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CEPAL

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December 1980

Notes and explanation of symbols

The following symbols are used in tables in the *Review*:

Three dots (...) indicate that data are not available or are not separately reported.

A dash (—) indicates that the amount is nil or negligible.

A blank space in a table means that the item in question is not applicable.

A minus sign (–) indicates a deficit or decrease, unless otherwise specified.

A point (.) is used to indicate decimals.

A slash (/) indicates a crop year or fiscal year, e.g., 1970/1971.

Use of a hyphen (-) between years, e.g., 1971-1973, indicates reference to the complete number of calendar years involved, including the beginning and end years.

References to “tons” mean metric tons, and to “dollars”, United States dollars, unless otherwise stated.

Unless otherwise stated, references to annual rates of growth or variation signify compound annual rates.

Individual figures and percentages in tables may not necessarily add up to the corresponding totals, because of rounding.

Note by the Editor

The CEPAL/UNEP Regional Seminar on Styles of Development and Environment in Latin America, sponsored jointly by the Economic Commission for Latin America and the United Nations Environment Programme, was held from 19 to 23 November 1979 at CEPAL Headquarters in Santiago, Chile. It was attended by a group of specialists who presented around fifty papers. The Director of the *Review* felt that some of these papers, which illustrate the value of the contributions, should be included in this issue.

Several of the contributions examine the relationship between development and the environment from a general point of view, such as those of Mostafá K. Tolba, Raúl Prebisch and Osvaldo Sunkel; the latter's paper served as a basic discussion document and inspired several comments, some of which are likewise included in this issue. Others analyse particular aspects of this relationship, as in Nicolo Gligo's article on the agricultural sector, or the case of a specific country, as in that of Fernando Henrique Cardoso. Finally, others approach it from a particular perspective, as does Luciano Tomassini with respect to the international framework.

We are convinced that these papers will serve to stimulate consideration of the subject and to suggest some policy orientations which could be followed in order to tackle these difficult problems.

Comments on the article "The Interaction between Styles of Development and the Environment in Latin America"

*Comments by Aníbal Pinto**

I wish at the start of these comments to state, without false modesty, that I am one of the people least qualified to comment, because I suffer from a sort of generational blindness towards environmental problems which, although it has been clearing up gradually, in no way qualifies me to discuss them. At all events, I shall put forward some points of view and appeals for caution regarding concepts and policy lines which appear in documents and presentations on these matters. At the outset, I wish to refer to and reiterate the position taken by Osvaldo Sunkel and Enrique Iglesias, that for an economist of my generation, as for many in succeeding ones, it is almost unbelievable that this vital relationship of man to the environment or of society to its physical surroundings remained unnoticed for so long, not even appearing tangentially in our discussions. We must acknowledge and recall, modestly and even repentantly, that those who were ringing warning bells and sounding the alarm on this issue were not only listened to indifferently but often considered well-intentioned eccentrics dealing with more or less irrelevant problems compared with those which really mattered to us. I believe that all the meetings currently being held on the subject should begin by paying homage to those who blazed the trail and raised concern over these issues, but received so little attention in the past. The economists, some absorbed by the relationship between classes and individuals and others by mercantile fetishism, overlooked the 'little detail', as a famous Mexican comedian would put it, that these processes took place in a finite

context which was constantly being depleted or deteriorating. Not to mention the more noble aspects of the quality of life. As often happens, unfortunately, and notwithstanding the optimistic image of *homo sapiens*, traditional approaches only began to be reconsidered substantially after the impact and testimony of flagrant and menacing crisis exposed man's myopia and weakness. I do not feel it necessary to belabour this point, however; what is important is that critical reconsideration has rapidly progressed and a new and integrated view of development is being developed and carrying over into action.

I should like to make my first remarks on this thematic integration, applying CEPAL criteria, although naturally they are not entirely an exact reflection of the thinking of that institution. I agree with Osvaldo Sunkel that the most important aspect has been precisely this attempt to structure the new topic systematically within some approaches or contexts which are vital for understanding it and in order to draw from it all the necessary conclusions. These approaches are transnationalization and styles of development. Since we have all been concerned with this matter for some time, I believe it is time to point out that in the search for an integrated approach, chapters have continually been added which have never combined to form a true novel, a complete work. Thus, we have incorporated the environment, employment, critical poverty, habitat, human settlements, etc. often adding little substance because all these topics often lie along the same road, and it is difficult to determine their separate identities. I feel that this is the first time that there is a systematic effort to articulate all aspects within a single whole, and it would clearly be very useful for this to be done

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in the case of other topics; they could thus be better identified, and the ensuing lines of action would be more fruitful than when based on an incomplete viewpoint, the limitations of which I shall not dwell upon.

I would like to make some remarks on these two general contexts, beginning with that of styles, which is most closely linked to CEPAL's analysis. As Sunkel states, the fundamental contributions of some persons closely involved in CEPAL must not be overlooked here: naturally, I wish to mention Jorge Ahumada and Oscar Varsavsky who, unfortunately, are no longer with us, but who were pioneers in the discussion and analysis of the topic of styles. Everyone knows that on the initiative of these two men, CENDES of Venezuela (and in that respect Venezuela deserves credit, a fact of which no Latin American should be unaware) began the studies which we continued in CEPAL with the direct collaboration of Oscar Varsavsky.

With regard to this concern with styles, however, I am also fearful that in the end it will become yet another concept which sweeps in at gale force and then, used and abused, inevitably falls into disuse, another of those categories piously kept in a drawer and replaced by relatively similar ones which seem new but in reality add little. This could happen with the styles approach, and much caution and precision must be exercised when using the term, in addition to great concern for sifting out its real and specific meaning. The work done in CEPAL has already thrown light on several aspects, such as the varying usages of the concept, and has touched on the category of the system, and the antinomy or conflict between the two competing systems coexisting in the world, capitalism and socialism, although of course within them and between them there are a number of peculiarities and extremely complex relationships. The concept of structure, which is extremely broad, since it ranges from the physical surroundings to aspects such as institutions, social and demographic structure, structure of the active population and others, has likewise been clarified, as has that of styles, which in a way are the product of the fusion and real development of the two other

contexts; this concept also includes all sorts of variations, even within the same systems or ones with similar structures. Within this theoretical framework, which also includes the dynamic interrelations between these categories, I am not sure where the environment fits. At first, we considered the problem of the environment, the physical surroundings, as part of the structure, and notable environmental aspects appear in certain classifications of structural traits. But as one becomes familiar with the work of experts on these subjects, which has broadened our horizons so greatly, the impression remains that the environment is probably a category of such importance and significance that perhaps its inclusion among the so-called structural factors is artificial. Explaining how the environment can be included, ordered and integrated into the discussion of styles is therefore something which requires much work and thought.

The second context or approach, transnationalization, must also be analysed cautiously and circumspectly, because it lends itself to certain ambiguities. It may be identified, as sometimes happens, with the controversial problem of transnational corporations. They are obviously an essential part of the problem, but I believe that it goes far beyond them. It might actually be better to use the term 'internationalization', in which these corporations are a key mechanism. Internationalization is a much broader, more complex and, undoubtedly, contradictory phenomenon. I feel that trends towards internationalization are unavoidable and contradictory, since they have both positive and negative elements. This is a dialectical (excuse the pedantry) process which may not be overlooked in any full analysis of the topic. To indicate its complexity, I shall merely point out that transnationalization and internationalization extend beyond the capitalist work, since they also involve, as promoters of change, the 'central' socialist countries which are also encountering many problems in adjusting their viewpoints and practices to the real situations of countries on the periphery. It suffices to recall certain episodes in Asia and Africa, the Sino-Soviet conflicts, etc., which are very relevant to this complex

and contradictory process of internationalization.

Another concern which I wish to raise stems from the material relating to environmental deterioration. An unwary observer or reader, observing the difficulties and damage which seem to invite total rejection or criticism, could easily arrive at a doomsday vision. The matter is undoubtedly much more complex, since between the apologetic and the disaster schools there must be, not some 'middle ground', because we are not proposing to take an eclectic position, but rather a vision which integrates and balances these dissimilar elements. By way of clarification, it could be recalled that CEPAL's analysis of Latin America has been mainly critical, becoming a sort of Socratic gadfly on the region's back by calling attention to the deficiencies of development, the conflicts it produces, the limitations affecting it, the social waste it engenders and the inequality inherent in it. But it is also certain that this critical view has not failed to appreciate the profound and largely progressive changes which have taken place in Latin America. I would say that CEPAL's vision has been governed by a kind of *critical optimism*. In some circumstances, at some times, it is more critical than optimistic; at other times, it is a bit more optimistic than critical. In this it differs both from the apologetic view, which sees only the favourable aspects of what is taking place—flashy or eccentric consumerism for example—and from the opposite view, which records only the negative aspects, which certainly exist and give rise to a doomsday vision. An awareness of this contradictory reality must therefore not be lost, and in this connexion, just by way of illustration, I wish to point out that in a brief analysis we have been making of the situation and evolution of some 25 vital or basic indicators of social development in Latin America—nutrition, infant mortality, education, etc.—, from mid-1950 to mid-1970 relating to all Latin American countries, in so far as the data permit, we have found that virtually no country has lost ground. This is of obvious importance, all the more so if we begin by assuming that the high- and middle-income groups were already at more satisfactory levels in terms of these social indicators, and that conse-

quently the changes must have taken place at the base, and particularly in the middle, of the social pyramid. This fact, which perhaps we do not value sufficiently, perhaps for fear of being taken for apologist, must likewise not be overlooked in the analysis of Latin America. And it is of great importance because, paradoxically, we find that much of the critical thinking about Latin American development has been done by persons who are fundamentally unaware of these advances and are hostile to methods which were adopted by force of circumstances rather than doctrinaire design, although ideas and policies derived from this background had an important influence. Thus, CEPAL's 'critical optimism' has furnished weapons to both sides, each of which drew antagonistic conclusions concerning Latin America's situation and perspectives. It is of fundamental importance, consequently, not to lose one's sense of balance regarding the contradictory statements and chiaroscuro of the regional panorama.

My final remark refers to Osvaldo Sunkel's statement of the need to orient this discussion towards policy formulation. Obviously, fairly clear proposals have been emerging and they must be systematized and defined. The comment which I wish to add on this matter, however, is based on the fact that the conventional discussion of markets and planning has become obsolete with the entry onto the scene of environmental topics; it is as clear as daylight that these must not be left to the play of the market. Any reasonable person, that is to say, a person who does not have overly dark ideological blinkers, cannot reject this assertion. We are dealing with complex problems requiring long-term policies which can hardly be decided on by the market mechanism. This clearly does not mean that it should be rejected or ignored. Whoever does so must pay the consequences, as has been demonstrated in so many international and Latin American experiences. The market has played, and will continue to play, a fundamental role in every economy, in some, clearly more than in others. But it is equally clear that its social squint and historical myopia make planning's role as a basic instrument of economic policy essential, no longer as an academic problem or a need of the technocrats, but as a social imperative. This also means that we

need planning in order to deal with all of the influences behind the deterioration of the environment which must be regulated in order to establish better relations with our physical surroundings and thus to achieve a more favourable situation than the present one. This is an irrefutable conclusion of great institutional significance, particularly for organizations linked to the United Nations.

Finally, I wish to return to my consideration of the use, disuse and abuse of concepts.

Although the emergence of environmental problems is a fundamental and far-reaching step, I cannot hide my fear that with time it will dissolve or disappear into bureaucratic routine. We have here the same problem as in sports; how to maintain the intensity of the effort, the *élan*. Valuable, abundant material has been accumulated and placed in extremely fruitful analytical categories, but the problem is how to sustain the momentum. Each document is a step which must be taken towards the future.

*Comment by Jorge Sabato**

Following the exhaustive analysis by E. Iglesias¹ and O. Sunkel of the global problem of energy, I wish to deal with the individual problem of nuclear energy, although without entering into technical detail on such a specific topic. One aspect deserves to be developed, however, because it goes beyond nuclear energy itself and may provide valuable insights into the central theme of the environment. I must confess that the problem which worries me most in connexion with the energy crisis is not so much the crisis itself, the gravity of which is entirely indisputable, but rather the possibility that we may become confused regarding its causes and consequences, and particularly its impact on the situation of the Third World countries. The commotion produced around the crisis is so strong that I sometimes fear we are developing a sort of intellectual hysteria which prevents us from distinguishing reality from fiction and that we shall finish by confusing the winners and the losers in this geopolitical game. I believe that the most important tool for confronting the crisis is our own intellectual capacity in the face of this mine field strewn with lies and half-truths generated by extremely powerful interests; many studies which are presented as objective and scientific in fact are nothing more than ideological and

semantic veils aimed at deceiving us, or at least at confusing us.

The case of nuclear energy is an example of what happens when, in the absence of any critical capacity, non-truths are accepted as true and the fashion of the moment is merely followed. In this area, the semantic veils have fulfilled to perfection their function of hiding reality or presenting it deformed so as best to suit those who have sought to obtain all sorts of advantages. I shall attempt to show some of these veils and their most pernicious effects in order to assist in exposing certain central aspects of the global energy problem.

The first example is the benefits and damage of nuclear energy used to generate electricity. We have, of course, proceeded from the belief that nuclear energy was the greatest wonder, the final solution to our energy problems, to the belief that it is a trap fraught with mortal dangers, both for ourselves and for our descendants. From the end of the Second World War until a few years ago, the conviction was held that nuclear energy was 'cheaper, better and brighter' and that its future was virtually magical, as the existing reactors would be succeeded by breeders, which would generate more fuel than they burned and yield their place to fusion reactors which would run on hydrogen from sea water, a virtually inexhaustible fuel. Naturally, we were all dazzled by this spectacular Eldorado: little or nothing was said of its dangers because, even if they existed, scientific and technical advances would quickly overcome them.

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¹E. Iglesias, "The Energy Challenge" *CEPAL Review* No. 10, April 1980.

This idea has collapsed, however, and it is now asserted that the dangers of nuclear energy are so tremendous that they far exceed its dubious benefits, so that it would be sheer insanity to continue installing nuclear reactors. It is suggested that a world-wide moratorium should be declared, all ongoing programmes abandoned and the same resources applied to 'healthier' forms of energy such as solar, wind, biomass, geothermal, and sea energy, etc.

What should we in the Third World do in the face of this dilemma? Firstly, we must learn the lesson of what happened with the first idea, so as not to repeat the mistake: at the time, most of our countries simply accepted it without critical analysis or individual consideration. We believe almost blindly what the developed countries said (not in all cases, certainly, but in most). Now we face a similar danger: that the new 'fashion' will sweep us up and we will leave aside everything to do with nuclear energy ... until it comes to the forefront again, and so on.

This is not the path which should be followed regarding this or any other problem. It is the exercise of our own intellectual capacity, analysis made from our own point of view and with regard for our own interests, which can lead us through this complex labyrinth. Obviously, we may make mistakes, but it is time for us at least to be masters of our own errors and not the eternal victims of mistakes introduced or imposed by others. It is for this reason that I wish to comment on current ideas regarding nuclear energy.

Let us begin by acknowledging that nuclear energy is certainly dangerous, perhaps the most dangerous of all known forms of energy, and that such serious problems as the radioactive waste produced by the operation of nuclear power stations, the genetic effect of low doses of radiation, etc., remain unresolved. But will these dangers be sufficient to make humanity reject nuclear energy forever? or, phrased more urgently: are the central countries prepared to abandon the nuclear way?

Let us first of all note that the entire world has been living immersed in nuclear energy, and its most dangerous form, nuclear armaments, for the past 35 years. Nuclear bombs and

missiles are located throughout the world, either directly, in fixed bases and installations, or in planes (which overfly literally every country on the planet), submarines (which cruise in all waters without asking anyone's permission) and artificial satellites, as well as in trucks, railway cars and boats, while being shipped from factories to military and other bases and from there to storage points. By way of example, one need only consider the thousands of nuclear warheads installed throughout Europe: these warheads must constantly be transported from one place to another, not only for tactical or strategic purposes but for the simple reason that they must be replaced yearly by new models, which must be taken to where the old models are located and the old models, in turn, to the depots where obsolete weapons are stockpiled. This means that every day, by highways, main roads, subsidiary roads and railways, a large number of nuclear weapons traverse both western and socialist Europe. Often, at the very moment when in some corner of Europe an energetic popular demonstration is taking place against the imminent installation of a nuclear power station, a truck or train passes by that very site carrying bombs of much greater actual destructive power than the potential danger from the planned power station.

An equally paradoxical example is what is currently taking place in the United States with the moratorium on plutonium. As we know, that country has suspended its breeder reactor programme and, consequently, the separation of plutonium for those reactors. But in no way has it suspended its separation of plutonium for manufacturing bombs, a fact which is overlooked when the subject is discussed; many people in the United States are satisfied with the moratorium on plutonium, but the fact is entirely forgotten that military production continues in many factories 24 hours a day, every day of the week!

The conclusion is obvious: whereas the dangers which may be caused by the operation of nuclear plants are currently described most vividly, all the dangers derived not even from the use, but merely from the production and deployment of nuclear armaments are glossed over. The nuclear-weapon countries have been

enormously successful in their propaganda, having accustomed all mankind to 'living with the bomb' as if it were simply a matter of another explosive which just happens to be a little more powerful. Although we do well to be concerned about nuclear power plants, we must never forget armaments, because otherwise we would be contributing to the silence enshrouding a much more serious threat and implicitly defending those who possess bombs. For this very reason, if we draw attention to the first of these dangers, we must not only include the other, but should proclaim it all the more energetically, and with far greater concern. The menace of nuclear power plants must not be used as a veil to hide a much greater threat!

Also with regard to nuclear armaments, I wish to refer to the SALT agreements, which likewise help to mask reality. These agreements are being presented to the world as serious efforts in nuclear *disarmament* on the part of the United States and the USSR. SALT I, signed some years ago, *limited* the type and number of strategic arms for both powers. SALT II, still not ratified by the United States Congress, set new *limits* regarding arms which could be developed and deployed by them. When the situation is presented this way, it seems that this is indeed an effort in favour of disarmament; however, it is not, since both SALT treaties leave both powers capable of destroying the entire planet. When SALT I was signed, the nuclear potential of the United States was enough to destroy all of the large cities in the USSR some 20 times over; the USSR's potential was enough to do the same to the large cities of the Western bloc, but *only* 5 times over. Accordingly, and in the midst of rhetorical statements, SALT I was signed. The treaty having been in force for several years, the current situation is as follows: the nuclear potential of the United States allows it to destroy each of the cities not 20, but 140 times over, whereas the USSR has increased its power to destroy each Western city from 5 to 120 times over. In other words, not only has SALT I done nothing for nuclear disarmament, but the lethal potential of each of the superpowers has increased. And believe it or not, SALT I's defenders argue that if it were not for the treaty,

the aggressive potential would have been still greater than it has in fact become — as if it were not enough to kill someone 145 times for him to be dead! And unfortunately, the new SALT treaty will have an effect similar to the previous one, since it will increase the nuclear potential, making it even more formidable. An innocent person might then ask what these treaties are for? On the one hand, to optimize investments in armaments, thus preventing an unlimited race from leading to the economic ruin of both powers. On the other hand, to make public opinion, primarily in their own countries, believe that they are doing *something* for the disarmament which we all anxiously desire.

Another veil which must be drawn back is that of the great campaign against nuclear proliferation. Naturally, no one in his right mind could wish nuclear proliferation to continue, but the objective of this campaign must be understood well. Firstly, it should be made clear that there are two types of proliferation: horizontal, which means that *new* countries *may* acquire nuclear armaments (India in 1974, for example) and vertical, referring to the *increase* of such armaments in countries which already have them, such as the incorporation of the neutron bomb into the nuclear arsenal of the United States. There is no doubt that the detention of vertical proliferation is a much more urgent priority; however, it is horizontal proliferation which receives almost exclusive attention and which is the focus of every meeting on the problem of proliferation. The propaganda has been so effective that it has been able to concentrate all concern on horizontal proliferation, which is potential, and has relegated the proliferation which actually exists to the background. Certainly, horizontal proliferation involves great potential risks, but the risks of vertical proliferation are immediate and concrete. Whenever I attend an international meeting at which horizontal proliferation is discussed while vertical proliferation is enveloped in pious silence, and listen to representatives of the nuclear-weapon countries discussing in great detail what must be done to ensure that some new country does not acquire the atomic bomb (as is currently taking place with Pakistan, for example), I get the impres-

sion that I am attending a congress of courtesans convened to discuss 'ways and means' of preventing a Saragossan nun from losing her virginity...

I believe that the true objective of the campaign against horizontal proliferation is to ensure that the two superpowers retain their control over nuclear technology, not only for military purposes, but also and above all for the production of energy. It should be recalled that the key to ensuring autonomous control of the nuclear energy used in the production of electricity is management of the fuel cycle, from uranium in the mines to radioactive waste. Any medium-sized country attempting to use nuclear energy, whether it be Brazil, Argentina, Chile, México, Spain, Czechoslovakia, Poland, etc., will attempt by all means to secure its control of the fuel cycle; otherwise, its production of electricity from nuclear reactors will depend upon those who provide it with the fuel and technology to use them correctly. It is therefore not surprising that the nuclear policy of these countries revolves around this key, the autonomous management of the fuel cycle. The non-proliferation policy of the superpowers, however, consists of preventing other countries from achieving this autonomy, in order to keep them dependent in the nuclear field. In the case of the Soviet Union, this policy is exercised strictly: if a country acquires a nuclear power reactor from the USSR, it must agree that the fuel be manufactured in the USSR, that it be installed as a sealed unit which cannot be manipulated by the receiving country and returned to the USSR once used, to be reprocessed there. In short, the USSR maintains complete control over fuel as a *sine qua non* condition for selling nuclear installations.

In the case of the United States the situation is different, although the final objective is the same. Until very recently, a country which bought a reactor from the United States could achieve an acceptable degree of autonomy in fuel management, but this situation changed radically as a result of an Act which was appropriately titled "Nuclear Non-proliferation Policy Act", adopted in 1978. Under this Act, and for the purpose of avoiding nuclear proliferation, the United States will not sell installations or technology which allow the buyer to

achieve autonomous management of the fuel cycle.

In sum, until now the non-proliferation policy of the great powers has not prevented horizontal proliferation, much less vertical proliferation, which continue unabated; rather, it has placed all sorts of obstacles to the autonomous development of nuclear technology, and has tenaciously opposed the nuclear programmes of the Third World countries designed to produce energy, such as Brazil's decision to establish installations to enrich uranium and process fuel, India's Tarapur installation and the Argentinian decision to install a heavy water plant. It must be recalled in this connexion that the United States and the USSR have organized a virtual cartel to control the export of nuclear technology and installations (elegantly called the London Club), of which some 15 industrialized countries, both of the West and of the socialist bloc, are members.

Now, what is happening in the industrialized countries during this high-water period in the fashion of opposing nuclear energy? The answer is surprising: with the exception of the United States, and to a much smaller extent West Germany, the other industrialized countries, both Western and socialist, remain embarked on formidable programmes for installing nuclear power stations. The vigorous programmes of France and the USSR are particularly noteworthy: the latter is not only installing power stations throughout its territory and those of its direct allies including Cuba, but has also started to export them to countries such as Finland, the Philippines, Turkey, Libya, etc. According to the Soviet Government, nuclear energy presents no danger which cannot be controlled, and on the contrary is the best solution for electrical energy supply. Furthermore, it has built a city, Atommach, dedicated exclusively to mass production of components for nuclear power stations and which will become the largest nuclear production installation in the world. West Germany, which has run into public opposition to the continuation of its nuclear programme as intensively as before, has become one of the principal exporters, as shown by its large contracts with Brazil and Argentina. Canada continues to install power stations on its territory and also to export them,

while England has again intensified its domestic programme, Spain is installing some twenty power stations, etc.

The United States is a special case, because its domestic programme for installing new nuclear power stations is practically paralyzed, as are exports; nevertheless, it continues to install power stations in accordance with a previous programme which will allow it to remain, for a few years at least, in the forefront of the countries generating nuclear-based electricity. Of course, its military programme has not only not decreased but has intensified, and its research programmes on breeder and fusion reactors continue to have the largest budgets of the entire world. My personal view is that the current policy of the United States will soon change, and once again a nuclear programme for large-scale electricity production will be promoted.

At all events, the evidence shows that despite all these actual and potential dangers, nuclear energy will remain with us for many years, unless a serious disaster takes place. The industrialized countries cannot give it up because they have no other alternative source in the short term and will in no way accept reducing their current life style in order to adapt to a situation of scarce and expensive energy. But if nuclear energy is not rejected by them,

sooner or later it will come to our countries, as it already has done and is doing in some.

For these reasons, it is important that the Third World countries should not allow themselves to be seduced by the new 'fashion' into believing that nuclear energy should be put aside; otherwise, when it reappears they will not be capable of using it autonomously and will have to surrender themselves, bound hand and foot, to the central countries, as they have done in the past with other sources of energy and technological capacities. Consequently if we do not draw back the veils which hide much of the reality, we could fall into a trap from which it would be very difficult to escape. The obvious suggestion is to keep our eyes very wide open and use our own analytical capacity in order to understand clearly what is happening in the complex sphere of nuclear energy.

The recommendations from the central countries, in this as in other fields, have already lost the coherence and ideological force they had in the past. Many of the events of recent years have demonstrated that the sacred truths of economics, politics, culture, etc., have proven to be pseudotruths which were foisted upon us, sometimes by force, but more often through continuous and thorough brainwashing. Under these circumstances, we must face the most difficult task without fear or complexes: to look at reality through our own eyes.

*Comments by Gabriel Valdés S.**

Those of us whose duty it is to attend meetings, congresses and seminars, know how much wear and tear language has seen, how blunted concepts have become, how dangerous the keen edge of creative thinking is regarded as being, how compartmentalized reflexion and analysis have become, how little concern there is for human beings and how desperate is the desire to have things.

One of the major problems of the last few decades has been the specialization in science

and technology. The evil also spread to the United Nations where a tacit conspiracy of bureaucrats and governments pursued the course of taking each individual science and activity, putting it into a new institution, inventing an acronym for it, placing a director-general in charge of it, and appointing a series of officials, in the belief that the addition of another specific institution to the many already in existence might lead to a general solution of the problems of man and society. However, as Aníbal Pinto has rightly maintained, a very original effort was made here not to add another element to the already complex and sometimes confused

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concept of development. The concept of economic growth, easy to measure, was replaced by that of development; and greater depth was then sought by adding a definite social dimension all round. In this process of telescopic conceptual comprehension—an indubitable merit on the part of CEPAL—the aim is now to consider development from the standpoint of the environment. I think that this is an intelligent, upstanding, humanistic—and I would also say Latin American—way of seeking more integral solutions to the problems of contemporary societies. It is not an Anglo-Saxon *modus operandi* and has its dangers. This is a search for something which Kalman Silvert would have said constitutes a Catholic form of thinking, i.e., seeking first of all to arrive at certain principles in order to try to cover all the facts. If they do not fit in, so much the worse; the dogma stands firm. It is dangerous to fall into this temptation but on this occasion CEPAL was able to resist it. Few facts have escaped the documents it has prepared on the subject, and I think that this is where the originality of its expression lies. It is also original because in the environmental field for common mortals the emphasis is always on the physical environment which was the *idée-force* of the Stockholm Conference. This approach, which reached a peak when some of its supporters brought forward the idea of the limits of growth, generated a doomsday vision of ultimate physical depletion, the increasing aridity of the earth contrasting with the overwhelming demands of the multitudes oppressed by hunger and poverty and wanting to live like the rest and enjoy the goods of this transnationalized civilization.

The problem to be tackled above all was that of the poor, since it was a question of demonstrating that if the inhabitants of India were to consume 30% of what the United States or Europe consumes there really would not be sufficient raw materials, land or energy for the Indians, Americans or Europeans. Thus, without an in-depth criticism of civilization, it would seem preferable for the Americans and Europeans to keep what they had, since if the Indians has waited so long without revolting, they ought to be satisfied with 'a different development' and intermediate technologies. As

a reaction, 'zero' growth was proposed—an evasive attitude to the problem. This is when development begins to be viewed from the standpoint of human beings as such.

What is the link between the environment and human beings, between society and its surroundings? By managing to understand environment development as a dialectical process between man and society and between society and nature and viceversa, one will really be entering into the heart of the analysis of civilization. Frequently, rather than an analysis of this environment, the crisis of civilization which we are experiencing is described. Without prophesying disaster, it seems obvious to us that a certain civilization is beginning to show signs of strain; and this is more clearly seen when living in the centres than in the periphery, because in the latter one still enjoys a certain human largesse; although material wealth is lacking, one profits more from the air, and space, and I would even say that one enjoys friendship and the natural things of life more than in the centre where these supreme values of life seem to have withered away, since it is constantly necessary to do many very important things which are increasingly of less importance. There is a tiredness, a sort of loss of speed and direction of this civilization which has now also received a rabbit-punch with the crisis in oil, on the back of which it confidently rode.

There can be no doubt that there is a loss of speed and direction. This can be seen equally clearly in Latin America because of a more intensive withdrawal of resources, a greater deformation of societies and a greater social dichotomy stemming from the clash between the modern, imported from abroad and moving with the speed and rhythm of the machine age, and traditional society which continues to be bound by its values and its structures; this dichotomy splits social life, breaks the necessary political consensus and replaces everything by so-called order, which is as ephemeral and forced as it is of debateable efficacy.

Perhaps we are witnessing the breakdown of civilization. Maybe some future historian will be able to tell us whether consumerism is a manifestation not just of a crisis of capitalism in

its highest form of expression but of a crisis of the whole system of international relations. Personally, I do not believe that socialism has resolved this problem either in the central or in the peripheral countries. Consumerism occurs in those countries too, on a different scale, perhaps, with different characteristics, but they have not found other objectives: the pace is different, but the trend is the same, because they have not imagined solutions other than material ones.

The gravity of this phenomenon is so evident that consumerism has been denounced and a call has gone out to reform the structures and not only the style but also the trend and direction of development; a call in relatively similar terms from many thinkers and from different positions. In a single month three different personalities have brought up the same subject. Pope John-Paul II and Prime Minister Fidel Castro speaking at the United Nations have revealed a surprisingly critical attitude towards the situation. Reflecting on their statements it may be seen that they coincide in denouncing the existing situation and in their reasons for so doing; this would have been inconceivable 5 or 10 years ago. Reading the speech recently given in Belgrade by R. MacNamara, President of the World Bank, we observe that both the context and the closing words are also a denunciation of these phenomena. McNamara goes so far as to say that unless tremendous structural changes occur there will be no significant alteration in what he describes as a sombre and negative picture on all sides.

There can be no doubt as to the great significance of the link between the environment and man, between society and its surrounding milieu. There are factors of concentration within societies, and factors which make societies dependent on external forces; there is loss of actual life on earth, but also a failure to take advantage of living the life of a human being as it should be lived. We are all in favour of self-rule; we encourage the highest possible degree of self-rule in our societies, but at the same time as the participation of our economies and our societies in the world increases, we reject external imposition out of dignity, and also for practical, cultural and ecological reasons.

The phenomenon of transnationalization has been superimposed on that of internationalization; and this is not only a question of semantics. Transnationalization has been considered only an expression of activity of enterprises, while internationalization is associated with the interaction among States. What is happening is that States, conceived of as absolute entities, are dissolving away. I think that within 20 or 30 years, in the transnational world of technology, science, culture, finance, ideologies, information and concern for human rights, the concept of the sovereign State is going to lose identity and power from the international point of view, succumbing to transnationalization which is rapidly gaining ground; in the press one reads statements made by personalities to the effect that ambassadors are of no interest to them if they have good relations with the international bankers. This is a fact. The ministries of foreign affairs, which represent the tradition of the sovereign State, are becoming nineteenth-century instruments with their decorative and necessary solemnity. They are less essential because there are other real, more effective and silent instruments, like those handled by the bodies responsible for finance and information. As one speaks of formal democracy and real democracy, so it should be admitted that there is a formal world and a real world. This real world exists not through the machinations of some executives nor because of financial flows; it stems from the very dynamism of transnationalization which is beginning to act with a great deal of force. What is curious is that the transnationalization of enterprises, of finance and of information is accepted, but where basic rights are concerned it is rejected. In this transnationalization, which should be considered very coolly and calmly, one must be able to distinguish between what is worth keeping as one's own and what should be incorporated into a stock of genuine advancement, the progress which mankind is constantly building on as part of its creation.

There is an initial feeling of rejection towards those goods which seem to run counter to customs or culture. They are initially rejected but finally win acceptance because it is better to use tools than hands, just as it is better

for the world to have transistor radios and television. What is important is the idea or the image, and not the tool. How can one distinguish that which destroys what is original and specific in culture, that which is the characteristic mark of a human being, from that which is external, instrumental and does not affect its substance but enhances and distributes it? Societies are like people; they know what it is that destroys men or permits them to liberate themselves, the forwards steps mankind is making, the scientific and technological creativity which leads to higher levels of freedom; as well as what it is that is destructive.

These problems of cultural and ethical content are directly related to the environment; if this question were not clarified we should be in mortal doubt. We cannot isolate ourselves in order to build our America or our countries as we should like, in accordance with our own strength and our own utopia. We cannot isolate ourselves because those who attempt to do so—and we have seen very dramatic cases—had to make heroic sacrifices and yet ended up yielding slowly, paying a heavy price. In the last resort the Monetary Fund is called in. What is essential for being a person in a civilized society? What is essential for being a nation? What is essential for being a national or a local society? What can one receive and assimilate without ceasing to be what one is? I ask these questions, the answers to which do not yet seem clear, because it is necessary to establish a balanced relationship between dependence and ecological problems.

In this regard I shall refer to two elements: one is planning, and the other is economic policies. From my point of view planning, i.e., the image of the organization of the elements which will lead to a desired future, has unfortunately lost its significance; there is nowadays less of a commitment to it in the world and in America. Work in this discipline has regressed, and planning is being performed more on a day-to-day basis; the problems are all urgent: social pressure, political tensions, changes in the prices of raw materials, inflation, the energy crisis, external indebtedness—all phenomena which sap the self-confidence of our societies having them without a vision of the

future. The market is supposed to provide a solution, because the economy always has an invisible hand which, manipulated by the haves, later will see to a judicious distribution on behalf of the expectant have-nots.

Our young continent has come to be a continent of profitability and old models. The continent of hope lacks a political objective and there is no more planning in it. The energy crisis constitutes a tremendous accusation against the market economy and the lack of planning. To plan is not only to express one's confidence in the future on the basis of political vision so that within certain realistic margins societies can achieve determined collective objectives; it is also to set right the deformed domesticity into which we have fallen and the simple and automatic form of external dependence so well represented by the concept of the market as the great regulator of right and wrong, of freedom and law. Among unequal partners, a free market necessarily leads to abuse and dependence. I think that planning needs re-thinking as a form of mobilizing the tremendous energy which lies concealed in our geography, our biology, our ecology, and our culture, using as a fulcrum society's desire to be more self-reliant and to be able to distinguish between what belongs to it and what is foreign to it. Planning would thus acquire a new dimension, and my opinion is that a fundamental step forward would be to incorporate the environmental dimension into the very nucleus of planning.

The other element is that of the so-called economic policies. Any mention of these policies refers to policies for correcting balance-of-payments disequilibrium, increasing investment or combating inflation. All of these are no doubt important, but they are all adjectival. Generally speaking, they are used in any context; they are taken as independent instruments which are not intrinsically linked conceptually with global aims.

Pace the economists (whom I respect) and the science of economics (which I admire) I think that many of them proceed like surgeons, called on to operate on any patient in any state. It has been common for them to become enamoured of their art and empty it of its social and

ethical content. When they work towards 'improving the economic situation' they are in fact working in a specific social and political direction always foreordained by someone since there is no neutrality in economics which is not an exact science but a social science. All technologies, like economic policies, are committed, serve certain interests, respond to an ideology and produce specific effects. But these very frequently escape the economists, who even go so far as to say that such effects are not their responsibility. They work with theoretical men, faceless and soulless. This is one of the major imbalances between the theoretical conception and the political functioning of development. If account is really taken of a balanced concept of the relationship between man and his environment, account should be taken of the protection of the environment, and in this regard protection of the ecology in the traditional sense is not sufficient. It is not only a question of preventing the continuing erosion of land or cutting down of forests, but of something very much more important —that man should once again reach an equilibrium, because man comes from nature and goes to nature, and is a part of the earth's vital energy; his breakaway from the earth damages psychologically just as it damages the structure of society and corrupts it, as we are seeing in so many

countries where the physical or social equilibria are upset. It is a matter of fundamental importance to rethink the objective of planning and the design of economic policies, incorporating a new human and ecological dimension into them, if we want to make really serious attempts in Latin America to set the development process back on course with social efficiency. What more real objective can there be than to return man to the land? Not to return to pastoral times but to the rational dialogue between what man is and what surrounds him, and then form a much clearer conception of what is important, and seek a greater capacity of development for men and women, and the largest possible income in keeping with the nation's capacity.

Perhaps a study is needed of man's medium, the cultural pith of societies, a kind of quintessence or heart of the process, the *raison d'être* of societies, because this is what makes history, builds the present and forges the illusion of the future. The economic, social and political dimensions must have the cultural dimension, as their spirit which grows until reaching its true form. And when we refer to the relationship between man and his environment, we normally deal with the external characteristics of societies, but not their cultural values.

*Comments by Jorge Wilhelm**

"The people like luxury; it's the intellectuals who like poverty."

Joaozinho Trinta, leader of the Beijaflor samba school.

'It's amazing!' exclaimed Aníbal Pinto, noted CEPAL economist, "truly amazing that for decades we economists were able to formulate so many theories and theses on the development of Latin America without taking into account the physical variable: natural resources and urban concentration".

This sectoral bias did not only affect CEPAL economists, however. Economists, planners and politicians throughout the world, swept up by the rush towards growing and ceaseless consumerism, manipulated statistics and formulated theses whose conclusions 'fitted' with Cartesian perfection, outlining optimistic solutions which prudently avoided the reality only sensed by the hippy movement, artists and poets, and isolated voices within the professional establishment.

Anyway, the intellectual's real role is not to compose perfect conceptual structures but to formulate pertinent questions: to raise the 'why', the 'wherefore' and the 'who for' of

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things. During the past decade, the reality of such dramatic events as the Seveso poisonings, oil spills in the North Atlantic, desertification, London smog, etc., finally motivated the intellectuals, various professionals and politicians to take into account this 'physical variable' of development and economic growth in general, since the style of growth seemed decidedly unhealthy, in addition to its accentuation of inequalities. However, it was the so-called oil crisis (October 1973) that dramatized these problems.

Although the new concern was first raised in Europe, it was not because the effects of aggression against nature were concentrated there: in reality, Europe is a small continent whose well cared-for soil has remained fertile since the neolithic era, centuries-old vineyards are treated with tender loving care, even today there is traffic on the Appian way and Renaissance mansions are being carefully adapted for modern uses. Perhaps the concern emerged in Europe because on that continent, more than in the Americas, professionals and other persons have an old and deep-rooted tendency, reflected in their educational system, to engage in an agonizing but necessary activity, exclusive to human beings: that of thinking deeply.

The wise warnings which began to be given in articles, congresses, and seminars sometimes had an ingenuous flavour of 'how to survive in the jungle', placing stress on mother-int. It is indisputable, however, that in querying the style of growth and the misuse of natural resources, questions were formulated which were relevant to planning. The sensitivity of CEPAL and Latin American professionals was awakened by this questioning, but they included it within the general frame of reference of underdevelopment and the type of growth characterizing the continent.

Thus, we were recently set to thinking by the plain speaking of Iglesias, Sunkel and Pinto: it seemed incredible that we had been able to overlook the subjects of 'non-renewable natural resources' or 'the environment' when writing of economic growth in Latin America. It took the petroleum embargo of October 1973 and the sharp and constant increase in the cost of this commodity and in our external debt to

remind us of facts which had been with us for at least two decades: (1) the growing internationalization and economic interdependence of the world; (2) the beginning of a shortage of certain natural resources due to the increase in world population and production, which made necessary the renewal of technology; (3) the strong metropolitanization of the world's population and the lack of truly modern urban technologies to cope with this phenomenon; (4) the increasingly evident widespread poverty and hunger; and (5) the gradual globalization of information and the homogenization of cultures, demands and expectations.

The bibliography of the 1970s which bears out these facts and seeks to resume the discussion of development alternatives in a more objective manner is extensive and rich in brilliant and profound authors and theses. Likewise, certain international meetings, from the preparations for the Stockholm Conference (1972)¹ to the recent meeting in Tepoztlán, and including the CEPAL seminar on "Styles of development and Environment in Latin America", allowed important renewals of theses on the development of the Third World countries and the 'deficient' development of the rest of the world to be formulated, discussed and published.

Without presuming to present a major synthesis, I shall begin by accepting that it is desirable and even necessary to change the "life-style" and consequently the style of development in order to achieve the following objectives: (1) to develop means of producing types of products more suited to the available natural resources, both renewable and non-renewable; (2) to modify the use of time, working relations and forms of management; (3) to reexamine and create human values closer to the feelings of solidarity among people and less destructive coexistence with nature. Regarding this subject, however, in this article I mean only to touch on the *modus faciendi* of this eventual and desired change of direction. How can changes of life-style compatible with these ob-

¹Especially the Tunis and Cocoyoc meetings and the useful publications of the International Foundation for Development Alternatives (IFDA).

jectives and acceptable to the citizens be introduced?

Both the diagnosis of modern civilization and the above-mentioned generous intentions are positive indications that, as Hegel said, humanity only recognizes the problems it is capable of solving. Despite the fact that diagnoses and intentions are necessary parts of the solutions, however, it must be acknowledged that they are not sufficient, and that additionally we must understand more precisely the "*raison d'être*" of the actions of the major agents of change. In other words, we must investigate (1) the possible and probable paths to be followed by the capitalist system within the rationale represented by transnational corporations; and (2) the possible and probable paths to be followed by State-controlled economies within the rationale of their political pragmatism, characterized by the prevailing bureaucratic domination. Finally, it will be necessary (3) to understand thoroughly the cultural motives of powerful agents of change such as religious-nationalistic movements (Islam, for example); and (4) to evaluate the likelihood of the emergence of prejudiced and racist movements or large-scale destructive mobilizations (various terrorist strategies as well as police repression and the revival of torture).²

This deepening of our knowledge and comprehension will make it possible to formulate either an objective or a strategy for modifying life-styles. The objective could take the form of a utopia, serving as a target towards which the vector containing tactics and action programmes would be aimed; in fact, utopian objectives are useful for motivating people and organizing activities along certain guidelines, and these action vectors may also be used for uniting activities, making them coherent and giving them a common content.

Thus, these strategies constitute sets of actions and programmes arranged along a vector aimed at an unattainable utopian objective

in order to achieve, within a specific period, comparable results, partial, attainable targets and small but important steps forward.

Before Mr. Karl Popper takes offence, I hasten to state that I do not conceive of the utopian objective as a deterministic representation of the future, but rather as a mobilizing and classifying tool allowing strategies to be established and order and coherence given to activities relating to change, that is to say, to development.

Before determining the difficult strategies for changing life-styles, we should investigate whether the populations of our Latin American countries truly wish or desire to change them. It is not enough to note that things are going badly, that the consumerist style is depleting our resources and that the competition inherent in the system generates all sorts of violence. Clearly, the people desire change because things are not going well, but what type of change, in what direction and to achieve what objectives? I doubt that a sounding of public opinion would show that radical changes in the current mode and vector of growth are demanded. Public opinion may be irascible, but it is generally conservative; radical changes are dreaded, and there is a natural fear of the unknown.

Accordingly, while public expectations determine a set of expectations, and consequently correct and enrich the technical view, they generally offer a conservative view of the world. This fact illustrates the difficulties which must be overcome if we wish to implement a strategy of change: resistance will be generated among the very beneficiaries of such change.

We must understand the basic motives behind the expectations of modernity which people the dreams of Brazilians (and citizens of the other underdeveloped countries), making them apt to resist changes in style. In a recent study on the mean dwellings of the poor sectors of São Luís (Maranhão, Brazil), I noted that by way of decoration, families hung the following articles from their walls of adobe, mud and wood: the Sacred Heart of Jesus and calendar; the Virgin and Child and calendar; Pelé or some other soccer player; Sandra Bréa (cinema

²It seems to me that the interaction between socioeconomic factors and cultural factors is a better analytical tool than the schematic relationship of superstructures which depend upon infrastructures. Moreover, how can one deny that irrationality also plays a role in history?

and television actress), generally fully dressed; and a Volkswagen, a poster of which I saw in more than one house. Icons of modern life—religion, the magic of heroes, the televised message and the automobile, product and symbol of modernity—these are part of the semiotics of daily life worthy of an anthropological survey of such life. What is the *historical origin* of these expectations, this desire to possess modern products and to affirm the current consumer style? At the end of the last century, pressure from English enterprises in Brazil prevented isolated voices (such as that of the Baron of Mauá) from inducing the nation to choose another economic growth model, as in Japan. Perhaps in that country, the language and insular culture made it sufficiently isolated so that for a while, a separate path could be followed; there, the bourgeoisie formulated a project and had a clear picture of the benefits to be derived from the Meiji reform and the industrialization process. In Brazil, recently emerged from a slave-based régime (slavery was abolished only in 1888, and as recently as 1850 the slave trade was still flourishing), wealth and power were concentrated in an extremely small portion of the population: a rustic élite living on their haciendas and spending exorbitant sums in Paris. This élite did not have very clear class projects, so that during the second half of the nineteenth century, abolitionist estate owners, slave-exploiting industrialists, atheists defending religious instruction and monarchist democrats all coexisted, without anyone having a very clear idea of his position. Deodoro, who officially proclaimed the Republic (1890), burst in upon the then Minister of War to depose him ... “in the name of the Emperor”.

To this weakness of national or class objectives on the part of the middle class and landowners (exporters and bankers) was added the class weakness of the workers, among whom the Italian immigrant, necessarily individualistic in his desire to begin life anew and transcend his divided loyalties, was to be found alongside the ex-slave who for decades would identify work with a form of slavery.

This obviously simplistic picture reveals the existence and strength of the alternatives as

well as the conceptual weakness upon which the interests of exporters and English entrepreneurs played with gusto. The century of independence in Latin America was also the century in which the relations of economic dependency became more transparent.

In this situation, there was naturally little autonomy for choosing the path to be followed, necessarily and for that reason, instead of integrated and industrial growth aimed at expanding the domestic market through more democratic participation in the distribution of wealth, Brazil headed towards *growth through modernization*.

What were the characteristics of this style of growth? It consisted basically of the adoption of a comparative model, an industrialized country, whose *life-style* was to be *copied*. Once the extent of the distance separating both countries had been measured, an attempt was made to reduce it. It is a sisyphian situation, since the industrialized country continued its progress, perfects its equipment, reinvests and also grows.

In its longing to possess the equipment and services defining the model life-style, Brazil embarked upon a modernization process which to some extent was a positive transition for the entire society. Within this transition movement, however, some parts of society advanced more, concentrating the country's income more and more, despite occasional half-hearted efforts at redistribution by various governments.

Growth by modernization required the concentration of income; there was no way to ‘disperse’ the country's slim savings if, firstly, it was wished to import the consumer products already known to the élites which dominated political decision-making; second, if these imports were then to be replaced with local manufacture of the same products (industrialization by substitution), importing the necessary production machinery; and third, if industrial development was to remain eternally dependent on the technology which was being developed in the industrialized countries, absorbing savings in order to pay for the import of constant innovations.

The Brazilian élite came to form part of

what Sunkel has defined as the 'modern archipelago'. Consequently, although the result of eighty years of modernization was an output of one million automobiles per year, this growth was paid for by an enormous and intolerable *social debt* illustrated among other unpleasant indicators, by an illiteracy figure of 20 million and an infant mortality rate of 101 per thousand (1976). This price is high and inadmissible. The fondness for privilege and belief in a magical solution to the problems of growing debt, price inflation and growing technological dependency will be succeeded by the violence of despair if the path of modernization is not changed for the path of *development* (which implies an increase in jobs, improvement of the quality of life and, above all, greater social equity).

This change of style will also have its price, however. Changing the group of products made from consumer goods to wage goods will involve going against general expectations and the illusory hope that income will be redistributed to achieve a simple equity of 'everything for everyone'. A spare and spartan distribution of consumer goods, even if it is equitable and eliminates poverty, will be perceived by many people as an intolerable frustration, a regression.

Consequently, a change from growth by modernization to growth with development cannot for the present entail extremely brusque qualitative alterations in the life-style. It is difficult to image a 'Chinese' sort of development in Brazil, a country without physical or cultural 'walls', and strongly influenced by what is happening elsewhere.

Accordingly, in order to face up to and prepare for the change in style, the importance of *expectations* and *habits* in the generation of demands must be considered. Even in the style of growth through modernization, demand was preceded by the formation of cultural habits suited to the import of products; although these were the habits of a small dominant class, we know that they were sufficient for substantive decisions to be taken.

Today, patterns of consumption are generated in a more complex and efficient manner: the mass communication media are responsi-

ble for creating a global demand, a sort of psychological need to possess objects.

The tyranny of the things offered is sweet: enveloping, sensual, with background music, and generally in colours. There is an illusion of love in each commitment to buy.

And we must keep in mind that the effectiveness of the mass media will be greatly increased during the 1980's through technological advances which will cause the retransmission media (television, telephone and radio) and the processing media (computers) to be interchanged and fused and information transmitted worldwide by satellites. I believe that the importance telematics³ will have from the 1980s onwards has not yet been properly understood by planners or politicians, and I shall therefore quote some statistics in order merely to indicate the importance of telematics in the subject which concerns us: thus, in the last 15 years, the transmitting capacity of the Intelsat satellites has grown from 240 to 12 thousand circuits, whereas the cost per year of active life has dropped from US\$ 30 000 to US\$ 700. The transnational flow of information may entail the concentration of data banks in a few countries, thus increasing dependency to an incredible extent and jeopardizing sovereignty. Microchips will reduce the price and size of equipment, thus admitting the computer into daily life and making available a large number of useful (e.g., telephones providing weather information) and useless (e.g., telephones relating stories) services.

In its May 1980 issue, the journal *Dados e idéias* gives an outline of the international information networks currently operating as a result of the rapid integration of computers and telecommunications. The following types of network exist:

1. For private use (examples: CIA, IBM, HP);
2. Belonging to companies providing data processing services (e.g., G.E., *Control Data*, *Computer Sciences Corp.*);
3. For specific purposes (e.g., SITA - *Société Internationale de Télécommunications*

³Neologism denoting the combination of telecommunications with data processing.

Aéronautiques; SWIFT - Society for Worldwide Interbank Financial Telecommunications);

4. Public (e.g., Telenet, of G.T.A.), designed to supplement and compatibilize the services of local telephone companies;

5. Mixed (Tymshare Inc., which operates in 26 countries and links 200 computers).

The importance for our topic of the formation of these data banks and telematics networks lies in the fact that transnational corporations will soon possess much more efficient machinery for the generation of global demand, thereby expanding their marketing capacity, which is just as important as their financial and technological capacities.

I believe that if the countries of Latin America fail to regulate and control transmission channels and telematics operations, any significant change in their life-styles and styles of development will become highly unlikely, since demands will continue to be generated in accordance with the interests of the transnationals, who wish to preserve the modernization model.⁴ We must not be deceived by the neoliberalism aired in certain political sectors. According to U. Kekkonen, President of Finland, in a speech at a communications congress (May 1973): "... freedom of communications in a liberal sense is not a neutral concept in everyday circumstances, but a means through which an enterprise with many resources at its disposal has greater possibilities than a weaker competitor for having its hegemony accepted".

Despite the mistrust we may have of governmental bureaucratic domination in telematics, the truth is that in the Third World, only governments can speak with a force equalling that of transnational corporations. We must permit and encourage them to exercise that role, but we must simultaneously increase and perfect civilian society's control over governments.

Both the facts mentioned above and the historical origin of the current modernization

itself point to the possibility that substantive economic decisions and options may be generated on the basis of the cultural conditioning of demands and expectations.

Thus, in order to introduce strategies of change, not only the technological (transmission channels and establishment of relevant data banks), but also the human potential (quality and content of artistic and intellectual output) of the means of communications must be considered.

It was for this reason that in a recent discussion I drew attention, again by way of illustration, to the effectiveness of Brazilian television serials in connexion with the analysis of the *modus faciendi* of alternative development strategies. The real talent of the writers, directors and actors has transformed this product of mass entertainment into a cultural product of notable quality. The audience is extremely large: for example, around 36 million Brazilians have already spent five months watching the serial "Água Viva" for an hour every day,⁵ and despite the cheaply melodramatic structure of these serials (whose conflicts always end in idealized solutions confirming a redundant set of values), the topical themes stick in the minds of the viewers and constitute the topics of informal conversation the following day. According to the authors of these serials, the definition of these 'topical themes' is the first important argument in favour of the use of such serials as a tool of the strategy for changing life-styles. The other argument is that the viewers identify with the characters and actors, so if this identification can be used to sell products, why should it not be used for intelligent discussion, a profound social objective? The North American cinema made the Indian a wicked character, a villain, a 'baddie', but he could just as effectively have been made into a hero, a 'good guy'. The communications media lend themselves to any content and, aside from obvious political considerations, the decision is personal.

Accordingly, after establishing the utopian

⁴Brazil has encouraging experience in this regard, such as CAPRE (Coordenação das Atividades de Processamento Eletrônico) and the recent creation of the SEI (Special Informatics Office).

⁵Written by Gilberto Braga, directed by R. Talma and P. Ubiratan, and produced and broadcast by TV Globo, the largest of the 108 channels existing in Brazil.

objective which we are to pursue we must, in order to modify effectively the style of development, consider the means which will allow us to overcome the reluctance to abandon illusions of modernization in the form of conspicuous consumption. For this purpose, we must learn to act in the field of culture, habits and the communications media. To make the *desirability of changing the style of development* lucid and convincing is one of the most difficult challenges facing intellectuals and planners who sincerely desire to develop and introduce significant alternatives in Latin America.

I fear that if we do not take into account the

potential of culture and the communications media for mobilizing public opinion, in ten years we will again hear the economist Aníbal Pinto exclaim: its amazing! For so many years we have been formulating proposals for Latin American development, but we have neglected to propose forms, means, strategies and tactics for communicating these ideas to the users of the proposals and to devise the best means of mobilizing citizens in favour of the alternatives which require changes in life-styles. We wished to make a revolution *for* our fellow-men, instead of a revolution *with* them.