Regional Growth and Local Development Theories: Conceptual Evolution over Fifty Years of Regional Science

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Summary
After fifty years of its existence, regional economics embraces a large number of approaches, theories and models for the interpretation of location choices and regional development trajectories. Assuming an historical perspective, this paper has the aim to underline the way in which the concept of growth and space has developed in theories of regional economics, leading to a higher interpretative capacity of theories and models. The work covers both regional growth theories and local development theories. Advances in theoretical approaches are highlighted. Aspects that run counter to general beliefs emerge by reading the original contributions of well-known theoreticians, and are presented. Future challenges emerge from a critical approach to the milestones achieved so far.

Résumé
Théories sur la croissance régionale et le développement local : évolution des concepts en 50 ans de science régionale. Depuis plus de cinquante ans, l’économie régionale recouvre (englobe) de nombreuses approches, théories et modèles pour l’interprétation de l’aménagement du territoire et des trajectoires du développement régional. En se plaçant dans le contexte historique, cet article a pour but de souligner la manière dont les concepts de croissance et d’espace se sont développés afin de conduire à une meilleure interprétation des théories et modèles de l’économie régionale. Ce travail couvre à la fois les domaines de la croissance régionale et du développement local. Les progrès dans les approches théoriques sont mis en évidence. Les aspects, contraires aux idées reçues, sont présentés à travers l’étude de contributions originales.

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1. Introduction

Economic activity arises, grows and develops in space. Firms, and economic actors in general, choose their locations in the same way as they choose their production factors and their technology. Productive resources are distributed unevenly in space: they are frequently concentrated in specific places (regions or cities) while they are entirely or partly non-existent in others. Quantitative and qualitative imbalances in the geographical distribution of resources and economic activities generate different factor remunerations, different levels of wealth and well-being, and different degrees of control over local development. The problem of factor allocation – which economists have conventionally treated as being the efficient allocation of the factors among various types of production – is more complex than this, in fact; and it is so because the spatial dimension is of crucial importance.

Regional economics is the branch of economics which incorporates the dimension ‘space’ into analysis of the workings of the market. It does so by including space in logical schemes, laws and models which regulate and interpret the formation of prices, demand, productive capacity, levels of output and development, growth rates, and the distribution of income in conditions of unequal regional endowments of resources. Furthermore, regional economics moves from “space” to “territory” as the main focus of analysis when local growth models include space as an economic resource and as an independent production factor, a generator of static and dynamic advantages for the firms situated within it – or, in other words, an element of fundamental importance in determining the competitiveness of a local production system.

After fifty years of its existence, regional economics embraces a large number of approaches, theories and models for the interpretation of location choices and regional development trajectories. An increasing interpretative power characterises the different models and theories once an historical perspective is assumed. The increasing interpretative capacity of the theoretical approaches can be attributed – among other factors – to the changes in the way space is inserted into the theoretical models. The aim of this paper is to revisit – in an historical perspectives – the different theoretical contributions, highlighting the evolution in the conceptualisation of space, the different interpretations of growth so far provided by the different approaches, and the distinction between growth and development theories.

2. Regional growth and uniform-abstract space

The first large group of theories pertaining to regional economics seek to explain why growth and economic development come about at local level. In this case regional economics analyses the capacity of a subnational system – a region, a province, a city, an
area with specific economic features – to develop economic activities, to attract them, and to generate the conditions for long-lasting development. Here by ‘regional economic development’ is meant the ability of a local economic system to find, and constantly to recreate, a specific and appropriate role in the international division of labour through the efficient and creative use of the resources that it possesses. By emphasising the more economic elements of this definition, regional development can be defined as the ability of a region to produce, with a (comparative or absolute) advantage, the goods and services demanded by the national and international economic system to which it belongs.

The first theories of regional growth were developed midway through the last century. They used a conception of space – as uniform-abstract, no longer physical and continuous but abstract and discrete – entirely different from the physical-metric space of location theory. Geographic space was divided into ‘regions’, areas of limited physical-geographical size (largely matching administrative units) considered to be internally uniform and therefore synthesisable into a vector of aggregate characteristics of a social-economic-demographic nature: ‘small countries’ in the terminology of international trade but, unlike nations, characterized by marked external openness to the movement of production factors.1

The advantage of this conception of space is that it enables the use of macroeconomic models to interpret local growth phenomena. But although these models fit the above-mentioned features, they nevertheless, and it seems inexorably, require the analyst to exclude any mechanism of interregional agglomeration, to discard location theory, to ignore the advantages of local proximity, and instead to assume unequal endowments of resources and production factors, unequal demand conditions, and interregional disparities in productive structures as the determinants of local development. Space is thus no more than the physical container of development and performs a purely passive role in economic growth, while some macroeconomic theories reduce regional development to the simple regional allocation of aggregate national development.

Theories which take this view of space are growth theories developed to explain the trend of a synthetic development indicator – income for instance. Although this approach inevitably entails the loss of qualitative information, its undeniable advantage is that it makes modelling of the development path possible. These theories differ sharply in their conceptions of growth: there are those which conceive growth as a short-term increase in output and employment, and others which instead identify the growth path in a long-period increase in output associated with higher levels of individual well-being (high wages and per capita incomes, more favourable prices on the interregional market).

This conception of space has been adopted by the neoclassical regional growth theory, the export-base theory, and the interregional trade theory which developed from various branches of mainstream economics in the 1950s and 1960s: macroeconomics, neoclassical economics, development economics, and economics of international trade.

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1 Ohlin defines a ‘region’ as a territory characterized by perfect mobility of production factors. See Ohlin, 1933.
2 We refer here to the Keynesian regional growth theories of the fifties (Hoyt, 1954; North, 1955); to the neoclassical interregional growth models (Borts, 1960; Borts and Stein, 1964 and 1968); to the neoclassical interregional trade theory (Heckscher, 1919; Ohlin, 1933).
3. Local development and diversified-relational space

3.1. The definition of a diversified-relational space

Whilst the theories developed within a uniform-abstract space use the term ‘space’ to denote territorial areas assumed to be internally homogeneous and uniform, other theories conceive ‘space’ as diversified. This change of perspective allows economic activities and production factors, demand and sectoral structure, to be treated as spatially dis-homogeneous within a region, so that territorial relations are cast in new light.

This new conception of space enables identification of highly distinct polarities in a territory. Activities, resources, economic and market relations structure themselves around these polarities to generate a cumulative process of territorial agglomeration and a virtuous circle of development. This conception of space restores one of the inspiring principles of location theories – that of agglomeration economies as the source of local development – to theories of regional development. It is evident that thus severed is any connection with geographical space, abstract or administrative. A more complex conception of space takes over, one based on the economic and social relations that arise in a territorial area. Whence derives the expression diversified-relational space.

When space is conceived as ‘diversified-relational’, theories radically change in their nature. A macroeconomic and macro-territorial approach gives way to a micro-territorial and micro-behavioural one. Abandoned is the notion of a region as a portion of a national system acting and reacting economically as a single, internally homogeneous system. Its place is taken by individual economic actors (large or small, public or private, multinational or local) whose behaviour is studied in terms of location choices, productive and innovative capacity, competitiveness, and relations with the local system and the rest of the world.

The qualitative nature of theories – only in recent years superseded thanks to the more advanced and sophisticated modelling techniques examined in the next part of the book – led in the mid-1970s to the distinction in the literature between “‘pure and exact’ regional theory without agglomeration economies, on the one hand, and ‘applied regional theory which is inexact but takes agglomeration factors into account, on the other hand” drawn by Edwin Von Böventer.

The theories within a diversified-relational space approach abandon the short-run view of development as a simple increase in income and employment, and also that of individual well-being, and assume a longer-term perspective. They identify all the tangible and intangible elements in a local area which determine its long-term competitiveness and enable it to maintain that competitiveness over time.

The theories analysed with this conception of space seek to identify the factors which render the costs and prices of production processes lower than they are elsewhere. These

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3 The reference is, for example, to formalization of equilibrium in non-linearity conditions and equilibrium under monopolistic competition. The latter was proposed towards the end of the 1970s by Dixit and Stiglitz, and it provides the basis for some of the models.

4 See von Böventer, 1975, p. 3. When von Böventer refers to “‘pure and exact’ regional theory without agglomeration economies”, he means the theories presented in Sec. 2 of this paper; when he refers to “‘applied regional theory’ which is inexact but takes agglomeration factors into account”, he means theories expounded in more qualitative form, which will be the ones developed in this part of the book.
factors are (i) elements *exogenous* to the local context, which originate externally to the area and are transferred into it either fortuitously or deliberately, and (ii) *endogenous* elements which arise and develop within the area and enable it to initiate a process of self-propelling development.

Exogenous elements comprise the following: the fortuitous local presence of a dominant firm or a multinational company; the diffusion in the area of an innovation produced elsewhere; or the implementation of new infrastructures decided by external authorities. Although these elements have nothing to do with local features and productive capacities, once they are present in an area they may catalyse new economic activities and development. Endogenous elements are entrepreneurial ability and local resources for production (labour and capital); and in particular the decision-making capacity of local economic and social actors able to control the development process, support it during phases of transformation and innovation, and enrich it with external knowledge and information. All these are factors strengthened and enhanced by a concentrated territorial organization which generates local processes of knowledge-acquisition and learning; networks of economic and social relations which support more efficient and less costly transactions; and advantages of economic and physical proximity among economic actors.

The assumption of diversified space entails definitive abandonment of the notion that regional development consists solely in the allocation of resources among regions. Instead, regional development must be conceived as stemming from local productive capacity, competitiveness, and innovativeness. The neoclassical model of interregional growth (Borts and Stein’s one-sector model) presumed that the national growth rate is exogenously determined, and that the problem for regional development theory is explaining how the national growth rate is distributed among regions. According to this logic of *competitive development*, the growth of one region can only be to the detriment of the growth of another region, in a zero sum game. The theories examined here adopt a notion of *generative development* whereby the national growth rate is the sum of the growth rates achieved by individual regions. National economic development may well increase because of growth achieved by a particular territorial area, and this growth may also come about – in the presence of increasing returns (as for the theories discussed in the next chapter) – with the same resources.

Interpretation of space as *diversified-relational* has restored to theories of regional development one of the key concepts of location theory - namely agglomeration economies - and made them the core of local development processes. According to this conception, which received its fullest development in the 1970s and 1980s, space generates economic advantages through large-scale mechanisms of synergy and cumulative feedback operating at local level.

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5 Many theories embrace the idea of an exogenous factor at the basis of regional development. For a dominant firm, see Perroux, 1955; for the presence of infrastructure, see among others Aschauer, 1989, Biehl 1986; for the spatial diffusion of innovation, see Hägerstrand, 1957.

6 This is the case of the weak region achieving greater growth than the rich region in Borts and Stein’s one-sector model. To be stressed is that the view of development adopted by other neoclassical models, like the Heckscher-Ohlin model, is one of generative development, not of competitive development. On the distinction between competitive and generative development see Richardson, 1973 and 1978.
A number of seminal theories of the early 1960s for the first time conceived space as diversified-relational. Development was defined, in the words of Perroux, as “a selective, cumulative process which does not appear everywhere at the same time but becomes manifest at certain points in space with variable intensity”. Perroux’s definition affirmed the existence of ‘poles’ at which development concentrates because of synergic and cumulative forces generated by stable and enduring local input/output relations facilitated by physical proximity. Space is thus conceived as diversified and ‘relational’.

But it was during the 1970s that studies on ‘bottom-up’ processes of development, on districts and local milieux, gave the notion of diversified-relational space its most thorough formulation. The conceptual leap consisted in interpreting space as ‘territory’, or in economic terms, as a system of localized technological externalities: a set of tangible and intangible factors which, because of proximity and reduced transaction costs, act upon the productivity and innovativeness of firms. Moreover, the territory is conceived as a system of local governance which unites a community, a set of private actors, and a set of local institutions. Finally, the territory is a system of economic and social relations constituting the relational or social capital of a particular geographical space.

Any connection with abstract or administrative space is thus obviously discounted. Adopted instead is a more intangible account of space which emphasises – by focusing on the economic and social relations among actors in a territorial area – more complex phenomena which arise in local economic systems.

Precisely because the diversified-relational space theories of the 1970s and 1980s viewed development as depending decisively on territorial externalities in the form of location and spatial proximity economies, they stressed (for the first time in the history of economic thought) the role of endogenous conditions and factors in local development. These theories adopted a micro-territorial and micro-behavioural approach; they can be called theories of development because their purpose was not to explain the aggregate growth rate of income and employment – as in the case of the above-mentioned uniform-abstract space theories – but instead to identify all the tangible and intangible elements of the growth process.

In the theories which conceived space as diversified-relational, location theory was inextricably and interestingly wedded with local development theory. By pointing out that concentration generates locational advantages, which in their turn create development and attract new firms whose presence further boosts the advantages of agglomeration, these theories elegantly revealed the genuinely ‘spatial’ nature of the development mechanism.

In this sense, diversified-relational space theories form the core of regional economics, the heart of a discipline where maximum cross-fertilization between location theory and development theory permits analysis of regional development as generative development: the national growth rate is the sum of the growth rates achieved by individual regions – as opposed to the competitive development envisaged by certain uniform-abstract space theories, where regional development is nothing but the simple regional allocation of aggregate national development.

The intriguing objective of these theories is to explain the competitiveness of territorial systems, the local determinants of development, and the capacity of an area to achieve and main-

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7 See Perroux, 1955, p. 308. For a critical re-examination of Perroux’s theory, see Parr, 1999a and 1999b.
tain a role in the international division of labour. They thus seek to identify the local conditions that enable an economic system to achieve and maintain high rates of development.

3.2. The active role of space on local development: agglomeration economies

Up to the seventies, space was inserted into theories and models with two distinct roles: (i) the role of a physical barrier – or of a spatial friction – against economic activity, taking the form of the physical distance between input and output markets conceptualized by models as a generic transportation cost; (ii) that of a ‘physical container’ of development, a simple geographical area often associated with the administrative region by aggregate macroeconomic theories – but also with smaller local areas. In both cases, space plays no part in determining the development path of a local economy. The same economic logic explains the development of regions, metropolitan areas, or more generally, densely-populated industrial areas. The export-base theory can be applied just as well to a region as to a country, with no change in the logic of its underlying reasoning. The Harrod-Domar model, too, and likewise the neoclassical growth models, fit both regional cases and national ones, which testifies to its aspatiality.

A radical change in the conceptualization of space taken place at the middle of the seventies gives it a very different role in development. No longer a simple geographical container, space is conceived as an economic resource, as an independent production factor. It is the generator of static and dynamic advantages for firms, and a key determinant of a local production system’s competitiveness. According to the theories based on this concept of space, space is a source of increasing returns, and of positive externalities taking the form of agglomeration and localization economies. Higher growth rates are achieved by local production systems where increasing returns act upon local productive efficiency to reduce production and transaction costs, enhance the efficiency of the production factors, and increase innovative capacity. Regional development consequently depends upon the efficiency of a concentrated territorial organization of production, not on the availability of economic resources or their more efficient spatial allocation.

This new conception of space has several implications. Space can only be diversified space in which it is easy to distinguish (even internally to a region) the uneven distribution of activities. Development comes about selectively in areas where the concentrated organization of production exerts its positive effects on the parameters of static and dynamic efficiency. At the same time, space is relational, in that the economic and social relations which arise in an area perform crucial functions in various respects. They ensure the smoother operation of market mechanisms, more efficient and less costly production processes, the accumulation of knowledge in the local market, and a more rapid pace of innovation – all of which are factors that foster local development.

Secondly, on adopting this new notion of space it is no longer possible to treat development as exogenous in origin. Development is now by definition endogenous. It is fundamentally dependent on a concentrated organization of the territory, embedded in which is a socio-economic and cultural system whose components determine the success of the local economy: entrepreneurial ability, local production factors (labour and capital), relational skills of local actors generating cumulative knowledge-acquisition – and, moreover, a decision-making capacity which enables local economic and social actors to guide the development process,
support it when undergoing change and innovation, and enrich it with the external information and knowledge required to harness it to the general process of growth, and to the social, technological and cultural transformation of the world economy. The theories based on this concept of space accordingly endeavour to identify the genetic local conditions which determine the competitiveness of a local production system and ensure its persistence over time. They seek out the local factors which enable areas, and the firms located in them, to produce goods demanded internationally with an (absolute) competitive advantage, to maintain that advantage over time by innovating, and to attract new resources from outside.

Theories of local endogenous development divide into two broad strands. On the one hand neo-Marshallian inquiry, which views local growth as resulting from externalities acting upon the static efficiency of firms, has been expanding and consolidating for years. On the other, the neo-Schumpeterian literature, which has arisen more recently, interprets development as resulting from the impact of local externalities on the innovative capacity of firms.

The logical leap of interpreting space as an active factor in development forcefully imposed itself upon the history of economic thought in the early 1970s, when unprecedented patterns of local development in Italy surprised theoreticians by resisting explanation based on conventional models. During the early 1970s, the sudden and rapid growth achieved by certain Italian regions – those of the North-East and the Centre in particular (hence the name ‘NEC areas’) – when the country’s industrialized areas were showing evident signs of economic crisis, could be explained neither by a neoclassical paradigm of interregional mobility of production factors (which greatly decreased in those years), nor by a paradigm centred on large firm efficiency (à la Perroux), nor by a Keynesian paradigm of development driven by external demand.

Numerous neo-Marshallian theorists around the world pursued very similar lines of theoretical inquiry during the 1970s and 1980s (still today there is no lack of theory on the matter): Walter Stöhr developed the concept of ‘bottom-up development’, Enrico Ciciotti and Reinhart Wettmann that of ‘indigenous potential’, Bengt Johannison of ‘local context’, Bernardo Secchi and Gioacchino Garofoli of ‘system areas’, and Claude Courlet-Bernard Pecqueur and Bernard Ganne of ‘localized industrial system’. But the first systematic theory of endogenous development was produced in Italy by Giacomo Becattini with his seminal study on the ‘Marshallian industrial district’ published in the mid-1970s. The theory of the industrial district – which originated in the work of the great neoclassical economist Alfred Marshall – was the first to conceptualize external economies (of agglomeration) as sources of territorial competitiveness. It did so with a model in which the economic aspects of development are reinforced by a socio-cultural system which fuels increasing returns and self-reinforcing mechanisms of development.

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8 The ‘industrial triangle’ comprising Lombardy, Liguria and Piedmont, i.e. the regions of north-western Italy.
These neo-Marshallian studies, in which space generates and develops mechanisms of productive efficiency, bred theories which identified the territory as the generator of dynamic external economies - that is, all those advantages which favour not only the productive efficiency of firms but also their innovative efficiency. In the neo-Schumpeterian strand of analysis on local development, space reduces the uncertainty associated with every innovative process.12

Finally, when space is viewed as generating advantages for firms, and therefore as an active component in the development process, scholars of local development shift their attention to the role of the urban space (the city) as the place where agglomeration economies are generated – be these localization or urbanization economies – and therefore as the place where the economic development of the entire region is rooted and structured. Hence, as the models of Christaller and Lösch show, the existence of an advanced and efficient city, and of an urban system organized into a network of vertical and horizontal relationships reflecting an efficient division of labour, may determine the success and development of a region (Christaller, 1933; Lösch, 1954).

4. Regional growth and diversified-stylized space

Until the end of the 1980s the different conceptions of space – uniform-abstract and diversified-relational space - developed within regional economics without the slightest convergence between them.

The 1990s saw the development of more advanced mathematical tools for analysis of the qualitative behaviour of dynamic non-linear systems (bifurcation, catastrophe, and chaos theory) together with the advent of formalized economic models which abandoned the hypotheses of constant returns and perfect competition. These advances made it possible to incorporate agglomeration economies – stylized in the form of increasing returns – into elegant models of a strictly macroeconomic nature.13

The reference is in particular to the models of ‘new economic geography’ and endogenous growth in which space becomes diversified-stylized.14 These theories anchored their logic on the assumption that productive activities concentrate around particular ‘poles’ of development, so that the level and growth rate of income is diversified even within the same region. Moreover, these models stylized areas as points or abstract dichotomies in which neither physical-geographical features (e.g. morphology, physical size) nor territorial ones (e.g. the local-level system of economic and social relations) play a role.

These theories achieved considerable success and acclaim in the academic community because they showed that territorial phenomena can be analysed using the traditional tools

12 Neo-schumpeterian theories of local development are, among others, the milieu innovateur theory (Aydalot, 1986; Aydalot and Keeble, 1988; Camagni, 1991 and 1999; Ratti et al., 1997; RERU 1991); the learning region theory (Lundvall, 1992; Ludvall and Johnson, 1994; Maskell and Malmberg, 1999; Cooke, 2002). For a systematic review of neo-schumpeterian local development theories, see Mouleart and Sekia, 2003.


of economic theory (optimizing choices by individual firms and people), and that the various conceptions of space can – apparently – be synthesised. These models in fact conceived growth as an endogenous growth generated by the advantages of the spatial concentration of activities, and by the agglomeration economies typical of diversified space theories. They counterposed dynamic growth mechanisms with increasing returns and transportation costs, thus reprising the economic-locational processes analysed by location theory.

Though diversified (inasmuch as there exist territorial poles of concentrated development), space in these models is stylized into points devoid of any territorial dimension. Thus inevitably abandoned is the concept of space as territory so favoured by regional economists. This stylized space does not comprise localized technological externalities, nor the set of tangible and intangible factors which, thanks to proximity and reduced transaction costs, act upon the productivity and innovative capacity of firms; nor the system of economic and social relations constituting the relational or social capital of a particular geographical area. Yet these are all elements which differentiate among territorial entities on the basis of specifically localized features. As a consequence, these approaches are deprived of the most interesting, and in a certain sense intriguing, interpretation of space as an additional resource for development and as a free-standing production factor. Predominant instead is a straightforward, somewhat trivial, view of space as simply the physical/geographical container of development.

Conclusions: Future Challenges

The new conception of space explained in the previous section has partly resolved the problem from which regional development theories have always suffered: their inability to construct formal models which combine specifically territorial features, like externalities and agglomeration economies, with macroeconomic laws and processes of growth. However, it should be pointed out that the assumption of a stylized rather than relational space deprives the polarities envisaged by such models of a territorial dimension able to give space – through synergy, cooperation, relationality and collective learning – an active role in the growth process. The introduction of agglomeration advantages in stylized form, through increasing returns, cancels out the territorial dimension. And in so doing it divests these theories of the aspect of greatest importance to regional economists: namely space as territory defined as a system of localized technological externalities, or as a set of material and non-material factors which by virtue of proximity and reduced transaction costs act upon firms’ productivity and innovativeness. Finding a way to incorporate the territorial dimension into theories already able to merge physical-metric, uniform-abstract and diversified space is the challenge that now faces regional economists (Capello, 2007).

To conclude, a certain convergence has come about between the large groups of theories discussed. Diversified-relational space theories, in particular those of (endogenous) local development, merge together ideas put forward by the theories of development and of location. Diversified-stylized space theories (in particular new economic geography) amalgamate growth and location theories. Nevertheless, still required is the further step forward which would produce an approach combining the economic laws and mechanisms which explain growth, on the one hand, with the territorial features that spring from the intrinsic relationality present at local level on the other. Such an approach would repre-
sent the maximum of cross-fertilization among location theory, development theory, and growth macroeconomics; a synthesis which would bring out the territorial micro-foundations of macroeconomic growth models. An undertaking of this kind, though, would require analysis of variables besides the cost of transport, which annuls the territory’s role in the development process. Also necessary would be variables that give the territory prime place – even in purely economic models – among local growth mechanisms. This is the challenge that awaits regional economists in the years to come.

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