

From regional anchors to anchoring

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INTRODUCTION

The current debate on regional development and innovation dynamics often refers to the metaphor of the 'anchor' to describe a tension or a balance between the local and the global forces shaping economic activities. In this chapter, a critical review of the current literature will show how this term is used in different ways depending on the correspondence and interplay between the local and global scales.

One can distinguish a first meaning in which anchoring consists of the historical position of a production system within a region due to a process of (mainly local) accumulation of knowledge and capital (for a recent review, see Becattini et al., 2009). A second idea emerged when the necessity to understand the location dynamics of new industries and what factors were determining industries' location choices became a prime concern for regional growth (Feldman, 2003). In this case, the focus shifted from the endogenous process of cumulated firm capacity to the drivers and players able to attract a critical mass of entrepreneurial vibrancy to a particular place and to retain it. Finally, we would argue that with today's (alleged) hypermobility of capital, knowledge and people, anchoring is becoming more related to the permanent interplay of economic activities across space, namely within and between places, than to any local accumulation.

SYSTEMIC INNOVATION, INDUSTRIAL AND REGIONAL TRAJECTORIES

The concept of 'regional anchors' was first coined by Feldman (2003) as she wanted to understand how emerging industries, like biotechnologies, could be anchored in a particular region, trigger a process of firms' clustering and become, thereby, engines of regional growth. Indeed the context of this contribution is the debate that throughout the 1990s and early 2000 developed around the forms and the dynamics of localized processes of innovation and learning. In the literature these were described by four main models: industrial districts, clusters, innovative milieux and regional innovation systems. These in different ways are organizational models that describe localized systems of firms and interfirm networking able to create the socio-economic conditions leading to superior innovation performance.

In a post-Fordist economy where the segmentation of production processes underpins flexible and modular value chains, the disintegration of production functions mirrors a disintegration of knowledge and competences. So much so that high levels of functional specialization necessarily lead to fast-moving and cumulative processes of learning, especially in relation to tacit knowledge. At the same time, the systemic nature of production reflects the systemic nature of the innovation process across firms. Indeed, firms do not

innovate in isolation, but contribute to a collective process of learning, advancement and adoption.

The common ground across the four models above is an understanding that a critical mass of specialized firms in a context of systemic production could bring benefits thanks to external and agglomeration economies. These, in fact, reduce the transaction costs associated with firms' networking, increase firms' efficiencies – for instance through pecuniary externalities (for example pooling of specialized labour and the sharing of common inputs) – and drive sustained radical and incremental innovations. Nevertheless, these models differ, both in the way the place, the industry and the community is argued to co-evolve or not, that is, the determinants of their trajectory; and in the way the systemic 'plumbing' of information and knowledge transfers and spillovers is able to absorb, adopt and integrate the knowledge and information coming into the system through its external 'pipelines'.

The so-called 'Marshallian industrial district' (MID) describes a model of a local production system where a localized industry is embedded in a community of people so that both co-evolve over time. An MID: 'has an economic and social identity shaped by an industrial atmosphere; the latter coinciding with a set of shared cognitive, moral and behavioural attitudes drawing on locally dense cultural interactions, and which orientate technical, human and relational investments towards forms consistent with local accumulation' (Becattini et al., 2009, xviii).

On the other hand, innovative milieux (IMs) can be defined as: 'sets of localised players in which interactions between players develop thanks to multilateral learning processes. The latter generate innovation specific externalities and converge towards more and more performing forms of common resources management' (Maillat et al., 1993). In this model, rich learning interactions develop primarily among local players. External links are seen as less frequent and above all monofunctional. Links between local players can be both mercantile and non-mercantile relationships (Kebir and Crevoisier, 2008). The emphasis on the extension and interconnectivity of the networks of information and knowledge is particularly relevant in this model.

In the MID and IM models, the processes of knowledge creation and transfer build on existing competences and embedded knowledge because their life cycle starts with an 'accident of history' in a particular place. Indeed one of the most debated issues within these streams of literature has been how they can be created. Indeed in both cases, the drivers of their innovation processes are assets or resources that are 'embedded' within a place and within the community in that place. These resources coincide with the 'knowledge in the air' suggested by Marshall and the 'shared know-how' in industrial districts; while more recently, Kebir and Crevoisier (2008) argue that:

culture can be distinguished from the other resources that are mobilised because of its intrinsic link to the societies and communities that produce it . . . Society, culture, etc. thus appear as substrates of economic factors while at the same time they are subject to modification by the economy. In this context, culture produces the knowledge and practices that are necessary in order to establish social links, rules, codes of conduct and the forms of language needed in order for exchanges to take place. (p. 307)

Systemic learning and innovation processes are taking place with respect to activities (sectors or technologies) that are embedded in the socio-economic fabric of places;

they draw, build and expand, combining internal, cumulated and tacit knowledge with external more codified information.

The IM and MID models have, however, been shown to be somewhat inadequate when trying to explain the emergence of new industries and evolutionary patterns that can take a new industry to locate in some place rather than elsewhere. At the zenith of the debate on the knowledge economy, we witnessed not only a change in the production organization paradigm with the demise of the Fordist model and the emergence of flexible specialized models (Piore and Sabel, 1984), but also successive and fast-moving shifts in the technological paradigm itself. Indeed, the focus on high-tech industries and, at the same time, the rise of new industries, like biotechnology, have both suggested that the economic growth of localities could be shaped for the future regardless of their past in some sense. In other words, the position acquired by a region thanks to past learning would no longer matter, or may even become a disadvantage for the initial rooting of a new industry.

Models of local production organization that could endorse this view were Porter's clusters and the Cooke's regional innovation systems (RISs). Clusters are geographical agglomerations of small and large firms, specialized in related industries comprising buyer-supplier networks in a context of cooperation and trust (Porter, 1990). Their key features are the spatial co-location and vertical disintegration of the value chain; which means that they can represent a model of local organization where the industry is not in symbiosis with the place, but can be added to a place. It could be argued that any firm agglomeration can be to some extent a cluster, insofar as it contains a set of input-output relations, and this explains why the term has been widely used to label phenomena that below the surface are very different. There is no doubt that the fact that conceptually clusters can be set up in a proactive way has enabled the term to be used to explain the genesis of some industries in some specific places. In other words, the cluster model provides a framework to understand and explain the emergence and accumulation of one or a few related new industries in a particular place.

The RIS model provides a more sophisticated framework to explain not only the geographical clustering of industries but also the systemic nature of their innovation processes by spelling out the synergies between firms and the innovation infrastructure (Braczyk et al., 1998). The latter is particularly apt to present a possible path for the emergence of high-tech localized industries and to explain their dynamics. In RISs, the nodes of the innovation process are the firms and the innovation-intensive institutions, either public or private, that form the innovation infrastructure. In its conceptualization, an RIS combines local and 'wider, global innovation interactions' (Cooke, 2001) that enable the systemic innovation process to be constantly fed by new ideas and knowledge coming from outside so as to remain on the innovation frontier.

One can notice that these representations of regional trajectories were elaborated at the end of the 1980s, when production factors were mainly considered as immobile. More precisely, in the four models, capital is considered as a pure follower of entrepreneurial dynamism and accumulates somewhat automatically within the region. Collective knowledge is considered as the main externality and as it is collective, it cannot move. This accumulation through history is the base of technological and regional trajectories (Crevoisier and Jeannerat, 2009).

With growing concern over technological change and the emergence of new industries,

these models could partially provide explanations by integrating entrepreneurial projects and the local capacity to appropriate knowledge generated elsewhere. Development is still driven by the past, but further steps depend highly on the local capacity to combine traditional knowledge with new technologies.

ATTRACTING THROUGH SPACE AND ANCHORING EMERGING INDUSTRIES

The technological leaps that have characterized the last couple of decades to 2010 have seen the emergence of completely new industries including information and communication technology (ICT) and, more recently, biotechnologies. The latter in particular has attracted the attention of Feldman (see Feldman, 1999, 2003; Feldman and Lowe, 2007; Lowe and Feldman, 2008), who has taken this new sector as an opportunity to understand how regional economic development can be driven by the ‘anchoring’ of a new and growing industry. As it was becoming increasingly accepted that the presence of competitive local production systems contributed to regional growth and competitiveness (Porter, 1990), scholars like Feldman started to question ‘how clusters are formed, how new industries become anchored in a local economy and, as a result, how locations may reap the resulting economic rewards’ (Feldman, 2003, 311). Indeed since these new industries were embryonic and still footloose, the question was to understand how they could be encouraged to root in one place rather than another. This was particularly relevant for those regions lacking some form of pre-existing competitive advantage and eager to attract a critical mass of firms and innovation activities that could finally grow into a regionally immobile competitive advantage.

According to Feldman (2003), the agglomeration of firms in a sector in a particular place can be engineered by means of a ‘regional anchor’; her argument stems from the ‘anchor tenant hypothesis’. She uses the metaphor of the shopping centre to build her argument. She argues that when one looks at what determines the success of a shopping centre, one finds that it often depends on the presence of an ‘anchor tenant’ which is able to guarantee a certain volume of customers for itself and, more importantly, for the other tenants – smaller, less known or less attractive brands. The anchor tenant creates a positive externality for all the shops in the shopping centre; in fact it acts as a magnet both for the other tenants which see their business guaranteed by the critical mass of customers the anchor tenant is able to attract and, of course, as just mentioned, it is a magnet for customers.

The anchor hypothesis proposed by Feldman is conceptually attractive in the way it models almost a mechanical synergy between the presence of a regional anchor and the emergence and growth of a clustered new industry. The role of anchor tenants in a regional system of innovation can be assumed by universities and government labs (Feldman, 2003) if and when they have the ability to generate start-ups or attract firms. Her application of this hypothesis to the biotech industry in Cambridge, MA and Berkeley, CA (Feldman and Lowe, 2007; Lowe and Feldman, 2008), and of the ICT industry in Washington, DC makes it all the more relevant. Other studies have produced similar findings. Sable (2007) looks at the development of the biotech industries in San Diego and Boston and finds that in both cases local universities played key roles as

anchoring players, especially as hubs of scientific knowledge, catalysts of social networking (social capital) between entrepreneurs and the academia, and engines of innovation spillovers; indeed: 'the basic science base in the university milieu is also a magnet for biotechnology entrepreneurs' (Sable, 2007, 40). Mayer (2006) on the other hand argues that the growth of the Portland's high-tech industries was driven not by universities but by two lead firms, Intel and TekTronix: one an external firm whose location in Portland generated significant spin-offs, and the other an indigenous large firm whose downsizing spawned start-ups. Indeed, regional anchors trigger a process of knowledge specialization and regional agglomeration as they attract talents, expertise, innovations and new firms related to a particular sector. This process aims, therefore, to create a regional competitive advantage where before there was none, and this can be done because it is driven by a new industry which in itself constitutes a technological leap. Feldman and Lowe (2007) argue that regulations can also act as catalysts stimulating and steering the agglomeration of an industry in a particular place through setting up a favourable business environment for it.

However, how sustainable is regional growth if it depends uniquely on the regional anchor? Indeed, Feldman (2003) herself is aware that 'if the anchor leaves the mall, the viability of the smaller stores is threatened' (p. 322). This means that the ability of a regional anchor to trigger a process of regional specialization that leads to sustainable regional growth is likely to depend on the ability of a place not only to attract such a firm, but more importantly to retain it.

The current literature has provided ample evidence of how attempts to fast-track regional economic development through 'flagship catalysts' can prove to be short-lived. There is some evidence that, for instance, technopoles have in some cases failed to deliver the expected regional growth, because they have been like 'cathedrals in the desert' (Cooke, 2001), that is, they have been unable to set up linkages and synergies with the contiguous economy.

Another route to leapfrog technological change and to trigger the development of an industry in a region has been through the location of a foreign firm; the technological know-how and the international linkages of the latter are often expected to generate localized dynamic spillovers through the creation of a local supply chain (De Propriis and Driffield, 2006). Numerous examples demonstrate that the footloose nature of the foreign multinational firm prevents it from totally rooting in the local economy, especially if there is a technological gap between the foreign firm and the host economy (*ibid.*), since the latter is unable to engage in a mutually dependent relationship. In the case of Ireland, the location of multinational firms has been short-lived and with a less than expected impact on the local economy.

It could be argued, therefore, that the sustainability of the 'anchor tenant' à la Feldman very much depends on the strategic rationale motivating the attraction of the catalyst firms: whether this is short-term employment creation or long-term sustained industrial growth. Besides, it could be suggested that the anchoring of a new industry to a particular place also depends on the knowledge and network infrastructures underpinning the local system of innovation. In other words, in order to be effective, a proactive attempt to promote regional growth through regional anchors must be coupled with the enhancement and strengthening of the regional innovation system. This means supporting the synergies and interdependences between universities, the government and the

business community (also referred to as the ‘triple helix’; see Etzkowitz and Leydesdorff, 2000), since these cement and underpin the systemic nature of the innovation process.

The argument is, therefore, that if regional growth is pursued through the anchoring of a new industry, this means transforming mobile factors into immobile factors to sustain a local process of firm agglomeration and knowledge accumulation. In fact, in a global context where products, services, labour, capital and knowledge move quickly and freely, regional competitive advantages coincide with locally differentiated and distinctive resources and competences. This means: embedding skilled labour and capital; transforming codified into tacit knowledge; supporting dense and deep local networking that mirrors knowledge and information sharing; and creating hard and soft infrastructures for innovation. Clearly, such regional innovation hot spots are not isolated, but have constantly to interface with other innovation systems in the same or related sectors. Moreover, such a local capacity to innovate, that is, to build collective differentiating knowledge and resources, has to be conceptualized as an endogenous, autonomous entrepreneurial force. Otherwise, there is no explanation as to why development occurs in such a place and not elsewhere.

EMBEDDEDNESS AND MOORING

Feldman’s contribution describes ‘anchoring’ as a process that enables a place to secure the presence of a catalyst player (or of an otherwise mobile resource) able to generate knowledge externalities which almost mechanically germinate through knowledge spillovers leading to new firms’ formation. Key to this view is the idea that anchoring means attracting, harbouring or pegging a resource that could otherwise move elsewhere. Nevertheless, we would argue that this anchoring process cannot occur in a vacuum; rather there exist pre-existing and embedded layers of social, institutional and economic linkages that characterize the fabric of the local place and qualify its ability to engage with the catalyst firm.

The term ‘embeddedness’ can be defined as the presence in a system or community of personal relations and structures so as to activate trust-based transactions. It is well known that the latter underpins the cooperative context where innovation takes place and flourishes. Indeed innovation is more and more proceeding through knowledge spillovers and shared tacit information; here cooperation and trust enable sustained and dense knowledge flows.

The superior performance of such highly innovative places (MID and IM) has attracted outside firms to look into locating there in order to access knowledge and competences which would otherwise be unreachable, and hence a ‘locational’ advantage in Dunning’s well-known ownership–location–internalization framework. Indeed, it is well known that the casual and spontaneous sharing of tacit knowledge and the inevitable knowledge spillovers decay with distance from the centre of the system. This means that co-location is necessary to be part of this systemic and geographically bound microcosmos. This explains why such places have attracted outside firms, interested in sourcing competences and knowledge (De Propris et al., 2008).

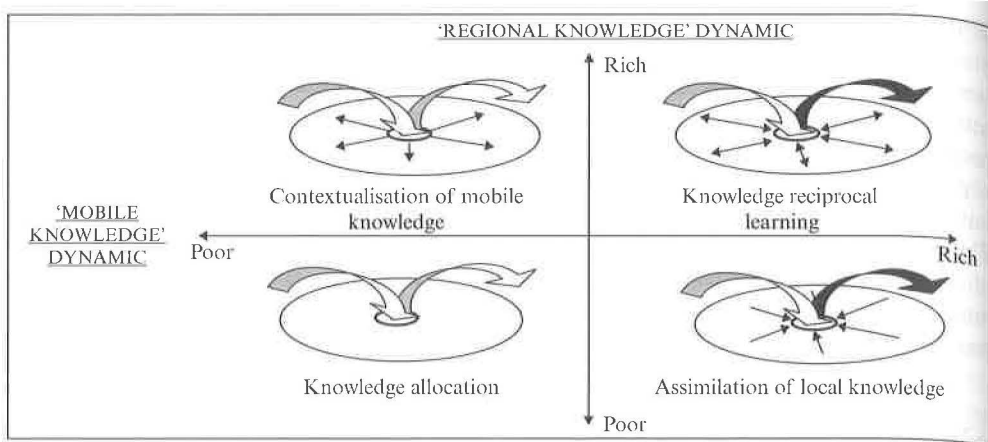
If one wishes to carry on with the nautical metaphor, such places are attractive to firms who are interested in ‘mooring’ in a certain place to access its embedded knowledge.

Whether mooring is sufficient to become part of the socio-economic community of these places and to penetrate its unwritten rules and codes so as to benefit from wider innovation, is debatable. Current studies suggest that location choices driven by knowledge sourcing embody a high degree of commitment on behalf of the multinational firm, because only an 'embedded' behaviour in reality enables true and long-lasting knowledge externalities to bear fruit. Embedded local communities can be cautious of new, outside players and request evidence of commitment to avoid 'hit and run' strategies. The location and 'anchoring' of a lead firm in a context where there is already a system of dynamic innovation can be extremely beneficial to activate technological leaps as 'imported' knowledge is accessed (via the lead firm), adjusted and combined (across the local knowledge basis) with existing and embedded competences.

ANCHORING AS THE CORE OF TERRITORIAL DEVELOPMENT IN A MOBILE WORLD

When related to embeddedness, anchoring appears to relate to the existence of some social fabric compared with economic and innovation processes. Feldman stresses the relevance of external links in a world characterized by mobile firms, knowledge and people. Paradoxically, as resources and production factors have been able to move increasingly more freely, it has become crucial for local systems to have the capacity to engage with these (potentially) mobile factors. In this framework, anchoring coincides precisely with the capability of a local system to access, interact and 'capture' knowledge, information, ideas or any form of tangible and intangible asset from other places or other firms to be fed into its local innovation system.

The concept of anchoring is also present in the current literature in relation to the challenges that local production systems face as globalization forces them to be more open, outward-looking and multi-located than ever. In this stream of literature, anchoring assumes a different meaning from the one introduced by Feldman, in that it relates the image of anchoring to the locally embedded nature of tacit knowledge and learning, which are key elements of firms' and regions' innovation processes. In this alternative perspective, anchoring coincides with the deep and complex roots that businesses have in a local context, whilst at the same time engaging in open, multi-local networks. In this context, the notion of anchoring must be distinguished from that of mobility if we wish to understand the processes of learning within space. Mobility is usually understood as a physical movement across space; on the other hand, anchoring is the other, inseparable face of mobility. Indeed, mobility means the relocation of economic activities to other places, or the interspatial transfer of information and knowledge. To some extent, this suggests a separation between the 'spaces' involved. We argue, on the contrary, that anchoring refers to the fact there are forms of linkages and relations that can occur between a context of localized knowledge and its various elements during their immobile phase. In other words, relations develop and coexist at different geographical scales, whereby mobile – or potentially mobile – elements will maintain relations both with those elements that are immobile and rooted in a location, and with those that are outside it. Anchoring therefore becomes decisive, because the easier mobility becomes, the more crucial the reasons behind such mobility seem to be.



Source: Crevoisier and Jeannerat (2009).

Figure 13.1 A typology of regional knowledge anchoring capacities

The notion of anchoring (Berset and Crevoisier, 2006) is close but different to that of embeddedness. Embeddedness, in fact, refers to a condition where economic actors interact and relate to each other in a context that has a specific historical origin and development, as well as precise spatial coordinates. In other words, firms' embeddedness refers to their belonging to a certain place. Instead, anchoring embodies the idea that there exists an aspect of mobility between places, namely a tendency to open or a movement towards a 'new' context. For example, knowledge can move from the context where it is generated and 'embedded' to feed into another context's knowledge system. Anchoring is the way in which the outgoing knowledge interacts with the external knowledge in ways that necessarily impact on the initial embedded knowledge. This means that if we want to understand the mobility and anchoring of knowledge, we have to take into account the context in which knowledge is initially generated, the context of where it is transferred to and the way this knowledge evolves when interacting with its new context.

It can be argued that various contexts of local knowledge creation will mobilize and integrate mobile knowledge generated elsewhere in differing ways. In some places, for instance, mobile skilled workers may only come, work and leave without having learnt anything new from local people and without having taught anything new to them. This is a simple allocation among various places. On the contrary, some places may learn a great deal from people coming from elsewhere and may also provide a rich learning experience to those people. What becomes decisive is the local capacity to interact with mobile elements in a rich and complex manner (see Figure 13.1). One of the most crucial challenges currently facing knowledge-intensive regions is to gain a position 'on the global map' of knowledge flows, in particular ensuring the movement and anchoring of knowledge in their specific sectors.

In traditional cluster or innovation system policies, the rationale for policy-making has been to intervene in terms of the research and training infrastructure to provide skills and competences complementary to local activities, and to support the local provision of

whatever set of knowledge is more needed and relevant for local firms. In other words, cluster policies have been seen as systemic (De Propris, 2007) and space-bound. In reality, this alone might not be sufficient to ensure the competitiveness of local production systems, as the self-contained nature of their innovative dynamism is increasingly less relevant. In a world where it is becoming easier and easier to mobilize very different, and complementary, knowledge from other places, the focus should be on building local capacities to access and mobilize external knowledge.

The anchoring role of lead firms here is to dovetail the local circuits of embedded and cumulative competences and specializations with the global circuit knowledge creation and transfer. In this framework, the anchor firm becomes a firm that is secured in the local system whilst being able at the same time to network globally through two-way channels, especially of knowledge. Giblin (2011) suggests that lead firms that are able to engage with the local and global networks act more as enablers than gatekeepers, and their role is to 'pollinate' the local context with inputs, ideas and innovations.

A good example of this is the Swiss micro-technology industry. It mainly consists of integrating various technologies, including micro-electronics, optics, micro-mechanics and material sciences, into one miniaturized system. The country is far too small to produce all the competences needed, therefore mobilizing external knowledge is key to the competitiveness of such a sector. The development of this industry is the result of a combination of an embedded set of skills derived from the long Swiss tradition in watch-making with a new set of knowledge accessed and captured through distant connections with complementary places and clusters.

As Dankbaar (2007) explains, enterprises that simply delocalize many of their activities due to cost-saving strategies or to access competencies have some difficulties, for example, in maintaining their 'core knowledge'; this is knowledge that their delocalized partners are seeking to anchor. These dynamics are becoming a major challenge for mobility and anchoring strategies. Local institutional capacities of value creation, value enhancement and value 'capture' (Coe et al., 2008) determine the ways in which local innovation systems realize knowledge mobility and anchoring.

In such an approach, regional development is no longer centred on integrated production systems or value chains. Today, nearly all value chains are organized across space, often spreading across several continents. Long-distance interactions develop rapidly and help increase local specialization into global production networks.¹ Multiscalar and multispatial relations become crucial. Of course, these relations are neither compulsorily cooperative nor egalitarian (Weller, 2006). Regional competitiveness relies heavily on the local capacity to take part in such long-distance interactions.

CONCLUDING REMARKS

Despite the vibrant debate of the concept of anchoring and its various interpretations, it still remains an intriguing and controversial issue. The metaphor has captured the imagination of scholars troubled by the challenges and opportunities that globalization is offering, especially for the economic development of regions and places. The sharp increase in the mobility of production factors over the period 1990–2010 has radically changed the scale and the 'space' of innovation and of capital accumulation. Localities

and regional systems that have been and are still developing along trajectories of cumulative innovation and knowledge, find themselves part of multiregional and multiscalar systems. Long-distance exchanges force economic actors to identify forms of proximities that are not geographical but are still able to generate comfortable relationships.

In this framework, anchoring provides a conceptual link between local and global. Feldman's conceptualization stresses the stability and stillness that the idea of 'dropping an anchor' depicts; on the other hand, anchoring could also be seen as the mobility to float whilst still having a firm anchor in the home place. Although this brief discussion has probably opened rather than closed the debate, it has hopefully provided a critical overview on the current views.

NOTE

1. For more details, see the special issue of *Environment and Planning A* (2006); and a special issue of *Journal of Economic Geography* (2008).

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