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On clusters of entrepreneurs - an austrian approach to innovative milieu

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ON CLUSTERS OF ENTREPRENEURS
AN AUSTRIAN APPROACH TO INNOVATIVE MILIEU

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Preliminary draft

Summary

For the last 10 years, connections between economic geography, theory of innovation and new theory of growth have produced substantial progress in the analysis of processes of spatial clusters. After having been ignored for so long by economic mainstream, various approaches have paid attention to spatial differentiated production systems through the complex interaction of increasing returns, technological spillovers, learning processes, transaction costs. In this intellectual context, the theory on "innovative milieus" developed by the GREMI group has addressed a wide range of theoretical issues dealing with the dynamics of local production systems. The economy of innovative milieu has enabled the study of links between technological innovation and geographical proximity proving that coordination problem of local economic agents is a central theoretical question in the major perspective of an economic analysis of territory as space of coordination. **Innovative milieus are discovery procedures in particular "circumstances of time and place" and refer to collective actions**. The purpose of this paper is to explore the nature of innovative milieu from an entrepreneurial process. We consider that entrepreneurs are a critical element in the emergence and viability of innovative milieu. Four main concepts from Austrian Economics – entrepreneurship, discovery process, time coordination and discoordination and imagination, guide our reflection on innovative milieu. Then a typology of clusters in terms of entrepreneurial discovery process can be proposed.

Keywords: Entrepreneurship, Entrepreneur, Discovery Process, Austrian Economics, Innovative Milieu, Coordination

The geography of innovation: the neglect of process

Recent decades have witnessed significant advances in the geography of innovation. Specifically, the geographical mediated spillovers literature, such as Glaeser, Kallal, Scheinkman and Shleifer (1992), Feldman (1994), Audretsch and Feldman (1996), which bases largely on the Marshall-Arrow-Romer models of externalities or Jacob's idea on knowledge spillovers and cross-fertilization of ideas across industries, has greatly improved our understanding of the nature of the geographic clustering of innovative activities. Nevertheless, models of the spatial dimensions of innovation seem to ignore the importance of entrepreneurial discovery process and have not incorporated the way in which

entrepreneurs actively interact with and shape their local environments (Feldman, 2001). Several weaknesses can be examined here.

Firstly, it confuses geographical clustering of innovative firms and the territorial organization innovation processes. The methods of technological spillover theory implicitly overlook the entrepreneurial discovery process and therefore present a highly distorted picture of the process of innovation.

Secondly, the idea that "the knowledge problem" (Hayek, 1937), may be spontaneously resolved by the geographical proximity of local actors is inconsistent with the very nature of the innovation processes in real time. According to A. Marshall (1961, p. 271), "when an industry has thus chosen a locality for itself, it is likely to stay there long: so great are the advantages which people following the same skilled trade get from near neighborhood to one another. The mysteries of the trade become no mystery; but are as it were in the air, and children learn many of them unconsciously. Good work is rightly appreciated, inventions and improvements in machinery, in processes and the general organization of the business have their merits promptly discussed: if one man starts a new idea, it is taken up by others and combined with suggestions of their own; and thus it becomes the sources of further new ideas". In short, A. Marshall rightly pointed that geographical proximity increases the transmission of tacit knowledge, the opportunities of frequent face-to-face communication, the concentration of specific know-how, and the speed of information flows. More importantly, the crucial knowledge in an industry is not standardized information. The important knowledge is uncodified, subjective, idiosyncratic, and tacit. The development of tacit and specific knowledge, through trial-and-error, is thus an interaction and learning process over time. Nevertheless, what is missing in the geography of innovation literature is a process approach on which to build a theory of learning, imagination, and adjustment to errors, that is to say an out of equilibrium coordination approach of productive activities. In short, the source of much confusion is a misunderstanding of the nature of temporal decision-making processes under radical uncertainty of economic agents and a mistaken analogy between geographical proximity and spatial clusters of innovative firms. Proximity matters. Nevertheless, the relation between proximity and innovation seems to be a much more controversial relation. It is not simply the concentration of skilled labour, tacit knowledge, local business organizations and trade connections that distinguish the geographical clusters of innovative firms but the collective capacity of local actors to experiment and resolve new productive problems. Technological externalities and spillovers of knowledge are not sufficient to explain the process of innovation in real time.

Thirdly, one cannot ignore the time element. In models of geography of innovation, the time period is irrelevant and the time structure of processes of innovation is systematically ignored. In fundamental sense, production and innovation only appear to be simultaneous. "Innovation has an intrinsic time dimension" (Amendola and Gaffard, 1994, p. 627). It supposes a sequential process of learning, through trial-and-error, plans revisions, failures of coordination, dynamic adjustment processes out of equilibrium. Innovation is fundamentally a process of creation of resources. The real problem to which the theory must be able to give an answer is, how the entrepreneurial discovery process makes a process of change viable and not what is the nature of externalities (Marshallian external economies, pecuniary externalities, knowledge and technological spillovers) as the recent models of economic geography suggests.

Finally, **the theoretical neglect of the entrepreneurial discovery process in models of economic geography constitutes a sort of logical incompleteness**. Much of the recent work

on geography of innovation concentrates only on technological spillovers and ignores the entrepreneurial activities representing the main instrument of change. We do not have any satisfactory explanation of the formation of entrepreneurial expectations nor of the revision of plans of investment and production in radical uncertainty.

Paradoxically, while innovation is fundamentally an entrepreneurial discovery process, there is no room for entrepreneurship in geography of innovation literature. The neglect of entrepreneur is the logical consequence of the neglect of processes over time. Many empirical estimations with considerable technical virtuosity reveal evidence of the importance of geographical mediated spillovers. These spatial patterns of innovation should not hide from us the fact that they nevertheless offer no answer to the key problem with which we are concerned, that of the territorial organization of an entrepreneurial discovery process in an "economics of time and ignorance" (O'Driscoll and Rizzo, 1985). We are almost completely unable to describe the out of equilibrium path to innovation. In other words, artificial mechanisms, such as technological or knowledge spillovers, have been invented to solve the theoretical problem of the coordination over time of discovery processes.

The innovative milieu: an entrepreneurial discovery process

The question that arises is to show how innovative milieu approach provides a theoretical answer to the "knowledge problem". According to Hayek, the limited cognitive capabilities of economic agents is the central problem of all social science: "how the combination of fragments of knowledge existing in different minds can bring about results which, if they were to be brought about deliberately, would require a knowledge on the part of the directing mind which no single person can possess" (Hayek, 1937, p. 54). The question of why many regions innovate whereas others do not, at the core of the innovative milieu approach cannot be answered in a satisfactory way without explaining the very process through which a particular economic space, out of equilibrium, may be viable. To this end, it seems fruitful and stimulating to study innovative milieu from an Austrian perspective. Both approaches are deeply concerned with change, disequilibrium processes, the growth and organization of productive knowledge, the processual nature to economics.

The innovative milieu approach is critical and constructive: critical of the limitations of the neoclassical theory of localization, and constructive by putting forward the spatial and territorial dimensions of the organization of production and innovation. The concept of innovative milieu has been defined as a set of relationships bound in a geographical area which unites a production system, a set of actors, a system of representation and an industrial culture, which generates a localized dynamic processes of collective learning and which acts as an operator for uncertainty reduction in the innovative processes (Camagni, 1995; Maillat and Crevoisier, 1991).

The innovative milieu approach provides four "stylized facts" of the innovation process:

- **Innovation is fundamentally a collective process**. Innovative networks can be interpreted as the formation of research communities, which are not confined to the organizational boundaries of the firm. Innovation is a collective learning process: the economic problem is no longer just a problem of costs or allocative efficiency but of coordination in time of different phases of the production and innovation process. This coordination is necessary of experimental nature;

- **innovation is a complex and interactive process**. Actors are necessary ignorant: "we don't know what we don't know". Genuine uncertainty is essentially endogenous. Knowledge is dispersed in the minds of individuals in an unpredictable way. We cannot communicate even the knowledge we possess ourselves thoroughly because much of it can only be revealed in particular situation. **The innovation process is essentially an experimental process**: experiments in products, processes, organization. The economic problem is "not only of allocative logic but of search and discovery" (Richardson, 1971, p. 244);

- **innovation is a learning process**. The question is not to discover the relevant or objective knowledge but to imagine new productive options. Learning is not the solution of a knowledge problem but the result of imagination and spontaneous discovery. The economic problem is not the reduction of known ignorance but the understanding of the entrepreneurial visions of various resource combinations that reflect the idiosyncratic nature of knowledge, expectations and imagination. This learning process is a disequilibrium process in the sense that it is driven by the continual arrival of new knowledge, the falsification of old expectations. With the passage of time, learning is a process of creativity. Different individuals often interpret the same information differently. The subjectivity of interpretation and expectation, the radical uncertainty, create the possibilities of new experimentations, that is entrepreneurial exploration and exploitation of profitable opportunities;

- **territorial organization is an essential component of the process of creation**. Patterns of learning and discovery depend on "particular circumstances of time and place" (Hayek, 1948). Specifically, the discovery of new knowledge is aided by the spatial organization of entrepreneurial processes. **The extend of experimentation depends on the spatial structure of entrepreneurial interactions**. In other words, the entrepreneurial alertness and discovery process require the construction of a common interpretative structure, namely, the innovative milieu. In this sense, there is a direct link between the territorial organization of innovative firms and possibilities of discovery and experimentation. The innovative milieu's perspective on the growth and coordination of productive knowledge is quite similar to the Marshallian premise in that in real time "organization aids knowledge".

The innovative milieu is not a set of resources, actors, firms or local institutions. Far from this allocative approach of the geographic clustering of innovation, it suggests an entrepreneurial discovery process. **Without entrepreneurial vision there is no innovation process**. Considering the specificity and complementarity of capabilities and assets, the subjectivity of interpretation and expectation, the private and tacit nature of knowledge, the time dimension of innovation process, the entrepreneurial behaviour is necessarily out of equilibrium.

Discovery and entrepreneurship in out of equilibrium innovative milieu

The discovery role of entrepreneurs has received little attention from economics because of the concentration of the analysis on spatial patterns of innovation. Theoretical models of geography of innovation adopt an *ex post* perspective and neglect dynamic processes in real historical time. Technological interdependencies are poor approximations of entrepreneurial discovery and experimental processes. Paradoxically, despite the fact that the innovative milieu approach takes into account processes in real time, no attention is given to entrepreneurship. This leads us to propose a reorientation of the innovative milieu approach to focus attention on the entrepreneurship within economic processes.

The concept of entrepreneurial discovery is formally put forward by Kirzner (1973, 1997) who rejects the objectively rational and maximizing behaviour of agents. The concept of entrepreneur is distinct from that of the owner or manager of the firm. In Kirzner's term, the concept of entrepreneur transcends the "Robbinsian maximizer" but refers to the category of entrepreneurial alertness and discovery. **Pure entrepreneurship is primarily an act of imagination and perception, always includes a feature of surprise**. According to Hayek (1948, p. 101), "the solution of the economic problem of society is always a voyage of exploration into the unknown, an attempt to discover new ways of doing things better than they have been done before". In this analytical context, the innovative milieus are subtle "circumstances of time and place": they express the non-deterministic and unpredictable nature of an entrepreneurial discovery process. This entrepreneurial process does not refer to the single, heroic Schumpeterian entrepreneur, but rather to collective actions. The innovative milieu emerges as an entrepreneurial cluster.

In conclusion, we may suggest four key analytical elements in the perspective of an Austrian approach to innovative milieu:

- innovative milieu is defined as an entrepreneurial discovery process, innovations are the product of entrepreneurial imagination;
- the entrepreneurial activity is a local process;
- the entrepreneurial activity supposes a process of mutual discovery;
- time and entrepreneurship are intrinsically connected; entrepreneurial action is necessarily an out of equilibrium behaviour.

Concluding remarks

Regarding the neglect of processes and entrepreneurship in modern geography of innovation, it seems that the relationship between Austrian economics and the innovative milieu approach offers fruitful and stimulating insights. Based on an Austrian process-oriented view, it becomes possible to understand how innovative milieu emerges and changes over time, that is how processes of transition take place in real time.

As Lachmann (1956, p. 131) notes, "we are living in a world of unexpected change; hence, (resource) combinations …will be ever changing, will be dissolved and reformed. In this activity we find the real function of the entrepreneur". Fundamentally, the entrepreneur imagines new resource combinations, new productive options that are totally specific to the innovative milieu. **Entrepreneurship is a local process**. This process of discovery is of experimental nature. Entrepreneurs are ignorant. The innovative milieu emerges as a means to manage radical and endogenous uncertainty: it creates predictable behaviour facilitating coordination over time of plans and expectations. In an Austrian perspective, innovative milieu provides a framework for entrepreneurial alertness and coordination of disperse, subjective and tacit knowledge. We have to study innovative milieu from an Austrian subjectivism taking into account that "different men know different things" (Hayek) and "different men have different thoughts" (Lachmann).

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