

Actuellement, les exigences de la technologie ont pour effet de concentrer de façon croissante l'appareil de production dans les mains de quelques-uns et à des points très limités de l'espace. De même l'Etat se trouve pourvu de pouvoirs de centralisation dont le domaine s'étend au-delà des décisions politiques et économiques.

Si l'on veut que les pôles de croissance soient établis en considération de la bipolarisation représentée par le double circuit de l'économie urbaine, il s'agira de trouver le moyen de diffuser la croissance à travers l'espace et de mettre un terme à l'extension du circuit inférieur par la modernisation. Un certain nombre de propositions ont été avancées en vue de ce but : création massive de nouveaux emplois, introduction de technologies dites « intermédiaires », combinaison de technologies moderne et traditionnelle. Quoi qu'il en soit, le problème de l'égalité ne peut être séparé d'une organisation cohérente de l'espace, basée sur une structure efficace de production, capable de transmettre la croissance des secteurs modernes aux secteurs anciens, capable aussi de répartir de façon plus équitable les biens disponibles.

Si l'on observe ce qui se passe aujourd'hui dans les villes du Tiers Monde et, plus particulièrement dans les métropoles et les villes moyennes, on constate que le circuit supérieur se double d'un circuit marginal. Dans les villes moyennes, les rapports entre le circuit supérieur marginal et le circuit inférieur et les populations correspondantes sont nettement plus importants que ceux reliant le circuit supérieur au circuit inférieur. Dans les métropoles, le circuit supérieur marginal peut éventuellement assister le circuit supérieur lorsque l'un et l'autre forment un système basé sur une communauté d'intérêts en matière d'établissement des prix et de partage du marché.

On a vu que le développement de la technologie, des transports et de l'organisation technique aboutit tôt ou tard au déclin du circuit supérieur marginal. Toutes les prises de décision, sinon toute la production, sont transférées à la ville macrocéphale. L'avenir du circuit marginal est des plus incertains parce que le pouvoir de contrôle exercé par un système de production théoriquement destiné à augmenter la productivité économique mais en fait affaiblissant l'Etat, cause la ruine des villes moyennes, réduit l'emploi et aggrave la pauvreté. Dans des conditions plus favorables, la population étant moins pauvre, le circuit inférieur connaîtrait un accroissement de productivité et tendrait ainsi à se rapprocher du circuit supérieur. Celui-ci, en d'autres termes, tendrait à être moins moderne et moins supérieur, alors que l'autre deviendrait moins inférieur. Les villes moyennes ou intermédiaires étant renforcées pourraient vraiment jouer un rôle dans leur région. Ce pouvoir de contrôle au niveau de la région aurait de nombreux effets tant économiques que sociaux. C'est tout un système de pôles de croissance économique et de développement social qui pourrait s'organiser et croître.

"CIVILISATIONS"  
VOL. 25 . 1975 - N° 1-2

vol. XXV, n° 1-2,  
1975

## Underdevelopment, growth poles and social justice

Milton Santos

researchers still seek means of increasing the magnitude of the economy while diffusing this growth throughout space and among the population. The problems of resource distribution and of spatial organization are inseparable.

*From Selective Space to Everyone's Space*

The question of knowing to what type of space his original formulations (1950) could be applied was well beyond the intentions of Perroux. J. Boudeville (1957, 1961) followed by L. Rodwin (1960) and J. Friedmann (1963, 1966) were the first to suggest that the growth-poles concept had a geographical base. Actually, the concept of topological space such as Perroux defined it (3) does not exclude the fact that firms influence communal space. Theoretical constructions and planning efforts, however, have mostly been directed toward economic space.

Therefore, growth pole theory in most of its traditional and recent formulations has been concerned with the space of a few and not the space of everyone. When corporate space is differentiated from communal space and favoured in the theoretical elaboration, the natural result is an aristocratic and discriminatory theory for most of the population is barely taken into consideration.

The distinction often made between abstract or economic space and concrete or geographical space — the latter being everyone's space — does not permit a clear grasp of all the elements entering into the definition of a given point in space (4) and prevents the identification of the hierarchy of forces acting upon space. The idea of organization is inseparable from those of decision-making and domination. The dichotomy between geographical space-economic space, presented as a methodological constraint, is in reality more an obstacle to spatial analysis (5). The relationship, however evident, between the monopolistic structure of production and phenomena such as macrocephaly, impoverished peripheries, or the rural exodus would be better analysed within a multidisciplinary perspective of concrete, yet communal multi-dimensional space composed of corporate, institutional, and everyone's space.

(3) Economic space « is defined by the economic relations existing between economic elements » (Perroux, 1961, p. 127, 1961 edition). There is as much economic space « as there is objects in economics and abstract relations which define each of them » (Ibidem, p. 126).

(4) Gauthier (1971, p. 15) observes that « efforts to develop a geographical dimension to theory have been less than successful. The rules of transformation from economic space into a geographical space have never been satisfactorily formulated ». Jansen (1970) complains of the little attention given to economico-geographical structures.

(5) « It seems that neither concept of space can be isolated from the other one without in so doing depriving oneself knowledge of their reciprocal influences » (Beguín, 1963, p. 573). « ... Consideration of economic space alone is not sufficient for an understanding of all factors exerting an influence on economic mechanisms; it is true that geographical space also influences them. The two concepts of space are to be used for a better understanding of reality » (Beguín, 1963, p. 573).

Discussion on growth poles (1) often provokes passionate semantic debate or a critical interpretation of the ideas of its founder, François Perroux (2), who has been accused of having ulterior motives for his work (Coraggio, 1972).

The growth pole concept became a victim of this own popularity at a moment when the idea of planning arose as a slogan. Perhaps, in the final analysis, it was this coexistence with planning which harmed the concept of growth poles (Lasuen, 1969, p. 140). Once growth pole theory came into vogue, its content was neglected in favour of its form, its explanations for techniques and models. In effect, a thorough analysis of the theoretical base of the theory was sadly omitted. While one might say (see A. Kuklinski, 1970, p. 13) that this theory has seldom been applied, or wonder (see B. Berry, 1971) whether it is in fact a theory, the growth-pole concept has nevertheless inspired a plethora of books, theses, and papers. Perhaps this situation arose, as J.R. Lasuen (1969, p. 137) has suggested, because F. Perroux's ideas were not originally presented as a coherent body of knowledge.

Due to the lack of agreement on research objectives, many papers fail to clear up the imprecise nature of the key definitions, thus perpetuating the indiscriminate usage of this concept both in theory and practise. These ambiguities result in all sorts of unintentional and deliberate misinterpretations. Yet the idea itself has not lost its prestige since

(1) For a bibliography see among others Lasuen, 1969, Darwent, 1969, and Hansen, 1971.

(2) (...) Paelink argues « the development pole concept has been misunderstood. It has been confused with the notions of key industry, basic industry, and industry ensemble; from this follows the erroneous conception that the development pole is an industrial monument raised to the glory of future regional industrialisation; a guarantee of certain economic growth ». J. Paelink, « La Théorie du développement régional polarisé », Cahiers de l'Institut de Science Appliquée, Série L, N° 15, March 1965, pp. 10-11.

Moreover, the commonly accepted model of space as a system is no longer sufficient due to the inadequacy of traditional definition of a system. If one accepts the classic definition of a system as a complex of elements, the relations between these elements and between their respective attributes (Hall and Fagen, 1956, p. 18) (6) an operational definition of space will be made much more difficult. According to M. Godelier (1972, p. 258), « a system is a group of structures interlinked by certain rules ». These structures are in turn defined by « a group of elements interlinked by certain rules » (7).

There is a great deal of difference between measuring, on the one hand, interrelations between industries through, for example, input-output matrices and on the other hand considering the relation between a given production structure and other elements of the social and spatial systems. The input-output approach extolled by Lasuen (1970) deals with economic growth « a la Rostow » because it only aids in the understanding of relations among « modern » firms, considered as dynamic. This approach is limited in that it is a neutral tool or value-free model (Miernyk, 1965, p. 88) and is not useful for the construction of a valid universal spatial theory (8). While it is true that J.R. Lasuen (1969) stressed analysis of corporate organisational structures, but of what use is an isolated element ?

One must instead go further and attempt to analyse aggregate production structures as « elements » in the elaboration of a spatial system, that is, the geographical projection of the social system in its widest sense. Success will no longer be measured, as under the present doctrine, in terms of the efficiency of inter-industry exchanges recognised by the increase in output within a given period of time and under given conditions for the use of capital and labour. The problem is more oriented toward *spatial productivity*, defined as the most efficient geographical arrangement of resources in which the organisational structure will have been previously defined with a better redistribution of results in mind. The concept of spatial planning would be consequently enriched.

(6) « A system may be defined as a complex of interacting elements, together with their attributes and relationships. One of the major tasks in conceptualizing a phenomenon as a system, therefore, is to identify the basic interacting elements, their attributes, and their relationships. For any given system its environment comprises 'the set of all objects a change in whose attributes are changed by the behaviour of the system'. Thus, a system with its environment constitutes the universe of phenomena which is of interest in a given context (A. D. Hall and R. E. Fagen, « Definition of system », *General Systems Yearbook*, 1956).

(7) I propose to understand by a « system » : « a group of structures interlinked by certain rules (laws) ». We are thus referred back to the idea of « structure » by which we can mean : « a group of objects interlinked by certain rules (laws) ». By « object » I mean any reality whatever : individual, concept, institution, thing. By « rules » I mean the explicit principles whereby the elements of a system are combined and related, the norms intentionally created and applied in order to « organize » social life : rules of kinship, technical rules of industrial production, legal rules of land-tenure, rules of monastic life, and so on. The existence of these rules allows us to suppose that, in so far as they are followed, social life already possesses a certain « order » (Godelier, 1972).

(8) Although using different arguments from ours, Paclink (1965) and Hansen (1967, 1970, 1971) have already criticised the use of input-output analysis for growthpole theory.

To realise these objectives, consideration must be given to economic structures as a manifestation of adopted growth models, geographical structures, that is the distribution of the population, infrastructure, activities, institutions as well as their environment, and finally social and political structures resulting from the superimposition of the present on the past and the superimposition of local, national, and international influences. The population and the supports of their activities must be envisaged within a transtemporal perspective. The definition of space as a system — i.e. a multidimensional and operational definition — is obtained from the interaction of these structures.

The structure of space not only depends on the location of firms, as classical regional analysis has maintained, but also requires consideration of the structure of the State and production, as well as the way in which available resources are allocated to the different social classes. The importance of an individual as a producer or consumer also depends on his position in space and varies as a function of changes in spatial structure. While one's perspective to the fundamental problem of finding a spatial organization capable of a better diffusion of growth is based on one's interpretation of the idea of growth, the conditions of growth and the conditions of diffusion must be envisaged in concert. Therefore a definition of the specific characteristics of spatial organisation in the underdeveloped countries is necessary.

#### *Third World Space : the two circuits of the economy and their spatial implications*

The application of growth-pole theory to underdeveloped countries raises the question of whether space can be described indiscriminately in developed and underdeveloped countries (9). Most analysers and planners of space act as if theories elaborated from western realities can be transferred to the Third World. Such a position is based on the premise that the Third World is a « developing world » — that is, in a transitory state progressing toward what the developed countries are today.

This concept of similar path models is inadequate (McGee, 1971) for it is not a question of a developing world but of an underdeveloped world with its own characteristics and mechanisms. The study of the history of underdeveloped countries reveals the unique nature of their development in comparison with that of the developed countries. Moreover, this specificity clearly appears in economic, societal, and spatial organization.

While the components of space are universal and form a continuum over time, they vary quantitatively and qualitatively over space, just as

(9) In his study on the Brazilian state of Minas, Boudeville (1957, p. 25) points out the structural differences between the United States and Europe, and Brazil.

the combination of components and their processes of fusion also differ. A real differentiation is the result of this variation. Third World space is first characterized by the fact that it is organized and reorganized as a function of distant interests, most often on a global scale. However, Third World space is not affected in a uniform manner by these forces of change. Their impact is very localised for diffusion may meet considerable inertia (Santos and Kayser, 1971).

Moreover, the forces of modernization imposed from either the interior or exterior are extremely selective in their forms and in their effects. Modern variables are not all received at the same time nor at the same place for history has been spatially selective. With each modernization, the impact of these forces produces alterations in the importance of the diverse variables whose combinations gives a point in space its characteristics. A great instability in spatial organization with disequilibrium and repeated adjustments is the result.

Discontinuous, unstable, Third World space is also multipolarised, i.e. subject to and torn between a host of influences and polarisations stemming from the many decision-making levels. The smaller the spatial scale the larger the number of impacts, which means that innovations reach the local level at different points in time, producing a reduction or gearing down of time at the local level (Santos, 1973).

Finally, space in underdeveloped countries is characterised by enormous income inequalities, which are expressed at the regional level by a tendency toward hierarchisation of activities, and on the local level by the coexistence of similar activities, but which function at different levels. Income disparities are much less blatant in developed countries and have very little influence over the accessibility to a large number of goods and services. By contrast, in the underdeveloped countries consumption possibilities vary greatly. One's income level is a function of one's spatial location, which in turn determine one's ability to produce and consume.

The operational modes of space are therefore influenced by these enormous geographic and individual disparities. This spatial selectivity at the economic as well as social level holds in our opinion the key to the elaboration of a spatial theory. As new tastes are diffused throughout the country and coexist with traditional tastes, the economic apparatus is forced to adapt both to the imperatives of a powerful modernization and to new and inherited social realities. This is equally true for the production apparatus as for the distribution apparatus. Two economic circuits are thus created, responsible not only for the economic process, but also the process governing the organization of space (Santos, 1971, 1972, forthcoming).

The city can therefore no longer be studied as a monolithic entity. We have called these two sub-systems the « upper or modern circuit » and the « lower circuit ». The upper circuit is the direct result of techno-

logical modernization and its most representative elements are the monopolies. Most of its relations take place with organizations located outside the city and surrounding region for this circuit is based on a national or international frame of reference. The lower circuit, composed of small-scale activities and involving primarily the poor population, is by contrast well established in the city and maintains privileged relations with its region. Each circuit constitutes in itself a system or rather sub-system of the urban system.

Upper circuit activities are responsible for the macro-organization of space while spatial organization at the local level is shared between the lower and the upper circuits. It is therefore on this level that the dialectic between the two circuits takes place, although macro-spatial decisions also affect the lower circuit (Santos, forthcoming). The existence of the two circuits as well as their competition are therefore a fundamental element in the explication of space and an essential part of the planning process, especially since each circuit maintains a particular type of relation with its region for each city has in effect two urban fields.

Only the modern circuit has been the subject of systematic research. Economic analysis, and in its wake geographical analysis, have long confused the modern sector of the urban economy with the complete city. Did not J. Friedmann (1961, p. 89, 1964, p. 346) state that « the folk sector is in the city but not a part of it ». Consequently most studies have not examined the aggregate urban economy, but only a part of it, preventing the formulation of a true theory of space.

The recognition of the existence of the two circuits necessitates renewed discussion on accepted concepts such as urban export theory, central place theory, and growth pole theory which until now have served as the base for many theories on regional planning. Henceforth the lower circuit must be considered as an element essential to the understanding of urban and regional realities. The theory of the two urban circuits in Third World countries appears as a true *paradigm* in the sense given the word by Kuhn (1962) where formulations capable of interpreting reality and offering solutions to the corresponding problems must be re-established, and not readapted, for each new historical period.

#### *Growth Without Growth Poles*

Growth pole theory, like all other spatial theories, takes into account only the upper circuit, for modernization alone, by establishing leading industries, is believed capable of stimulating growth. The lower circuit is considered a brake to economic growth rather than what it really is — at any rate in its present physiognomy — a result of technological modernization.

This view contains a series of ambiguities. First, modern industries are not necessarily complementary. Secondly, these industries may not

produce important spill-over effects. Finally, industries may profit from agglomeration economies found in a city without exerting in return any appreciable multiplier effect, particularly in the case of re-export industries.

It is not certain whether large, capital-intensive industries are necessarily dynamic, as A. Manne (1967) and H. Richardson (1969, p. 106-107) once suggested. Aydalot (1965) believes the term leading industry should be reserved to industries capable of generating external economies, and these are not necessarily large scale industries. It is therefore possible to have *growth without growth poles*.

This growth appears in privileged points of space, especially since, due to modernization, new economies of scale geographically limit the establishment of new activities. Macrocephalic cities and industrial towns are the prime geographical locus of growth and are a manifestation of growth and not a cause (J. Casimir, 1968, p. 11). At the same time, tertiary activities take on an increased importance within the urban system because modern industry tends to eliminate traditional industry and because modern industry is unable to supply sufficient employment. This « primitive » tertiary (J. Beaujeu-Garnier, 1965) is also a « refuge » tertiary (D. Lambert, 1965). It is as much present in cities without secondary industry as in those where this industry is important, i.e. in the poles and non-poles. Thus it can be said that growth and the development of the lower circuit take place in a parallel manner. Growth — or in any case growth as it is still commonly defined — therefore does not appear as the process capable of eliminating poverty.

#### *Obstacles to Diffusion*

Since there is a lack of social diffusion of growth, can one assume that there is a spatial diffusion? Hirschman (1958) was perhaps the first to think so. As if trying to apply Schumpeter's thesis (1950, Chap. 7-8) on « destructive creation » to the space, Hirschman suggested the need for encouraging growth in a given region, which would then become the country's propulsive region transmitting growth to other points of space. Following these ideas of Hirschman and Hagerstrand (1967, 53) the notions of *growth poles* and *innovation diffusion* began to be integrated. Gauthier (1971) included Lasuen and Friedmann among the diffusionist group. For his part, Berry considers that « the role played by growth centres in regional development is a particular case of the general process of innovation diffusion, and therefore that the sadly deficient « theory » of growth centres can be enriched by turning to the better-developed general case » (1972, pp. 340-341).

The diffusionist hypothesis served as the base for Friedmann's (1963, 1966) elaboration of the core-periphery concept — a geographical variant of the principles previously developed by R. Prebisch (1949) and Gunder Frank for international relations.

The problem is once again whether such concepts are applicable to underdeveloped countries without first defining Third World space, its functioning, and its articulations.

The essential conditions of spatial organisation have always stemmed from the free or guided play of concentration and dispersion tendencies, although these conditions vary as a function of the specific forms taken by modernizations and the types of activities influencing spatial organization. During the present historic period, due to the exigencies of technology, the production apparatus is becoming increasingly concentrated in the hands of a few and at a limited number of points in space. Similarly, the State, which has universally become a modern State due to the new international conditions imposed and facilitated by the technological datum, finds itself equipped with centralizing powers. The domain of these powers extends beyond political and economic decisions for the exercise of the modern State's functions requires a transport organization in which the tendency toward integration favours all types of concentrations.

The technological period is however the first period in Third World history to produce a generalized diffusion of two variables elaborated in the centre — information and consumption diffusion. The phenomenon is more discernible in Latin America than elsewhere. Migrations result from these influences, but only affect a part of the population since the transport revolution facilitates the diffusion of certain goods. Moreover, the State does not and can not remain indifferent to the newly created needs which remain out of reach for most individuals. It is called upon to furnish free of charge or almost free of charge a certain number of services such as education and health facilities which have at least temporarily an attractive influence. Thus the distribution of goods and supply of services, which suppose a minimum sized agglomeration, are responsible for the establishment of small cities in the interior, while production concentration with consequent creation of monopolies is responsible for macrocephaly.

Therefore, as factors of concentration we have the organization of production and the State and as factors of dispersion the population due to new needs based on information and consumption diffusion, and again the State. The State's role depends on whether it uses its resources to facilitate directly or indirectly, production concentration or whether it uses them to furnish services to the local population. The problem, however, is not only the State's will, but also its power because concentration tendencies lead to monopolistic and oligopolistic forms of organization which force the State to share not only popular saving, but also decision-making power. Needless to say these new organizational forms use their decision-making power for their own benefit, that is to aggravate concentration. Myrdal's (1957) concept of cumulative growth is therefore well-founded. The idea that external and agglomeration economies

are replaced at a given moment by diseconomies would only be valid if large firms were forced to assume responsibility for their own infrastructure.

J.C. Funes (1972) criticises the analogy established between developed and underdeveloped countries when the possibilities of diffusion of growth from a more developed region are suggested. Since growth is cumulative in the same points or regions, the decline in regional income disparities can only be obtained through sustained growth. Funes (1972) goes on to point out that « external and agglomeration economies are used by the capitalist sectors in the respective urban centres while diseconomies are observed by the State and the entire population » (10).

The location of modern activities, principally industries, in intermediate cities does not depend on the importance of demand innovation as J. Friedmann (1969, p. 10) believes (11). B. Berry was also mistaken (1971, p. 116, 1972, p. 340-342) when he suggested the existence of a hierarchical filtering down process following the rank-size rule (12). These writers disregard the contemporary realities (such as the role of aggregate production structures in spatial organization) and their projections in the Third World. Berry (1972, p. 342) cites as one of the causes of hierarchical filtering the movement of the largest firms toward the middle-sized cities in order to obtain cheap labour. J.R. Lasuen (1969, p. 150) has shown that « wage differentials between regions are unimportant factors ». Indeed, it is in terms of the structures of the systems, i.e. through Godelier's perspective, that this question must be reasoned. Otherwise ambiguities will result, explaining why theories such as « concentrated deconcentration » (Rodwin, 1960) are of limited explicative value, since selective and cumulative concentration of modern production and the generalized diffusion of impoverishment are worsening throughout the Third World.

(10) « This approach supposes the possibility of two types of economies and diseconomies - social and individual (enterprises and families). While there is the possibility of a transfer of individual diseconomies, i.e. of enterprises and persons - located in the large cities - either to the public sector (due to increasingly expensive infrastructure requirements but without a proportional rise in rates) or to the national population (through prices of goods and services produced and provided by the large cities) it is evident a transfer will not be encouraged to other urban centres (due to diseconomies for the firms and households) as the theory elaborated in the developed countries assumes. This seems to be one of the critical points for an understanding of the urbanisation process in Latin America but researchers have not taken this into consideration » (J. Funes, 1972, p. XXX).

(11) In his analysis of innovation diffusion, Friedmann (1969, p. 10) says that effective demand is a determinative factor: the greater the demand, the higher will be the probability of innovation.

(12) « ... the innovation potential of a center is function of its own rank in the urban hierarchy, and the force exerted on it by virtue of its location relative to the other centers in the hierarchy that have already adopted the innovation » (Berry, 1972, p. 342).

### *Development Poles and Social Justice*

How can growth poles be formed which take into account the bipolarization represented by the existence of the two circuits of the urban economy? The solution lies in finding ways to diffuse growth through space and to stop modernization from enlarging the lower circuit, due to its lack of positive effects which have worsened poverty. D. Morse's (1970) estimate that 300 million jobs must be created in the underdeveloped countries by 1980 arouses heated debate on the means of solving the problem. G. Jones, like many others, believes the solution lies in the introduction into the Third World of intermediate technologies. Others such as Ramos assume that the coexistence of modern and traditional technologies in different proportions can assure full employment. Yet the problem is as much economic as spatial. Kutlinski (1972, p. 220) rightly says « we have to remember that the main objective of our time is the equality among human beings and not among places ». Nevertheless, the problem of equality is inseparable from an adequate spatial organization based on an adequate production structure. But how can this be obtained? The primary problem is to find a production structure which is both capable of transmitting growth from the modern sectors to the non-modern sectors and of allocating in a more equitable manner the available resources.

Let us for a moment imagine that it is possible to change the present production structure and by consequence the consumption structure. This alteration would be oriented in the direction advocated by R. Gendarme (1963, p. 355), that is « a turning of the modern sector toward the interior ». Freedom from international models would on the one hand result in the reduction of the scale and indivisibility of investments, and on the other hand would release more domestic and external resources. The first consequence would be a deconcentration of « modern » activities for they would now be capable of locating outside the « core ». No longer forced to share national resources with oligopolistic structures, the State would be able to make more social and agricultural investments in the peripheries. These two movements would result in a strengthening of intermediate and local cities, while residents would be less poor since they would be able to use a larger number of public services and would have a greater accessibility to goods and services supplied by private firms.

Let us return to what is presently taking place in Third World cities. One can observe, particularly in the metropolises and intermediate cities, a *marginal upper* circuit next to the *upper circuit*, strictly speaking (Santos, forthcoming). In the intermediate cities the relations between the marginal upper circuit and the lower circuit and the corresponding populations are most important than those between the upper circuit and the lower circuit. The activities of the marginal upper circuit resemble those of the lower circuit since they are created as a function of regional demand and do not have an extra-regional range. In the metropolises,

the marginal upper circuit can be tactically an ally of the upper circuit when and where the two form a system based on a community of interests for price formation and sharing the market. The marginal upper circuit in the intermediate cities, however, does not participate in such an alliance. Its survival supposes the absence of conditions which would allow firm establishment of the upper circuit. The example of Barquisimeto, Venezuela, is typical of this « upward » industrialization. The development of technology, management, and transports sooner or later results in the decline of marginal upper circuit firms and all decision-making, if not all production, is transferred to the macrocephalic city. The marginal upper circuit is presently in a position to supply neighbouring populations, while locally providing a large number of direct and indirect jobs. Nevertheless, its future is very uncertain because control by a production system which is supposed to increase economic productivity but which actually weakens the State, undermines the intermediate cities, reduces the number of jobs, and worsens the problem of poverty.

It has not been proven that large production units have the highest levels of productivity (Messner, 1966, p. 243; Owen and Shaw, 1972, Chap. 6) (13). Moreover, abundant manpower resources must not be neglected. The contrast of unemployed masses with the scarcity of capital has long pointed out the need for a more rational solution to the problems of the Third World.

A decrease in the technological gap would allow less exploitive relations between the upper and lower circuits. Under present conditions, while the lower circuit plays a buffer role between the modern economy and the impoverished masses it employs, it primarily acts as a transmission belt for popular savings, which « rises » by different channels to the upper circuit. This dominant modern circuit is the only benefactor of what G. Bedford (1972) has called « persistent poverty ». Under the conditions we simulated earlier, since the population would be less poor the lower circuit would experience an increase in productivity and would come closer to the modern circuit. *The latter would become less modern and less upper while the former would become less lower.* Since the intermediate cities would be strengthened they would play a true regional role. This regional controlling power would produce numerous economic and social multiplier effects. Migrations would be re-distributed among the various cities of the network and as Hansen (1971, p. 195) has suggested, a system of economic and social development growth poles instead of a single pole would develop.

To be sure, our model is very general and must be reworked in order to take into account local realities. The combination of economic and political possibilities will determine the degree of success for the initiatives. It must never be forgotten, however, that an isolated solution can only be truly effective when it is considered as an element in a total strategy, and never as an autonomous solution.

(13) « The myth of a higher productivity in large enterprises must be reduced to its real dimensions. Productive capacity does not accurately correspond to productivity indices » (J. Messner, 1966, p. 243).

## REFERENCES

- Alonso, William, « Urban and Regional Imbalances in Economic Development, EDCC, Vol. 17, No 1, 1968, pp. 1-14.
- Aydolat, Philippe, « Note sur les économies externes et quelques questions connexes », *Revue Economique*, XVI, Nov. 1965.
- Beaujeu-Garnier, J., *Trois Milliards d'Hommes*, Hachette, Paris, 1965.
- Beckford, George, *Persistent Poverty, Underdevelopment in plantation economies of the Third World*, Oxford University Press, Londres, 1972.
- Beguin, H., « Aspects géographiques de la polarisation », *Revue Tiers Monde*, 1963, No 16, pp. 559-608.
- Berry, Brian, « City Size and Economic Development: Conceptual Synthesis and Policy Problems, with Special Reference to South and Southeast Asia », Leo Jakobson and Ved Prakash, eds., *Urbanization and National Development*, Sage Publications, Beverly Hills, 1971, pp. 111-155.
- Berry, Brian J. L., « Hierarchical Diffusion: The Basis of Developmental Filtering and Spread in a System of Growth Centers », in P. W. English and R. C. Mayfield (eds.), *Man, Space and Environment*, Oxford University Press, 1972, pp. 340-359.
- Boudeville, Jacques, « Contribution à l'étude des Pôles de Croissance Brésiliens: Une Industrie Motrice, La Sidérurgie du Minas Gerais », *Cahiers de l'ISEA Série F*, No 10, Paris, 1957.
- Boudeville, Jacques, *Les espaces économiques*, Presses Universitaires de France, Paris, 1961.
- Boudeville, Jacques, « Schéma de Recherche pour une analyse de la polarisation », in A. Kuklinski, J. Boudeville, F. Lefebvre, P. Vellax, P. Viot, M. Amadio, *Pôles de Développement et Centres de Croissance dans le Développement Régional*, Dunod, Paris, 1970, pp. 17-24.
- Casimir, Jean, « A Teoria dos Polos de Desenvolvimento e sua Aplicação aos Países sub-desenvolvidos », *América Latina*, Vol. III, outubro 1968 pp. 3-16.
- Corragio, José Luis, « Hacia una revisión de la teoría de los polos de desarrollo », *EURE, Revista Latino-Americana de Estudios Urbano Regionales*, Vol. II, No 4, Marzo 1972, pp. 25-39.
- Darwent, D. F., « Growth Poles and Growth Centers in Regional Planning: a Review », *Environment and Planning*, Vol. 1, 1969, pp. 5-32.
- Friedmann, John, « Cities in Social Transformation », *Comparative Studies in Society and History*, Vol. 4, July 1961, pp. 86-103. Also in J. Friedmann and W. Alonso, *Regional Development and Planning*, MIT Press, Cambridge, Mass., 1964.
- Friedmann, John, « Regional Economic Policy for Developing Areas », in *Papers and Proceedings, The Regional Science Association*, Vol. II, 1963.
- Friedmann, John, *Regional Development Policy, A Case Study of Venezuela*, M.I.T. Press, Cambridge, Massachusetts, 1966.
- Friedmann, John, *A General Theory of Polarized Development*, University of California at Los Angeles, revised, Oct. 1969 (mimeog. 44 pp.). Also in Niles Hansen (ed.) *Growth Centers in Regional Economic Development*, The Free Press, New York, 1972.
- Funes, Julio César, Introduction, in J. C. Funes (ed.) *La Ciudad y la Región para el Desarrollo*, Comisión de Administración Pública, Caracas, 1972.
- Gakenheimer, Ralph, « Analysis para la planificación metropolitana en América Latina: La adaptación de métodos », *Revista EURE*, Vol. I, No 2, julio 1971, pp. 55-66.
- Gauthier, Howard L., « Economic Growth and Polarized Space in Latin America: A Search for Geographic Theory? », *Conference of Latin Americanist Geographers*, Syracuse, Dec. 1971, mimeog., 17 pp.
- Gendarme, René, *La Pauvreté des Nations*, Editions Cujas, Paris, 1963.
- Godelier, M., *Rationality and Irrationality in Economics*, NLB, London, 1972.
- Hagerstrand, Torsten, *Innovation Diffusion as a Spatial Process*, The University of Chicago Press, 1967 (Published in Sweden, 1953).
- Hall, A. D. and E. Fagen, « Definition of System », *General Systems Yearbook*, 1956.
- Hansen, N. M., « Development pole theory in a regional context in *Kyklos*, Vol. 20, 1967, pp. 709-725, also in McKee, Dean and Leahy, *Regional Economics*, The Free Press, 1970, pp. 121-135.

## REFERENCES

- Hansen, N. M., *Intermediate-Size Cities as Growth Centers, Applications for Kentucky, the Piedmont Crescent, the Ozarks, and Texas*, Praeger Publishers, New York, Washington, London, 1971.
- Hirschman, Albert O., *The Strategy of Economic Development*, New Haven, 1958.
- Jansen, A.C.M., « The Value of the growth pole theory for economic geography », *Tijdschrift voor Econ. en Soc. Geografie*, Mar. Apr. 1970, pp. 67-76.
- Jones, Graham, *The Role of Science and Technology in Developing Countries*, Oxford University Press, London, New York, Toronto, 1971.
- Kuhn, Thomas S., *The Structure of Scientific Revolutions*, The University of Chicago Press, 1972.
- Kuklinski, A., *Growth Poles and Growth Centers in Regional Planning*, Mouton, Paris, The Hague, 1972.
- Kuklinski, A., « Pôles de Croissance et Centres de Croissance en Matière de Politique et de Planification Régionale », in A. Kuklinski, J. Boudeville, F. Lefebvre, P. Vellas, P. Viot, M. Amadio, *Pôles de Développement et Centres de Croissance dans le Développement Régional*, Dunod, Paris, 1970, pp. 11-15.
- Lambert, Denis, « L'urbanisation accélérée de l'Amérique Latine et la formation d'un secteur tertiaire refuge », *Civilisations*, Vol. XV, Bruxelles, 1965.
- Lasuen, José Ramón, « De los Polos de Crecimiento », numero spécial sur la Région et la Ville, *Cuadernos de la Sociedad Venezolana de Planificación*, N° 68-69, Caracas, Nov. 1969.
- Lasuen, José Ramón, « On growth poles », *Urban Studies*, June, 1969.
- Lasuen, J. R., *A Generalisation of the Growth Pole Notion*, Paper prepared for the Commission on Regional Aspects of Economic Development, International Geographical Union, Vitoria, Brazil, 1971.
- Manne, A., *Investments for Capacity Expansion: Size, Location, and Time-Phasing*, M.I.T. Press, Cambridge, 1967.
- McGee, T. G., *The Urbanization Process in the Third World*, Bell and Sons, London, 1971.
- Messner, Johannes, « L'entrepreneur propriétaire », in F. Bloch-Lainé et F. Perroux (eds.), *L'Entreprise et l'Economie du XXe Siècle*, Presses Universitaires de France, Paris, 1966, pp. 241-256.
- Miernyk, William H., *The Elements of Input-Output Analysis*, Random House, New York, 1965.
- Morse, David, *Dimensions of the employment problem in developing countries*, Keynote paper at the Cambridge Conference on Development, 1970.
- Myrdal, Gunnar, *Economic Theory and Underdeveloped Countries*, 1957.
- Owens, Edgar and Robert Shaw, *Development Reconsidered*, Lexington Books, 1972.
- Paelinck, Jean, « La théorie du développement régional polarisé », *Cahiers de l'Institut de Science Economique Appliquée*, Série L, N° 15, Mar. 1965.
- Perroux, François, « Economic Space: Theory and Applications », in J. Friedmann and William Alonso (eds.), *Regional Development and Planning*, M.I.T. Press, 1964, pp. 21-36 (Reprinted from *Quarterly Journal of Economics*, Vol. 64, Feb. 1950). Also in F. Perroux, *L'Economie du XXe Siècle*, Presses Universitaires de France, Paris, 3e édition, 1969 (1re édition, 1961), pp. 159-177.
- Perroux, François, « Notes sur la Notion de Pôle de Croissance », *Economie Appliquée*, Vol. VII, N° 1-2, 1955 (also in McKee, Dean and Leahy, *Regional Economics*, The Free Press, 1970, pp. 93-103, « Note on the Concept of « growth poles »).
- Prebisch, Raul, *The Economic Development of Latin America and Some of Its Problems*, ECLA, New York, 1949.
- Ramos, Joseph R., *Labor and Development in Latin America*, Institute of Latin American Studies, Columbia University Press, New York and London, 1970.
- Richardson, Harry W., *Elements of Regional Economics*, Penguin Books, 1969.
- Rodwin, Lloyd, « Metropolitan Policy for Developing Areas », *Daedalus*, Winter 1960, pp. 132-146.
- Santos, Milton, *Les Villes du Tiers Monde*, Editions M. Th. Genin, Paris, 1971.
- Santos, Milton, *Los Dos Circuitos de la Economía Urbana en los Países Sub-desarrollados*, in J.C. Funes, 1972.
- Santos, Milton, *Espaces et Théorie de la Dépendance*, Editions Anthropos, Paris, 1973.
- Santos, Milton, *The Shared Space*, Methuen, London (Series Geography and Development) - forthcoming.
- Santos, Milton and Bernard Kayser, « Espaces et Villes du Tiers Monde », *Revue Tiers Monde*, N° 45, Jan. Mart 1971.
- Schumpeter, J. A., *Capitalism, Socialism and Democracy*, Harper and Brother Publishers, New York, 3rd. Edition, 1950 (1st. Edition, 1942).

## SOUS-DEVELOPPEMENT

## POLES DE CROISSANCE ET JUSTICE SOCIALE

(résumé)

Le concept du pôle de croissance, dû à François Perroux, n'a pas encore été débarrassé des ambiguïtés et des confusions qui s'y sont attachées dès l'origine. Rappelons que ce concept est en quelque sorte le nœud qui relie deux problèmes essentiels : la répartition des biens et ressources, et l'organisation spatiale de l'économie. Il n'y a d'ailleurs pas si longtemps que l'on a admis le fondement géographique du concept des pôles de croissance. On peut avancer aussi que bien des modes d'approche utilisés dans l'analyse de cette notion nouvelle se sont révélés impropres ou insuffisants.

Ce qui importe en définitive c'est de considérer l'ensemble des structures qui, par leurs réactions réciproques, aboutissent à la définition de l'espace en tant que système. Ainsi, il s'agira d'examiner les structures économiques envisagées comme manifestation des modèles de croissance admis, les structures géographiques, soit la répartition démographique, l'infrastructure, les activités, les institutions et leur cadre. On en arrivera enfin aux structures sociales et politiques résultant de la superposition du présent sur le passé, et d'interactions entre les diverses influences, locales, nationales et internationales. Dépassant ce stade de l'examen, il faudra tenter d'analyser les structures de production groupées et considérées comme « éléments » dans l'élaboration d'un système spatial, c'est-à-dire la projection géographique du système social au sens le plus large.

L'application de la théorie des pôles de croissance aux pays sous-développés impose d'indispensables discriminations. Ainsi, l'espace du Tiers Monde est à la fois dépourvu de continuité et de stabilité. Il est aussi multipolarisé, c'est-à-dire soumis à des influences contraires et à des polarisations issues des divers niveaux des prises de décision. Enfin, l'espace des pays sous-développés est caractérisé par de considérables inégalités de revenus, lesquelles s'ajoutant aux disparités géographiques influencent fortement l'étude de cet espace en ses modes opérationnels. Ceci pourrait donner la clef d'une nouvelle théorie spatiale, basée sur le fait que deux circuits économiques co-existent, non seulement en vue du processus économique même, mais aussi pour l'organisation de l'espace. « Circuit supérieur » et « circuit inférieur » forment l'un et l'autre un sous-système du système urbain, le premier déterminant la macro-organisation de l'espace, tandis que l'organisation spatiale au niveau local est le fait des deux circuits combinés.

Les conditions premières de l'organisation spatiale ont toujours été déterminées par le jeu des tendances de concentration et de dispersion.