

Regional Planning in Ireland—The Case for Concentration: A Reappraisal

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FEW development issues in Ireland have generated so much controversy and emotion as the concept of spatially polarised growth; yet the continuing discussion has often been confused by a notable failure to define terms and concepts clearly and a tendency to recommend radical policy initiatives on the basis of flimsy and often unscientific evidence. It is against this background that Helen O'Neill entered the debate and has advocated that a high degree of spatially concentrated investment should constitute the fundamental basis of Irish regional policy. In her recent paper¹ and her earlier book,² she has outlined the empirical research upon which the regional strategy recommendations are founded. In reading these publications, one is immediately impressed by the volume of research input, but an examination of certain aspects of the theoretical background and methodology and, in many cases, the absence of any appropriate statistical tests of the many interesting hypotheses serve to sow some doubts in one's mind concerning the policy recommendations drawn from the analysis. It is with some reluctance that one comments upon this research especially as there is a dearth of such work in Ireland; yet as Dr O'Neill's recommendations are so relevant to Irish economic and social policy, in general, and to the investment strategies of government departments, semi-state bodies and local authorities, in particular, it seems important to draw attention to those aspects of the project which are not entirely convincing. It is hoped that such a critique will contribute positively to

1. H. B. O'Neill, "Regional Planning in Ireland—the Case for Concentration", *Irish Banking Review*, September 1973, pp. 9–20.

2. H. B. O'Neill, *Spatial Planning in the Small Economy: A Case Study of Ireland*, Praeger, New York and London, 1971.

the continuing debate on regional investment strategy and to defining those areas where our current knowledge is less than adequate for the purposes of policy formulation.

Development Strategy: Dispersion or Growth Centres—a Conceptual Framework

Dr O'Neill states that the fundamental strategy choice lies between, on the one hand, dispersion, and on the other, growth centres. She writes:

On one side of the fence stand the Dispersionists, defenders of the countryside and of local culture and traditions, who tend to see the presence of a factory in every town or village as the answer to rural decay and as a means of distributing the benefits of development more equitably throughout the country. On the other side are ranged the growth-centre protagonists, or what we might call the Centralists, who tend to emphasise the benefits to be derived from increasing total national wealth which, they claim, is more likely to be maximized if investment is concentrated at a small number of carefully selected and relatively large urban centres, where external economies and economies of agglomeration will help to ensure the success of industrial activities.³

The discussion then proceeds to a comparison of the merits of the two conflicting strategies, dispersion versus concentration, and it is here that this author becomes somewhat uneasy for it would appear that to state the policy options in such terms is to oversimplify the problem. The Industrial Development Authority had recognised, in June 1972, that dispersion and concentration were not mutually exclusive alternatives.⁴ Conceptually, it seems more realistic to conceive of a continuum of strategy options ranging from total concentration at one end of the scale (for example, this might be operationalised as a decision to concentrate investment in Dublin and Belfast) to extreme dispersal at the other (for example, the implementation of a policy to create autonomous growth in every community of greater than 200 people). Between these two end points of the concentration-dispersal continuum lie an almost infinite variety of alternative strategies including any distillation of "concentration" or "dispersal" which, at a given point in time, is in harmony with the social and economic goals of the community. Furthermore, it is not unrealistic to envisage a wide range of spatial investment strategies which incorporate features from the "concentration" end of the continuum together with elements of "dispersal". For example, a policy of concentrating resources upon Dublin in the east might be combined with one to disperse growth to places in the population range 500–10,000 in the Designated Areas by means of appropriate injections of infrastructure investment and both regionally and town-size differentiated industrial incentives schemes. The general

3. O'Neill, *op. cit.*, 1973, pp. 12–13.

4. *Regional Industrial Plans 1973–77*, Part 1. Industrial Development Authority, Dublin, 1972, p. 47.

proposition is that to consider the policy options in terms of a simple Dispersion or Growth Centre alternative serves to needlessly polarise the debate; to force various public and private interest groups to take up unnecessarily defensive positions and therefore to overstate their reasons for advocating a particular strategy. I have argued that an infinite blend of concentration-dispersal possibilities exists which can be traded-off against each other and that the optimum policy for one region may not necessarily be optimum for another or for the nation. The advantage of the "continuum" concept is that it permits a high degree of flexibility so important when we are planning a regional system the growth processes in which are only partly understood and where the locational decisions of so many "actors" are not under the control of the state.

Dispersion versus Growth Centres: Empirical Evidence

In order to identify the appropriate strategy for Irish regional policy—North and South—Dr O'Neill investigated the locational pattern of industry between 1926 and 1966 in addition to examining the viability of enterprises by town size group. Her chief data sources were trade directories giving the names and addresses of manufacturing and exporting establishments and she has acknowledged that the information for certain industries is incomplete.⁵ In addition, classification problems arise in attempting to use separate trade directories for the Irish Republic and Northern Ireland. Drawing upon her earlier research, Dr O'Neill states:

... the pattern of industrial location throughout the whole island between 1926 and 1966 revealed a strong tendency towards clustering of manufacturing plants, that is, a tendency for industrialists manufacturing the same goods to locate close to each other to take advantage of external economies. The percentage of establishments located in small centres has decreased and the percentage located in the larger centres has gone up significantly over the period.⁶

A consideration of the methodological procedures used in order to derive these conclusions will demonstrate that they need to be interpreted with a degree of caution. In the series of cross-classifications upon which the analysis was based; the rows formed three time cross-sections (1926, 1946 and 1966) for both Northern Ireland and the Irish Republic and the columns represented seven groups of manufacturing establishment numbers. The cells of the matrix therefore recorded the number of towns at each of the three time horizons with a given number of establishments. Separate tables were constructed for ten industrial groups in the two states. The results showed that the total number of establishments rose from 832 in 1926 to 3,095 in 1966 in the Republic, while the corresponding rise in Northern Ireland was from 600 to 1,535. No statistical significance tests of any kind were used to substantiate the apparent clustering trend and the findings that

5. O'Neill, *op. cit.*, 1971, p. 79.

6. O'Neill, *op. cit.*, 1973, p. 13.

in the engineering and textile industries "the tendency towards clustering is particularly strong" and "for firms which export . . . the clustering tendency is even more clear-cut"⁷ are also unsupported by any statistical analyses.

A locational dimension was introduced into the study for each industrial group by cross classifying the number of establishments for five time cross sections by (i) the number of counties with one or more establishments; (ii) the number of towns; (iii) percentage of establishments in Dublin; (iv) percentage of establishments in Cork and (v) percentage of establishments in Dublin and Cork. In the case of Northern Ireland, the same methodology was employed except that Belfast and Derry were the respective towns. While Dublin's share of the number of manufacturing and exporting establishments in the Republic rose over the period, Belfast's share in the North declined. Even if allowances are made for the absence of statistical procedures to test the significance of any changes, the locational parameters chosen are somewhat limited. The tables provide the reader, in the case of the Republic of Ireland, with some useful data on trends in Dublin, Cork and the remainder of the country; but it is regrettable that Dr O'Neill did not introduce a greater degree of both regional and locational disaggregation into this analysis. One is left to speculate as to the trends in Limerick, Galway, Drogheda or Sligo relative to Dublin; to question whether medium-sized centres (5,000–20,000) maintained their share of manufacturing units; and to wonder if the proportion of establishments located in the poorer regions of the south-west, west and north-west declined over the period of the analysis?

Clustering and Failure Rates

In the next stage of the study, Dr O'Neill examined the relationship between clustering and apparent failure rates. The "apparent failure rate" was defined as the percentage fall in the number of establishments within an industry between 1946 and 1966 in towns classified according to the number of establishments which they contained in 1946.⁸ Thus, the "apparent failure rate" is a *net* concept. It deals exclusively with towns which had less establishments in 1966 than in 1946; but the apparent failure rate is not adjusted for "births" of new firms during the twenty year period (which may favour larger towns as they are likely to generate more births and thereby reduce the apparent failure rate) nor does it incorporate firms which entered the system after 1946 and ceased operations before 1966. She concluded that for "both the Republic of Ireland and for Northern Ireland, and in the case of every individual industrial group, the evidence suggests that lower failure rates are associated with clustering within industrial groups".⁹ Three classes of towns were distinguished: towns containing one firm in an industry; towns containing two to five firms in an industry and towns containing six firms

7. O'Neill, *op. cit.*, 1973, p. 13.

8. *Ibid.*, p. 14.

9. *Ibid.*, p. 14.

or more within an industry. A clustered pattern of industrial location was regarded as "beneficial to industrialists because the apparent failure rates within industries tend to decline as the number of firms within a cluster increases."¹⁰ It is unfortunate that, as in the case of the locational analysis, the data have not been subjected to any statistical tests. Also, the locational trends in towns with two to five establishments in the Republic tended to be opposite to those in towns with one establishment and this failure of the basic hypotheses is not satisfactorily explained. Dr O'Neill has not published the number of firms in each cell of her tables which would have been a most useful aid in interpretation. It is clear that for some cells there were no establishments in 1946. If other cells in the tables contained small numbers of firms, they will tend to have large failure rates simply through the mathematics of percentages. For example, if for industrial group (i) there are two firms in the Republic in towns containing one firm in that industry and one firm closes down the apparent failure rate is 50 per cent; conversely, if there are ten firms of industrial group (i) in towns containing two to five firms in that industry and one firm closes production, then the apparent failure rate is only ten per cent. Yet, if the latter firm has been a large one and the former a small concern, the consequences of the lower failure rate might be more important. However, even allowing for the absence of quantitative testing and the definition of apparent failure rates, the analysis implies the existence of an inverse causal relationship between the degree of clustering and failure rates. But the success or failure of firms is influenced by a large number of variables some of the more important of which may be size (and there are more large firms in major towns), the capital-labour ratio, managerial efficiency and external market demand factors. Such variables, and others not listed, may be more important in influencing failure rates than the degree of clustering and, in a specific empirical context, those shown to be significant must be controlled in order to assess the influence of location. Although she did not quantify the significance of any other variable, Dr O'Neill felt justified in asserting that while "size of the individual establishments is not ruled out as a factor contributing to their success or failure, it is nevertheless clear that external economies . . . play an important role in promoting the success of firms locating close to others within the same industry".¹¹ This conclusion, which may be valid, is not derivable from the analysis conducted by Dr O'Neill as the multivariate nature of the problem makes it unrealistic to assume that the net effects of all factors, other than degree of clustering, are random.

Dr O'Neill then investigated the increases which took place between 1946 and 1966 in the number of firms within each industrial group and the way in which the increases were distributed between towns, classified according to the number of establishments which they contained at the beginning of the period. This "apparent increase rate" (similar to the apparent failure rate) is a measure of *net*

10. O'Neill, *op. cit.*, 1973, p. 15.

11. *Ibid.*, p. 15.

increase and the same interpretation problems apply. The tables showed "the greater proportion of the increase in the number of firms was recorded in centres containing more than 6 establishments".¹² Again, statistical tests were not applied to the data so it is difficult to know what reliability to place upon the inferences derived from the tables. From her investigation into locational trends and failures, Dr O'Neill concludes:

External economies, associated with the clustering of plants within the same industrial group, become very significant for firms which locate in towns containing 6 or more establishments within the same industry, as is suggested by the low apparent failure rates in such firms. . . . Agglomeration economies, on the other hand, which are associated with the clustering of plants of *all types* together in large industrial centres . . . only become significant in towns containing more than 200 firms in the Republic.¹³

Dr O'Neill also states that:

A significant exception to the general case of increasing agglomeration economies occurs in the Republic's medium-sized towns . . . Limerick, Galway, Sligo, Waterford, Tralee, Wexford, Dundalk, Drogheda and Clonmel . . . in these towns there appear to be important diseconomies at work . . . it was probably safe to say that the diseconomies ultimately associated with inadequate infra-structural facilities in medium-sized towns put a brake on the agglomeration economies which such centres may offer.¹⁴

The first problem in interpreting these statements is one of definition. The "external economies" and "agglomeration economies" referred to are, in fact, *localisation* economies and *urbanisation* economies—two sub-sets of agglomeration economies.¹⁵ It would be prudent to consider carefully the conclusions that "external economies become significant in towns containing six or more establishments"—"agglomeration economies only become significant in towns containing more than 200 firms"; and "diseconomies in medium-sized towns . . . put a brake on the agglomeration economies". There is little doubt that urbanisation economies are an important element in the regional growth process but an examination of "clustering", "failures" and "increases" does not constitute direct evidence of their existence. Regional science, as yet, has made little headway in how to measure, even how to define, these agglomeration economies¹⁶ and so a statement

12. O'Neill, *op. cit.*, 1973, p. 15.

13. *Ibid.*, p. 16.

14. *Ibid.*, p. 16.

15. Localisation economies: for all firms in a single industry at a single location, consequent upon the enlargement of the total output of the industry at that location. Urbanisation economies: for all firms in all industries at a single location, consequent upon the enlargement of the total economic size, population, income, output, wealth of that location, for all industries taken together. See W. Isard, *Location and Space Economy*, M.I.T. Press, Cambridge, Mass., 1956, p. 172.

16. H. W. Richardson, *Regional Growth Theory*, Macmillan, London, 1973, p. 210.

that "such economies only became significant in towns containing more than 200 firms" should be interpreted with caution; to the regional scientist it represents an interesting hypothesis which would be difficult to test empirically. Indeed, it is more likely to be absolute size of population or work force that will determine a critical agglomeration economies threshold rather than the number of manufacturing establishments. The state of uneasiness induced by some of the conclusions drawn from the data recurs again when Dr O'Neill alleges that "no Irish city has yet attained the scale of agglomeration where such diseconomies might become serious constraints on industrial growth".¹⁷ While being sceptical of the concept of optimal city size, there may be, nevertheless, some level of urban scale at which net agglomeration economies become negative and the possibility of an inversion point on the urban agglomeration function must be accepted. It is very difficult to quantify diseconomies (for example, *per capita* costs of urban services, traffic congestion, environmental pollution and so on) or even to estimate whether they have any influence at all. The enormous conceptual and measurement problems of defining an "optimal size zone" for a city in the Irish context have been reviewed elsewhere by this writer¹⁸ and the intractability of operationally identifying such an optimum emphasised. The published evidence on the shape of the marginal cost curve for social and economic overhead capital as towns increase in size is scanty, unstandardised and conflicting. The most rigorous piece of research related to five Indian cities¹⁹ which ranged in size from 48,000 to 1,070,000. The results from this study show that urban infrastructure costs are relatively insignificant: for every £100 of net value added in manufacturing, the incremental infrastructure cost is of the order of £13. Moreover, the variation in incremental cost between the smallest and the largest city was small, and between the 132,000 city and the one million plus city, the unit cost difference was insignificant. Although it would be invalid to infer anything about the Irish urban system on the basis of Indian data and other studies, Dr O'Neill is probably correct in stating that no Irish city has reached the scale of agglomeration where diseconomies might become constraints upon growth but this conclusion cannot be logically derived from her data.

In the latter part of the paper Dr O'Neill considers urban growth within Ireland by constructing an economic "profile" of the major urban centres and urban growth was hypothesised to be a result of many inter-related factors—size, proximity to a large centre, degree of urbanisation, presence of growth industries, of exporting firms, and of linked industrial activities. Dr O'Neill then argues that "while the results of the study do not detract from the importance of any of these factors, it was apparent that, in the Irish context, size is the really dominant

17. O'Neill, *op. cit.*, 1973, p. 16.

18. P. N. O'Farrell, "Regional Development in Ireland: The Economic Case for a Regional Policy", *Administration*, V. 18, No. 4, 1970, pp. 342-362.

19. *Cost of Urban Infrastructure for Industry as Related to City Size in Developing Countries (India Case Study)*, October 1968, Stanford Research Inst., California, SPA, New Delhi, S.I.E.T., Hyderabad.

consideration".²⁰ The validity of these conclusions must be questioned on the grounds that the researcher did not conduct a systematic test of these hypotheses within a multivariate framework thereby permitting the simultaneous and partial effects of these variables to be examined and the ever-present problem of multicollinearity to be solved. In order to evaluate the importance of size, the author calculated rank correlation coefficients between the populations of the 96 towns in the Irish Republic of over 1,500 population and the increases recorded between 1946 and 1966²¹ ($r = 0.36$). This appears to be a somewhat naive approach for it demonstrates a low correlation between the size of a place and absolute increase: larger towns with a bigger population base recorded larger absolute increases! The reader is left to wonder what influence standardising for town size would have had on the results or to speculate on the effects of incorporating all the independent variables into the analysis. In the process of identifying the influence of size upon urban growth rates, it is likely that the variance of growth rates will show an inverse relationship with town size. Hence, it may be necessary to base such an analysis upon standard scores for groups of towns. It would have been of considerable value if Dr O'Neill had updated her 1946-66 analysis to incorporate the 1971 census results in her 1973 paper as certain peripheral counties, such as Donegal and Kerry, performed better than had been expected.

Policy Recommendations: Growth Centre Choice

The arguments which have been traditionally invoked to justify policies of concentrating growth within a few selected places have been reviewed extensively elsewhere;²² so here they will be summarised only briefly. First, concentration engenders both economies of localisation and urbanisation for the firm, economies of scale in infrastructure investment and, furthermore, indivisibilities in the provision of many facilities serve as an agglomerating process. It is assumed that spatially polarised investment policies will maximise the inflow of exogenous capital and generate a productive environment in which an expanding export base will reduce the regional balance-of-payments deficit. The merits of these arguments are clear on *a priori* grounds and there is substantial, if not conclusive, evidence to support them. The other fundamental premise of growth centre policy is that it is the most effective method of promoting higher levels of development over a much wider geographical area. As Brian Berry has argued "growth impulses and economic development . . . 'trickle down' to smaller places and ultimately infuse dynamism into even the most tradition bound

20. O'Neill, *op. cit.*, 1973, p. 18.

21. O'Neill, *op. cit.*, 1971, p. 132.

22. G. C. Cameron, "Growth Areas, Growth Centres and Regional Conversion", *Scottish Journal of Political Economy*, Vol. XVII, No. 1, Feb. 1970, pp. 19-38 and P. N. O'Farrell, "Regional Development in Ireland: Some Reflections upon Development Strategy", *The Economic and Social Review*, Vol. 2, No. 4, 1971, pp. 453-479.

peripheries".²³ This "trickle down" hypothesis, clearly accepted by Dr O'Neill,²⁴ is critically important if strategies of considerable spatial concentration as recommended by her (three centres in the Irish Republic) are to be successful in stimulating development impulses in the remainder of the country. This notion of an extensive geographical impact lies at the heart of growth centre policy and, although it remained untested until recently, Hoover had warned that "we do not yet know much, particularly in quantitative terms, of the way in which a favourable economic effect is propagated from an urban growth centre to the surrounding territory, or the range and speed of the various impacts".²⁵ Cameron, writing in 1970, was also sceptical alleging that "there are uncertainties relating to the impact of a growth area strategy upon areas within the region which have not been chosen for prime investment . . . and hence there are legitimate grounds for assuming that complementary policies for the redevelopment of the economic base of secondary centres are absolutely necessary, if labour and capital under-utilisation is to be prevented".²⁶

On the basis of her research Dr O'Neill has clearly proposed a growth centre strategy which recommends that "Dublin and Belfast be allowed to grow unimpeded . . . and the accelerated development of Cork, Derry and Galway would provide a well spaced ring of cities around the perimeter of the island".²⁷ Moreover, Dr O'Neill states that a policy of concentrating resources on only five centres (three in the Irish Republic) "enhances the prospects of smaller towns, not only those which are located close to the growth centre but also many of those situated outside their immediate spheres of influence, because those too should benefit from the improved level of development and the increasing urbanisation of the economy as a whole".²⁸ So, if this underlying premise is accepted, Dr O'Neill logically concludes that "a growth centre policy, involving the promotion of one or two centres only, need not be inimical to the development prospects of small towns".²⁹ Dr O'Neill recognises that "the spatial disequilibria, which the implementation of these proposals would create elsewhere in the economy, might well be conducive to the fostering of a spirit of dissatisfaction and thus of self-help amongst the remainder and induce them to provide for themselves the conditions necessary for their growth and development".³⁰

Although many might argue that to expect small communities to provide for themselves the conditions necessary for growth is a somewhat draconian policy—

23. B. J. L. Berry, "The Relationship between Regional Economic Development and the Urban System: The Case of Chile", *Tijds. Voor. Econ. Soc. Geog.*, Vol. 60, 1969, pp. 283-307.

24. O'Neill, *op. cit.*, 1973, p. 18.

25. E. M. Hoover, "Some Old and New Issues in Regional Development", in E. A. G. Robinson (ed.), *Backward Areas in Advanced Countries*, Macmillan, London, 1969, p. 352.

26. G. C. Cameron, *Regional Economic Development: The Federal Role*, Johns Hopkins Press, Baltimore and London, 1970, p. 58.

27. O'Neill, *op. cit.*, 1973, pp. 18-19.

28. *Ibid.*, p. 18.

29. *Ibid.*, p. 18.

30. O'Neill, *op. cit.*, 1971, pp. 157-158.

and almost certainly politically unacceptable—Dr O'Neill has quite courageously stated her position. However, the assumption that concentrating upon three centres in the Irish Republic and two in Northern Ireland will enhance the prospects of smaller towns even "many of those outside the immediate sphere of influence" of the growth centres represents, I believe, a somewhat starry-eyed view of the extent to which such centres might revolutionise the structure and growth potential of lagging regions. Richardson has argued that growth poles have functioned as isolated enclaves with only very slight effects on growth, incomes or social change in their domiciliary region or even in their immediate hinterland.³¹ There is a body of published evidence to lend support to this thesis. In a paper published six months before Dr O'Neill's article, Moseley, in analysing the impact of growth centres, in particular Rennes (200,000), upon a rural region of Brittany concluded:

The spatial extent of "upward transitional areas" within which "trickling down" occurs appears effectively confined to the commuting hinterlands of major urban centres. Despite prolonged and heavy net out-migration, more remote rural areas remain largely immune to any effective development impulses.³²

The study area (3,500 sq. miles—approximately two Irish counties) displayed many characteristics similar to those present in the peripheral regions of Ireland: continuing net-outward migration, 33.2 per cent of its employees in agriculture (1968) and decline in the active workforce. The failure of a large and dynamic growth centre, Rennes (200,000), and others St. Malo (50,000), Fougères (27,000) Vitré and Redan (each with 11,000 inhabitants) to stimulate "spread" effects beyond their commuting hinterlands is a finding of some relevance to Irish development policy. In a parallel study in East Anglia,³³ Moseley identified the spatial dimensions of the various channels by which the expansion of a growth centre will affect a region for two expanded towns, Thetford (13,706) and Haverhill (12,430). He demonstrated that while the recruitment of labour has benefited residents of many villages and small towns around the growth centres, the scale of generation of supplementary economic activity in the form of industrial linkages was small and much the greater proportion of the "spin off" was generated outside the region. Within the region, linked activity has occurred largely in the growth centres themselves and any industrial growth stimulated in other towns appears to relate directly to their importance as industrial centres, and inversely to their distance away.³⁴ Hence, it was the large and expanded towns which benefited; the small towns and problem areas were largely unaffected. Yet small towns do not find a place in the growth centre scenario proposed by

31. H. W. Richardson, *Regional Growth Theory*, London, 1973, p. 80.

32. M. J. Moseley, "The Impact of Growth Centres in Rural Regions—I, An Analysis of Spatial Patterns in Brittany", *Regional Studies*, Vol. 7, No. 1, March 1973, p. 74.

33. M. J. Moseley, "The Impact of Growth Centres in Rural Regions—II, An Analysis of Spatial Flows in East Anglia", *Regional Studies*, Vol. 7, No. 1, 1973, pp. 77–94.

34. *Ibid.*, p. 92.

Dr O'Neill. Similarly, "leakage" from the growth centres in the generation of service sector activity has largely been channelled to the larger centres—as central place theory would suggest. Moseley states that as a result of these two studies severe doubts must be based on the notion that "growth impulses . . . trickle down".³⁵ He concluded that the implications for regional planning of the studies would appear to be that, given an objective to develop a number of small towns in a region, then direct investment in these towns would appear to be required and "trickle down" cannot be relied upon.³⁶ He even argued that if growth is required throughout an urban hierarchy, then there is a case for neglecting the larger settlements to which some "trickle up" might be expected.

The distinction between the economic space in which poles are defined and geographic space in which they have a location is a fundamental one. Paelnick has distinguished the case where the pole is *in* a region when it extends its economic influence over that region (A) and is *on* a region when physically located somewhere within it (B).³⁷ Hence, given these two conditions, four combinations are possible for the firm or enterprise:

- A B (influencing and located in the region)
- $\overline{A} \overline{B}$ (not influencing but located in the region)
- $\overline{A} B$ (influencing but not located in the region)
- $\overline{A} \overline{B}$ (neither influencing nor located in the region)

Penouil³⁸ has monitored the effects of the development of the petro-chemical industry (a growth pole in abstract economic space) around a discovery of natural gas at Lacq (a growth focus³⁹) in Southern France. The propulsive effects of the growth via the recruitment of labour, purchase of materials and the provision of goods and services to satisfy local demand have been felt chiefly elsewhere in France. Thus, while the *growth-pole* stimulated growth in linked economic sectors, the *growth centre* initiated little growth in adjacent areas. There is nothing in the original growth pole concept to suggest that exploitation of the gas deposits at Lacq should attract growth at that location.

Is development today as polarised as in the past? Lasuen has advanced some Spanish evidence to show that nowadays the polarisations over topological sectoral

35. M. J. Moseley, *op. cit.*, p. 93.

36. *Ibid.*, p. 93.

37. J. Paelnick, "La Theorie du Developement Regional Polarise", Cahiers de l'Institut de Science Economique Appliquee, serie L, No. 15 (1965), pp. 5-48.

38. M. Penouil, "An Appraisal of Regional Development Policy in the Aquitaine Region", in E. A. G. Robinson (ed.), *Backward Areas in Advanced Countries*, Macmillan, London, 1969, pp. 62-113.

39. Penouil introduced the concept of a "growth focus" to designate an activity or set of activities whose presence involves certain changes in the structure of the surrounding economic environment; and a "growth point" (equivalent to our growth centre) to refer to a complex of activities whose presence determines the structural reorganisation of an entire geographic zone and lays the foundations for an increase in its output.

space seem to distribute themselves over the urban structure so as to permit a stable pattern of growth over the system of cities.⁴⁰ As much regional development policy is based on the premise that "trickle down" effects do exist, it is important that these effects be crystallised into an investigation of the processes by which growth is stimulated in the areas surrounding a growth centre because it is these processes which the planner hopes to trigger off by the creation of a growth centre. There are two dimensions to the question of the spread of growth through a lagging region. On the one hand, there is the problem of the "trickle down" effects from one town to other towns of the region; on the other hand, there is the problem of development spreading from the growth centre to the surrounding rural parts of the region. The processes by which these two types of diffusion may be brought about are likely to be different. This author hopes to initiate some research in the near future into identifying and analysing the extent of "trickle down" effects from growth centres in Ireland.

A set of expanding economic activities (growth pole)—or one large firm—clustered in space will need to fulfil certain conditions simultaneously if it is to function as a growth centre:

- (a) Its level of technical sophistication should not be too complex for its dependent region, for, if it is, neither "forward" nor "backward" linkage effects will arise and labour with the necessary technical expertise will not be available locally. The distribution pattern of intra-regional linkages and their magnitude is a key element in the "spread" process; if the regional economy is inadequately diversified, the linkage effects and their multiplier impacts are registered in other regions and cities (often outside the country).
- (b) a crucial dimension of the development process engendered by a growth centre is the income multiplier effect operated by the direct and indirect employees increasing the volume of demand—particularly in the tertiary sector. The spatial pattern of these income and expenditure flows and the extent of leakages outside the region are important with regard to the distribution of employment in the service sector and the second round multiplier benefits of this induced service employment.

Criticism of the IDA Plans

In the final section of her paper, Dr O'Neill discusses the regional industrial plans of the Industrial Development Authority,⁴¹ 1973–77, and stresses the importance of the implementation phase in the planning process. She emphasises that if the IDA were to implement the investment and employment targets in the largest centres first, then by the time they had completed the whole balanced

40. J. R. Lasuen, "On Growth Poles", *Urban Studies*, Vol. 6, No. 2, June 1969, p. 144.

41. *Regional Industrial Plans, 1973–77, Part I, Industrial Development Authority, Dublin, 1972.*

package the income and employment multiplier effects in the largest centres would have ensured them of a disproportionate share in the growth of income and employment.⁴² Dr O'Neill then comments specifically upon the IDA's implementation:

The evidence to date on the phasing aspect does not suggest that by 1977 (the end of the IDA plan period), there will be any significant increase in the dispersion of economic activities in the Republic of Ireland.⁴³

Dr O'Neill's comments on the likely effects of implementing the targets in the large centres first would appear to reflect a slight misconception of the role of development agencies, such as the IDA, in a mixed economy. The Industrial Development Authority employs a wide range of fiscal measures—capital grants, training grants, tax incentives, loan guarantees—in order to influence the locational choices of private enterprise. The IDA also provides certain infrastructure investments notably advance factories and housing for key workers, which are additional incentives to locate at certain places in the regions. The final choice of whether to locate in Ireland or not (if a foreign firm) and the selection of the specific site are made by the investor. In such a decision-making environment it would be extremely difficult, if not impossible, to concentrate growth in the earlier stages of the planning period exclusively in the largest centres: such an approach implies that the IDA *controls* the location of grant-aided industrial investment; yet the Authority has stated that there are "limitations on the control which the IDA can exercise over the locational decisions of industrialists".⁴⁴ Dr O'Neill's other point that the evidence to date on the phasing aspect does not suggest that by 1977 there will be an increase in the dispersion of economic activities is not substantiated by reference to any data. An evaluation of the success of the IDA plans should wait until the end of the planning period in 1977 and any assessment before that date would be unfair to the IDA who have allowed for an element of flexibility throughout the course of the plans, if, for example, certain regions are lagging behind their projected targets.

Discussion and Conclusion

In writing the book and her subsequent paper, Dr O'Neill has performed a valuable service both in terms of the number of empirical problems tackled in her work and in the contribution it has made to the debate on growth centre strategy in Ireland. While I have tended to be somewhat critical of certain aspects of the methodology and the policy assertions derived in some cases from somewhat tenuous evidence, there remains an admiration both for the quantity of work undertaken and the courage in proposing radical policy solutions. The research

42. O'Neill, *op. cit.*, 1973, p. 20.

43. *Ibid.*, p. 20.

44. *Regional Industrial Plans, 1973-77, Part I, op. cit.*, p. 61.

has also aided me in clarifying my thoughts on some important development problems and these are now summarised:

1. To crystallise the regional investment strategy issue into a dichotomy between "concentrated" versus "dispersed" investment, as Dr O'Neill has done, is to over-simplify the problem. I have proposed an alternative and more flexible "concentration-dispersion continuum" concept within which an infinite mix of concentration-dispersal strategy combinations exist.

2. There is no general prescription available for the social and economic ills of all regions in terms of an appropriate degree of spatially concentrated investment. No unique answer exists to the question as to what level "dispersion" becomes socially preferable and economically viable relative to "concentration". This depends upon the strength of locational preferences, the social content of regional policy objectives,⁴⁵ the size and natural resource distribution of regions and their relation in space to the rest of the economy. Although there is little consensus in the literature, workers generally mention that the threshold for *social* viability may be different from that for *economic* viability. The concentration-dispersion continuum concept implies a large number of policy alternatives and therefore the task of defining a solution is very complex.

3. This paper has attempted to show that certain conclusions drawn by Dr O'Neill from her research project are based upon somewhat flimsy evidence; in addition, it would have been more convincing if appropriate statistical tests had been applied to the numerous cross-classification tables in the study. These strictures apply to the locational analysis and the investigation of clustering and failure rates. The latter analysis was limited by the use of an "apparent failure rate" measure and the conclusion that clustering and the incidence of failures are causally related stand uneasily together in the absence of any attempt to identify and quantify the significance of other variables such as firm size and external market factors which are likely to influence the probability of success or failure. In short, the analysis requires a clear statement of hypotheses and rigorous testing within a multivariate framework.

4. The conclusions that external economies become significant in towns containing 6 or more establishments in the same industry and that agglomeration economies only become significant in centres of 100,000 and over in the Republic⁴⁶ are very categorical statements to draw from an analysis of clustering, failures and increases which at no stage identified *direct* evidence of such economies.

5. In her analysis of urban growth, Dr O'Neill did not model the process by considering the independent, joint and partial effects of the six independent variables hypothesised as relevant; yet size was regarded as the dominant explanatory variable.

6. Dr O'Neill's growth centre recommendations—concentrating upon Dublin,

45. For a review of this problem in an Irish context see, P. N. O'Farrell, "Regional Development in Ireland: Problems of Goal Formulation and Objective Specification", *The Economic and Social Review*, Vol. 2, No. 1, 1970, pp. 71-92.

46. O'Neill *op. cit.*, 1971, p. 154.

Belfast, Derry, Cork and Galway—are founded upon the assumption that this strategy will enhance the development prospects even of towns outside the immediate sphere of influence of these centres. There is empirical evidence from Brittany (in many respects comparable to provincial Ireland), East Anglia, and South-West France to show that such an assumption is very heroic. This author has argued elsewhere that while a regional growth pole strategy may initiate convergence in regional *per capita* income relatives, it is possible that intra-regional *per capita* inequalities may increase through the creation of spatial disequilibrium.⁴⁷ What degree of heterogeneity is acceptable at intra-planning region level? Some might argue that inter-regional convergence is a meaningless goal, if at intra-regional level disparities remain or increase as a consequence of the inter-regional development programme. Policies may then be formulated with respect to more than one level of spatial aggregation and it has been suggested that a hierarchy of region sets may be desirable.⁴⁸

7. This author has criticised the Buchanan⁴⁹ growth centre strategy, not for its proposed hierarchical system of growth centres, but for its failure to undertake any analysis into the selection of centres on the lowest tier of the hierarchy.⁵⁰ Having recommended that Cork and Limerick-Shannon be developed as national growth centres and Waterford, Galway, Sligo, Athlone, Dundalk and Drogheda as regional centres, Buchanan proposed local centres at Tralee, Castlebar, Cavan and Letterkenny. No consideration was given to the possibility of distributing growth over a number of centres in a region.

8. Some recent evidence, as yet unpublished, has yielded some interesting findings which may prove valuable in growth centre selection at the local level.⁵¹ In an analysis of the changing functional structure of 49 towns in an eleven county region of the Midlands and border areas ranging in size from Kilkenny 13,306 to Drumshambo 576, between 1951-61 and 1961-71, the author has shown, *inter alia*, that the relative changes in both the composition and size of the retail structure of urban centres was remarkably uniform, even when stratified by town size and order of function. The principal change element has been the diffusion through the system of the new higher-order functions, which, because they have concentrated predominantly in larger towns (> 5,000 population), have served to diversify their tertiary economic base. This study has demonstrated that, even in the absence of a development strategy for provincial centres, they are capable of steady growth in their supply and range of tertiary services.⁵²

47. P. N. O'Farrell, "The Regional Problem in Ireland: Some Reflections upon Development Strategy", *The Economic and Social Review*, Vol. 2, No. 4, 1971, p. 475.

48. P. N. O'Farrell, "Regional Development in Ireland: Problems of Goal Formulation and Objective Specification", *The Economic and Social Review*, Vol. 2, No. 1, 1970, p. 90.

49. *Regional Studies in Ireland*, Colin Buchanan & Partners in Association with Economic Consultants Ltd., Dublin, 1968.

50. P. N. O'Farrell, *op. cit.*, 1971, pp. 474-475.

51. P. N. O'Farrell, "An Analysis of Functional Change in the Irish Urban System", forthcoming in R. A. Butlin and P. N. O'Farrell (eds.), *Irish Urban Studies*, Methuen.

52. *Ibid.* (forthcoming).

9. Any criticism of phasing in the implementation of the regional industrial plans of the Industrial Development Authority is premature before the termination of the planning period in 1977 for a degree of flexibility in the approach to job creation targets is inherent in these plans and is an essential element in regional employment planning in a mixed economy.

10. A shift and share analysis of regional employment change has indicated that, even allowing for the assumptions of the methodology, the proportional effect has been the predominant element in regional growth providing support for the hypothesis that Ireland's regional problems are largely structural rather than locational.⁵³ This underlines the long term nature of regional development strategy in Ireland and the need to transform the structure of regional economies. A form of growth centre strategy will be a necessary but not sufficient element in such a policy.

11. The identification of a satisfactory solution concerning the appropriate degree of spatially concentrated investment in various regions will remain a somewhat intuitive exercise until answers are found to a number of questions, some of the more important of which are:

1. What is the magnitude and spatial distribution of "trickle-down" effects from growth centres in Ireland?⁵⁴
2. To what degree is the IDA capable of influencing industrial location decisions?
3. What is the minimum size of growth centre in Ireland which, after a period of stimulation, is capable of self-sustaining growth?
4. How important is the social or equity goal relevant to the economic efficiency criterion in Irish regional policy?
5. What are the likely costs and benefits of distributing industrial investment over a number of satellite towns within a 30-mile radius of a large centre (such as Cork or Limerick)?

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53. P. N. O'Farrell, "A Shift and Share Analysis of Regional Employment Change in Ireland", *The Economic and Social Review*, Vol. 4, No. 1, 1972, pp. 80-81.

54. The author is currently formulating a research project in which one of the aims will be to answer this question.

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