

THE ECONOMIC DEVELOPMENT OF BORDER REGIONS

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Preface

One of the major long run tasks of the Human Settlements and Services Research Area at IIASA is Human Settlement Systems: Development Processes and Strategies. The purpose of this task is to establish and use a framework of functional urban regions to provide a better understanding of the impact of public policies on the spatial distribution of population and economic activity. Regional policies usually are formulated in the context of individual nations. However, many regions are directly and significantly affected by proximity to an international frontier. This paper examines border regions from the viewpoint of location theory and the growth center literature, and suggests research directions for the study of opportunities that could be realized in border regions as a consequence of economic integration across national boundaries.

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1. Peter Hall, Niles Hansen and Harry Swain, Urban Systems: A Comparative Analysis of Structure, Change and Public Policy, RM-75-35, July 1975.
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4. Peter Hall, Niles Hansen and Harry Swain, Status and Future Directions of the Comparative Urban Region Study: A Summary of Workshop Conclusions, RM-75-59, November 1975.
5. Niles Hansen, Growth Strategies and Human Settlement Systems in Developing Countries, RM-76-2, January 1976.
6. Niles Hansen, Systems Approaches to Human Settlements, RM-76-3, January 1976.
7. Allan Pred, The Interurban Transmission of Growth in Advanced Economies: Empirical Findings Versus Regional Planning Assumptions, RR-76-4, March 1976.

ABSTRACT

Regional policies usually are formulated in the context of individual nations. However, many regions are directly and significantly affected by proximity to an international frontier. This paper examines border regions from the viewpoint of location theory and the growth center literature, and suggests research directions for the study of opportunities that could be realized in border regions as a consequence of economic integration across national boundaries.

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Introduction

For present purposes border regions may be defined as sub-national areas whose economic life is directly and significantly affected by proximity to an international frontier. Small nations often have many of the attributes of border regions but the primary concern here is the border region in the larger context of its own nation, as well as its international setting. Some large countries also may have a border region problem that is truly national in scope. For example, despite the large geographic size of Canada, most of the Canadian population lives relatively close to the United States. Issues related to this proximity receive continual national attention in Canada; yet they also may be analyzed in terms of border regions, i.e. they take on different dimensions depending on whether they are viewed from the Vancouver region, the plains and prairies, Ontario, Quebec, or the Maritimes.

It might be supposed that classical and neo-classical international trade theory would be able to give significant guidance with respect to border region problems. In fact it is not well adapted for this purpose because it is largely oriented to the notion of equilibrium. It postulates that trading partners both gain from the exchange and that any disequilibrium will be corrected by re-equilibrating forces. It was never elaborated to deal systematically with economic inequalities so it cannot explain the existence of underdevelopment or the process of development. Even in its modern versions, international trade theory has as its ideal the generalization of free trade in order to promote world well-being. But the notion of homogeneous markets bears little resemblance to the realities of most border regions. The latter are profoundly influenced by particular local geographical, political, and economic conditions. It has been argued that present tendencies in the evaluation of the

European Economic Community are forcing recognition of this fact. In this view, phenomena neglected in trade theory (as well as location theory) are in fact the key elements in any serious consideration of the problems of border regions. Thus trade theory "ignores economies of scale, external economies, the effects of domination, and the cumulative processes of economic decline or development; in brief, it does not take account of development theory and particularly its spatial implications (Gendarme, 1970, p.894)."

The remainder of this paper critically examines the nature and significance of border regions in location theory and in the growth center literature. It is argued that both of these approaches have considerable shortcomings. However, proposals are made concerning feasible analysis of the opportunities that could be realized in border regions as a consequence of economic integration across national frontiers. Specific border regions in Western Europe are discussed throughout the paper.

Location Theory and Border Regions

Von Thünen

In the present context it is noteworthy that the seminal works in location theory are virtually a German monopoly. The first attempt to develop a general location theory was that of J.H. von Thünen (1826). He posed the problem of how to determine the most efficient uses of the land on his estate and in so doing he formulated a more general model of how rural land uses should be arranged around a market town. The underlying principle in his scheme was that each parcel of land should be put to that use which yielded the highest rent. Despite the originality of von Thunen's approach, he did not really succeed in explaining the spatial structure of a functioning economic system. Yet he inspired the more comprehensive analyses of central place functions made by W. Christaller a century later.

Christaller

It is beyond the scope of this paper to give even a complete outline of Christaller's (1933) general theory. However, it may

be noted that he employed the term "central place" to denote all urban agglomerations and he pointed out that there is a mutual interdependence between any central place and its complementary region. He constructed now familiar geometric models to demonstrate the possible hierarchical relations among central places in an economic landscape. If the objective is the greatest provision of central place goods and services by the fewest number of central places, then the market principle should be the determining factor in their spatial organization. But if the objective is to satisfy the maximum demand for the transportation of goods at minimum cost, then as many central places as possible should lie on traffic routes; relatively more central places would then be needed in comparison with spatial organization according to the market principle. The contrast between the two systems can be seen by comparing Figure 1 and Figure 2.

Figure 1 shows only three orders of central places, but in an economic landscape there could be many more. A brief digression is necessary to elucidate the nature of this spatial configuration.

The "range of good" and "threshold population" are perhaps the key concepts in central place theory. The range of a good denotes the zone around the central place from which persons travel to the center to purchase the good or service offered at the place. In theory, the upper limit of this range is the maximum possible sales radius. Beyond this limit, the price of the good is too high because the distance results in too high a price or because of the closer proximity of consumers to alternative centers. The lower limit of the range is the radius that encloses the minimum number of consumers necessary to provide a sales volume adequate for the good to be supplied profitably from the central place. This lower limit is the threshold population. The lowest level of center performs certain functions or provides certain goods that are limited in number and kind by the limited population within usual range of the center. The center of the next highest order performs all the functions of the lower-order center plus a group of additional functions. The next higher order of center will offer all

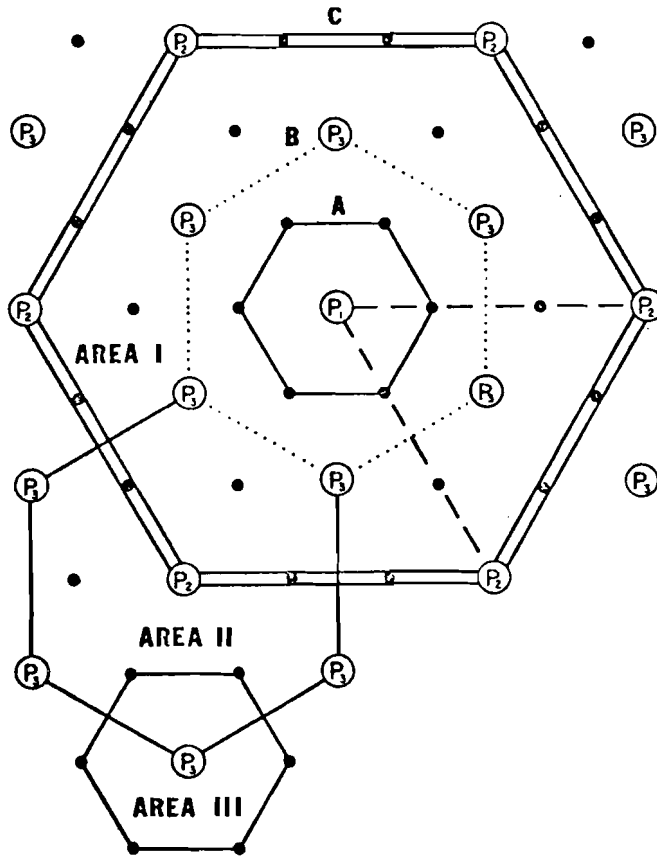


Figure 1: Christaller's Dispersion of Central Places under the "Market Principle"

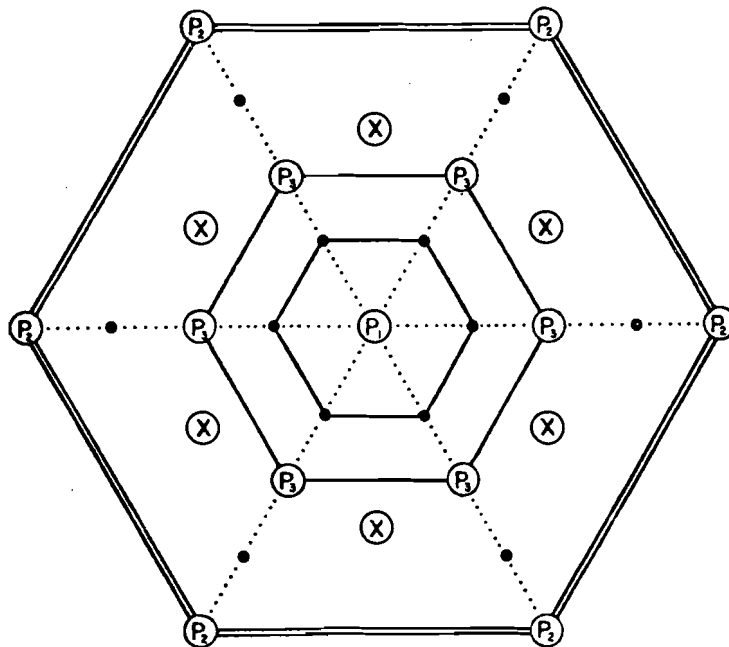


Figure 2: Christaller's Dispersion of Central Places under the "Traffic Principle"

the goods offered by the first two levels but will be differentiated from the order just beneath it by a group of goods with greater ranges than those possessed by any of the goods of the next smallest center. In this manner, a hierarchy of centers is determined.

In Figure 1, the largest central place, P_1 , supplies the highest order goods for the entire area bounded by the P_2 perimeter (Area I) and all P_2 centers are corners of six equilateral triangles centered on P_1 . Similarly, each P_2 center has a complementary region bounded by P_3 perimeters (only two Area II's are shown though there are in fact many such areas). However, the P_2 centers supply lower goods than the P_1 center. P_3 centers (with their corresponding Area III's, only two of which are shown) supply still lower order goods. The smallest centers, which form the perimeters of the P_3 centers, have only relatively tiny market areas. Thus, central places are dispersed in a hierarchical arrangement so as to maximize the distribution of various types of goods.

In contrast, the traffic principle seeks to maximize the movement of goods at minimum cost. In terms of both Figure 1 and Figure 2, traffic routes would go from P_1 to the six P_2 central places at the angles of the P_1 complementary region, topography permitting. The fundamental difference between Figure 1 and Figure 2 is the location of the P_3 centers. If the traffic principle is the constraint, the P_3 band of towns shown in Figure 1 must be rotated so that all P_3 centers lie on direct routes between P_1 and the P_2 places. But then the $P_1P_2P_2$ triangles no longer have P_3 places at their centers. If the entire hexagonal landscape is to be provided adequately with central places, six additional P_3 centers (marked "X" in Figure 2) are required.

From an economic viewpoint, the forms of spatial organization depicted in Figure 1 and Figure 2 are both rational. However, there may not be any necessary economic logic when central cities are chief administrative centers and subordinate centers are dispersed for governmental, juridical, or other essentially noneconomic purposes. Thus border cities may be

fragile economically in Christaller's scheme because national frontiers artificially cut up spatially complementary regions. Of course large cities may grow up for defensive purposes on national boundaries, but they may have only fractional hinterlands. Or cities that once had a large complementary region may lose most of their market areas when drastic revisions of political boundaries take place; Vienna is a clear case in point. The only general conclusion to be drawn when spatial organization occurs through what Christaller calls the "sociopolitical separation principle" is that many more central places will be required to achieve the same degree of efficiency that would have been attained if the market principle had been followed.

It should be noted, however, that Christaller makes a distinction between central places in "endangered" border areas and those near stabilized borders. Whereas the former will have small complementary areas and limited development, the latter will have greater development because border traffic stimulates activity. For some central goods, e.g. cultural events, the border plays no role at all; "then the complementary region for such more cultural central goods might extend far into the neighboring country. All such connections of the border place with the foreign country, together with the development of trading activity at the border, the storage of goods, the collection of duties on goods, and the earnings derived from them, strengthen the importance of the border place, even though it has no, or almost no, complementary region (Christaller, 1933, p. 46)."

Lösch

In contrast to Christaller, Lösch began his analysis with nucleated agricultural villages. The spatial structure he articulated moves from the small and simple by a series of stages into market network patterns that are progressively larger and more complex. The entire spatial structure must include simple market areas, regional networks, and regional systems. But market configurations are not mere hierarchical progressions of central places; an "economic landscape is a system of different markets; an organism, not merely an organ (Lösch, 1940, p. 219)."

Although Lössch derived economic regions as functions of distance, mass production, and competition, he was quite aware of complicating factors in the real world. Not the least of these is the presence of political boundaries. "The goals of economic landscapes and states are different. If those for states are arranged in a descending order as follows: continuance, power, Kultur, prosperity, this order must be exactly reversed for economic areas. Entirely different sides of human nature are expressed in the political and economic orders (Lössch, 1940, p. 199)."

Lössch argued that it is characteristic of national frontiers to hamper the crossing of boundaries by market areas, to create new gaps in a market network where none exist, and to discourage industries from settling near a boundary, where often they would have a market in one direction only. This also explains why after a shifting of political frontiers the new border regions frequently become depressed areas. When a boundary creates market gaps and when no multiplication of the interior market can be achieved by regrouping--which also is relatively uneconomic--the result is greater excess profits but almost certainly a poorer supply for the consumer. Political boundaries have this effect because of secondary phenomena usually associated with them. Thus, political boundaries

are almost always customs boundaries as well. But tariffs are like rivers, which separate their banks economically more than would correspond to their actual width. Second, they are often national frontiers also. Differences in language, in requirements, and in national character have the same effect as customs duties. Third, they are administrative boundaries which means on the one hand that public contracts are only reluctantly awarded beyond the border, and on the other that business traffic, to the extent that it is associated with official traffic, as is especially common among country folk, does not cross the border. Fourth, border regions are regions of danger, for special consideration must be given to military requirements even in time of peace, and in war they are the most seriously threatened areas (Lössch, 1940, p. 200).

Giersch

In contrast to other location theorists, Giersch (1949-50) developed a spatial model for the explicit purpose of examining

the locational consequences of political boundaries. His model assumes a large plain in which transportation costs are proportional to distance. The plain is a circle surrounded by a desert, which Giersch regards as the strongest possible substitute for a national frontier and a barrier to international trade and factor movements. Natural resources, population, and production units are assumed to be equally distributed over the entire area. In some respects what Giersch proposes is a von Thünen-type model of economic union; the principal difference is that Giersch introduces capital growth as a dynamic element.

Giersch argues that the lower the costs of transportation of a product and the greater the internal economies of large-scale production, the larger will be the market areas and the fewer the firms that will emerge. What is particularly significant is that the larger the market areas the fewer will be the entrepreneurs who choose a location near the frontier. There is a network of markets for every commodity but the whole system of networks tends to become denser in the center than at the extremities. Thus, as soon as capital growth, internal and external economies (due to indivisibilities), and rent-lag are introduced into the model, the advantages of the favored location cumulate, an agglomeration center necessarily appears, and the spatial distribution of economic activities acquire a cone shape.

Reversing the argument, it follows that elimination of the border as a result of economic integration would create a tendency for economic activities to aggregate in the center of the space.

The locational consequences of the formation of, for example, a Western European Union can now be described by the following general statement: The abolition of barriers to inter-European trade and to inter-European movement of factors will weaken the deglomeration effect of national agglomeration and will thus enforce international, or more precisely, inter-European, agglomeration. It will strengthen the attractiveness of the highly industrialised centre both for labour and capital. Towns and regions with artificial advantages due to national agglomeration will become disadvantageous. On the other hand, particular regions near the industrial centre, which have suffered under the depressing influence of national borders, will gain instead (Giersch, 1949-50, p. 91).

This implies a generally favorable evolution for border regions of the Common Market because they represent a central space within the European Community. Moreover, collectively the border regions already have advantages that are favorable to the attraction of economic activity. There is a high degree of population concentration along the Rhine-Rhone axis and the large amount of capital already in place in the vicinity of the border regions would permit them to gain particularly from an enlargement of the market.

Evaluation

Because Lösch and Christaller were not primarily concerned with the dynamics of location they did not devote much attention to the effects of national boundaries on factor mobility. However, Lösch did examine the reasons that led Swiss entrepreneurs to move their firms or branches to Germany and the reasons for establishing them precisely in the border region. The main reason in most cases was the saving of German customs duties. An additional reason--in earlier days it was perhaps the most important one--was the cheap labor of the Black Forest, though Lösch questions whether some of these workers would not have been available on the Swiss side as well, as migrants across the border. After the turn of the century plants were usually moved to Germany but the enterprise headquarters remained in Switzerland. One reason was a saving in taxes, which even caused a few firms that were originally German to move to Switzerland. Although the frontier zone was unfavorable from the viewpoint of transportation charges, the establishment of branches there meant they could still be managed from Switzerland; moreover, Swiss key personnel could be employed and contacts maintained with Swiss financial backers. "In addition there was the lower wage on the frontier in earlier days, while direct dealings with local administrative officials might prove advantageous also. Names like Maggi, Wybert, Suchard, Villiger, and those of many important textile, chemical, and metal enterprises in particular show that these frontier industries were by no means negligible exceptions (Lösch, 1940, p. 384)." Lösch also noted

similar phenomena with respect to United States investments in the Canadian border zone.

Christaller argued that capital costs have great importance in the development of central places because they primarily determine the lower range limit of central goods, and especially those with a high proportion of capital costs to total costs. As pointed out earlier, Christaller believed that central places on a stabilized border might have a number of advantages, but in unstable situations capital costs would contain a high risk premium and consequently goods would have to be sold at higher prices. This in turn would lead to a transfer of consumption to other central places. Central places on unstable borders will thus have relatively small complementary areas and limited development.

Unfortunately, although Christaller and Lösch clearly recognized the peculiarities of border regions (and indeed of many other constraints on rational spatial organization from an economic viewpoint), it is difficult to bring their models to bear on policy issues related to the economic integration of border regions. The great strength of classical location theory in general has been its elegant demonstrations of theoretical possibilities. Its principal weakness has been neglect of the development process. Problems common to border regions--disparities in growth rates, commuting and migration of workers across frontiers, lack of coherence in social and economic infrastructure, differing planning contexts, etc.--are not amenable to solutions flowing directly from location theory because it has not been concerned with policy paths that could be followed in order to realize economically rational market structures.

Despite the efforts of Giersch to show how locational equilibrium can be changed by introducing dynamic elements (particularly capital growth), the arguments just presented with respect to the models of Christaller and Lösch also apply to his approach. Moreover, economic integration within the framework of the Common Market may not favor the central border regions to the extent implicit in his model. For one thing,

resources are of course not equally distributed. Several zones of high industrial concentration--the areas around Paris, Antwerp, Rotterdam and Frankfurt, for example--may be stronger and may benefit more from integration than would the already industrialized border regions. Also, the evolution of transportation technology and the construction of advanced facilities for transforming primary materials has reinforced the economic advantages of maritime regions such as Rouen and the Lower Seine. Finally, it was noted earlier that firms in countries outside of an economic union often locate plants inside the union for fear of losing a market. Since these plants tend to be on the edge of the territory comprising the union, yet another advantage might accrue to peripheral maritime regions, e.g. Rotterdam and Antwerp. However, this phenomenon is likely to be less in evidence with the entry of Great Britain into the Common Market. In sum, then, from a purely theoretical viewpoint the economic integration of Western Europe should create an optimal location zone in the center of the European Community. When realistic qualifications are made it would appear that economic integration will be favorable for most border regions, but there well may be numerous exceptions.

Border Regions as Incomplete Growth Poles

Growth pole theory emphasizes that international and inter-regional inequalities are an inevitable part of the development process. It maintains that analysis of sustained growth of total production should concentrate on the process by which various activities appear, grow in importance, and in some cases disappear, and it emphasizes that growth rates vary considerably from sector to sector. Entrepreneurial innovation is given a prominent place in explaining the origins of the growth process, which takes the form of a succession of dynamic sectors, or poles, through time. A particularly regional flavor has been given to the pole concept by emphasizing that growth is concentrated in various spatial loci as well as in certain leading industrial branches. A great deal of attention is given in this context to the importance of economies of scale and to

larger considerations of external economies of agglomeration. In the past two decades a large theoretical literature has evolved around these notions and growth center policies (usually intended to induce growth in lagging regions) have been adopted by planning authorities all over the world, although the extent to which they have been influenced by growth center theory has varied considerably. Detailed examination of the history, nature, and significance of growth pole theory and practice is beyond the scope of this paper, but such studies are available elsewhere (Hansen, 1972; Kuklinski, 1972; Moseley, 1974). Suffice it to say here that the theory has been criticized for being poorly articulated and less general than the theory of innovation diffusion; and growth center policies have not been notably successful in generating regional development.

Nevertheless, an influential French literature has continued to maintain that the growth pole approach could be particularly useful in studying border regions. For example, Gendarme (1970) argues that the main consequence of a political frontier is to check the spread effects (effets de diffusion) of a development pole. The latter will not have the same strength in inducing other activities that they would have had inside a national space. He calls particular attention to situations where "zones of underdevelopment" on one side of border co-exist with "zones of overdevelopment" on the other. This phenomenon, which he describes as an "incomplete development pole," is a result of such factors as customs barriers, failure to take advantage of complementary natural resources, a tendency for transportation routes to run parallel with borders rather than across them, and supply and demand problems with respect to labor market integration.

Gendarme recognizes that investments are made across a border in order to penetrate a foreign market and still maintain control of operations from a position of proximity in the country of origin. However, he regards such investments as exceptional in the total scheme of things; more significant is the tendency of countries to react negatively, for narrowly nationalist reasons, to foreign investments.

Moreover, within nations capital mobility has worsened the economic situation in border regions. A "fortress mentality" has led to stagnation because industrialists refuse to invest in threatened areas, with the exception of activities related to national defense or when essential resources (iron ore, coal) are found there. For such reasons a region such as Alsace could be regarded as having experienced World War Two already in 1933. Similarly, Lorraine's lack of investments in manufacturing activities related to the steel produced there can be attributed to the region's proximity to Germany. In fact, in the 1930s some plants originally located between the Maginot Line and the Siegfried Line were dismantled and re-assembled in central France. Thus, given a lack of investment from abroad and re-investment by local firms in other areas, it is not astonishing that border regions have economies that are vulnerable or depressed.

In contrast to capital mobility, Gendarme finds that nation-states have always taken a more permissive attitude toward international labor mobility, even to the extent of helping to organize it. Labor mobility across political boundaries has represented a kind of safety valve helping to maintain a favorable level of equilibrium in the labor markets of border regions. Alsace again provides a case in point. German and Swiss border regions exert an important influence on the Alsatian labor market. Each working day thousands of Alsatians cross a border to work in Basle or in Baden, where wages are higher than in Alsace. The city of Karlsruhe is a veritable pole of attraction for the entire area around Wissembourg, in northern Alsace (Maugué, 1973, p. 43). This fluidity is not without its problems. For example, early in 1966 wages on the German side of the border were 21 percent higher than on the French side; many Alsatian firms felt that as a result they were losing needed skilled workers to German firms. In contrast, during the 1966-67 German recession many Alsatian workers were affected by lay-offs.

To the extent, then, that Gendarme's arguments with respect to factor mobility are correct, it may be concluded that border regions are characterized by a relative immobility of capital but a certain mobility of labor, the extent of which will depend on the economic situation in the neighboring country.

Jacques Boudeville, the leading French proponent of the growth pole approach to regional development issues, similarly rejected classical economic analysis of border regions because of its static quality and its neglect of institutional factors. However, at the time of his recent death he had not really developed more than a sketch of how growth pole theory might be specifically adapted to the study of border regions. Boudeville held that European solidarity could be realized within the framework of geographical and technical external economies of agglomeration. In this regard he referred to integration poles which would put into communication regional economic systems that hitherto had been essentially isolated (Boudeville, 1972, pp. 265-267). An integration pole "is a multi-focal development pole, connecting two urban systems which remained separate from each other, thus creating propulsive circuits and feedbacks in each of them. It gives birth to new propulsive nodes and to new evolutionary possibilities (Boudeville, 1974, p. 133)." The strength of the integration pole is due to three factors: first, the addition of a new activity creating technical accessibility between two regions; second, the creation of new elements in the transport network between neighboring towns creating improved geographic accessibility; and third, the elaboration of common urban development planning which improves social accessibility. According to Boudeville the most general type of polarized integration is triangular. French examples include Orléans-Blois-Tours, Pau-Lourdes-Tarbes, Caen-Rouen-LeHavre, Reims-Epernay-Châlons, and Belfort-Montbéliard-Mulhouse, the last being built in order to balance Basle's "dangerous polarisation at the junction of the Rhine and the Swiss plateau (Boudeville, 1975, p. 232)."

The growth center literature offers numerous examples of zones whose development has been impeded by more or less arbitrarily fixed frontiers which divide natural economic regions into two or three parts, but it remains to be seen if it will provide any truly new insights into border region problems and their resolution. A major shortcoming in Gendarme's analysis is its emphasis on the military vulnerability of border regions. Clearly not all border regions live under threat of attack.

Even though this was the case in Western Europe's past, today and in the foreseeable future it is highly unlikely that one Western European nation would attack another. Rather, the real issue of present concern is economic integration. However, neither Gendarme nor Boudeville nor any other growth pole theorist (Economies et Sociétés, 1971) really develops a systematic theory relating border regions to the growth pole literature. Many of the examples cited of the consequences of an incomplete development pole were already recognized, at least implicitly, in classical location theory and it is difficult to see what is to be gained by adopting the jargon of growth center theory.

Moreover, the identification of an incomplete development pole with the absence of spread effects from core urban centers to their adjacent hinterland areas or to neighboring urban centers might at first appear to be a useful point of departure for the analysis of border regions. But this is precisely the point where growth center policies have most frequently failed to measure up to expectations. Even where growth has been induced in selected centers, spread effects usually have been either non-existent or much less than anticipated. The principal reason is that economic linkages tend to be very diffused spatially; they are not primarily a matter of a center and its hinterland or even an orderly filtering process from higher order to lower order centers within an urban hierarchy (Hansen, 1975; Pred, 1976). Thus the reduction of border region problems to the issue of spread effects appears to be too simplistic.

To this point it has been argued that neither international trade theory, nor location theory, nor the growth pole approach to spatial development provides an adequate basis for analyzing the economics of border regions. This lack of understanding of border regions and their problems may be in part both an effect and a cause of persistent nationalism in the face of attempts to achieve greater economic integration in Western Europe.

Border Regions and National Regional Policies

A study of the growth of European border regions in relation to the respective nations to which they belong indicates

that similar characteristics tend to be present on either side of the border (Gouzes, 1970). Nevertheless, national regional policies and development programs for border regions have largely ignored areas beyond the national frontier. Even when economic interdependencies have been taken into account, the principal concern has nearly always been how to favor one side of the border at the expense of the neighbor on the other side. What matters is the narrow interests of the nation-state and not potential improvements in economic well-being that economic integration across national frontiers might bring to residents of border regions.

French and German regional policies, for example, have had quite different orientations. French efforts have been directed mainly toward lesser developed areas, which are not border regions. The Federal Republic, on the other hand, has accorded more attention to reinforcing the growth of areas which already have clearly demonstrated economic advantages. This has favored the Rhine axis and some of its peripheral border regions. The consequence has been that along their mutual border, the French side--more or less left to its own devices by the national government--has lagged behind the German side, which has been relatively favored by national policies.

French planning for northern France (Nord) recognizes important spatial differences within the region and broad objectives have been outlined for planning in each of the subregions. "These proposals for the Nord region have not been made in ignorance of trends in operation in Belgium, yet plans have not been made to integrate the management of similar areas on both sides of the frontier. In similar fashion, planning schemes for neighboring parts of Belgium have been conceived at a local or regional level without direct reference to conditions in France. However, a case can be made for devising planning schemes that correspond to the economic sub-regions that can be seen to extend across the international boundaries of this problem region (Clout, 1975, pp. 44-45)." Pressures favoring economic integration may reduce significantly the importance of the political frontier between Belgium and France.

Ironically, though, the ancient and divisive boundary between the Flemish and Walloons within Belgium is likely to persist in any event.

For over a decade the European Economic Community has demonstrated considerable interest in problems of regional development in member countries; yet the delineations used for regional analyses are always carefully drawn to respect national boundaries. Even so, influential political figures have objected that the mere delineation of a regional map of Europe is a threat to national interests. Thus, Michel Debré, a leading French nationalist, has contended that "to create large regions strongly independent of central power--is this not to prepare an 'integrated' Europe, where the idea of France would have only a folkloric character since the nation would be 'disintegrated' (Debré, 1963, p. 237)?" Admittedly this may be an extreme position, but the division of the European Community's newly-created European Regional Development Fund--which is intended to help correct the main regional imbalances in the Community and especially those resulting from the preponderance of agriculture and from industrial change and structural unemployment--is to be made on the basis of nation-by-nation applications. Thus, while the funding regulations make vague references to "the principles for the coordination at Community level of regional aids" and to considerations of "whether the investment falls within a frontier area, that is to say, within adjacent regions of separate Member States," it is clear that "priority shall be given to investments in national priority areas (Official Journal of the European Communities, 1975, pp. 73/2-73/3)."

Border Region Integration and Development: What are the Research Needs?

Despite the fact that economic integration is being pursued in both Western and Eastern Europe, the conceptual basis for understanding the possible consequences of integration for border regions appears to be remarkably weak. (Despite some efforts to remedy our ignorance, we still are not aware of major Socialist

contributions in this regard; hopefully this paper will help to promote some significant East-West dialogue on the subject.) The remainder of the paper is devoted to a consideration of elements which--in a Western European setting--need to be integrated into a systematic policy-oriented theory of the economics of border regions; and to the question of the specific geographic delineations and data that would be appropriate for empirical tests of the theory.

Of course, there is no lack of examples of lost opportunities from failure to coordinate economic activities across borders. From an economic--if not yet a political--standpoint, the need for coordination has been rather well established. What is required now is a better understanding of the development processes underlying border region economies. Lacking this understanding it is premature to advocate, as some writers have done (Gendarme, 1970, p. 915; Balassa, 1973, p. 409), the creation of international mechanisms patterned on the Tennessee Valley Authority. Moreover, it is not sufficient merely to analyze growth rates of border regions in comparison with national growth rates. To be meaningful, such efforts

must first be linked to studies that analyze, by region and by country, the economic structure and the growth of each sector. This by itself will not even give sufficient insight into similarities and dissimilarities found in the structure and rate of expansion of border regions. To realize this objective, comparative studies must be undertaken of sectoral and employment classes, as well as of international migration, commuting and trade.

Taking account of the importance of border regions in the economic and social life of the European Community as well as in each member nation, these efforts as a whole should make it possible to derive the consequences that these similarities and dissimilarities will have for the economic and social development of these regions and nations within the larger context of the Community (Gouzes, 1970, p. 382).

It should be emphasized that economic analyses of border regions need to be carried out in terms of functional economic areas, the boundaries of which may not conform with provincial administrative boundaries. In so far as possible these economic regions should be self-contained labor market areas, i.e. there should be a high degree of closure of place of employment and

place of residence within the respective regions. Since border region analysis is by definition international in nature, it is important that common procedures be used for delineating functional economic areas in the countries concerned and that every effort be made to assure the international comparability of small-area data for demographic, employment, consumption, social infrastructure, production and interregional flow variables. Flow data would be particularly valuable to gain greater understanding not only of actual interactions across national frontiers, but also potential interactions which could be expected under conditions of economic integration.

Earlier it was pointed out that in Western Europe the border regions on both sides of national frontiers tend to have similar characteristics. For each set of relatively homogeneous regions (border and non-border) it would be instructive to carry out comparative studies of non-border regions and border regions. Such studies should shed light on the nature of differences between similar border and non-border regions; in addition, insights would be gained into the possible consequences of greater economic integration across national boundaries. In other words, the analysis of border region problems and opportunities may be undertaken through complementary approaches, one focusing on interregional flows between border regions, the other concentrating on comparative studies involving both border and non-border regions within given countries.

Research of this nature will in fact be undertaken within the International Institute for Applied Systems Analysis's Human Settlements and Services Area. At first this task will involve German-speaking countries of Western Europe, but with sufficient international interest and cooperation it hopefully will be extended to include other nations.

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