

# What Does the Learning Region Mean for Economic Geography?

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## 1. Introduction

Concepts focused on learning have been increasingly adopted as a solution to innovation and organisation deficits (Oinas & Virkkala, 1997). Learning companies (Knoblauch, 1996), learning organisations (Hoch, 1997), the learning economy (Lundvall, 1996) and recently also learning regions (Morgan, 1997) have been propagated as future concepts for successful economic development. Economic geographers such as Oinas & Virkkala (1997) and Legendijk (1997) even speak about the 1990s as being the era of the learning economy and the learning region. Advocates of the theory-led future model of the learning region assume that, with the help of particular policy measures, one can increase companies' dependence on regional partners for technological learning and thus on the location itself. Although the catchword learning has just recently been launched, first critics ask themselves

what is new about it (Hudson, 1996; Hoch, 1997).

This paper aims at analysing what the learning region concept means for economic geography. In order to do so, it will give answers to two questions. First, what distinguishes the learning region concept from other modern theoretical concepts in economic geography? (what is new about the learning region?) (Section 3). Secondly, what are the deficits and research gaps of the concept and its potentials for economic geography? (Section 4). Before dealing with these questions, first a literature review on what has been recently written on the learning region is needed, which will be presented in Section 2.

## 2. The learning region: a concept launched from three perspectives

Reading the recent literature on the

learning region, three angles can be distinguished from which this concept has been launched (Table 1). First, some authors consider the learning region as spatial outcome of grand societal changes at the macro level (theoretical-structural perspective) (Section 2.1). Secondly, others have written about the relationship between entrepreneurial learning, innovation and spatial proximity at the micro level (theoretical, actor-related perspective) (Section 2.2). Thirdly, the concept has been launched as a theory-led regional development concept from an action-related perspective at the meso level (Section 2.3).

1) The theoretical-structural perspective

Although the learning region is

mostly discussed at the micro and meso level, some scholars consider the learning region as a spatial outcome of grand societal changes at the macro level.

Florida (1995) considers learning regions as the spatial outcome of grand societal changes from mass production to knowledge-based capitalism (Table 1). According to him (1995:527) "regions are becoming focal points for knowledge creation and learning in the new age of global, knowledge-intensive capitalism, as they in effect become learning regions. These learning regions function as collectors and repositories of knowledge and ideas, and provide the underlying environment or infrastructure which facilitates the flow of knowledge, ideas and learning". Globalisation is not a threat for regions, instead "learning

Table 1: The debate about the learning region

	micro level	meso level		macro level
learning region as spatial outcome of grand societal changes (theoretical-structural perspective) (Section 2.1)				
learning region as spatial concentration of entrepreneurial learning for innovations (theoretical, actor-related perspective) (Section 2.2)				
learning region as regional development concept (action-related perspective) (Section 2.3)				

regions are increasingly important sources of innovation and economic growth, and are vehicles for globalization" (Florida, 1995:528).

Similarly, people are speaking about the new 'learning economy' (Lundvall, 1996) as a new form of the capitalist economy in which knowledge is the most fundamental resource and learning the most important process (Asheim, 1996:386). This process can be affected by policy-making and, deliberately, institutionalised in more or less efficient ways ("The extent to which this learning economy coincides with geographically circumscribed space ... will depend, in part, on the policies that help pioneer it" Miller, 1995:25).

Florida (1995:532,534) clearly sees similarities between the characteristics of the new generation of regions and the new generation of companies in knowledge-based capitalism as he states: "in effect, regions are increasingly defined by the same criteria and elements which comprise a knowledge-intensive firm - continuous improvement, new ideas, knowledge creation and organizational learning" ... "Learning regions must develop governance structures which reflect and mimic those of knowledge-intensive firms, that is co-dependent relations, network organization, decentralized decision making, flexibility, and a focus on

customer needs and requirements".

Asheim & Isaksen (1997) consider learning regions as the outcome of the change from the linear innovation model to a bottom-up interactive innovation model. The linear innovation model was part of the Fordist industrial and societal organisation, in which formal knowledge, research-based and codified knowledge, large enterprises, national systems of innovation have dominated. The bottom-up interactive innovation model is adapted towards the post-Fordist learning economy. This model is dominated by the techno-economic paradigm of information and communication technologies (information, computers, telecommunication). Untraded interdependencies, which include the regionally embedded labour market, tacit knowledge, knowledge system, norms, social conventions and values and institutions<sup>1</sup>), are seen as important factors for the process of learning. If they are geographically concentrated the region is a key, necessary element in the 'supply architecture' for learning and innovation (Storper, 1997; Morgan, 1997; Maskell & Malmberg, 1999). This school of authors does not see innovation as a linear process, but as an interactive process in which interactive learning and feedback effects are constantly taking place (Malecki, 1997; Asheim, 1996).

## 2) The theoretical, actor-related perspective

From a theoretical, actor-related perspective the discussion about learning regions focuses on entrepreneurial learning for innovations (Hausmann, 1996; Oinas & Virkkala, 1997; Lawson & Lorenz, 1999; Lorenzen, 1997). For their competitiveness firms depend on innovation processes. In order to come to such innovation processes firms have to exchange information and reproduce

this information into knowledge, in other words they have to learn. Innovation processes of firms can hence be regarded as learning processes of the firm's employees. These actors permanently collect information and compress it into innovations. The information and knowledge that is needed for innovations can be collected both inside and outside the firm. Due to an increasing cutthroat competition and shorter product life cycles, firms, particularly small and medium-sized

Table 1: From mass production to learning regions

	mass production region	learning region
basis of competitiveness	comparative advantage based on: <ul style="list-style-type: none"> <li>· natural resources</li> <li>· physical labour</li> </ul>	sustainable advantage based on: <ul style="list-style-type: none"> <li>· knowledge creation</li> <li>· continuous improvement</li> </ul>
production system	mass production <ul style="list-style-type: none"> <li>· physical labour as source of value</li> <li>· separation of innovation and production</li> </ul>	knowledge-based production <ul style="list-style-type: none"> <li>· continuous creation</li> <li>· knowledge as source of value</li> <li>· synthesis of innovation and production</li> </ul>
manufacturing infrastructure	arm's length supplier relations	firm networks and supplier systems as sources of innovation
human infrastructure	<ul style="list-style-type: none"> <li>· low-skill low-cost labour</li> <li>· Taylorist work force</li> <li>· Taylorist education and training</li> </ul>	<ul style="list-style-type: none"> <li>· knowledge workers</li> <li>· continuous improvement of human resources</li> <li>· continuous education and training</li> </ul>
physical and communication infrastructure	domestically oriented physical infrastructure	<ul style="list-style-type: none"> <li>· globally oriented physical and communication infrastructure</li> <li>· electronic data exchange</li> </ul>
industrial governance system	<ul style="list-style-type: none"> <li>· adversarial relationships</li> <li>· command and control of regulatory framework</li> </ul>	<ul style="list-style-type: none"> <li>· mutually dependent relationships</li> <li>· network organisation</li> <li>· flexible regulatory framework</li> </ul>

enterprises (SMEs), are increasingly dependent on information and knowledge sources that are only available outside the firm. Firm innovation processes therefore increasingly take place in interaction with other organisations, be it with other business partners, such as customers, suppliers or competitors or with public research establishments (PREs), higher education institutes (HEIs), technology transfer agencies and regional development agencies. Innovation processes hardly ever take place any more in isolation.

Innovations can thus be understood as manifest results of cumulative learning processes of firms (Hausmann, 1996:82). This kind of learning is not the mere intra-firm learning by doing or learning by using, but much more learning by interacting, which is goal-oriented instead of just profit-oriented. Learning by interacting can be described as the communicative and synergetic co-operation between at least two actors, who develop or affect innovation processes of companies (Hausmann, 1996:100). The synergy achieved by learning by interacting, which is so important for innovations, cannot be bought, but can only be achieved by personal commitment. The use of information, which is necessary for these learning processes, is dependent on existing human knowledge. Learning therefore is an evolutionary and

context-dependent process. The spatial environment provides different institutional contexts for interactive learning. These contexts differ not only nationally, but also regionally and locally from each other. Firms are therefore embedded in different contexts for interactive learning.

The larger the proximity is between at least two actors, the higher the probability that they interact in a certain time period and that learning by interacting takes place (Hausmann, 1996; Oinaś & Virkkala, 1997; Lorenzen, 1997). Proximity particularly eases the formation of rules, norms and routines. Although spatial proximity might stimulate communicative interaction between actors, it is certainly not a sufficient condition (Gregersen & Johnson, 1997:482). In order to achieve this interaction social proximity (equal or similar characteristics such as age, vocation, language and equal or similar views on values and norms) and organisational proximity (concern structure, intra- and inter-firm network structures) are necessary factors as well. The naive learning by 'being there' is fundamentally questioned: neither personal presence on the spot nor spill-overs are sufficient factors to explain innovation-relevant communicative interaction between actors (Hausmann, 1996:120). Proximity does not have to be a fixed conditioning factor, it can also

be created by actors themselves. In addition to the static relational proximity (language, religion), there is dynamic relational proximity (for example trust), which first has to be created by actors (Hausmann, 1996).

The knowledge form determines to what extent proximity is necessary for learning by interacting. One has to distinguish here between tacit and codified knowledge. Innovation-relevant information is typically not a publicly available good, but private tacit knowledge; those parts of personal knowledge as well as personal skills that cannot be communicated in an impersonal way (Hausmann, 1996). Only through personal, communicative interaction between actors there are possibilities to exchange, understand and to apply this kind of information. This strongly selective transferability might be the deeper explanation for learning by interacting being such an important form of learning for company innovation processes (Hausmann, 1996). In order to communicate tacit knowledge 'code keys' are needed, which are only understandable if (social) coherence and proximity are available (Lorenzen, 1997). According to Breschi & Malerba (1997:136,137): "the more knowledge is ... tacit, complex and part of a larger system, the more relevant are informal means of knowledge transmission, like 'face-to-

face' talks, personal teaching and training, mobility of personnel, and even acquisition of entire groups of people ... Such means of knowledge transmission are extremely sensible to the distance among agents".

The institutional framework affects the way how tacit knowledge emerges and develops in an economy. As knowledge and skills influence a company's ability to innovate, a direct relation can be observed between institutional environment and a company's ability to innovate (Hausmann, 1996). The institutional framework works as a selector: it affects the velocity of diffusion and is a filter.

Thus the conditions for learning by interacting between actors are proximity, information and institutions (Hausmann, 1996). From this perspective, a learning region can be considered as an area in which learning by interacting between actors takes place who are linked to their location or embedded in their region: elsewhere learning by interacting in its present form would not have been possible (Oinas & Virkkala, 1997:270). In learning regions one can therefore observe collective learning processes and a collective tacit knowledge which are linked to the location because of the coinciding of social, cultural and spatial proximity (Keeble & Wilkinson, 1999; Keeble et al.,

1999; Lawson & Lorenz, 1999; Maskell & Malmberg, 1999; Morgan, 1997). This collective tacit knowledge in regions can be equated with Storper's (1997) term untraded interdependencies<sup>2</sup>). This kind of tacit knowledge in regions cannot only be stimulating for innovation processes in companies and interactive learning between them, it can at the same time also lead to path dependence and political and cognitive lock-ins (Lorenzen, 1997; Grabher, 1993; Enright, 1995; Tichy, 1995). Therefore one can rightly ask oneself, to what extent learning regions distinguish themselves from path-dependent structurally weak regions, such as old industrial areas, which suffer from collective tacit knowledge or untraded interdependencies. It is at this point that learning regions from an action-related perspective might come in, to which we turn now.

### 3) The action-related perspective

Apart from authors who explicitly have used the term learning region in the context of grand spatial theories or the relationship between entrepreneurial learning, innovation and spatial proximity, others have launched the learning region as a new theory-led regional development concept which aims at achieving and/or supporting collective learning processes.

Stahl (1994), Koch (1994) and to a certain extent also Morgan (1997) see learning regions from a policy angle. Learning regions are regional development concepts in which the main actors (politicians, policy-makers, chambers of commerce, trade unions, HEIs, PREs and companies) are strongly, but flexibly connected with each other. Morgan (1997) calls learning regions the new generation of regional policy, which, compared to traditional regional policy, focuses on infostructure instead of infrastructure, on opening minds instead of opening roads and branch plants and which devises policies with SMEs instead of just policies for SMEs. Other characteristics of this concept are: bottom-up concept, transparent, face-to-face relations, integrated solving of problems (crossing of policy fields) and permanent organisational learning with feedback effects. This network is open to learning, both to intra-regional and inter-regional learning. "They are prepared, as it were, to change a winning team" (Cooke & Morgan, 1994:91). These characteristics of a learning region, however, only describe the method of working and the attitude of regional economic policy-makers. The concrete contents of the innovation policy need to vary according to the economic profile and demand in individual regions.

According to Butzin (1996) innovative milieus are very important for the region's ability to be innovative. Policy-makers, however, are not able to create such milieus. With the strategy of the learning region at least a seedbed for innovative milieus can be created. Butzin (1996) considers the concept of the learning region as seedbed or context for a comprehensive innovation culture. Flanked with the right measures this concept enables a region to enhance the probability of spontaneous development of local and regional creative milieus, both economically, socially and politically. The key resources of this strategy of the learning region are new learning concepts, a particular network architecture and regional self regulation. According to Butzin (1996) the learning region concept integrates political, social and company networks. Where they come together a creative milieu can emerge.

In order to survive in competition, the region increasingly depends on the quality of its information and communication competence. Like Florida (1995), Butzin (1996) sees similarities between the learning company and the learning region. Both have to renew their organisations by decentralising and making vertical decision hierarchies leaner and flatter and by replacing departmental thinking with cross-sectional thinking. For the innovation

policy of a 'learning region' this means that it is not enough to supply technological knowledge (Butzin, 1996). Support is certainly also needed to enhance the capacity of SMEs to accept, absorb and adapt this knowledge in a useful way. The SMEs' learning of how to become ready and capable to innovate, in other words the innovation competence of SMEs, becomes the decisive determinant of regional development. In addition, Butzin (1996) stresses the need for qualification measures for regional actors. These measures should not focus on the traditional concrete expert knowledge, but on the readiness and capability to learn and to 'network'.

Thus, Butzin (1996) considers 'ultra soft' location factors, next to soft and hard location factors, as being of increasing importance to explain regional innovation capabilities: the regional 'socio-culture' is the engine of learning and innovative capability, knowledge and competence are its fuel and network architectures and networking quality of persons are its navigators.

On a slightly more theoretical level, Asheim (1996) sees learning regions from an institutional point of view. In his eyes learning regions are the successors of 'traditional' industrial districts. The challenge for learning regions is to devise and implement



policy measures that both increase the innovative capability of SME-based industrial agglomerations and find ways to benefit simultaneously from tacit, 'contextual' knowledge of industrial districts and from codified knowledge of the global economy.

### 3. What distinguishes the learning region from other concepts in modern economic geography?

In order to locate the learning region phenomenon in modern economic geography it is not only necessary to review what authors have written who explicitly dealt with the term learning region, the phenomenon also needs to be located in the glut of existing concepts. As the learning region has been launched from three different perspectives, it can be linked to several existing grand spatial theories, theory-led development models and policy-oriented innovation stimulation concepts.

As has been shown in Section 2.1 Florida (1995) broadly defines learning regions, as he considers learning regions as the outcome of the shift from mass production capitalism to global, knowledge-intensive capitalism (Table 1). In fact, what he calls a shift from a mass production region to a learning region, other scholars have called a shift from Fordist to post-Fordist economic and

social systems (Amin, 1994) or, confined to economic changes, from mass production to flexible specialisation (Piore & Sabel, 1984; Sabel, 1989; Scott & Storper, 1992). Advocates of the regulation school state that every production regime prevailing during a long wave of the economy will be accompanied by certain governance systems and behaviour of institutions (Krätke, 1996; Moulaert & Swyngedouw, 1989; Boyer, 1988). Parallel with the change of production organisation, economic policies are now focused on flexibility, 'deregulation, the decrease in red tape and increase in public-private-partnership. In other words, learning regions can be regarded as the modern regions in the post-Fordist governance system. In my opinion, this perspective of a learning region cannot distinguish itself clearly enough from what other concepts have already launched. It is at most developing existing concepts further along the same line, without adding much new insights to them.

Partly as a reaction to the limited use of these grand theories as an argumentative basis for regional innovation strategies (Butzin, 1996), empirically founded theory-led development models have been developed, such as industrial districts (Pyke & Sengenberger, 1992) and innovative milieus (Aydalot & Keeble, 1988). They are situated somewhere in between the extremes of

abstract theories and regional policy strategies. These concepts, which emphasise the importance of the regional level, socio-cultural dimensions (milieu, 'world') and social networks, form the basis for building models for regional economic development (Butzin, 1996). Based on experiences in growth regions such as Silicon Valley, Baden-Württemberg and the Third Italy, they consider the innovativeness of individual companies or industries not as a sufficient factor to explain regional economic inequalities (Läpple, 1994, 1996; Ronneberger, 1995; Malecki, 1997). In order to explain regional economic inequalities it is not so much important what is produced in a region (the production structure), but how and under which conditions (Läpple, 1996; Fromhold-Eisebith, 1995; Krätke, 1996). These conditions might be the modes of inter-firm co-operation, the functional division of labour, the position of firms in the supply pyramid, the qualification of the workforce, the institutional fabric, social and technical infrastructures, economic history and cultural traditions in the region. The individual firm is no longer seen as an isolated actor, but the firm's dependence on its direct regional environment is stressed (Kilper & Latniak, 1996).

Another theory-led development model, the production cluster approach, developed by well-known American economists such as Porter (1990),

Krugman (1991) and Enright (1995), shows that internationally competitive industries seem to be spatially concentrated in a few nations and regions. Not only the kind of relationships (networks) is regarded as an explanation for industrial competitiveness, but also geographic clustering. Krugman (1991) points to the fact that the historical process of industrialisation in the USA and Europe is marked by stories of small accidents leading to the establishments of one or two persistent centres of production (see also OECD, 1994). Thereafter cumulative processes can generate a geographical structure of production which may be stable for long periods of time. The limited transaction costs caused by spatial proximity explain this geographic clustering. Or as Saxenian (1994:173) puts it: "producers benefit from sharing the costs of common external resources such as infrastructure and services, skilled labor pools, specialized suppliers, and a common knowledge base ... When these factors of production are geographically concentrated, firms gain the additional benefits of spatial proximity, or 'economies of agglomeration'".

These theory-led development models have been particularly criticised when it comes to the trend of a re-regionalisation of production systems (Amin & Robins, 1990; Kilper & Latniak, 1996; Lagendijk, 1996; Ronneberger, 1995; OECD, 1994).

As multinationals with their global networks have by far more impact on the world economy than locally embedded firms, flexibility is more a matter of industrial organisation on a global rather than on a local or regional scale (Ronneberger, 1995; OECD, 1994). Furthermore, as only a few success regions are analysed in an anecdotal way, there is a lack of evidence to speak about a theory which has general validity for explaining regional economic development<sup>3)</sup> (Staber, 1996; Krätke, 1996; Tödtling, 1994; Ronneberger, 1995; Lagendijk, 1996; Krumbein et al., 1994). Even the highlighted success regions Emilia-Romagna, Baden-Württemberg and Silicon Valley differ concerning a whole range of fundamental aspects (Braczyk et al., 1996; Digiovanna, 1996). Sternberg (1995) and Tödtling (1992) in fact empirically proved the limited general value of these models to explain regional economic development.

The above-mentioned theoretical concepts assume that geographical concentration of industrial activities positively affects competitiveness. This correlation, however, is not watertight. According to Saxenian (1994:161) "spatial clustering alone does not create mutually beneficial interdependencies. An industrial system may be geographically agglomerated and yet have limited capacity for adaption. This is overwhelmingly a function of

organizational structure, not of technology or firm size". Therefore, many scholars stress that clustering may also be responsible for the loss of national or regional competitive advantage (Enright, 1995; Grabher, 1993, 1994; Tichy, 1995; Glasmeier, 1994; Porter, 1990; Hassink, 1997; Thierstein, 1996). Geographically concentrated clusters can become insular, inward-looking systems, as many old industrial areas have shown us (Hamm & Wienert, 1989; Glasmeier, 1994). The line between successful and open regions and old industrialised, insular, inward-looking industrial districts can be very thin (Grabher, 1993; Läßle, 1994; Frommhold-Eisebith, 1995; Hamm & Wienert, 1989; Maskell & Malmberg, 1999). As milieus tend to change more slowly than industries, a sclerotic milieu can remain in a region even after the industrial structure to which it belonged already has disappeared. Maskell & Malmberg (1999) distinguish 'good' from 'bad' agglomerations by pointing at their ability to 'un-learn'. The regions that are able to adjust their institutional endowment to meet contemporary demands of the firms require 'un-learning'. The process of 'un-learning' necessitates the removal of formerly significant institutions which now act as a hindrance to further development. There appears a great variation in the ability of regions to 'un-learn', "which makes it possible in some regions but not in others to inaugurate new institutions

and simultaneously dissolve ones" (Maskell & Malmberg, 1999:179).

It is at the latter point, which has been neglected by the industrial district, innovative milieu and production cluster models, that the learning region concept comes in. By focusing on the learning ability of regional actors it might be able to explain why in some regions learning by interacting and collective tacit knowledge can turn from a strength into a weakness (path dependence). Here the learning region clearly adds something to existing concepts.

Furthermore, in contrast to the above described theory-led development models, which are mainly based on experiences in growth regions such as Silicon Valley, Baden-Württemberg and the Third Italy, the learning region concept is not derived from experiences in any particular kind of region. Therefore, it can be applied to a broader range of regions than the other models, which turned out to be difficult to transfer to structurally weak region<sup>4</sup>).

Besides grand spatial theories and theory-led development models, policy-oriented innovation stimulation models show large similarities to the learning region concept. The recently launched regional innovation system concept, in particular, is very similar to the learning

region as a regional development concept (action-related perspective). The regional innovation system concept originates from discussions about national innovation systems (Nelson, 1993; Freeman, 1995; Edquist, 1997). Cooke et al. (1998:1581) define regional innovation systems as systems "in which firms and other organisations [such as research institutes, universities, innovation support agencies, chambers of commerce, banks, government departments] are systematically engaged in interactive learning through an institutional milieu characterised by embeddedness". The aim of regional innovation systems, similar to that of learning regions, is to integrate traditional, context-linked, regional knowledge and codified, worldwide available knowledge in order to stimulate regional endogenous potentials (Asheim & Isaksen, 1997).

A regional innovation system consists of an institutional infrastructure and a production structure. Asheim & Isaksen (1997) categorise regional innovation systems in two types:

- the regionalised, national innovation system in which parts of the regional production structure and institutional infrastructure in a region functionally belong to the national innovation system (examples are large PREs, technopoles or science parks that are often implemented into the region in

a top-down way and that are thus little anchored in the region),

- the regionally embedded innovation system in which both the regional production structure and institutional infrastructure are embedded in the region, both established in a bottom-up way (interactive innovation model). Spatial proximity and agglomeration make the establishment of this model easier.

Since the learning region and regional innovation concept are very similar, it is not easy to distinguish the concepts from each other; Keeble et al. (1999) and Lawson & Lorenz (1999), for instance, treat them as one group. Not only have few people tried to distinguish the concepts from each other, what these few have written on the issue is contradictory. Cooke et al. (1997) see regional innovation systems as learning regions with an added financial capacity and, in a similar line, Cooke & Morgan (1998:71) consider regional innovation systems as more advanced than learning regions, including the full range of innovation actors and tutoring functions. In contrast, Asheim (1998) sees learning regions as a broader concept than regional innovation systems. In other words, there is no consensus yet on what distinguishes the concepts from each other.

In my view there are three main differences between the concepts.

First, compared with the learning region, the regional innovation system concept is more operational in character. Although partly based on empirical insights (Morgan (1997) in Wales, Great Britain, Butzin (1996) in the Ruhr Area, Germany, and Asheim (1998) in Jæren, Norway), the learning region concept is in fact a conceptual model (Keeble et al., 1999:321), whereas the regional innovation system concept has been far more empirically described and tested. On the basis of a large European project recently 11 regional innovation systems in Europe have been investigated and compared with each other (Tödting, 1998; Braczyk et al., 1998). In addition, case-studies have been done of regional innovation systems in North America, particularly Canada, and some countries in Asia (de la Mothe & Paquet, 1998a; Braczyk et al., 1998). Therefore, regional innovation systems are much more empirically tested than the more conceptual learning region concept.

Secondly, the regional innovation system concept is a slightly broader concept than the learning region (Morgan, 1997; Butzin, 1996). It contains more regional actors that have impact on innovation, such as firms, than the learning region, which is more focusing on innovation support policies and

agencies.

Thirdly, there might be a difference related to the focus on 'innovation' of regional innovation systems and 'learning' of the learning region concept. Compared with regional innovation systems, learning regions are more involved in learning from institutional errors made in the past and by doing that in avoiding path-dependent development. The latter point is illustrated by the research question Wolfe & Gertler (1998:102) are putting in their study on a regional innovation system in Ontario, Canada: "how reflexive is the [regional innovation] system as a whole in terms of monitoring its successes or failures and adopting the features associated with a learning region?" Learning regions, therefore, seem to be reflective and monitoring regional innovation systems.

With their concept of 'institutional thickness' Amin & Thrift (1994) take up many topics which have a central position in the discussions around learning regions and regional innovation systems. They differentiate themselves from other concepts by taking the thickness of institutions as their starting-point of analysis. The discussion about institutional thickness started after scholars found out that successful industrial districts, such as the Third Italy and Baden-Württemberg, are characterised by a 'thick' tissue of

support institutions (Tödtling, 1994:80). Institutional thickness is characterised by inter-institutional interaction and synergy, collective representation by many bodies, a common industrial purpose, and shared cultural norms and values (Amin & Thrift, 1994:15). Thickness both establishes legitimacy and nourishes relations of trust. Many authors, however, point to the fact that institutional thickness cannot only be associated with successful regional development; we can find thick layers of institutions in structurally weak regions, such as old industrial areas, as well (Amin & Thrift, 1994; Tödtling, 1994:85; Glasmeier, 1994; Grabher, 1994; Hudson, 1994). Hudson (1994, 1996), for instance, states that the culture of dependence of old industrial areas was sustained through the particular and thick institutional tissue of such areas. "In all these cases, albeit in different ways, the legacy and residue of a former thick localized institutional tissue suppressed the exploration of alternatives to, and resistance to, the conventional solutions" ... "Under these circumstances, it would seem that localized institutional thinness may have held greater emancipatory and radical transformatory potential" (Hudson, 1994: 211,212). Whether institutional thickness is beneficial or harmful to regional economic development seems not so much a question of the sheer number of institutions or the way they individually

work, but rather a question of how and in which framework they are organised (Pyke, 1995; Amin

In sum, the learning region concept can be linked to several theoretical concepts in economic geography. The learning region seen from a theoretical-structural perspective (Section 2.1) does not fundamentally distinguish itself from existing concepts. It does not contribute much to these concepts. The learning region seen from the second and third perspective (Section 2.2 and 2.3), however, is not only able to distinguish itself more from other concepts, it also has something to add to these concepts. In some ways, it continues where other concepts have stopped. In the case of industrial districts, innovative milieus and production clusters, the learning region tries to solve the neglected issue of what distinguishes 'good' from 'bad' industrial agglomerations. However, it is difficult to find out to what extent the learning region distinguishes itself from regional innovation systems. Here there seems to be clear overlap and need for debate on what differs between these concepts.

#### 4. Weaknesses and strengths of the learning region concept

Because the learning region is a very

young concept, there can be observed many deficits and difficulties.

First, the actor-related and action-related policy perspectives from which the learning region concept have been launched are too isolated from each other. In my view the learning region clearly contains elements of both perspectives. It partly consists of the location-linked entrepreneurial learning by interacting and partly of the regional development concept which has to support the linking of learning to the actor's location. A recently developed integrative framework for learning is a first step towards bringing the different levels of learning (micro, meso and macro) closer together (Jin & Stough, 1998).

Secondly, the definitions of learning regions are quite vague, since seldom concrete examples can be shown. Therefore it is necessary to further empirically test the concept. According to Lagendijk (1997:19): "while this [systems of innovation approach] seems to offer a promising agenda for future research, it should be acknowledged that, at present, both the National Systems of Innovation approach and its regional offspring are still in an initial stage of development. Much has to be done, for instance, before we will really understand the meaning and role of institutions and agents, and, more

particularly, of localised learning and untraded interdependencies". Although definitions are vague, aiming for a too narrow definition of the concept would be a mistake as well. A narrowly defined model would not come to grips with the daily complexity. According to Edquist (1997:20) "we cannot define an optimal system of innovation because evolutionary learning processes are important in such systems and they are thus subject to continuous change. The system never achieves an equilibrium since the evolutionary processes are open ended and path dependent".

Thirdly, closely related to the second point is the need for more clarity about the additional explanatory qualities of the learning region concept compared with other models. More needs to be done to make clear the differences between the learning region concept and similar theory-led development models, such as industrial districts, innovative milieus etc. In addition, more clarity is needed concerning the role of regions in learning by interacting in a time perspective: is spatial proximity getting more important or less important for learning by interacting?

Fourthly, both the learning region and the regional innovation system concept do not pay much attention to sectoral and industry differences. By

stressing the supply architecture for innovation, they tend to neglect that "different kinds of products will 'demand' different kinds of innovation systems" (Storper, 1997:107,108). Firms in different industries need different partners for technological learning (chemical industry - PREs; building industry - customers) at different distances. Twenty kilometres might be far away for a butcher, whereas 200 kilometres might be close by for a software developer (Thierstein, 1996; Asheim & Isaksen, 1997). Due to their staff, individual innovative companies have different learning environments for innovation. The same location therefore might not mean the same innovation-stimulating environment for companies (Hausmann, 1996). This clearly puts the importance of spatial proximity for innovation into perspective. It also has important consequences for developing a learning region strategy and therefore for local and regional development agencies. A region with mainly regionally oriented independent SMEs is better served with a regionally embedded innovation system than a region with mainly large enterprises and/or branch plants.

Fifthly, speaking about learning regions, one should not forget the role of nations. In order to stay competitive, regions must integrate locally specific competence with codified, generally



available knowledge, or, in other words, they must link their own innovation systems with national innovation systems and international knowledge flows. According to Gertler (1996) the increasing impact of national regulatory and innovation systems on the behaviour and strategy of individual firms narrows the leeway for regional innovation policy. A regional innovation system, therefore, will not be successful if it ignores the impact of national innovation systems on inter-firm co-operation and innovative behaviour.

Point four and five bring us to the question where the borders lie between national, regional, local and sectoral innovation systems (Edquist, 1997). Depending on the technological and market conditions, institutions and the extent of mutual dependencies between institutions, the role of the different innovation systems will be larger or smaller. The systems complement each other more than they exclude each other. In contrast to local, regional and national innovation systems, where borders can be more or less defined, borders of sectoral innovation systems are endogenous: they emerge from the specific conditions of each sector and therefore vary to a large extent (Breschi & Malerba, 1997:131).

Moreover, we must not forget that the endogenous potential strategy, on

which the learning region concept is based, can only be applied under certain conditions. We can only find these necessary socio-cultural and socio-economic conditions in structurally strong regions and the necessary techno-economic and institutional structures in developed countries (Koschatzky, 1995:2). In addition, regions strongly vary with regard to their political and economical starting conditions (Tödtling, 1998). In contrast to the regional innovation system approach, which has developed a typology of systems in order to consider this point (Cooke, 1998), the learning region concept does not pay attention to this fact. Although it must be a political challenge for every region to turn a potential learning region into a real one, economic and social policies for structurally weak regions remain a task for national governments (Morgan, 1997).

Despite these weaknesses and research gaps, the learning region concept certainly bears potentials for economic geography. Having in mind that this discipline traditionally has difficulties to develop its own theoretical concepts and that more and more economists are discovering the spatial dimension of the economy (Porter, 1990; Krugman, 1991; Enright, 1995), economic geography must rethink and redefine its position and strategy (Lagendijk, 1997).

According to Lagendijk (1997:20) "recent attempts to embrace concepts of the 'learning economy' and 'regional competitiveness' clearly present important steps towards a redefinition of the discipline [economic geography]". More concretely, the potentials of the learning region concept for economic geography can be seen in three areas.

First, discussions about untraded interdependencies, tacit knowledge and local learning systems lead us to new and deeper insights of agglomeration effects and thus of the explanation of regional economic inequalities. Lagendijk (1997:20,21) states concerning this point: "while the world of 'traded' interdependencies has continued to shrink thus challenging the premises of traditional economic geography, 'untraded' elements such as tacit knowledge and localised learning systems have given industrial geographers a new anchor for the explanation of spatial variation in economic phenomena".

Secondly, these new insights and the development of the learning region as a regional development concept have strengthened the relationship between economic geography and policy advising and consultancy. In comparison with other concepts in economic geography, the theory-led learning region concept is much more focused on a direct transfer

of academic insights to local and regional innovation policies. It, therefore, seems to provide regional innovation policy with a new stimulus, particularly due to its emphasis on intra- and inter-regional learning. Concerning intra-regional learning, the concept can help regions to organise themselves in such a way that technology policies are more tailored toward the needs of firms in the region (demand-oriented) (Hassink, 1996). With regard to inter-regional learning, it can help policy-makers to intentionally select partner regions in order to learn lessons on regional technology policy rather than develop inter-regional networking by accident (Pyke, 1995:108).

Thirdly, the learning region concept could serve to solve the question what distinguishes 'good' from 'bad' industrial agglomerations. Traditional theoretical concepts as well as recent studies on regional networking and collective learning in Europe (Keeble & Wilkinson, 1999) not only focus too much on success regions, they also lack the equipment to distinguish 'good' industrial districts, such as the Third Italy and Silicon Valley, from 'bad' ones, such as the Ruhr Area and Route 128 near Boston (Hassink, 1997). The limited learning ability of regional actors could be the explanatory factor why the co-ordination of inter-actor activities in some industrial districts

turns from a strength into a weakness (path dependence) (Lagendijk, 1997:21).

## 5. Conclusion

As has been shown in this paper, the learning region is discussed in contemporary literature from three perspectives. First, theoretically, learning regions are regarded as the spatial outcome of societal changes (theoretical-structural perspective). Secondly, there are discussions going on about the relationship between entrepreneurial learning, innovation and spatial proximity (theoretical, actor-related perspective). According to that perspective learning regions can be considered as areas in which inter-organisational learning by regionally embedded actors takes place. They could not achieve the same learning at another location in the way as they achieve it now. Thirdly, the learning region has been presented as a new theory-led policy concept for regional economic development (action-related perspective). This concept is supposed to provide local and regional policy-makers and economic development agencies with a framework for alternative strategies to link companies to their location and to combat increasing unemployment.

In recent years, a large group of scholars in economic geography, regional economics and spatial planning

have been publishing widely on the learning region concept seen from the second and third perspective. This is positive, since these perspectives, in contrast to the first, theoretical-structural perspective, clearly add explanatory insights and valuable knowledge to existing modern theoretical concepts in economic geography, such as industrial districts, innovative milieus and production clusters. More in particular, the learning region concept, seen from these perspectives, bears the potential to provide economic geography with more insight in agglomeration effects and stronger links with policy-making. Moreover, its strongest potential lies in its explanatory power to unravel the distinction between 'good' and 'bad' industrial agglomerations. Due to their exclusive focus on success regions, modern theoretical concepts in economic geography have been strongly neglecting this area. These potentials of the learning region can only be fully achieved, however, if economic geographers would manage to come to a clearer and more concrete definition of the concept which would help to distinguish the concept from similar concepts, such as regional innovation systems. Furthermore, the concept should be more tested with empirical case-studies and the second and third perspectives should be integrated into one comprehensive concept.

## Notes

- 1) Institutions are both "things that pattern behavior" such as norms, rules and laws and other "formal structures with an explicit purpose", which are also called organisations (Edquist 1997:26).
- 2) In fact the neo-Schumpeterian Dosi (1988: 226) launched this term much earlier. Storper (1997) introduced it into economic geography.
- 3) Also recent research of European economic geographers on regional networking and collective learning processes, although less anecdotal in character and including more case-studies, strongly focuses on successful high-tech regions (Keeble & Wilkinson, 1999).
- 4) Markusen (1996), however, has developed a useful, broadly applicable typology of industrial districts, consisting of the classical Marshallian type of industrial district, the hub-and-spoke and the satellite industrial district.

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## ABSTRACT

Recently the concept of learning has become very fashionable among academics from different economic disciplines. Economic geographers and spatial planners joined this fashion by increasingly speaking about the 'learning region'. This paper makes clear that this learning region concept has been launched from three angles: as spatial outcome of grand societal changes, as spatial concentration of entrepreneurial learning for innovation and as regional development concept. Despite the deficits and flaws such a young concept is faced with, such as vague definitions, the lack of empirical research and an insufficiently clear separation from existing concepts, the learning region concept might provide economic geography with more insight in agglomeration effects, stronger links with policy-making and more knowledge on path dependency and thus on unravelling the distinction between 'good' and 'bad' industrial agglomerations.