

## Spatial Integration and Geographic Modernization : Review of Theories and Synthesis

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Résumé de l'article

L'objectif principal de cet article est de combiner le processus d'intégration spatiale avec celui de modernisation géographique. L'intégration spatiale se définit en tant que processus par lequel la combinaison de la centralité et de la marginalité forme la contradiction fondamentale de la dialectique spatiale: la lutte spatiale. La modernisation géographique, quant à elle, est un processus relié au développement et à la transformation mutuel de l'espace terrestre et des formations socio-économiques qui mènent vers de nouvelles formes spatiales. Cette étude soutient que le mécanisme de l'intégration spatiale est le moyen par lequel se réalise le transfert géographique du produit du surplus social, alors que la modernisation géographique est le résultat de la mobilité géographique des forces productives.

## **SPATIAL INTEGRATION AND GEOGRAPHIC MODERNIZATION: REVIEW OF THEORIES AND SYNTHESIS**

*by*

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### ABSTRACT

The main concern of this paper is to combine the process of spatial integration with that of geographic modernization. Spatial integration is defined as a process by which the combination of centrality and marginality forms the basic contradiction of the spatial dialectic: the spatial struggle. Whereas geographic modernization is a process related to the development and the mutual transformation of terrestrial space and socio-economic formations leading to new spatial forms. The paper argues that the underlying mechanism of spatial integration is the geographic transfer of social surplus product. Whereas geographic modernization is the outcome of the geographic mobility of productive forces.

**KEY WORDS: Spatial integration, geographic modernization, centrality, marginality, mobility, geographic transfer of social surplus product, productive forces.**

### RÉSUMÉ

#### **Intégration spatiale et modernisation géographique: revue des théories et synthèse**

L'objectif principal de cet article est de combiner le processus d'intégration spatiale avec celui de modernisation géographique. L'intégration spatiale se définit en tant que processus par lequel la combinaison de la centralité et de la marginalité forme la contradiction fondamentale de la dialectique spatiale: la lutte spatiale. La modernisation géographique, quant à elle, est un processus relié au développement et à la transformation mutuels de l'espace terrestre et des formations socio-économiques qui mènent vers de nouvelles formes spatiales. Cette étude soutient que le mécanisme de l'intégration spatiale est le moyen par lequel se réalise le transfert géographique du produit du surplus social, alors que la modernisation géographique est le résultat de la mobilité géographique des forces productives.

**MOTS-CLÉS: Intégration spatiale, modernisation géographique, centralité, marginalité, mobilité, transfert géographique du surplus du produit social, forces productives.**

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A fundamental process in the evolution of any system is the connection of its differentiated elements into a functioning whole. When spatially structured, such systems deal with the geographer's traditional object of specialization, the region.

Spatial integration is desired for a variety of ideological and tactical reasons. More importantly, it is considered a necessary precondition for the development of socio-economic formations. Recent development strategies have come to revolve increasingly around the process of modernization. Like all societal processes, modernization has a geography. It expresses itself as the areal variations arising from the imprint and diffusion of modernity within a territorially defined socio-economic formation.

In the following pages, the intention is to present a review of basic theories and to outline the links that might exist between the processes of spatial integration and geographic modernization from a dialectical materialist perspective.

## DEFINITION OF SPATIAL INTEGRATION

In geography, the materialist perspective is based upon the notion that social process deals essentially with the production and reproduction of the material basis of life. But the social process equally includes the perpetuation of social, political and ideological practices which are consistent with the economic basis of society as well as the perpetuation of various relationships (for example the division of labour) within the economic basis itself. The most significant relation expressed by the social process, however, is the relationship between classes (Lenin, 1965, p. 421). Three major assumptions can be made about class analysis. Firstly, classes are defined by the function they fulfil in the production process. Secondly, each mode of production determines essentially a combination of classes that are opposed and united in the mode. And thirdly, a class relation expresses a relation of domination. In this respect, social integration is a process by which the opposition, articulation and domination of classes produced by the social process form the basic contradiction of the social dialectic: the class struggle. It follows that a low degree of social integration corresponds with a state of hostile encounter between opposing classes while a high degree of social integration amounts to a relative absence of class conflict.

The struggle between classes whose interests contradict each other is the basic content and moving force of the history of all antagonistic class societies. More specifically, class exploitation is the source of the class struggle. This process of exploitation is the appropriation by one class of the socially designed surplus product of some sort. This means that women and men produce commodities and are compensated at a rate that represents less than their contribution to output. Generally, this surplus takes two forms. Firstly, it is the amount of material product over and above that which is necessary to guarantee the maintenance and reproduction of labour power in the context of a given mode of production. Secondly, it is the quantity of material resources that are appropriated for the benefit of one segment of society or of one class at the expense of another.

From a materialist perspective social processes do not exist independently of time and space. Social integration therefore is manifested spatially. Since the production, circulation and appropriation in space of the social surplus product is determined by those who exercise economic, social, political and ideological power, it follows that a crucial factor in the development of the socio-spatial dialectic is the geographic concentration and centralization of a significant quantity of social surplus product in space.

Centrality is a basic principle of human spatial organization (Tuan, 1973; Bird, 1977; Raffestin, 1980). It is both a place and a force that are linked dynamically

through time and space. It expresses itself by centripetal and centrifugal movements. Evidently, the dynamic of centrality implies dialectically the existence of marginality. Indeed, centrality and marginality may only exist in relation to one another. More importantly, their respective functions are interchangeable. In other words a centrality could become a marginality and conversely. Centrality attracts and agglomerates productive forces due to the basic need for social interaction and energy savings, but is also rejects and excludes something. This rejection and this exclusion establish the marginality. The fundamental problem of the socio-spatial dialectic, however, lies in the social and spatial control of centrality, that is the control over the relationship between the centre and the periphery. Obviously, in the context of the social process, this control is the object of a struggle. It follows that spatial integration is a process by which the combination of centrality and marginality forms the basic contradiction of the spatial dialectic: the spatial struggle. In this process, both centrality and marginality possess separate structures with dialectics of their own. Hence, centrality and marginality must be seen as constituting a single spatial system. Moreover, whatever the scale of analysis, subnational, national or international, centrality and marginality stand by definition in an asymmetrical relationship of dominance and dependency. Spatial integration therefore, is the spatial expression of social integration. It follows that a low degree of spatial integration leads to territorial disintegration while a high degree of spatial integration harmonizes the control of centrality. Concretely, the relationship between marginality and centrality expresses itself spatially by a transfer of social surplus product from the periphery to the centre. But an appreciation of the vast complexity of spatial integration necessitates an attempt to analyze its underlying mechanism.

## THE THEORY OF SPATIAL INTEGRATION

A consistent and coherent analysis of the dynamic and holistic process of spatial integration requires the elaboration of a theory.

A number of theories about spatial integration have been developed in the past. Christaller (1966), Losch (1967) and Skinner (1964, 1965a, 1965b) have concentrated on central-place theory. Other efforts have focussed on growth pole theory. Important in this respect were the work of Perroux (1971) and Friedmann (1972). But these spatial theories have little to offer by way of explaining the centrality process.<sup>1</sup> The very assumptions and methodologies of these theories present the current form of the economic, social, political and ideological order as an environment to which everything has to adapt. Centrality, including the polarization process, is viewed as an intrinsic phenomenon of space. In this context, spatial integration remains analytically inadequate. It follows that no consistent and coherent analysis of spatial integration in its totality is possible without an explanation of the basic tendencies of that process. Therefore, it is necessary to inquire as to what makes spatial integration exist and persist instead of questioning what form it develops. The principal objective here is to go beyond a superficial description of centrality, in order to understand the underlying mechanism that produces spatial integration. Centrality cannot be considered as a passive location of productive forces, but as an active element in the complex interplay of centre-periphery relationships. The following argument is based on the hypothesis that spatial integration is a comprehensive process of varying intensity that may be analyzed on three levels: the city, the nation-state and the world.

## The city

A necessary starting point is a critical understanding of the origin of the city, for it represents a fundamental structure of centrality in space.<sup>2</sup> The city is a form of organization composed of both a spatial node and a social process in continuous interaction. It is generally founded on various resources accumulated out of previous production and on the occupational specialization of a territorially based population most of which is not producing food. It would be too simple to ascribe the emergence of cities directly to one single, autonomous and causal factor in the nexus of economic, social, political and ideological practice. Nonetheless, three points may be emphasized: first, centrality was clearly a major element in the agglomeration of people; second, there is a general agreement that the emergence of urban forms cannot be considered without reference to the productivity of agriculture; and third, since the history of spatial integration is the history of struggles and relationships between classes, it follows that an understanding of the beginning of the city must also be considered in the light of these relationships.

Therefore, the dynamic of spatial integration explains the emergence of cities firstly, by centrality, and secondly, by the appearance of an agricultural surplus and its appropriation and utilization by particular social classes composed of non-agricultural workers. Thus, as long as the essential basis of the economy is agricultural, cities are the social and spatial manifestation of first, the domination and the administration of the exploiting class and second, the residential and consumption settlement of that class, its services and politico-administrative apparatus. The countryside is the place where the exploited classes live and work as immediate producers on the land. Therefore the simplest form of spatial circulation of social surplus product arises when a city extracts a surplus from an agricultural hinterland. With the rise of industrialism however, the city becomes the space for the production as well as the extraction of social surplus product. Indeed, industrialization finds its fulfillment in urbanization. It is easier to mobilize, extract and concentrate a certain quantity of socially designated surplus product under some specific conditions. Favourable circumstances for the occurrence and growth of industrialization in a city initially stemmed from some combination of the following conditions: 1) a large population; 2) a relatively immobile and settled population; 3) a high density of population; 4) a high potential productivity under a given set of natural and technical conditions; and 5) easy communication and access (Harvey, 1973, p. 239). Under this perspective, the simplest form of spatial circulation of social surplus product appears when a surplus is extracted from the labour of the working classes based in the city.

The antagonistic contradictions between the city and the countryside are inherent in all socio-economic formations, and are reflected in the level of development of productive forces in the society. The opposition between the city and the countryside arises when cities appear as a result of the development of productive forces and the social division of labour, and this opposition develops as new branches of production break off from farming and concentrates in cities. Thus, the division of labour is expressed spatially. Indeed, according to Marx and Engels: "The greatest division of labour is the separation of town and country" (1983, p. 43). The contradiction between city and countryside analyzed by Marx and Engels expresses the social contradiction evoked above. Therefore, in this perspective, cities are formed through the geographic concentration of social surplus product which the mode of production must be capable of producing and concentrating. That surplus allows the city population but more particularly the ruling class to enrich itself. More specifically this class expands

its territorial power over dependent areas and spatially dispersed populations. But the appropriation and sometimes distribution of the socially designated surplus product develop basically through the dominant and hierarchically ordered centres of control located in the nation-state.

### **The nation-state**

A nation-state consists of territory, people and authority. But more importantly, it must be viewed as an instrument, a product and a determinant of contradictory social relations in which class struggle plays a key role. Moreover, an objective of the state is to maintain the already established order of the society that benefits the dominant class notwithstanding the class struggle that tends to tear it apart. It follows that the territory of effective domination of the nation-state is neither naturally nor socially homogeneous, and that the organization of space is a very important element in the tendency towards differentiation. Some spatial differentiation is inevitable in any mode of production, derived on the one hand from the simple friction of distance and on the other hand from the basic principle of centrality. But these trans-historical spatial characteristics have been used to a certain extent by the state to produce a disarticulated and fragmented space. The objective of this spatial disarticulation is to secure greater social surplus product in central versus peripheral locations. It follows, that the increasing differentiation in production and reproduction relations produces a disarticulated space and serves the function of establishing or maintaining conditions favorable for subsequent accumulation of social surplus product profitable to the ruling class located in the core regions.

Societies can be understood as consisting of two broad categories of people: direct producers, that is the women and men who produce the goods and services which allows the society to continue; and non-producers or more specifically those who live off the production of others. In this respect there are certain social relations between producers and non-producers which first secure the survival of the non-producing class by means of ideological legitimization or direct oppression and second, provide the non-producers with the social mechanisms necessary for the appropriation of the social surplus product. Thus accumulation must be understood as the exploitation of a certain section of the population either by the appropriation of fixed assets accumulated from previous production, or by the appropriation of labour power, in order to invest in enlarged reproduction. The key factor in this process is the relationships of production in which a certain proportion of the population (the producer) finds itself divorced from the control over the means of production (Marx, 1906, p. 786). It follows that the articulations of the accumulation process express a system of social relationships whereby a transfer of social surplus product operates from one class to another. But, accumulation does not take place in thin air. It is a concrete process that has to occur somewhere. For accumulation needs not only labour, means of production and a set of social relations, but also a territory. To understand the relationship between accumulation and space, there is a need to analyze the process of accumulation itself that is the creation and circulation of social surplus product placed in a concrete spatial context.

The process of accumulation in a city, region or nation-state, strives on the one hand to tear down every spatial barrier to exchange through integrated transportation, and on the other hand to annihilate space with time through a dynamic tendency towards concentration. It is precisely at this point that the organization of space enters

into the scheme of spatial integration. For not only do production and accumulation shape urban, regional and national space, but also the pattern of established spatial differentiation influences the process of accumulation in later historical periods. Indeed, the process is cumulative. Accumulation thus takes place in a geographic structure. Indeed, it is possible to connect the general processes of accumulation with an explicit understanding of the emergent core-semiperipheral-peripheral socio-spatial structure. More specifically, the periphery is composed of those regions which receive less surplus product than they produce. The semiperipheral regions are those which merge a balance between production and transfer of social surplus product. Finally, the core regions are those which produce their own surplus product and receive the transferred surplus product from peripheral and semiperipheral regions. This process whereby part of the surplus product is drained away from the periphery and the semiperiphery results on the one hand in a slow-down of the accumulation rate in the supplying region, and on the other hand in an acceleration of the accumulation rate in the receiving region. This is precisely the essence of the theory of accumulation on a world scale.

### **The world system**

A world system is defined as :

"... a social system, one that has boundaries, structures, member groups, rules of legitimation, and coherence. Its life is made up of the conflicting forces which hold it together by tension, and tear it apart as each group seeks eternally to remold it to its advantage" (Wallerstein, 1974, p. 347).

More important however, this world system is composed of an extensive division of labour that magnifies and legitimizes the ability of a class within the system to exploit the labour of another class and to appropriate a larger share of the social surplus product. It follows that the ongoing process of accumulation on a world scale tends to widen the economic and social gaps among its varying areas in the very process of its development. This is the essence of the theory of unequal exchange (Emmanuel, 1972). When two regions exchange their products and one has higher productivity and/or higher rewards of labour than the other, the exchange is unequal. Obviously, this process is a function of the possibilities of transport and communications. It follows that accumulation on a world scale implies that the improvements in the means of transportation of a given region or nation-state located either in the core or periphery, are concentrated towards the already existing centres of production and population and more specifically towards the zones of export production. There the large size of the retained surplus product appropriated by the centre from the periphery is utilized in three ways. First, it is used to create new means of production in order to ensure the expanded reproduction of future surplus in these areas. Second, it is spent in the construction of transport and communication links that can be used for extracting greater quantities of surplus product from the periphery. And third, it is consumed in the centre which serves as a locus for disposing of the surplus product. But nation-states are usually open systems having relationships with other nation-states and the international markets. It follows that if a nation-state does not receive the social surplus product that it produces, then this surplus does not vanish. It has to go somewhere and this somewhere involves a geographic transfer. In view of this, the distribution of the social surplus product on a world scale varies between regions and nation-states in accordance with the relative strength of the ruling classes.

By way of summary, the underlying mechanisms by which spatial integration is maintained over time are: 1) the geographic distribution of the conditions of accumulation, and 2) a geographic transfer of social surplus product. Evidently, these two mechanisms are interacting, mutually reinforcing and cumulative. More importantly, both mechanisms illustrate explicitly that spatial integration results originally from the activities of all societies that have to produce and reproduce the necessary conditions for survival. Therefore, spatial integration is not a static reflection of the geographic environment, it is a dynamic process depending on the level of development of productive forces within a particular socio-economic formation. Moreover, in the process of spatial integration, all dimensions (urban, nation and world) are encompassed in core-semiperiphery-periphery relationships.

A comprehensive analysis of spatial integration cannot be accomplished without an analysis of the modernization process. For spatial integration as such "simply" represents a spatial structure. And if its evolution is to lead to spatial equilibrium, the question of changes in society needs to be well documented and analyzed.

#### DEFINITION OF GEOGRAPHIC MODERNIZATION

Every historical period has been characterized by its own prevailing form of modernity. That is, there is a region or system which is considered modern in relation to other contemporary regions or systems. This is how modernization today has become connected with "westernization". But, the most comprehensive definition of modernization would have to be based on indicators applicable at least in principle to all societies on a world scale and at all times. Moreover, modernization is believed to be associated with the process of growth. Yet this view is doubtful on the grounds that modernization is not a matter of linear evolutionary transformation of communities. In the social process, the question of transition from one historical stage to another has raised some issues, one of which is internal versus external sources of change (Mao, 1965). Actually changes are the result of an interaction between external and internal contradictions. In the modernization process, changes are chiefly predicated on the development of the contradiction between productive forces and production relations. Then again, of the two contradictory aspects, one must be principal and the other secondary. The argument of the present paper is that development in the productive forces provide the main dynamic to total historical change (Marx, 1977). But even though the production relations only reflect the stage of development of the productive forces, once firmly established, they tend to reinforce the existing state of the economic base and inhibit further development of the productive forces.

Concretely, the conflict between productive forces and production relations manifests itself in the exacerbation of social antagonisms and more specifically, in intensified struggle between classes. Indeed, in the development of productive forces there comes a stage when the productive forces provoke a struggle within society between the classes that cling to specific social and spatial modes and to particular political and ideological practices that support them, and classes that aim at establishing new modes and practices. Actually, these changes do not develop at an even pace.

"All rest, all equilibrium, is only relative, only has meaning in relation to one or other definite form of motion" (Engels, 1954, p. 86).

Indeed, from a materialist perspective,

"Motion... comprehends all changes and processes occurring in the universe, from mere change of place right to thinking" (Engels, 1940, p. 35).



It follows that modernization is a process keyed to the dynamic created by the development and the mutual reaction of productive forces and production relations: social mobility.

In this context social mobility is the endless process related to both social development and class struggle in changing the social position of classes, groups or individuals. But, social mobility is not merely a change of place, it is also a change of quality (Engels, 1954, p. 519). It is commonly believed that social mobility is oriented towards certain historical stages marked by such ideal as egalitarianism. This premise seems illusory as the processes of polarization and increasing social inequalities become the dominant features of antagonistic society. Actually, mobility expresses itself in contradiction (Engels, 1940, p. 38). The argument of the present paper is that mobility expresses itself as the opposite of concentration and distribution. The new economic, social, political and ideological conditions that mobility produces reflect the relative extent of modernization selectively within the class structure. It follows that control over the process of social mobility is the object of a struggle immediately related to social integration. Both processes of modernization and social integration are interrelated. A low degree of modernization corresponds with a relative absence of social mobility, while a high degree of modernization is indicative of an almost permanent state of social mobility.

Like all societal processes, modernization has a geography. Modernization shapes and reshapes the geographic environment. The geographic environment is considered to refer to that part of the earth which has been altered by human beings and which is directly related to the production and reproduction activities of society. Therefore, geographic modernization is a process related to the development and the mutual transformation of terrestrial space and socio-economic formations leading to new spatial forms. The geographic distribution of the conditions of accumulation and the geographic transfer of social surplus product contribute to what is perhaps the most outstanding empirical regularity of spatial development: the tendency toward the geographic concentration of the attribute of modernization. It follows that a primary component of spatial development must be an explicit formulation of the dynamic of geographic concentration: spatial mobility.

Spatial mobility is a process that creates the very channels that allow the spatial structures formed by spatial integration to become systems of interaction and development. From a materialist perspective, spatial mobility is closely linked to the process of material production where it manifests itself as the process of transferring energy, commodities and people (transportation) or information (communication) (Marx, 1907, p. 61-62).

It follows that both processes of transportation and communication produce a network of circulation that is associated with the basic spatial patterns growing in relation to centrality. Spatial mobility and centrality are thus connected. Geographic modernization and spatial integration therefore change the land-use patterns associated with the core and the periphery by means of circulation. Obviously, the physical barriers to movement over space have to be reduced to a minimum. Indeed, the overcoming of distance is so basic to geography that geographic modernization cannot develop without movement. Distance is measured in terms of time and costs, and an emphasis on distance is an emphasis on extent. Indeed, the distance reached provides a record of the extent to which the socio-economic formation has shaped terrestrial space and in so doing has shaped itself. It follows that in the present analysis, a low degree of geographic modernization suggests a society in which the

control over distance leads to a spatial concentration of the forces of modernization, while a high degree of geographic modernization indicates a society in which the control over distance contributes to an equal spatial diffusion of the forces of modernization.

Spatial mobility thus incorporates basic geographic elements of distance, direction and spatial variation. But a comprehensive understanding of the process of geographic modernization requires the elaboration of a theory.

## THE THEORY OF GEOGRAPHIC MODERNIZATION

The diffusion of modernization throughout the earth's surface has been the subject of many geographic enquiries in the past. There is thus a vast literature and many models have been developed to examine this problem. Most of them have been influenced by the work of Hagerstrand (1965, 1966, 1967) who established the basic tenet for contemporary diffusion research.<sup>3</sup> But an adequate theory of geographic modernization is not located in a social, political, economic or ideological vacuum.<sup>4</sup> It must be linked to the social process. Assuming that productive forces provide the main dynamic of total historical change, it follows that in a spatial frame of reference, the principal mechanism of geographic modernization is the geographic mobility of productive forces. Geographic modernization is thus expressed in terms of fixity and motion leading to the geographic concentration and dispersal of the productive forces. It must be remembered that productive forces can move as objects of labour, means of labour and labour power. A high degree of geographic modernization is thus essential if productive forces are to be mobilized for the greatest possible development of spatial integration. Spatial integration and geographic modernization are interlocked processes and it would be a serious mistake to regard them as somehow unrelated.

## CONCLUSION

Spatial integration is a process that acquires its fullest significance in terms of movements and changes, that is through a dimension that is too often hidden in the geography of modernization: the practice of space. Assuming that the political dimension is always present in the spatial practice, it follows that the complexity of socio-spatial differentiation must be viewed in the mutual causality of society and space.

The objective of this paper has been to summarize the conceptual tools to understand two facets of the socio-spatial dialectic: spatial integration and geographic modernization. The analysis of this relationship may help to clarify the underlying mechanisms that produce and reproduce uneven regional development. But it cannot resolve the problem. The solution of this problem is political and lies in the explicit acknowledgement that spatial organization is in direct conjunction with social classes. If this is accepted, then this work represents a contribution about the sorts of issues both theorists and empiricists might wish to pursue in order to explain the spatial practice of regional development.

## NOTES

<sup>1</sup> Various authors have already criticized central-place theory, and the major point of contention is that theory challenges the form of centrality (location, mode of distribution, appropriate infrastructure), whereas in the process of spatial integration, it ought to examine the content of centrality (control over the relationship between the centre and the periphery, geographic distribution of the conditions of accumulation, historical analysis of uneven development. For a critical view of this theory, see Szymanski and Agnew (1981).

<sup>2</sup> On the origin of city see Sjöberg (1960), Carter (1977) and Morgan (1978).

<sup>3</sup> Further application of the innovation diffusion model may be found in Harvey (1966), Brown (1969, 1981) and Brown and Cox (1971).

<sup>4</sup> Several points may be raised concerning innovation diffusion. First, knowledge is separated from the process of material production thus neglecting social, political, ideological and economic practice. Second, the innovation diffusion model isolates information as an independent and universal variable assuming an equal opportunity of adoption by everyone, a condition which is not a simulation of the real world of geographic change. Third, it identifies diffusion with exceptional individuals or information disseminating institutions, thus leading to an increased elitist entrenchment. As a result, it aggravates regional inequalities and widens class disparities. Fourth, the innovation diffusion model simulates reality and as such is independent of the phenomenon being studied. Fifth, the evaluation of the model relies solely on visual comparison of map patterns and therefore, may at best be regarded as a convenient descriptive device.

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