

Torre A., 2013, Proximity relationships and entrepreneurship, in Carayannis E.G. (ed), *Springer Encyclopedia of creativity , invention, innovation and entrepreneurship*, Springer Verlag, N. York & Heidelberg, 1908 p.

Proximity relationships and entrepreneurship

André TORRE
UMR SAD-APT, Agro Paristech
16, rue Claude Bernard
F. 75231 Paris Cedex 05
E-mail: torre@agroparistech.fr

Introduction: Proximity relations at the heart of firms' strategies

In the present days of clusters, localized production systems, districts or technopoles, it is not surprising that the question of proximities is raised with force in the analysis of firms' strategies and the relations they form with their partners, competitors, and more generally with the economic and social environments in which they conduct their everyday activities. Moreover, this aspect has not escaped the makers of economic, industrial or innovation policies, who unceasingly plead in favour of structures in which economic activities are concentrated, whether they be competitive clusters in France, Industrial districts in Italy, technopoles and science parks in Britain and Japan, or the different types of clusters that exist all over the world (OECD, 2001).

The studies devoted to the analysis of proximity relations are based on research situated at the intersection of industrial and spatial economics (Torre & Gilly, 1999), which found, in the 1990s, that one could not study enterprises and their strategies without taking into account the spatial and geographic dimensions of their activities (see entry "Territory and Entrepreneurship"). This has resulted in a large number of studies - some of which are presented below – all of which refuse to dissociate the economic from the geographical aspects, and all of which take into account various dimensions of proximity relations. To the spatial dimension of proximity – which is the most obvious – is combined the relational or organizational dimension. One may feel close to people located great distances away, and this is true of work and personal relations.

The analysis of proximity relations has subsequently been extended to many other fields, such as that of environmental questions, of urban or transport policies, for example. But the industrial and productive dominant has remained strong, and there has been a marked interest in issues related to innovation and knowledge based economy. Thus, a large part of the research on the different types of proximity is devoted to two topics related, primarily, to questions of entrepreneurship (see entry "entrepreneur"), with the idea that a firm must take into account, in its strategies, the two categories of proximity relations. Thus, some studies focus on analysing inter-firm relationships, approached from the perspective of local or long distant collaboration and of firms' ties with their local environment. Many other research studies have examined innovation questions related to innovative firms and their productive and scientific environments or to firms that wish to acquire or transfer technologies or knowledge (see entry "innovation and entrepreneurship").

Definitions

The following definitions of the proximity-based approach are based on a division according to two main dimensions – spatial and non-spatial - which include more refined and detailed categories (Torre and Rallet, 2005).

Geographical Proximity

Geographical proximity is above all about distance. In its simplest definition, it is the number of meters or kilometres that separate two entities. But it is also relative in terms of the morphological characteristics of the spaces in which activities take place, of the availability of transport infrastructure and of the financial resources of the individuals who use these transports infrastructures.

Geographical proximity is neutral in essence but it can be activated or mobilized by the actions of economic and social actors, in our case firms, labs or institutions. Depending on their strategies or strategic choices, or according to their perceptions of their environment, the behaviours and attitudes of these actors vary and they mobilise geographical proximity differently. More precisely, actors might seek to get closer to or further away from certain people or places, or they might feel satisfied or dissatisfied with the geographical proximity of certain people, places or technical objects. Geographical proximity can be enhanced in the context of an urban area, by the creation of localized innovation clusters (see entry “Clusters”) for example, or by the development of local networks of producers, exchanging knowledge and information through face to face contacts.

Organized Proximity

Organized proximity too is a potential that can be activated or mobilized. It refers to the different ways of being close to other actors, regardless of the degree of geographical proximity between individuals, the qualifier “organized” referring to the arranged nature of human activities (and not to the fact that one may belong to any organization in particular). Organized proximity rests on two main logics, which do not necessarily contradict each other, and which are called the “*logic of belonging*” and the “*logic of similarity*”.

The logic of belonging refers to the fact that two or several actors belong to the same relationship graph or even to the same social network whether their relation is direct or intermediated. It can depend on the sector they are operating on; in this case they share common creative or innovation capital. It can be measured in terms of degrees of connectivity, reflecting more or less high degrees of organized proximity and therefore a more or less great potential of interaction or common action. Cooperation will, *a priori*, develop more easily between researchers and engineers who belong to the same firm, the same technological consortium or innovation network (see entry “Network and entrepreneurship”).

The logic of similarity corresponds to a mental adherence to common categories; it manifests itself in small cognitive distances between some individuals. They can be people who are connected to one

another through common projects, or share the same cultural, religious (etc.) values or symbols. Social norms, common languages partake of this organized proximity. It can also, however, correspond to a bond that sometimes emerges between individuals without them having had to talk in order to get to know one another. It facilitates the interactions between people who did not know one another before but share similar references. Engineers who belong to the same scientific community will easily cooperate because they share, not only the same language, but also the same system of interpretation of texts, results.

Temporary Geographical Proximity

Temporary Geographical Proximity (TGP) constitutes one form of geographical proximity that enables actors to temporarily interact face-to-face with one another, whether these actors are individuals or organizations such as firms or laboratories for example. It corresponds to the possibility of satisfying needs for face-to-face contact between actors, by travelling to different locations. This travelling generates opportunities for moments of geographical proximity, which vary in duration, but which are always limited in time. TGP is limited to certain times; this form of geographical proximity should not be mistaken for a permanent co-location of firms or laboratories.

The development of communication technologies and ICT nowadays facilitates long-distance exchange. A large part of the information and knowledge that are necessary for production or innovation activities can be transferred from a distance, through telephone or Internet mediated exchanges for example. Consequently co-location no longer constitutes an absolute necessity. However, times of face-to-face interaction are necessary and beneficial in this context. Face-to-face interaction cannot altogether be eliminated, including in the case of communities of practice, for example (See Torre, 2008). As a consequence ICT cannot be considered as substitutes for face-to-face relations: both are useful tools to support or enhance the interaction between two or several individuals. Space matters, but in a new way; one that consists of temporary face-to-face contact between two or several individuals.

Theoretical origins and debates regarding the concept

The first research studies on proximity were conducted in the early 1990s and led to the creation of the so-called « Proximity Dynamics » group in 1991, and later to the publication in 1993 of a special issue of the *Revue d'Economie Régionale et Urbaine*, entitled « Economies of Proximity » (Bellet et al, 1993). In that special issue, which was written entirely by researchers of this movement and which subsequently resulted in the creation of what is now commonly called the « French School of Proximity », were published various articles, all of which presented the concept and approached in different ways questions pertaining to production and innovation processes. All the articles are devoted to production related questions and place emphasis on the geographical component of these relations. This journal's special issue advocates the integration of the spatial dimension in the analysis of industrial relations and provides a first interpretation of proximity relations. It introduces two types of proximity, called « geographical proximity » and « organizational proximity » respectively; at the intersection of both categories one finds the so called « territorial proximity »; a notion which deals

with the complex interplay between productive relations and spatial relations and their being inextricably linked.

The following publication by the group of a multi-authored book (Rallet & Torre, 1995) shows that the authors, most of whom are either industrial economists interested in spatial questions, or spatial economists interested in industrial issues, all prove to be passionate about the topic of productive relations, and their development at the level of territories, and have a particular interest in approaches to innovation. Their analysis did not develop out of nothing, nor without any theoretical bases. These authors inherited analyses carried out from a territorial perspective, on questions pertaining to localized production systems, and more particularly of industrial districts and innovative milieus (see entry “innovative milieu and entrepreneurship”). They are the followers of a relatively heterodox tradition, and reject both the idea that the economy is only dependent on commercial relations and that of a separation of the productive dimensions – mostly studied by economists – from the more spatial dimensions, which are generally examined by geographers. Thus, the approach is meant to be multi-disciplinary, even though it emerged from economic analyses.

Standard economics has not paid much attention to the questions of proximity and has seldom used the term. Indeed, it generally prefers approaches in terms of distance or location: Space is, at best, treated as data, the effects of which on economic activities and therefore firms must be taken into account. The models are characterized by a tension between inter-firm competition - which forces them to go further away in order to obtain selling space for their products – and their search for advantages drawn from location close to clients or to competitors. The benefits of proximity, much praised, are seldom explained, and are to a large extent mistaken for the very process of spatial agglomeration, to which proximity can contribute without necessarily being associated to it. Even the New Economic Geography, which is a relatively recent movement, has not shown any interest in the question.

But other studies have attempted to open the “black box” of proximity relations. Whereas the standard approaches consider proximity relations as causative variables, without their content being ever considered, other works have tried to understand proximity relations by attempting to highlight their significance as well as their different contents. This movement has been largely inspired by the highly influential district, milieu and SPL approaches, which have opened the way to unselfconscious research on “the local”. The authors in this research movement have placed emphasis on the relations between firms and on the networks that develop, mostly at local level. They have highlighted the systematic nature and the importance of these systems’ structures and modes of organization. They also showed that industrial districts are not the result of a concentration of firms initially attracted by favourable factors, such as primary resources for instance. Rather, they are built upon an organizational settlement in the territory which makes the “disengagement” from relations to an area or a local system difficult for producers, given the presence of local skills and trained workers.

A second track of research into the origins of the externalities of proximity resides in the approaches that emphasize the horizontal links within localized production areas. The traditional analysis of external economies is challenged here because the frontier of the firm fades in favour of the organization into networks, like that found in the emblematic case of the Silicon Valley (Saxenian,

1994). Beyond the characteristics purely linked to the specificity of the technologies in question, three main dimensions are at the origin of the competitiveness of these industrial systems: a) the existence of local institutions guaranteeing the circulation of a local culture, b) the specificity of the firm's internal organization and c) the presence of a particular industrial structure based on the existence of recurrent contacts between local actors.

The third track of analysis is found in the so-called geography of innovation (Feldman, 1994) which emphasizes the process of spatial concentration of innovative activities, be there within regions or smaller geographical areas, and directly introduces the notion of proximity into the analysis. Innovation is concentrated essentially in a few zones in which one can find, not only units of production but also public research laboratories or universities (see entries "Invention and innovation as creative problem-solving activities" and "University Research and Innovation"). This empirical evidence reintroduces the idea of the importance of the relations of proximity in the generation of the new technologies. Moreover the link between this movement and that of the spatial concentration of industrial activities is made: firms' choice of location can be explained by their need to develop relationships not only with other firms (Inter-firm relations) but also with science (Science-industry relations).

The group has also inherited a great deal from the research conducted, in industrial economics, on value chains and industrial groups, or on the micro economics of imperfect competition and firms' strategies. But it is also largely indebted to evolutionist and institutionalist approaches. The role of institutions is always emphasized, and industrial relations are presented as forces driving the processes of change and of transformation of economies, which mostly rest on innovations and technological changes. Similarly, the research on proximity moves, from the start, beyond methodological individualism by repositioning the individual or the firm within a network of social or economic relations. The firm is never considered as an isolated entity, but is always regarded as being part of groups of actions, local systems or long distance networks.

Applied studies and theoretical advances

On the basis of these principles, a large series of applied studies were conducted, focusing primarily on industrial firms and their relations, or on technological interactions; and these applied studies have rested on a proximity based approach. They have mostly examined the case of France, and have focused essentially on productive systems such as the Toulouse, Grenoble or Marseilles « technopoles » or on organizational structures such as innovation networks or cooperatives for instance. They reveal that the formation of relations between firms located in the same areas is not exclusively related to their geographical proximity. Social ties, inter-firm relations, trust, networks of actors, friendships, successful collaborations all contribute to forming a web locally; a web which matters at least as much as co-location. In light of this network, one clearly understands the factors of what can be called the firms' "ties to their territory". Each tie is fragile and must be nurtured and stands as a veritable resource for firms, which hesitate all the more to move to different locations as the web they have woven with other local actors is strong.

Nevertheless, the development of the research on proximity, which continues to give rise to collective publications that provide provisional assessments of the analysis and of its progress (see for example, Torre & Gilly, 1999, or Pecqueur and Zimmermann, 2004), has quickly led to an in-depth debate on the different forms of proximity. Besides the authors who argue that there are two main types of proximity, called geographical and organized (or organizational) proximity respectively – as seen above – there is a variant school of thought that considers that the political and institutional dimensions play such a central part that it is necessary to posit the existence of a third category : institutional proximity. The latter is defined as the actors' adherence to a space that is defined by common rules of action, representations, thought patterns (Kirat & Lung, 1995). The authors of this school reckon that the political dimension, the importance of the legal component, of the rules that govern the social and economic relations justify the creation of this category; all the more so as organized proximity is thought to be essentially cognitive in nature. As for the defenders of the first approach, they consider that these dimensions are encapsulated within the logic of similarity.

With the rising popularity of the research on proximity, new, non-French-speaking researchers have, since the 2000s, joined the debate and have contributed new directions and taken into account new concerns. One of the most remarkable contributions has resulted in an increase in the number of proximity categories, which the founding fathers had preferred to limit for the sake of analytical coherence, but which has exploded in order to take into account the different facets of proximity and reveal their extraordinary malleability as tools of reflection. Five types of proximity are nowadays often described : they are called cognitive proximity (common knowledge bases and competences), organizational proximity (the extent to which relations are shared in an organizational arrangement), social proximity (the embeddedness of the trust relations based on friendship, family ties and experience), institutional proximity (adherence of the economic actors to common rules, such as structures, laws, political rules, and to common values), and geographical proximity (Boschma, 2005).

Simultaneously, as a result of the emergence of new societal concerns and of the arrival in the group of sociologists, geographers and land planning experts, there has been an extension of the topics and themes addressed. This extension has taken several directions consisting, for example, in taking into account issues related to the environment, land planning, transport, urban or rural planning, or, of a question of particular interest to us : the importance of new Information and Communication Technologies in the relations between firms located in proximity to or far from one another. It has also sounded the knell of the eulogistic way of looking at proximity. The negative dimensions of the various types of proximity are now highlighted, particularly those of geographical proximity, which appears not only to generate land use conflicts in situations where space is scarce, but also to be conducive to problems in terms of relations between innovative firms for example : Indeed a classic finding is that geographical proximity facilitates industrial espionage and therefore the unwanted appropriation of knowledge by firms' rivals, and also that production systems that give priority to internal relations at the expense of external relationships may find themselves in negative development trajectories.

Many research studies have been conducted, particularly in European countries, on the basis of the proximity based approaches, and often by using field data and the econometric tools. They often begin with the analysis of one particular sector – software or aeronautics for example – with a marked interest in knowledge-intensive industries or technological innovation sectors. They seek to

test the importance of the different types of proximity in firms' performance, and often confirm that geographical proximity cannot alone ensure high performance, nor does it in itself facilitate the exchange or interactive creation of knowledge. Thus, it is the non-spatial dimensions of proximity that now have the place of honour, and more particularly their role in the creation of networks of economic actors, located either in proximity to or far from one another: Indeed, these networks rest mostly on different dimensions – social, relational, cognitive ...- which do, indeed, correspond to the components of the different types of proximity (Boschma & Frenken, 2010).

Conclusion and Future Directions

The most recent development of the analysis of Proximity relations, dating from the second half of the 2000s (Torre 2008), has been the publication of research studies on the temporary dimensions of proximity and particularly of geographical proximity. They have been based on three findings. The first has to do with the increasing number of fairs, trade shows and conventions, which bring together, in given places and for very short periods of time, people located varying distances away from one another but who nevertheless are able to communicate through ICT. The second finding is related to the increasing mobility of individuals, mobility which concerns private persons but also engineers or business owners or managers. The third and last finding is linked to the analysis of the relations developed by firms that form clusters in specific fields such as that of biotechnologies for example : Though they reap financial and real estate related advantages from being located in the same areas as other firms that belong to the same sectors of activity, they often prefer to form relationships with outside firms so as to prevent problems related to the leaking or loss of intellectual property between themselves and rival companies.

This has led some researchers to examine the way in which firms located distances away from one another communicate. One know that they mostly do so through ICT but also through the inevitable implementation of geographic interfaces: Different cases of communication are examined: long distance communication, fairs, conferences, as well as temporary “platforms” of project teams, implemented by large manufacturing groups such as EADS or Renault, in order to enable the participants of a project to work together in the same place for short periods of time; participants who will subsequently go back “home” and work together from a distance. As has always been shown since the first research studies on proximity were performed, space and geography do matter, but researchers have moved far beyond the exclusive analysis of clusterized firms, even though these new considerations have considerably enriched it.

Bibliography

- Bellet, M., Colletis, G., Lung, Y., 1993, Économie de proximités, *Revue d'Economie Régionale et Urbaine* 3: 357-606.
- Boschma, R.A., 2005, Proximity and innovation. A critical assessment, *Regional Studies*, vol. 39, n° 1, 61-74.

- Boschma, R., Frenken, K., 2010, The spatial evolution of innovation networks: a proximity perspective. In R. Boschma and R. Martin (eds) *The Handbook on Evolutionary Economic Geography*. Cheltenham, UK: Edward Elgar, 120-135.
- Feldman M.P., 1994, *The Geography of Innovation*, Kluwer Publishers, Boston, 155 p.
- OECD, 2001, *Innovative clusters, drivers of national innovation systems*, OECD, Paris, 420 p.
- Pecqueur B., Zimmermann J.B. (eds.), 1994, *Economie de Proximités*, Hermès, Lavoisier, Paris.
- Saxenian A.L., 1994, *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*, Cambridge, MA: Harvard University Press, 226 p.
- Torre A., 2008, On the role played by temporary geographical proximity in knowledge transfer, *Regional Studies*, vol. 42, n°6, 869-889.
- Torre A., Gilly J.P., 1999, On the analytical dimension of Proximity Dynamics, *Regional Studies*, vol. 34, n°2, 169-180.
- Torre A., Rallet A., 2005, Proximity and localization, *Regional Studies*, vol. 39, n° 1, 47-60.

CV

André Torre is research director at the INRA (National Institute of Agronomical Researches) and AgroParisTech in Paris. He is President of the French speaking section of ERSA, Director of the PSDR (For and About Regional development) research programs and Head of the « Proximity team » in Paris. André Torre has published more than 100 articles and 8 books, mostly on issues related to space and coordination between people or groups of people, on the topics of proximity, innovation and regional development. Its research was for a long time at the cross roads of spatial and industrial economics; It has in recent years become more multi-disciplinary and focused increasingly on questions related to land use planning and sustainable development processes. It currently focuses on the analysis of proximity relations and on their importance in processes of coordination between people, and centres on two main areas: local interactions between innovative firms and, more particularly, the role played by geographical proximity in the transfer of knowledge; land use and neighbourhood conflicts.