GROWTH CENTRE THEORY AND VILLAGE DEVELOPMENT

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The notion that certain urban centres or core regions represent the leading edge of most intensive economic development is one of the most widely accepted theories of geography. The concentration of many establishments at a centre promotes economic interaction, minimizes economic effort and the friction of distance and leads to sustained economic growth. The advantages of agglomeration are so pervasive that the nucleated settlement or central place is the characteristic expression of man in the cultural landscape. The economic geography of a territory in consequence consists of centres of intensive economic activities and of peripheral regions dependent on interchange with the core areas for much of their required goods and services.

This article reviews relevant geographic theory and explores its implications for the economic development process. It also considers some of the processes which run counter to economic development at the core and serve to spread economic development impulses more widely throughout the periphery. The article proceeds to an examination of the development problem at the scale of an area containing several villages through the presentation of two case studies drawn from the Niger and Sabi River valleys. Conclusions address themselves to the applicability of theory, required research and the practical implications for economic development planning.

A THEORY OF GEOGRAPHIC DEVELOPMENT

The process of geographic development may be envisioned as originating from a historic base of many evenly distributed small nucleated settlements (dorps, hamlets, villages). With the growth of population and advances in technology some of these develop faster than others and become magnets for further economic development. Growth-inducing advantages include location, such as harbours, e.g. Durban or Beira; centrality, e.g. Bulawayo; access to resources, e.g. Johannesburg, Jos or the Copperbelt; and historical primacy, e.g. Cape Town, London or Salisbury. Major growth points often have a combination of these and other advantages to explain their core area status.

A theoretical distribution of market centres on a uniform plain was deduced by Christaller on the basis of economic efficiency of access to an evenly distributed population. Centres would be located in a uniform equilateral triangular lattice, each market place surrounded by a hexagonal trade area. The distance between and the sizes of market centres would be a function of local transport technology. Christaller recognized further that linear transport routes might impose other theoretic lattices of centres.

These and subsequent theoretical distributions of centres and growth points cannot be shown to exist in reality, not merely because postulates of even distribution of population and resources can only be approximated but because the rigidly even distributional pattern cannot be brought into agreement with any known process of historical development. In a rigid lattice pattern the location of only
two centres determines the location of all other centres. Yet, Christaller's static model serves heuristic purposes of elucidating requirements of economic efficiency and draws attention particularly to the interdependence of growth points and the spacing requirements between viable centres.

Growth point location, interdependence and their implications for development planning have been investigated at several geographic scales, except at the local village scale. Grotewold\(^2\) examined industrial growth areas and cores of world trade encompassing the global scale. He enlarged on the analysis of Preßler\(^3\) who identified industrial core areas based on the existence of major steel industry. Grotewold called attention to the recent dispersal of industrialization based on technologies other than steel which have called into existence new core areas of world trade, for instance South Africa. Grotewold attached importance to the early recognition of incipient world growth areas but has no planning recommendations at the scale of his analysis.

The original concept of core areas at the continental scale belongs to Platt\(^4\) who identified one or several core areas for each of the nations of Latin America. His empirical description of areal functional organization of national economies and of the linkages between core and periphery remain fundamental to the study of geographic development. Green and Fair\(^5\) examined the continent of Africa south of the Sahara and identified 19 major and minor development islands. The authors carried their analysis two steps further to increasingly greater detail. In the first instance they divided the Southern African subcontinent into growth regions characterized as hinterlands of particular nodes and non-growth backwaters without such growth nodes.

Recognizing that planning does not take place at the subcontinental scale, Green and Fair examined case studies of more local areas, the Witwatersrand, the Tugela basin, Swaziland and Botswana. In each of these they were able to identify local growth centres and to make penetrating comments about future development. From their empirical evidence the authors conclude that rational plans for economic advance require the use of public funds to stimulate economic and social progress within local growth nodes. These in turn need to be tied more firmly into the expanding network of more advanced and stronger core growth areas nearby. They see this as important even in cases where the more advanced core area is located across national boundaries as in the case of Swaziland and Botswana advocating improved trade and communication among the various existing and potential growth centres of the entire Southern African region.

A remarkable application of growth centre theory at the national scale may be found in the recommendations of the commission study "Population and the American Future".\(^6\) This study acknowledges that the largest metropolitan centres in the United States have severe problems of decay, especially in the central cities, with the attendant problems of urban unrest, racial tension, high crime rates and welfare loads straining public services and infrastructure. The study further recognizes the gradual depopulation of the countryside and the decline of small towns. Consequently, it charts an ambitious policy of encouraging growth and directing migration to centres of intermediate size, in the range of 50,000 to 200,000 population. These towns are identified not only on the basis of size but also by the existence of a growing industrial base and by their distance from existing metropolitan areas. The intention is to foster independent growth centres serving separate hinterlands and acting as magnets for migration from the surrounding rural areas. Employment opportunities within local growth centres would permit migrants to remain within the area of their regional culture, in many instances within a daily commuting distance of 70 to 80 kilometres. Implementation of this ambitious proposal may well founder on the political obstacles and resource distribution problems discussed below.

Examples of implementation of growth centre policies are rare. A successful case at the provincial scale is provided by the history of Newfoundland since confederation with Canada in 1949. The population of the sparsely-populated province was scattered in many small villages and outports most of which could be reached only by sea. The Government identified a small number of growth centres in which industry could be fostered. A vigorous programme of serving these with highways, schools, hospitals and other infrastructure encouraged their expansion. People from isolated outports were encouraged to relocate in the centres or indeed assisted in migration to the Toronto-Montreal core area of Canada. Small outports too remote to be economically effective in the modern world were evacuated and razed.

The concentration of growth in a few centres has
been powerfully affected by advances in transport technology in this century. At the national scale it has made industrial establishments less resource-bound and more able to take advantage of linkages with other industries, markets and labour forces in established centres. At the local scale it has increased the personal action radius for shopping and commuting of the individual. In the developed countries small stores and village markets have become redundant or atrophied as consumers are able to drive their cars to regional shopping centres.

In Africa the general store and the periodic market are still viable institutions, widely scattered to be within reach of pedestrians. As the bicycle becomes ubiquitous and motorcycles and cars come within economic reach of the African family, one may expect economic redundancies not dissimilar to those which have occurred elsewhere. Local and regional growth points which have not yet come into existence will eventually decline in favour of the more important centres.

The insight afforded by theory points to an economic development policy which fosters growth in a few selected centres identified as showing present development and economic promise. Such policy would concentrate public investment on infrastructure in growth centres for maximum pay-offs from development funds.

COUNTERVAILING FORCES

If economic development were the only consideration, public investment would be concentrated in a few growth centres evenly spaced throughout the national territory, with the distances determined by prevailing transport technology. Development is never the only consideration guiding public investment and two powerful factors run counter to concentration on growth centres. One is the distribution of resources both natural and human, the other are the demands of political equity which require public services to the entire population no matter how remote or how small the centre.

The distribution of natural resources is unrelated to human needs and can be regarded as arbitrary or quasi-random. The location of resources including transport advantages did call growth centres into existence at different stages of technological advance. The distribution of human resources in consequence is always a product of past history and of technologies, transport advantages and resources which may no longer be in use. Since existing centres have the advantages of infrastructure, market and labour force they typically continue to grow irrespective of their original resource origin. Major established centres rarely decline absolutely but growth may slow down as new centres come into existence. Many small centres, in the United States those of less than 10 000 population, reach the point of stagnation, while village size places may atrophy with consequent high costs of maintaining public services. The implication for a future-orientated development policy is that growth of a selected few villages ought to be fostered while others may be aided in their transition to decline.

Resources affect the geometrical distribution of centres rather than the hierarchy of size. Empirically observed patterns of central places may be analyzed as statistical deviations from Christaller’s lattices.7) Deviations may take the form of even spacing of central places along major rivers in response to past transport advantage.8) This assessment, however, is by no means firm or accepted by all investigators.

Despite rapid out-migration from rural areas, villages and small towns during the past century, most people prefer to see their home place flourish. This desire may represent vested self-interests of retail and commercial establishments or sentimental attachment to the home town environment. The citizen feels entitled to demand that his village have schools, stores, hospitals and bank services as good as any other place, road access and bus services together with the communication links of telephone and post office as anyone else regardless whether the prospect is growth or decline for the centre. In developed countries governments subsidize public services to the rural areas and small towns of the periphery. In under-developed countries where the public purse is frequently the only source of investment funds regional competition for growth-inducing establishments, utilities and infrastructure is intense and a major source of friction.

The competition for local advantage is conducted through the political process, whether this is expressed by the local member of a representative parliament or the intrigues of the one-party state. A local leader cannot afford to let the home folks down lest he erode support and lose his political face, the ultimate consequence of economic decline and depopulation.
The tendency for dispersal and mislocation of investment is aggravated where the national territory is divided among ethnic groups, races or other groups which harbour mutual suspicions or antagonisms. As long as members of one Nigerian ethnic group feel uncomfortable or unsafe migrating to a growth centre located in the territory of another, the demand for uneconomic dispersal of investment will continue. Each state has to insist on its very own university and industrial centre. A rational economic development policy may be inhabited by ethnic particularism and overcoming this remains a major task confronting the present Nigerian Government.

South Africa's policy of stemming the influx of the majority population to established growth centres provides an example of political policies running counter to economic needs. The movement of a large part of the population to the rural periphery while the bulk of investment continues to find its way into the existing core is only alleviated by the encouragement of investment in border areas. It is the author's surmise that South African population policies have retarded economic development below the potential by redirecting investment away from the economically best location.

To conclude, social goals expressed through the political process induce a dispersal of development investment wider than the economically most efficient. Efficiency is not advocated as the only development criterion, but by identifying the most rational policies it may be possible to assess the relative cost of serving social goals and thereby clarify the decision-making process. This viewpoint derives from the assumption that all but a minority of men share the goals of economic development and greater welfare while cultures and classes and indeed inhabitants of different places have widely divergent social aspirations and concepts of social justice. The author accepts human well-being as the ultimate goal of development and this cannot be found merely in the economic sphere.

**THE CASE STUDIES**

Two case studies drawn from widely separate parts of Africa illustrate the interplay between economic development and social goals at the village and small town scales. Both describe a reach of river valley of about 160 kilometres inhabited by peasant cultivators providing their own subsistence. Many have entered the market economy through the sale of agricultural products. Irrigation farming is an important feature of the economy, although on the Niger this is part of the agricultural tradition while in the Sabi Valley it is the result of modernizing influences.

The socio-political systems differ considerably. The Niger Valley area is ruled by a traditional emir through appointed district heads and village headmen. The emir is advised by a career official of the North-Western State Government and ultimately under the authority of the Nigerian national government. The area is inhabited by about eight ethnic groups speaking different languages and using Hausa as the *lingua franca*. The minority Moslem Hausa represent a leading social group, eager to recruit new members by conversion, acculturation and marriage while the other groups tend to be endogamous. They inhabit the region in the pattern of a shatterbelt, yet with few villages wholly confined to one ethnic group but rather shared by two or more. Features of the farming economy differ only in detail among groups except for the Fulani who follow a pastoral nomadic way of life. A most important aspect of the exchange economy is the open air village market meeting periodically on a four or seven day cycle. Size of market can be used to identify the hierarchy of growth centres.

The Sabi Valley is characterized by a strict division between lands apportioned to White and Black citizens. This and a host of other factors is responsible for quite disparate levels of living and a dual economy which make it impossible to identify a hierarchy of centres. The White section of the community is governed by a representative government which is exceptionally responsive to the needs of the rural areas. The Black Tribal Trust Lands are administered by District Commissioners with the help of traditional chiefs. The latter have lost much of their moral and social authority through their links with government so that Black aspirations are feebly voiced through Church dignitaries and self-appointed leaders.

Nine irrigation projects are concentrations of an economically advanced peasantry with incomes from farming comparable to those of Black town dwellers. The irrigation projects have given rise to business centres which may be regarded as growth points in the regional economy.

**Case One: The Niger Valley**

The Kainji Lake area is remote from the major
growth centres of Nigeria. About 560 kilometres separate it from the south-western growth region dominated by Lagos and Ibadan and an equal distance from the more dispersed growth region in the North dominated by Kano and Jos. Agricultural products of the area — onions, cow peas, rice and sorghum — move to the south-west and the area is dependent for manufactured goods on suppliers from the growth centres.

The area has been studied in some detail as a result of the construction of Kainji Dam. Creation of the reservoir in 1968 necessitated moving 50,000 people from approximately 150 small towns, villages and hamlets. Resettlement concentrated on replacement of existing structures — houses, schools, roads, etc., — thereby disturbing the existing cultural landscape and economy as little as possible.

The inter-regional outflow of products is a complex marketing process involving wholesalers, middlemen, lorry operators, some of whom may work together in co-operatives. Gathering farmers' products into truck loads occurs at Yelwa, Rofia and Bussa (Figure 1). In a functional classification of markets these may be regarded as higher centres. Other periodic village markets are the second level of the hierarchy and exist within pedestrian access to all inhabitants. Hamlets without markets form the base of the central place hierarchy.

The primary growth centre in the area is Yelwa, a town of 8,000 inhabitants. It is the seat of the Emir of Yauri and hence of local government and distinguished by road and river access. It is served by two primary schools and a secondary school, a bank and a hospital. More recently a barge quay has been constructed and a customs post established to control river traffic from the Niger Republic. The periodic market at Yelwa increasingly meets daily at a lower level of activity. This centre also contains a number of permanent stores otherwise rare in the area.

Yelwa, however, is not a river crossing point for motor traffic because numerous islands make it an unsuitable point for a ferry service. The Niger ferry is located at Rofia where the river bed narrows. This village, which otherwise has an undistinguished market, has become a major bulking point for the wholesale trade because traders prefer to load their lorries on the west bank avoiding the river crossing. Commercial interaction linkages and thereby growth would be enhanced if Yelwa in addition to its other advantages became a river crossing point.

The trade areas of two small markets north of Yelwa, Kasabu and Tillo, are restricted by the proximity of Yelwa. Despite this, a village located between Tillo and Yelwa tried to establish yet another market. Local government did not recognize this new market but may have to if it succeeds in attracting customers despite the obvious duplication of facilities.

Location on the highway to the north make Giro and Bakin Turu accessible to itinerant traders bringing manufactured goods by lorry. Gebbi on the west bank of the Niger lacks road access. It derives importance from the seat of the district head, which helped in acquisition of one of the few primary schools of the emirate. Bukunji and Dungunsofo depend on river traffic for success. Close spacing of these markets is necessary to serve the present boat and pedestrian traffic. But a future-orientated growth policy looking at increasing bicycle, motorcycle and lorry traffic would identify one of these villages as a growth centre for investment in schools, clinic, and post office services.

South of Rofia a cluster of four riverine markets, without roads, exhibits the kind of competition which keeps each centre small. Selecting one for growth, road access, and fostering development with other public services would turn this small area from a backwater into a minor growth region. Yet, temptations of political equity demand a spread of services among all villages, especially because concentration on one could lead to charges of ethnic favouritism. Road access would make one of these villages a bulking point for the wholesale trade in agricultural products. It has been proposed that such bulking points are needed at 16 kilometre intervals to spare farmers the hazardous journey by foot or dugout to distant markets. The absence of a bulking point on the 125 kilometre stretch of river from Rofia to Bussa discourages the production of cash crops and inter-regional export in this reach.

Figure 1 shows Bussa as a twin of Wara on opposite banks of the Niger. The seat of the Emir of Borgu makes Bussa an important centre and its growth was strengthened by road access, a school, a postal agency and a clinic. Lacking good agricultural hinterland its market area was restricted and most food supplies crossed the river from the more active agricultural hinterland of Wara. This market
is the more active and larger but without adequate road access. Products for inter-regional trade are ferried across the river for loading at Bussa.

The strength of the twin centres was split when Bussa was moved 48 kilometres downstream to the vicinity of Kainji Dam. The growth potential of the new town has been considerably increased through paved road access and by the infrastructure support associated with operation of the Dam. Wara remains the main source of food supply for the new and larger Bussa and farmers, traders and customers have to bear the increased transport costs across 48 kilometres of lake.

The description has highlighted the interplay between growth centres, political needs and resource opportunities. Such interplay is constant but rarely consciously considered in the many diffuse and individual decisions which result in economic growth and guide the evolution of the cultural landscape. No criticism of past decisions nor prescriptions for the future are intended. Demonstrated is the interplay of processes which needs to be taken into account for rational planning.

Case Two: The Sabi Valley

Nineteen central places have been identified on the basis that each has at least six retail stores plus, in the case of the smaller centres, some other central function — post office, police station or mission (Figure 2). The centres are tributary to the city of Umtali in that roads and inter-regional trade move there. Located just beyond the northern edge of the study area, Umtali is a major national growth centre and excluded from this discussion. Proximity to a major city accounts in part for the greater economic advance of the Sabi Valley compared to the previous case.

The cultural and political contrast between Black and White in this example is very much greater than among ethnic groups in Nigeria. The separation is given formal expression by the division of land between Black and White. Six central places are located in the White area and comprise all such places and one of them — the mission farm Chikore — is essentially a Black central place. Of the 13 central places in the Tribal Trust Land, three are associated with mission stations, eight are located at irrigation projects and two are merely cross-roads centres although some of the others have the advantage of cross-roads location as well.

The economic means of the White population make access to vehicular transport close to universal; consequently centres in the White area are widely spaced. Centres in the Tribal Trust Land represent the top of the hierarchy. Assessment of the complete distribution of centres demands taking places down to the minimum central place into account. This is represented by a single general store isolated in the bundu (remote countryside) and accessible to pedestrian traffic from a five kilometre radius only.

The dual economy makes it difficult to identify a hierarchy of central places for the study area. In number and size of stores as well as in the variety of other central functions primacy belongs to the country town of Chipinga. Numerically, however, several of the irrigation projects outrank Chipinga with Nyanyadzi having primacy. The socio-political structure of the country prevents the most populous centre from becoming a primary growth point.

The example of Nyanyadzi shows the development and internal structure of a Black business centre (Figure 3). The commercial community of this irrigation project contains about 25 retail shops strung out along the main highway to obtain the patronage of the travelling public. The business strip is bracketed on the north by a police station and on the south by a rural clinic and contains a post office, service station, hotel, butchery, and other specialized stores. The general stores located away from the business centre are limited to serving families resident near D block and C block. They have difficulty competing with the main centre because customers are willing to undertake the three or four kilometre walk to the more competitive shopping near the highway.

People-orientated services such as a hospital might be expected at the most populous place. The regional hospital, however, is located at Chipinga, which lowers its accessibility for the greater part of the population. Doctors prefer the ambience of the White country town in the cool highland to the Tribal Trust Land in the lowveld.

District Commissioners' offices and courts are located in the country towns, not in the Black areas where they might be expected. This results not only in inefficiencies of access but also prevents the kind of growth which has occurred around District Headquarters in other parts of the country.
Fig. 3: Source: The Sabi Valley Irrigation Projects, Chicago, 1965.
Examples of dis-junction between central functions and population could be multiplied.

Roads are more developed in the White area with four centres having access on two-lane tarred highways. Espungabera in Moçambique functions as part of the economic region despite the political boundary, not because its access is good but because access and distance to the rest of Moçambique is worse. The sixth centre is the Black spot mission farm served by a dirt road. Three centres in the Tribal Trust Land are located on the main highway, another four are located on a single lane tarred highway and the remainder are served by dirt roads only. The road network, development of the infrastructure and the growth of central places are clearly responsive to the wishes and political power of the Whites.

Growth responding to resource opportunities is exemplified by the irrigation projects and the cross-roads centres. The country towns, too, are a response to good agricultural land at a cool elevation but early settlers consciously chose central locations as well. Settlers who considered Chipinga too distant from Umtali founded Melsetter in its present location. The founding of mission stations near chiefs’ villages is another example of conscious choice of central location to the extent that these were embryonic growth centres. Absence of a business community at the ninth irrigation project is attributed to its proximity to an older centre, which makes competitive growth difficult.

Resource opportunities and conscious choice of centrality determine the site of settlements within a framework of relative location of larger centres. The major guide of economic development and growth point structure, however, is the separation of Black and White lands and economies.

CONCLUSIONS

The two case descriptions draw attention to the resource advantages, socio-political needs and locational patterns which allow economic growth in small centres. No prescriptive statements are offered for the future, except that these factors ought to be considered explicitly in rational planning. Reticence is not merely the reluctance of the foreign outsider but is a tribute to the complex intertwining of the forces at work. Our analytical tools permit the separation of economics, politics and geography much more easily at the macro-scale, where one deals with a large universe and a long time-span of history. At the micro-scale, where much of the development depends on recent individual decisions by a few, it is much clearer that people do not act as economic man, political man or geographic man but attempt to reconcile many often conflicting objectives in one decision. It thus becomes difficult to marry theoretical abstractions to empirical reality.

The problem of identifying successful development strategies is complicated by the fact that the establishment of a store or post office is both evidence of growth and stimulus for the future. If one knew precisely what behavioural consequences such decisions entail, e.g. how many post office saving accounts are opened and how this money is used in further investment and how many traders are made more efficient by the ability to transfer funds, etc., then it might enable one to advise where and when to place public investment for maximum pay-off. The kind of insight sought demands nothing less than a detailed quantitative development history of a sample of representative areas. Such research awaits the future.

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In "The Village that Chose Progress" Redfield studied the dynamics of rural social development. Without denying the role of internal factors this study insists that villages do not "choose" progress. As part of the periphery they are embedded in a context of dependence on linkages with regional and national growth centres. Economic development in the national core areas may stimulate growth in the periphery through inter-regional trade and migration. The pattern repeats itself at the micro-scale as some villages grow into market centres. Ultimately an interaction trickle reaches the most isolated farm house tying it into the national economy though a hierarchy of intervening central places.
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