weber, there will be no reason for any confusion about it. Technobureaucracy will clearly be a political system in which power will be placed in the hands of bureaucratic technicians. It is a political system managed according to criteria of rationality or efficiency. It is a political system in which power is legitimate insofar as its origins are or are intended to be technical. In the words of Jacques Billy, who tries to give us a definition of technocracy or technobureaucracy:

In the field of economics, industry and commerce, at the level of the state or large enterprise, the exercise of power of organization and decision-making may be characterized as the most general by a small group of men of technical training, who accept hierarchical discipline and are generally placed under the authority of a chief.⁶³

Put the problem in those terms, technobureaucracy is not simply a political system, it is also, and essentially, an economic system. Otherwise we could not have argued that, after the stage of capitalism, technobureaucracy or a managerial society is emerging, not socialism. My hypothesis is that technobureaucracy is or tends to be an economic system as much as capitalism is, feudalism was, and socialism would be. As an economic system it might be better to call it technobureaucracy or techno-structure, as Galbraith did. Technobureaucracy is a good name, and I may use it eventually, but in general, I will stay with technobureaucracy also to express the economic system. To understand this assertion that technobureaucracy is, in ideal terms, not only a political system, but also an economic system, we must recall in two words the concepts of capitalism and socialism. Capitalism is not simply an economic system based on the private ownership of the means of production, just as socialism is not simply the economic system in which the goods of production are in the hands of the state or are collective. Capitalism is, moreover, an economic system based on small and medium-sized enterprises, and there may be only one sector or another in large companies. It is an economic system controlled essentially by competition, by the price system determined in the market. It is an economic system in which the state is relatively weak economically and little intervenes in the economy. It is finally an economic system in which political power is mainly in the hands of the capitalist class, since it is not possible to distinguish, except for analysis purposes, the economic system of the political, given its total independence.

On the other hand, socialism is more than simple control by the state or even by cooperatives of the means of production. It is more than a planned economic system. In fact, it

is perfectly feasible to visualize a socialist economic system based on cooperatives or collective enterprises, where control of the economy rests as much or more in the price system as in a planning system. Socialism is more than this. Socialism is not necessarily a utopia, but it is certainly an ideal to be achieved. If we do not distinguish between socialism and communism, which is, in fact, dispensable at the level of generalization in which we are discussing the problem, socialism is classless society. It is the society in which equality of opportunity and freedom have been definitively established. There may be a transition phase. For the Marxists there will be a dictatorship of the proletariat, for a certain time. Initially the goods will be distributed according to the capacity of each one, after according to their necessity. Socialism is synonymous with an economic system based on social justice and the offering of opportunity for personal fulfillment for all. Socialism is incompatible with dictatorship, totalitarianism, privileges, domination of a class of technobureaucrats. To this day, we insist, socialism is an ideal, not a historically observable reality.

Technobureaucracy is the economic reality to which capitalism tends and in which the attempts to achieve socialism have been distorted. Technobureaucracy, from the economic point of view, is the system of the great bureaucratic state and large corporations. Large companies may be public or private. This does not make much difference. They will always be monopolistic or oligopolistic. Monopoly capitalism is the transition phase between capitalism and technobureaucracy. Technobureaucracy is the economic system based on rational planning and administration. Planning will take place not only at the level of the large state, but also at the level of large enterprises, and generally, at the level of large bureaucratic armies. A role may be reserved for the pricing system, but it will become increasingly secondary.

The main goal to be achieved will no longer be the maximum profit, as in capitalist society, but the maximum output. For the state and for society in general, maximum output means economic development, means consumption, means efficiency. Economic development, increasing consumption, efficiency are three key words of the technobureaucratic system. For the corporations, maximum output means growth, that is, increasing the quantity of goods and services produced and sold, increasing the amount of capital and labor under the corporation's control, increasing the power and prestige of its managers. In capitalist societies, such as the United States, profit is becoming secondary. It is a mere means to achieve growth. It is always considered long-term. It is strictly planned. It does not allow the company to speculatively take advantage of favorable market conditions to maximize profit, as the pure capitalist system presupposes. In the exceptional moments when profit and growth conflict, the former is always sacrificed in favor of the latter. In societies where private property has been abolished, profit is definitely secondary. It has had a certain rehabilitation recently, but it constitutes one among other measures of efficiency. Maximum production is clearly the great goal to be achieved.

I will not dwell on the characteristics and functioning of the technobureaucratic economy. Not only because it escapes the area of interest of this study, which is eminently political, but also because the economic characteristics of technobureaucracy are still poorly defined and studied. Galbraith in *The New Industrial State* and Robin Marris in *The Economic Theory of Managerial Capitalism*⁶⁴ are among those who have best studied the problem of the transition from monopoly capitalism to technobureaucracy. Orthodox economics, of neoclassical and

Keynesian tradition, continues to ignore the problem and to assemble its abstract models of the capitalist economic system based on perfect competition, while economists like Sweezy, Baran, Tsuru, while acknowledging the existence of monopoly capitalism, continue to adopt a nineteenth century conceptual scheme to analyze the problems of this century. For us, at the moment, it is enough to be clear that the technobureaucracy is the economic system of the great bureaucratic state and large bureaucratic enterprises or corporations. And the economic system of planning, mass production, managed efficiency, mass consumption. It is the system of economists, engineers, and professional managers who manage it and are their primary beneficiaries. It is a system based on the privilege of the technobureaucrats, and the mass consumption of an entire population manipulated through the modern mass media. It is a system in which large corporations and the state determine what is going to be mass produced, based on their plans and market research, and then manipulate consumers' wishes through advertising. It is the economic system of a highly technical industrial society in which the methods of production have been or are all being automated. It is an economic system much more efficient and productive than the previous ones, although it can hide in its bosom still many inefficiencies.

The technoburocratic ideology

Technobureaucracy, more than an economic system and a political system, is a cultural system. Culture is the product of all human activity. It is the product of the work, art and intelligence of men through the ages and in every moment. Culture encompasses the economic, political, playful, artistic, scientific, religious and ideological activity of man. The culture of modern industrial society is already in large part and tends to be more and more a technobureaucratic culture. It is not only the economic system that is technobureaucratic, supported in the big companies, in the great state, and in its planning. It is not only the political system that is technobureaucratic, in that it is being dominated by technobureaucrats. The whole society becomes technobureaucratized. Values, belief; arts, amusements, are gaining increasingly definite technobureaucratic connotations. Technobureaucracy represents the crystallization of the ideas and rationalizing actions that define the modern world. It is the result and summary of all the great technological, economic and social revolution that has been taking place in the world since the Commercial Revolution and particularly since the Industrial Revolution, under the aegis of a utilitarian rationalism. In the words of Theodore Roszak, who wrote a remarkable work on technocracy or technobureaucracy,

By technocracy I understand the social form in which industrial society reaches the peak of its organizational integration. It is what the ideal standard man usually has in mind when he speaks of modernization, rationalization, planning.⁶⁵

Understood in these terms, the technobureaucracy is identified with modern Western civilization. Although essentially dynamic because it is based on technological development, and also identifies with the status quo, with the preservation and perfection of the current culture, either in its supposedly capitalist form, or in its supposedly socialist form.

We have already examined in the previous sessions the emergence of technobureaucracy and its basic economic, political, and social characteristics. I shall now examine its ideology which naturally serves to legitimate those corresponding economic, political, and social relations. The first postulate of technobureaucratic ideology is that it itself is not ideological. In the second half of the twentieth century we are finally coming to the era of the “end of ideology”. The ideologies of the left and the right lose meaning, as they lack technical and scientific bases. There is no reason, say the technobureaucrats, to waste our time with sterile discussions between ideologies. Ideologies, whatever they may be - liberalism or interventionism, nationalism or colonialism, authoritarianism or democracy, spiritualism, egalitarianism, fascism, are all emotional and irrational expressions. They translate interests and passions. They are not “scientific”, they are not “technical”. Today, say the technobureaucrats, this kind of political behavior is no longer possible. Today the development of science and techniques has been so great. that it is possible to govern countries according to technical and scientific criteria. Ideologically neutral technicians, using exclusively technical and scientific criteria, wherever possible quantitatively demonstrable, are available to take or advise decisions. Governing is not a political problem, it is a technical problem. It is the rational and accurate analysis of economic and social problems, with the use of available techniques, that will tell us what to do. Discuss, for example, whether we should distribute more or less income, whether the degree of freedom should be greater or less, whether such economic activity should be managed by the state or by private owners, whether the electoral system should be majoritarian or proportional, whether the currency should be devalued or not, whether the arts should be more or less stimulated, whether education should be paid or free, are all problems that can be solved according to technical criteria.

Perceiving the unmasking of the ideologies that the historical-dialectical method of Marxist analysis made possible, the technocrats, very wisely, propose not to adopt any ideology. It is clear that this type of position is not acceptable. Their bases are as ideological or more than any others. The simple assertion that any political problem can and should be solved technically is already an ideological proposition. The assertion that we have reached the time of the end of ideology is non-sensical. After all, what criteria will the technobureaucrats adopt to make their technical decisions? Will they try to make decisions without taking into account values, without considering goals to be achieved? Obviously not. It is therefore important to determine the foundations of technobureaucratic ideology.

One factor that has made the technobureaucrats' attempt to consider themselves ideologically neutral and to propose the end of ideology a success is the extraordinarily widespread character of technobureaucratic ideology. It permeates all sectors of modern life. It adapts to the old ideologies in struggle, with them is confused in them imbedded. More than this, it co-opts them. Capitalists or communists of the second half of the twentieth century, leftists of the old left or conservatives are, without realizing it, victims or defenders (no matter) of technobureaucratic ideology. This is so pervasive, has reached such a degree of consensus in developed or underdeveloped countries, capitalist or communist, western or eastern, as long as these countries have been hit and influenced by the values of modern industrial society, which may go unnoticed.

A somewhat more careful analysis of the problem, however, will unmask the technobureaucratic ideology. This, however, will only be possible if we are at the same time capable of criticizing it. It will be very difficult to detect the technocratic ideology if we do not have the criteria to analyze it from a point of observation external to it. Technobureaucracy is the fruit of rationalism. It is his most perfect expression. It's its finished form. It is, therefore, necessary to define what I mean by rationalism.

Rationalism is the dominant philosophy throughout the modern world. It has its origin in the Greek philosophy of Aristotle, but really finds its first and great herald in Descartes. From the great French philosopher of the early seventeenth century, practically all the great philosophers, until the end of the nineteenth century, are rationalists. Whether Bacon, Hobbes or Locke in England, whether Spinoza in Holland or Voltaire and Conte in France, whether Kant, Hegel, Marx and Nietzsche in Germany or William James in the United States, all of them, though often far removed from Descartes' philosophy, have in common a rationalist view of the world. Rationalism is philosophy that places all the legitimacy of knowledge in reason, opposes tradition and revelation, as other possible sources of knowledge. More than believing that everything can be understood, that all the mysteries of the world can be solved through the use of human reason, through research and scientific analysis, rationalism places all the hopes of the world in the development of human reason.

We cannot now make an in-depth analysis of rationalism. It is enough to have in mind that it is closely related to the emergence of the bourgeoisie and the capitalist system in the modern world. Capitalism, being an economic system more rational than feudal, needed, to become dominant, the legitimation of rationalist ideologies, such as liberalism and individualism. Capitalism is more rational insofar as we conceptualize a rational act as a deliberate act, aiming at a definite goal, and adopting the most adequate means to achieve that goal. Put the problem in these terms, commercial capitalism is much more rational than the feudal system, in that it defines profit as the goal to be deliberately attained by economic activity. Industrial capitalism, on the other hand, shows progress in relation to commercial capitalism, insofar as it defines the criterion of efficiency or maximum productivity, within a system of competition, as the most appropriate, more rational means of achieving the purpose. It is for no other reason that the great ideologists of capitalism, the French encyclopedists, the liberal economists, from Adam Smith, the great liberal thinkers of the nineteenth century, like Stuart Mill and Tocqueville, are all rationalists. Marx's criticism is also eminently rationalist. The socialism proposed by Marx receives its legitimacy from the fact that it claims to be even more rational than industrial capitalism. More rational because fairer, but mainly because more efficient, insofar as the objective is no longer the profit, but the maximum output, insofar as the basic criterion for achieving such maximum output is efficiency through administration and orderly and rational planning, not through competition, often chaotic and irrational.

In these terms, although rationalism has been proposed by philosophers, its origin is basically economic. Driven by interests in legitimizing a modern, capitalist society, as opposed to a traditional society. Probably for this reason, rationalism, understood no longer now in the form in which each isolated thinker defended it, but in the form in which it became the dominant ideology of modern industrial societies - that is, of technobureaucratic society - is a

fundamentally rational basis is a utilitarian rationalism. The utilitarianism characteristic of technobureaucratic rationalism is clearly verifiable through the basic political goal pursued by the technobureaucracy: efficiency. The first and most important objective to be achieved by a technobureaucratic system is economic efficiency, it is the maximization of results in relation to the productive resources employed, it is the increase of the productivity of workers, managers, machines and natural resources. For the technobureaucrat, rational act and efficient are synonymous. If rational act is the act coherent with the ends intended and if efficient act is what maximizes results in relation to a certain realized effort, rational act and efficient act are synonymous for technobureaucratic ideology. The criterion of rationality of an act is in its economic efficiency, in its utility. This belief is so deeply ingrained in modern society that it seems difficult to imagine another conception of rationality. Economic efficiency, the maximization of the production of goods and services, given a limited amount of productive resources, sums up all the aspiration for rationality of the modern world. And it translates the materialistic meaning of this world. Economic goals are, in practice, placed above all others. It is difficult for the average man and particularly for the technobureaucrat to imagine that there may be other, possibly greater, values to be attained, such as freedom, love, beauty, truth, justice, personal fulfillment.

The great criterion for technobureaucratic action is efficiency. The major goal to be achieved through efficiency and economic development is the increase in per capita production. It does not matter if the resulting income is distributed with more or less justice. The distribution of income is only significant insofar as it contributes to or not to economic development itself. In these terms, an equal distribution of income is likely to be inefficient and therefore reprehensible. Similarly, excessive concentration of income will hinder the creation of an internal market and will also be undesirable. For each economic and social situation there must be an optimal distribution, that is, efficient distribution of income, that allows to maximize the rate of economic development. This does not mean that the technobureaucratic ideology of modern industrial societies does not admit other values. It admits them but subordinates them to efficiency and economic development. This subordination, however, is not made expressly. The technobureaucrat hates discussing values. It is part of your ideology to have horror of ideologies. In a subtle and typically technobureaucratic way, however, without ever claiming that these values are more important than those, or vice versa, it puts them all in dependence on efficiency and economic development. The method is simple. It is enough to assert that all the other political objectives that man can aim to achieve depend on economic development. Development is the independent variable that will determine not only the level of well-being, but also the degree of freedom, the degree of security, the degree of social justice, the degree of beauty existing in a society. Democracy would only be possible in advanced industrial societies. Equality of opportunity increases as the level of economic development increases. The beauty of the environment depends on the architectural and landscaping works. The arts are developed to the extent that there is economic development.

To prove these hypotheses, partial regression analyzes are performed, and high correlation indices are obviously achieved. Technobureaucratic theses thus gain status of scientific propositions. It is intended that, through those statistical methods, definite cause-and-effect

relationships were established. Economic development thus becomes the great political goal to be achieved. Now, development means modernization, industrialization, rationalization. Development is the increase of efficiency, productivity. On the other hand, efficiency is the distinctive feature of the technobureaucrat. We have already seen that technician is the professional who acts according to efficiency criteria. It is the efficiency of his action as a specialist or as a manager that legitimizes his position. Technicians and development give themselves the arms through efficiency. The technobureaucrat becomes the main agent of development. The only member of society able to plan and execute this development efficiently. And so the technobureaucratic ideology gains a perfect internal logic and becomes a powerful instrument for the seizure of power by technobureaucracy.

Besides efficiency and economic development, which form the heart of technobureaucratic ideology, we have other important elements to consider. First, technobureaucratic ideology emphasizes change. As Rose Marie Muraro notes, it starts from a basic principle: that technology is the great revolutionary factor of our time. In his words;

The twentieth century is witnessing the most fantastic revolution in the history of mankind. It is not a political, social or economic revolution, but a global revolution - the revolution of man - unleashed and accelerated by the development of technique.⁶⁶

The technique causes changes. These changes are well received by technobureaucratic ideology, and to the extent that increasing efficiency necessarily involves the introduction of new techniques. In contrast, however, the technobureaucratic ideology is conservative. This is a new type of conservatism. Of a reformist conservatism. Not an immobile conservatism. The technobureaucrat only admits a kind of revolution; the technical revolution. It can take power through a political revolution or a coup d'état. But once in power, he will not be prepared to make an economic and social revolution. He prefers to make reforms. It is true that in the communist countries the economic and social revolutions were profound. But we have already seen that, initially, communist revolution was not technobureaucratic. The true technobureaucrat prefers not to revolutionize the social and economic structures of a country in which he has assumed or is assuming power. Revolution means disorder, insecurity, and therefore inefficiency. It is therefore preferable to be moderately conservative. If the structure is capitalist, it will remain capitalist. If it is socialist, it will remain socialist. The technobureaucrat does not care. He is sure that through his reforms, through the adoption of technical planning and managerial criteria, both systems will move in the same direction in the long run. And they can both be efficient.

Third, technobureaucratic ideology emphasizes security, *social order*. This value is particularly emphasized by military technobureaucracies whose very *raison d'être* is security. The military is a security professional and everything is subordinate to it. But security is not essential only for military technobureaucracies. Political technobureaucrats also value it. Security is a pre-condition of system efficiency. Without order, without security, there can be no rational government, it is impossible to achieve efficiency. In addition, the emphasis on security is a means of securing the autocratic power of technobureaucrats. And to justify the assembly of an entire internal police system inside the country, which starts to monitor the activities of all publicly or openly. In other words, security, transformed into a political goal of

the first greatness, opens the way to another basic characteristic of technobureaucratic ideology. She is eminently authoritarian. We have already seen that technobureaucracy does not fit with democracy. Technobureaucracy is, by definition, a type of oligarchy. It is natural, therefore, that his view of the world is authoritarian. It assumes that the legitimation of political power lies in technical knowledge, in competence. However, the democratic system does not always guarantee the seizure of power by technically more competent ones. Moreover, the technobureaucrat was formed in rigidly hierarchical bureaucratic organizations, where authority always comes from top to bottom. To reverse the process, as democracy claims, seems to him to be irrational. Freedom is for the technobureaucrat synonymous with indiscipline, license, disorder. Freedom is a luxury that can always be postponed in the name of efficiency and safety. It is a distant goal, which can only be achieved after economic development and social order have been achieved as Mihajlo Mihajlov observes:

If the aim is technical-scientific progress, and freedom is merely a tool, then it is not so difficult to imagine the convergence of the two systems (capitalist and socialist) to a mixture of the societies painted by Orwell in 1984 and by Huxley in *Admirable new world*.⁶⁷

Another characteristic underlying the technobureaucratic ideology is the belief that all problems are technical and can be technically solved.⁶⁸ This belief is based on a typically technobureaucratic worldview according to which there would be an internal logic immanent to things and situations that would make the world essentially harmonic. The world, for the technobureaucrat, is a system or set of systems in which each element has a function, a role. The technician's role is to understand these systems - natural systems, such as the human organism, mechanical systems, such as a machine, social systems, such as a family or a company - is to understand their interdependencies, and to make them function smoothly and efficiently. Conflicts, contradictions, disarrangements are mere technical defects of the systems, they are dysfunctions, which can be technically solved. In the words of Henri Lefebvre:

In this vast ideology, it is understood that the societies and groups that constitute them, such as living beings and "beings", in general, need an internal principle that keeps them in existence. This principle of cohesion and coherence, latent structure or in the process of appearing, is the only important thing. The destructuring? It is the threat, the evil side to be abolished with urgency, it the Economist, evil.⁶⁹

This view of the world which in the field of social sciences particularly influences Parsons' functionalist sociology, Levi-Strauss's structuralist anthropology, and all neoclassical economic theory is characterized first and foremost by a conservative and mechanistic view of the world, which has its origins in Newtonian Mechanics. Harmony immanent to the planetary system is transplanted to all other systems, and particularly to social systems. In these, however, harmony is not automatic. It depends on men who are able to make the system work properly. It depends on the social engineers of the modern world, the technobureaucrats. Henri Lefebvre called this view of the world "new elitism" to emphasize its immobilist and conservative character.⁷⁰ In fact, technobureaucratic ideology is not immobilist in that it values technical change and resulting social change. It is, however, an ideology that neither admits history nor contradictions. In these terms, it is an ideology that repudiates dialectics and a

historical view of the social process. In this ideology, "history ends by declaring that it has neither orientation nor meaning or showing that meaning is attained with the realm of technical rationality."⁷¹

Finally, within its vulgar materialism and its omnipotence expressed in the assertion that all problems are technical and can be technically solved, technobureaucratic ideology values consumption. Efficiency and economic development are its basic goals. Mass consumption is the way in which it alienates the population. Technobureaucracy is a system of domination. It's a privilege system. It needs, therefore, good arguments to justify its domination. Consumerism, the valuation of personal consumption, and the provision of economic means for this consumption to take place are essential elements of its system of legitimation. Modern industrial society is a mass consumer society. It is mass produced, it must be consumed in mass: the third car, the second television, increasingly sophisticated electronic devices, plus a telephone, clothes and more clothes, amusements. Happiness is to consume. The measure of one's personal fulfillment is in their capacity for consumption. Everything will be resolved to the extent that more goods are produced, the greater the consumption. Consumerism is, of course, closely related to other aspects of technobureaucratic ideology. On the one hand, there is a basic economic need. After Keynesian economic analysis, it became clear that consumption, rather than savings, is essential for the balance of modern industrial economies. It is of no use to maximize efficiency, mass production, if the objective is not to ultimately consume these goods. This consumption may be postponed, as the communists did, but will eventually be necessary. On the other hand, by reducing all human aspirations to consumption, it becomes easier to apply the basic postulate of technobureaucratic ideology that all problems are technical and can be technically solved.

In short, the technobureaucratic ideology values the technique itself and the technobureaucrats, it values efficiency, economic development, and the resulting mass consumption. The technobureaucratic ideology believes in economic planning and rational management. The technobureaucratic ideology is, first of all, the fruit of a utilitarian and efficient economic rationalism. It values safety, order and authority, which are essential for efficiency. On the other hand, it *devalues* freedom, social justice, beauty, or, when it values them, transforms them as a result of efficiency. Freedom and social justice, in particular, are considered dangerous. They can always be sacrificed in the name of safety and efficiency.

From Technocracy to Revolution

It is time to conclude this essay. Through its various sections, we have seen how modern industrial society tends to become technobureaucratic. Instead of moving towards socialism, as Marx foresaw and is the aspiration of the vast majority of those who have generous and disinterested feelings about the future of humanity, the modern world is being dominated by the technobureaucracy. Technique, including organizational technique, has become, in the modern world, the new strategic factor of production. Their control, by technicians and managers or technobureaucrats of the most varied shades is transferring to them the economic power and the political power. More than this, it creates a new political system, a new economic

system, a new cultural system - the technobureaucratic system. Through the communist revolutions and military revolutions, in the underdeveloped countries, technobureaucracy is already largely victorious. Its progress is slower in the advanced capitalist countries, where the capitalist system and the liberal ideals are more ingrained. Even in those countries, however, we can speak today of a technobureaucratic capitalism.

Technobureaucracy is, in fact, crystallization, if not the consummation of the rationalist ideals of modern industrial society. It represents the peak of the economic rationalism that characterizes the Western Civilization, from the moment in which the Modern Age begins with the Renaissance, the Reform and the Commercial Revolution. Technobureaucracy is therefore a culture, now understood in its broadest sense. It's a civilization. It is the sum of material resources and modern technology, economic, political and social organization and the corresponding worldview. It is the expression of the form reached in the second half of the twentieth century by Western Civilization. In this essay, I will not do the analysis and criticism of this civilization any more than we have already done. I prefer to refer the reader to the probably more authoritative and more penetrating critic of industrial society, Herbert Marcuse. His critique of modern industrial society is merciless. It shows us how this society is, above all, totalitarian. The master of the Frankfurt school tells us:

By virtue of the way in which it has organized its technological base, contemporary industrial society tends to become totalitarian. For 'totalitarian' is not only a political terrorist co-ordination of society, but also non-terrorist technical-economic coordination, which operates through the manipulation of needs by vested interests.⁷²

This manipulation is carried out through the propagation of a consumerist ideology, which values consumption as a synonym for happiness, and the use of a variety of techniques, ranging from methods of mass communication, marketing, advertising, public relations to the use of instruments of personal and group adjustment, such as human relations, psychoanalysis, group psychotherapy, sensitivity training. All these techniques, although they can be and are often instruments of freedom, easily become, in technobureaucratic capitalism, instruments of adjustment and conformism. And the result, in the words of Rose Marie Muraro, is dramatic: "technological democracy is the most totalitarian system of humanity".⁷³

This open and totalitarian totalitarianism, as in communist societies, or disguised, as in advanced capitalist societies (being in an intermediary position the technobureaucratic military regimes), is exercised in the name of rationalism in the name of efficiency, security, order and well-being. In the name of these same values, technobureaucratic societies arm themselves in unprecedented proportions and carry out the bloodiest wars in the history of mankind; launch atomic bombs, carry out chemical and bacteriological warfare, practice genocide; impose their will both with the force of technological persuasion and economic pressure, as with the strength of tanks and napalm bombs; use waste as the norm, pollute nature in unimaginable proportions, build a tense and neurotic society. In other words, modern technobureaucratic societies practice irrationality in the name of rationality. Or, in Marcuse's words: "We can say that the rationality of society lies in its own madness, and that the madness of society is rational insofar as it is effective, and it delivers goods."⁷⁴

As Marcuse has noted on another occasion, one of the most disturbing aspects of developed industrial civilization is the "rational character of its irrationality".⁷⁵ The utilitarian economic rationalism, which has dominated Western civilization since the end of the feudal period, reaches its peak in technobureaucratic society. Bentham, in identifying the rational as useful, was simply expressing a utilitarian ideology that would become dominant and was paving the way for the realm of efficiency as measured in terms of production. In the words of Daniel Bell: "utilitarianism provided a new definition of rationality: not the domain of reason, but the domain of measurement".⁷⁶

At a time when rationalism is reduced to economic utility, to efficiency, the doors are open to its own degradation. Rationalism becomes irrational. And this irrationality is multiplied when the reason of efficiency is added to the reasons of power and safety. At this point, the technobureaucratic society of the second half of the twentieth century begins to approach the models created by the most pessimistic science fiction. Aldous Huxley's *Brave New World*, George Orwell's *1984*, Dennis F. Jones' *Colossus*, Ray Bradbury's *Fahrenheit 451* become prophetic visions of a rational technobureaucratic society in its irrationality and intrinsic totalitarianism. This society, dominated by economic reason, of technological bases, all subordinates to this same efficient reason. Still in the words of Marcuse:

In the contemporary period, technological controls seem to be the very personification of Reason for the good of all social groups and interests - to such an extent that every contradiction seems irrational and every counteraction seems impossible ... The totalitarian universe of technological rationality is the most recent transmutation of the idea of reason.⁷⁷

The same idea is posed by other two representatives of the Frankfurt school, Horkheimer and Adorno:

"The technical rationality today is the rationality of its own dominaton, it is the repressive character of the society that is self-alienating".⁷⁸

In other words, technobureaucratic society becomes a system of repressive domination, insofar as it is self-alienating because of a utilitarian concept of rationality. This process of alienation already forms part of the capitalist system. Marx analyzed it in his "theory of alienation." With the development of capitalism society is organized for the production of commodities, in which the value of use is not important, but the value of exchange. This commodity production becomes so important that it comes to dominate all social relations. Then the process of reification or reification of social relations occurs. Social relations are carried out in the market, in an impersonal way. Significant are the goods and their exchange, not the people. The exchange value of commodities, to which men alienate themselves, becomes dominant in relation to human life. Labor itself is transformed into a commodity, to be traded on the market like any other. Human life thus becomes not only dominated by the production of commodities, but itself transformed into a commodity. From this perspective, commodities become fetishized. In Marx's terms:

A commodity seems, at first glance, something trivial, which one understands by itself. Our analysis has shown that, on the contrary, it is a very complex thing, full of metaphysical subtleties and theological insights ... a simple social relation between men

(the production of commodities) is for them the fantastic form of a relation of things between themselves.⁷⁹

And it follows that we enter into a phase of history in which man alienates himself to commodities, in addition to being confused in them; we enter “a period of social history in which production and its relations dominate man, instead of being mined by him.”⁸⁰ This analysis, as Fritz Pappenheim observed, strongly influenced the work of Tönnies and his theory of *Gemeinschaft* and *Gesellschaft*. Society, in historical terms, would tend to change from *Gemeinschaft*, that is, from a kind of natural society in which social relations are not deliberate, to a kind of contractual, individualistic and rationalist society, the *Gesellschaft*, in which men are separated from each other, each one alone and isolated, and there is a deep tension between all.⁸¹

Tönnies' vision, though marked by philosophical individualism, helps us to understand the modern world. But it is from the original theory of Marx's alienation that we can understand the essential alienation of technobureaucratic society. In capitalism, man alienated himself through the reification of social relations, the transformation of his own work into a commodity, and the attribution to commodities of mysterious characteristics of fetish. In technobureaucracy this alienation is refined. Besides alienating itself to the commodity, man also alienates himself from the technique, that is, from the method of producing the commodity. It reifies the technique, attributed intrinsic mass and value to it, and subordinates itself to it. Through this reification and absolute valorization of the technique, which also now gains fetish character, the modern man of technobureaucratic society is self-alienating. A utilitarian rationalist ideology, which identifies rational as useful and efficient, subordinates all other human values freedom, love of beauty, justice, equal opportunity - to the highest values of efficiency and technique. And within this process of alienation, all material progress achieved, any technical and scientific development that has taken place, instead of contributing to the author's realization, creates anguish and uncertainty in each, repression and manipulation in the whole. The picture is therefore pessimistic. The rationalistic optimism of the second half of the nineteenth century is dead. The wars, the genocides, the ideological confusion, the anguish and the uncertainty of a world intrinsically alienated to the technique took care to put an end to this optimism. Bertrand Russell in the introduction to his autobiography, summed up this transformation in an experiential way:

The last half of my life was experienced in one of the most painful times in the history of mankind, during which the world became worse, and the great victories of the past, which seemed definitive, were only temporary. When I was young, Victorian optimism was a general state of mind. Freedom and prosperity were thought to expand gradually across the world through a methodically ordered process. It was also expected that cruelty, tyranny and injustice would continue to decline.⁸²

If pessimism replaces optimism in the modern world, this does not mean that modern man is giving himself fatalistically to his destiny as an object alienated by utilitarian technique and rationalism. On the contrary, in the second half of the twentieth century, a new revolution is outlined - the first great revolution since the beginning of the Modern Age - the Counterculture Revolution. This revolution is still underground, has not yet fully defined its objectives (if it ever will), but there is a revolution in progress. And if it is victorious, it will have been much

more revolutionary than any other revolution that occurred from the moment that bourgeois and then technobureaucratic rationalism took over the world. If technobureaucracy is a cultural system that encompasses and brings to the end capitalism, the Soviet communism and the military revolutions in underdeveloped countries, the reaction against this culture against this civilization of utilitarian technique and rationalism can only be a counterculture. This expression "counterculture" was used by Theodore Roszak, who then defines the general meaning of this new culture:

Nothing is more necessary than the subversion of the scientific view of the world, with its ingrained commitment to a kind of cerebral and egocentric consciousness. In its place must arise a new culture in which the non-intellectual capacities of the personality - those capacities that draw strength from a visionary splendor and the experience of human communion - become the arbiters of the good, the true and the beautiful.⁸³

This counterculture, based on the youth, may imply, according to Roszak, a revolution as important as that which separated Greco-Roman rationality from the Christian mystery. And we would add, as important as the revolution that separated feudal and Christian medieval culture from modern culture, initially capitalist, then technobureaucratic, but in both cases rationalist and utilitarian. Roszak observes that the antagonisms to a technical and scientific view of the world are not new. Theosophists, fundamentalists, spiritualists, occultists, Satanists represent nothing particularly new.

What is new is that a radical rejection of scientific and technological values appears so close to the center of our society, rather than on unimportant margins. It is the middle-class young people who are conducting this policy of conscience, and they are doing it with audacity, persistence and aggressiveness ...⁸⁴

This revolution bursts everywhere. It is a recent revolution that began in the sixties, although antecedents of his may be found previously. It is a youth revolution, supported by some radical intellectuals such as Marcuse, who knew how to see the world dynamically and who did not want to commit themselves to bureaucratic conceptions of Marxism. It is the revolution of the students, the hippies, the new left. It is the revolution of the underground, of the young music, of the experiential contestation, more than politically active. Collaterally, it is the feminist revolution, it is the sexual revolution, it is the revolution of the blacks of the United States, it is the revolution of the Catholic Church. Initially, it was the beatniks revolution in the United States and the existentialists in France.

It is not the purpose of this essay to make the analysis of this revolutionary counterculture. Technobureaucracy is a new system of domination. Already the revolt against the status quo that was expressed recently in the 1968 student revolution and in the political revolution in the Latin American Catholic Church are part of a counterculture.⁸⁵ Now we have an overview of the formation of this counterculture, which has its main agents in the youth of the second half of the twentieth century. When we examine the student revolution, we see that this phenomenon is not superficial, much less represents a mere conflict of generations. It is a profound historical phenomenon, rooted in a series of new facts, that the technological transformations of the last hundred years have brought in its bulk: student massification, revolution in education, dissolution in the patriarchal family, development of the media in large

scale. It is important now to define just the basic lines of this young revolution. Herbert Marcuse, in interviews between May 5 and May 9, 1968, in Paris, said of the students:

I believe that students revolt against our whole way of life, that they repudiate the advantages of this society as well as its evils, and that they aspire to a radically new way of life: to a world where competition, against others, deceit, cruelty, and massacre no longer have a reason for being.⁸⁶

The same Marcuse, soon after, talks about the hippies:

Look at the hippies - Their rebellion is directed against a puritanical morality, against an American society, where people wash themselves ten times a day, and at the same time kill and fire in Vietnam in all purity.⁸⁷

The revolt, therefore, is against the whole technobureaucratic society, which is often still confused with the capitalist system. It is a moral revolt above all else. It is a revolution of consciousness. It is a revolt against the trend of history, if we see it from a deterministic point of view. It is a revolt based on the transformation of consciousness, the creation of new values, the experience of a new way of life. It is a revolt that can only be victorious if it rejects the determinism of the strategic factor of production. Because it is a revolt that puts the production of material goods in the background. It is a total revolt, which rejects Western civilization en bloc in the name of full freedom and a new life. The phrases during the May 1968 revolt in France are significant:

Prohibition is prohibited.

Change life. Transform society.

The emancipation of man will be total or will not be.

My wishes are reality.

To build a revolution is also to break all the inner chains.

Imagination takes power.

We want structures at the service of man and not man at the service of structures. We want to have the pleasure of living and never again the harm of living.⁸⁸

It is a revolt in which a minority of young people take a revolutionary attitude towards life. This attitude can be politically activist as it is the case of the students, of the hippies, and of the new left, or it can be politically not active, as is the case of the hippies and of many intellectuals and artists, who in one way or another are linked to the underground. It may suffer profound influences from Eastern religions, especially from Buddhism and Zen Buddhism, and may at the same time be marked by Marxism. It is often contradictory, indefinite and fragile. But it is always radical. According to one of the leaders of the youth movement in the United States, Jerry Rubin:

Who in the end wants to be successful in America today? The hippie-ypies-SDS (Students for a Democratic Society) movement is a "black-white" movement. The

American economy no longer needs white and black youth. We are trash. We realize our destiny in life by rejecting the system as it rejects us.⁸⁹

This radical rejection of the technobureaucratic system, which many still identify with capitalism, is most dramatically expressed by one of the leaders of the Black Panthers movement in the United States, Eldridge Cleaver:

What we have to understand above all else is that our enemy, and what we are actually fighting against, is not a certain university president or gym director, or an education council, but it is against the whole structure Social.⁹⁰

This revolution is there. It began in Berkeley, in the United States. His great moments were the May 1968 revolt in France and the Woodstock festival in 1969 in the United States. It is still a minority revolution. It is a revolution of developed countries, which have already reached a reasonable level of material abundance, although it is having profound influences on the underdeveloped countries. It is a long-term revolution, which is only now beginning. It is, in any case, a revolution that systematically suffers the danger of being co-opted by the technobureaucratic system and integrating it as a kind of folklore.

In order to finish this essay, it remains to answer four questions about the young revolution that seeks to create a new culture in the modern world: Can it be victorious without dominating a new strategic factor of production? Is it not feasible for underdeveloped countries? What will be your basic principles? What is the fate of socialism in this context?

The first question will only be difficult to answer if we accept a mechanistic determinism, which makes history necessarily determined by the material conditions of existence. In other words, if we stick to orthodox Marxism and believe that freedom is the consciousness of historical necessity. That man can and should act on history but cannot go against it. You cannot ignore the material constraints of your own life. I do not accept this determinism. Marx himself, while not abandoning his basic vision of history, already admitted that man would, over time, gain ever greater power over *his* history. His view was optimistic. Staying attached to the material conditions, man would necessarily go to an ever-better world: for socialism and communism.

We have seen in this work that, by adopting not orthodoxly the historical-dialectical method, we conclude by the inverse. History leads man to a world which, if not worse, is at least as bad as the capitalist: technobureaucracy. However, today more than ever, man has an opportunity for freedom. The existentialist philosophy, which places man as a being intrinsically free and responsible for his actions, did not arise by chance in this century. Although it has an abstract philosophical basis, insofar as it relies on the precedence of existence over the essence, the existence before it is defined, and the basic gratuity of human life, it is clearly situated at a given historical moment: in the twentieth century, at a time of crisis and disbelief in rationalism, and at a time when the development of education and communication systems, including the press itself, broadened more than one could expect, the ideological debate between men .

Thus, we had at the same time a world dominated by several individualistic philosophies, which ignored the material conditions of history and, on the other hand, by deterministic

philosophies, among which Marxism. None of these solutions was obviously acceptable, especially when ideologies, systems of legitimation of the established order dominated the plan of ideas, but also, utopias, systems of contestation of the same order, began to dispute primacy in the same plane.⁹¹ Existentialism arises at this moment. And Sartre in particular, while accepting much of the material constraints on human life, in the terms intended by the Marxists, posits the existential freedom of man:

What does it mean to say that existence precedes essence? It means that man first exists, if he discovers, arises in the world; and only then is defined ... Thus, there is no human nature, since there is no God to conceive it. Man is not only as he conceives himself, but as he wants it to be, as he conceives himself after existence, as he desires after this impulse into existence; man is but what he does.⁹²

This results in man's basic freedom and responsibility. Freedom and responsibility which, viewed from a historical perspective, increase as the education develops, the media grow, the sciences, and especially the social sciences, make us better understand the determinants of our social life. After Marx, Freud, Max Weber, Keynes, among many others, it is evident that man knows much better the social and psychological processes to which he is subject. And he *can* be free and responsible. It is on this hypothesis of freedom and responsibility that the viability of the counterculture is based. Is this revolution premature for underdeveloped countries? Not necessarily. It is undoubtedly a product of advanced technobureaucratic societies, where there is already a certain degree of abundance. But it is true that today we live in an integrated world. We have already seen that the technobureaucracy has leapfrogged and settled solidly in underdeveloped countries, through military or communist revolutions. On the other hand, underdevelopment is a system of global, structural dependence that only exists in function of development. And it is always suffering profound influences from the central system. Techniques, ideologies, and utopias are quickly transplanted. Consumerism dominates both the US population and much of the Brazilian population, which has limited conditions to consume market products. The student revolts broke with almost as much vigor in underdeveloped countries as in developed ones. The hippie phenomenon is still not well defined, but it is already beginning to manifest itself in these countries. There is, therefore, no reason to believe that it will be necessary for underdeveloped countries to become industrialized and to raise their standard of living, only to see the emergence of a counterculture. Especially through a process of cultural transplantation, it may also arise in underdeveloped countries.

But with the emergence of the counterculture, what are the ideals of the old left? What other ideals in place? Can one speak of a new and an old socialism? The answers to these questions today are very confusing. I will therefore give them a very brief personal response. This is an essay of critical analysis, not of moral proposals. The naive perspective of the automatic realization of socialism through the mere suppression of the private ownership of the means of production is naturally neglecting. The socialization of the means of production is undoubtedly a presupposition of the young revolution and the new left, but it is neither the most important nor the most urgent of the transformations. If it is done without the other changes occurring, it is more likely that it will pave the way for a totalitarian technobureaucratic revolution, as happened in the Soviet Union. To the extent that this socialization of the means of production is carried out, however, the need for a process of economic decentralization, in which market

mechanisms combine with those of planning, in controlling the economy, seems indisputable. Placing all power in the hands of a central planning organ is inefficient and greatly facilitates the takeover or retention of power by technobureaucrats. This does not mean that we want to go back to a small business system. In most industrial and financial sectors and even in large commercial sectors, these enterprises have become infeasible due to economies of scale. Companies will therefore have to be large. But they will not have to be monopolies. Oligopolies will generally be obliged to compete with each other, under the supervision of the state. Corporate control will be collective, not state control. A system based on self-management will probably be the way forward.

The essence of this revolution, however, will not be the transformation of the relations of production, the general lines of which we have just described. If this revolution intends to change the course of history, it is intended to displace the technobureaucracy, even though the strategic factor of production remains technical; if this revolution depends on the exercise by man of his freedom and his existential responsibility, it will have to be a revolution of consciousness - a profound ideological revolution. This revolution will be, in the first place, a critical revolution. It will have to start from the radical critique of prevailing capitalist and / or technobureaucratic society. And it will direct its weapons against a main enemy: the utilitarian and efficiency-oriented rationalism. On the basis of this assumption, some interpreters imagine that the revolution would be against rationalism pure and simple. And indeed, this analysis seems correct. When we examine the mystical tendencies of the hippies and the revaluation of religions, especially Eastern religions which, unlike Christianity, have not suffered even the influence of Greco-Roman rationalism; or when we see young people resort to hallucinatory experiments with drugs in an attempt to escape reality and reason, much more than in a real effort for inner liberation.

These attitudes are undoubtedly part of the reaction against established order and against current rationalism. I do not think, however, that they will prevail. They are the exaggerations of the antithesis, which will find no shelter in the tutoring synthesis. This, after radically criticizing the current rationalism, will probably propose a new rationalism. If man has moved from tradition and revelation to reason as a source of knowledge and power, I do not think he is now willing to take a step back, since there are no other alternatives for him other than tradition, revelation and reason. Within rationalism, however, alternatives exist. Given that the historically adopted alternative of efficient utilitarianism is not acceptable to the young revolution, a new conceptualization of rationalism is necessary. Rationalism is, in the first place, a philosophy that believes in human reason. The new rationalism will also believe in human reason as the main source of knowledge and power. But you will not be as optimistic as the old rationalists. It will not believe in the kingdom of the heavens on earth simply because of technical and scientific development. Because it knows that this development could perfectly serve to establish a system of domination more rigid and totalitarian than the previous ones. The new rationalism believes in reason but qualifies it. Reason is not good in itself. It will be good or bad, depending on how it is used, depending on the goals that are set and the means that are adopted. Rationalism sets goals for social action and seeks the most appropriate means to achieve those goals. The old utilitarian rationalism identified the social objectives with the economic objectives of greater profit, greater welfare greater production of goods, and

identified the appropriate means with the economic efficiency or productivity. All other objectives were subordinated or made dependent on these economic objectives. The new rationalism repudiates this false hierarchy of goals. It does not disregard economic goals and economic efficiency, but considers them only among other goals. And certainly not the most important.

Much more important, among the goals to be achieved, is that of freedom. Not just political or economic freedom. But full freedom, the inner freedom of each one. Freedom is born and has its only limit on the freedom of others. Freedom in communion, freedom within the community of friends and co-workers. Freedom based on mutual respect and the responsibility of everyone, within a legal framework in which human rights are solidly ensured. Adopting the objective of freedom as the main, the new rationalism should seek to define, within a process of praxis, the most appropriate means to be used to achieve this goal. In this process, it may be admitted that it is better to sacrifice freedom today, in the name of efficiency and well-being, because later it will be easier to recover lost freedom. In the same way, the new rationalism will put other goals at least as valid as the economic objectives: justice, beauty, truth, love, equal opportunity. They are goals that are valid in themselves for the new rationalism, and cannot be subordinated to any other. They are objectives that, together with freedom and a certain degree of economic well-being, guarantee the self-realization of each one within the society.

This, then, will be a profound revolution, which will change not only the relations of production, but also and especially the consciences of each one. Without the revolution of consciousness there will be no revolution. The name of the new regime to be established may be socialism, despite the abuses that this name has been a victim of, either on the part of the old left, or mainly on the part of the communist technobureaucracy. More important than the name, however, is the meaning of this revolution. Like any other revolution, its meaning is eminently utopian. The transformation of consciousness, the inner liberation of man, are not easily attainable goals. They are not achievable goals with a coup, not even with an armed revolution. The latter alternative, in certain extreme cases of totalitarianism, will have to be attempted. In reasonably open societies, however, they are certainly neither necessary nor indicated. Consciences do not change with the strength of weapons. The use of war to establish peace, the use of terrorism and violence to impose freedom, the use of hatred to establish love can hardly be successful. When politically victorious, the new rulers will ultimately tend to deploy war instead of peace, totalitarianism instead of freedom, hatred instead of love. This revolution will probably be slow. It will be stumbling. It will require patience, dedication, love, trust. It has, under no circumstances, its success assured. And yet, a path to be followed, that all a generous and bold youth has begun to tread.

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⁵ *Idem*, p. 102.

⁶ *Idem*, p. 103

⁷ *Op. cit.*, p. 66.

⁸ *Op. cit.*, pp. 66-67

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¹⁰ *Idem ibidem*.

¹¹ Cf. MURARO, Rose Marie, *A Automação e o Futuro do Homem*, Petrópolis, Vozes 1969. Nesse livro o desenvolvimento tecnológico e suas consequências sobre o mundo moderno são examinados em profundidade.

¹² RAIROCH. Paul. *Revolución Industrial y Subdesarrollo*, tradução do original francês, México Siglo XXI Editores. 1967, p. 178.

¹³ Esta característica perdurou mesmo entre os economistas clássicos da Revolução Industrial. Grande parte das dificuldades criadas por Ricardo. por exemplo, com sua teoria do valor trabalho, derivam de não ter dado suficiente importância ao capital e particularmente a não ter considerado diferentes relações capital-trabalho em diversas indústrias.

¹⁴ Cf. SOLOW. Robert. "Technical Change and the Aggregate Production Function", *Review Economic and Statistics*, agosto de 1957; ABRAMOVITZ, M., "Resources and Output Trends, in the United States since 1970", National Bureau of Economic Research, *Occasional Papers* 52 (1956).

¹⁵ Sobre a personalidade do administrador bem-sucedido há um grande número de estudos. O melhor deles é provavelmente HENRY William E., *A Personalidade do Administrador bem Sucedido*, em *Revista de Administração de Empresas*, vol. 4, n. 10 (1964) Originalmente publicado em "The American Journal of Sociology" vol. 54, n. 4 (1949). Este trabalho, baseado em cuidadosa pesquisa nos dá uma imagem viva e nem sempre favorável da personalidade do administrador bem-sucedido.

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- ²⁷ Cf. LAMBERT. Jacques, *op. cit.*, p. 352.
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- ³⁰ *Idem*, p. 18.
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- ⁵⁰ *Idem* p. 170
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- ⁷⁵ MARCUSE Herbert, *Ideologia da Saciedade Industrial*, p. 29.
- ⁷⁶ BELL, Daniel. *Work and Its Discontents*, Boston, Beacon Press 1956. p 1.
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- ⁷⁹ MARX Karl, *Le Capital*, Paris. Editions Sociales 1950, pp. 83-85.
- ⁸⁰ *Idem* p. 92
- ⁸¹ Cf. PAPPENHEIM, Fritz, *A Alienação do Homem Moderno*, São Paulo, Editora Brasiliense, 1967. pp. 39-80.
- ⁸² RUSSELL, Bertrand, *Autobiografia*. Postscriptum publicado em *Manchete*, 28 de fevereiro de 1970, por ocasião da morte do autor, aos 92 anos.
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- ⁸⁴ ROSZAK, Theodore, *.A Contracultura*.
- ⁸⁵ Bresser-Pereira (1968; 1969).
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- ⁸⁷ *Idem*, p. 61.
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⁸⁹ RUBIN. Terry, An Emergency Letter ao My Friens, em *Countdown*, 1. New American Library. 1970. p. 170.

⁹⁰ CLEAVER, Eldridge, Revolution and Education, em *Countdown* 1. op. cit., p. 158.

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