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SPATIAL THEORY, TEMPORALITY AND PUBLIC ACTION

Abstract: Innovation and information combined with ICTs constitute a new framework which questions the theories on the functioning of classic space and stresses the need to think of new frames. The principle of acentrality proposed here highlights the role of politics in the structuring of space, as well as the role of temporality. For public planning policies to be relevant, acentrality and temporality must be taken into account.
Key words: spatial policy, location theory.

1. INTRODUCTION

The embedding of activities seems to be challenged everyday by plant closures, relocations and installation mobility. Hence the idea of a deterritorialisation[1] of activity, with activity gradually losing its roots, but first and foremost, losing the very use for these roots. Similarly, politicians seem powerless when faced with logics beyond their scope. Yet, reality is not that simple. Actually, the real issue here is to find the right frame to interpret the facts. The first hypothesis is that the rules of location have become more flexible, allowing more possibilities and bigger competition, in a conceptual framework which remains the same. The second consists in asserting the existence of a new framework invalidating part of our frame of reference, and therefore requiring the recasting of the principles of territorial organisation and the embedding issues.

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[1] What is meant with this word is the decline of territory as a location factor.

The organisation of regional space and urban structures seems to endorse the first hypothesis. Indeed, it gives an impression of great stability and durability, which explains why numerous works try to describe and explain this balance. The idea of central places was expressed in the nineteenth century (Robic 1982), and later theorised by Christaller (1933/1966) and, with a different position, by Lösch (1944/1954); later on, other works went deeper into it, trying to account for the stability of the evolution. As far as geographers are concerned, Denise Pumain (1980) uses Gibrat's model to report on some scalar variations which are capable of bringing to the fore ever stronger urban poles; the PARIS (Sanders 1992) research team has worked extensively on questions of self-organisation; as for Fujita, Krugman and Venables. (2001), they contribute to a dynamic vision of regional structures by renewing the Christaller's model and by following the path of self-organisation already explored in the 1980s (Krugman, 2008; Allen and Sanglier, 1979; Sanders, 1992).

These models and theories face numerous fundamental problems. The first category gathers together the idea of the economic balance point of central spaces, of territorial optimum and, beyond that, the principle of market as the driving force behind territory organisation. Indeed, these elements struggle to account for the real behaviour of the participants, or for the capacity of the system to remain stable through various economic and political systems (Fache, 2008a). The second category, which we are going to tackle in particular here, results from the current mutations induced by information and innovation. These two elements generate major upheavals in the functioning of cities, urban networks and regional systems, which have already been studied by numerous authors. Camagni (1992), for instance, defines new types of relations between cities that may or may not be hierarchical. Now, information and innovation introduce such thorough changes that even the most acknowledged theories must be revisited, revised and at least partly abandoned, which seems to be corroborating the hypothesis of the need for a new conceptual framework. This framework is essential to consider public action in a more dynamic way. Indeed, any action implies a plan, and thus the understanding not of past organisations, but of organisations which are already on the way, following new parameters.

The objective of this contribution is to propose two working hypotheses. First, the acentrality of space induced by the fundamental role of innovation in its structuring, and thus also by time and speed. Second, the idea that acentrality sets political players and the notion of territorial plan at the core of space structuring, with economy mostly adapting itself to the new deal (Fache 2008a).

The first issue to be investigated is the relationship between innovation and the evolution of territories. It conditions the processes of territory destabilisation and fragmentation, opening the way for new territorial hierarchies and organisations, and new roles for key players, especially politicians.

2. INNOVATION, SPEED AND DECONSTRUCTION OF FORMER RELATIONS

The structuring of space and territories stems from innovation, and now aims increasingly at innovation. Though this principle is getting more and more obvious, it is not mentioned in standard works dealing with the geography of activities (e.g. Mérenne-Schoumaker, 2002; Géneau de Lamarlière and Staszak, 2000). It is nevertheless essential. Placing it at the heart of the process changes the whole picture.

2.1. Innovation as Core Principle: Structuring through Innovative Poles

It has been a while since innovation conquered a decisive place within economic processes. Focusing on the role of the entrepreneur, Schumpeter has introduced a dimension essential to corporations, markets and economic cycles of all kinds (Shumpeter, 1935/1999). This innovation also provides an insight into the process of territorial accumulation, akin to the innovative milieus developed by the GREMI (1987; Camagni and Maillat, 2006). Innovation is also at the heart of diffusion models, from Hagerstrand's (1953/1967) models to the latest developments. However, it is not at the heart of space structuring processes. It is *de facto* introduced as a constituent in a system governed by broader, sometimes exclusive cost issues. In that regard, the dynamic model proposed by Fujita, Krugman and Venables (2001) is based on data like transport costs, salaries and trade barriers, but not in the least on innovation. It is thus an essential parameter, but which remains outside the territorial system.

Today, this position is no longer appropriate, because innovation[2] is at the heart of everything: products, process, organisation… That being the case, how could a geographical system escape the impact of innovation?

This impact takes various, easily perceptible forms. The first one is linked to the increasing structuring weight of the poles which are capable of mastering innovation in its entirety. These poles often belong to the category of metropolises, which may give the impression that innovation is only strengthening the commanding power of long-established structures. Actually, it is possible to interpret things the other way around. In the past, metropolises were not influential because of some specific commanding power, but because of their capacity to master the innovations of their time. To start with a light approach: the 'Paris

[2] We use the term of innovation in a broad way. It integrates technology, but also what has to do with creativity, like design, which is partly linked to fashion trends or innovative political decisions. This approach is common to a majority of researchers of the 'Industries et emplois' group of the CNFG (cf. S. Daviet, J. Fache, S. Montagné-Villette etc.).

fashion' boutiques of yore show how a pole can be a leader and have a strong influence on behaviours. Concretely, it shows how one fashion pole can dictate the life and pace of life of whole cities, as it was the case for Lyons, which used to be specialised in textile industry and ready-to-wear clothing, and thus dependent on such fashion trends. As a consequence, Lyons won its status as a leader in the field of chemistry and artificial colouring (Laferrère, 1960). The same thing occurred in the Cholet area, where the ready-to-wear business is strongly linked to the fashion market (Montagné-Villette, 1987). More generally speaking, innovation is a structural key, including for small and medium cities which position themselves according to it, and not necessarily in the sole field of technology. To keep the example of the Cholet area, this industrial district is now embarking on the adventure of the 'Child Pole', an original competitiveness cluster betting on an innovative and trans-disciplinary concept.

Therefore, the impact of innovation can hardly be described as new. It may even be the essential purpose of the urban, metropolitan system and of regional organisations. What is now changing is the dimension of the phenomenon, the awareness of its importance, the conceptualisation of correlated development, and finally the fact that it is a real driving force which generates a world of knowledge economy. But it has been overshadowed by some factors, including the pace of the spreading of innovation. For instance, Hagerstrand's (1953/1967) seminal works are developed within a framework of connections between a pole and the spaces which are inside its zone of influence, on decades-long scales of time. Hence the appearance of immobility, permanency and inertia. Michel Rochefort's (1960) works efficiently bring to light spatial logics based on distribution networks and zones of influence, which correspond to a historically dated way of functioning. But he also emphasizes the major role of politics to shape this organisation, with or without a planning vision for that matter.

This first impact is in keeping with the theories which have been putting innovation at the heart of industrial production for the last 50 years. Vernon's product life cycle brought about numerous adaptations, especially territorial ones. Industrial districts (Ritter, 2000), tourist resorts, science parks (Daviet and Fache, 2008) and many forms of development and/or territorial planning follow cycles, which are related to their innovative dimension and to the introduced territorial differential. Most studies focus on local areas, and therefore offer only a partial vision of territorial organisation. It is hardly surprising, because even if there are general macroeconomic processes, local cycles are often specific, independent from one another. For instance, the current cycle in Nantes is based on its asserted status as regional capital in the West of France, and is disconnected from the redevelopment cycle of the Cholet area, and from the accumulation around the Yon valley; the dynamics in the Aix area answer to logics which are much different from those of Marseilles (Morel, 2000) etc. However, one cycle in place X will change the cycle in place Y. The consequences of creating

a biotech park largely depend on the national and international environment, and thus on the existence of other poles and on their stage of development. The difficulty is to look beyond these cycles and try to find a more comprehensive explanation for seemingly disconnected entities.

2.2. The Break in the Pace of Evolution

The second aspect of this impact, the most destabilising one for territories, is without a doubt speed. It is as logical as the first aspect: former product cycles have grown shorter, sometimes drastically, causing fleeting setting-ups and investments. Future 28µm micro-component factories are bound to have a two-year life expectancy only (Fache, 2009)! Besides, the technological rush of countries and companies requires ever-hasty discoveries and innovations, to such an extent that they tend to merge in some sectors like biotechnologies. For that reason, notions like anchorage and heritage change completely. The crucial question is now to know how increasingly fragile installations can establish themselves in destabilized territories. The question of the adaptability of territories also needs to be considered. Indeed, the challenge of innovation and integration into knowledge economy is already tricky as it is. The challenge of speed may quickly become a wager, even for well-established poles. For instance, in just a few years, a high-tech city like Grenoble has seen the Motorola-Freescale firm invest in its research potential by building an expensive research centre (2004), only to pull out from the area 4 years later.[3] But for regions whose economic base is neither particularly innovative nor technological, the challenge is even greater. Saarbrücken, the capital of the Saarland state in Germany, is now facing such a trial and trying to redevelop, this time focusing on innovative activities, notably in computer science, but it has difficulty emerging (Gobin, 2007; 2008a). It is true that speed raises the problem of the time differential between politics and companies as regards regional and urban planning.

These simple facts have major consequences on territories. First of all, the very idea of territorial balance and optimum, omnipresent in the literature, loses much of its explanatory strength. Indeed, the basic principles of regional and urban organization apply to relatively long periods of time, during which the setting up of an industrial plant, for example, gets integrated into a structural logic of space. Henceforth, the cyclical logic prevails. Then, the question of the global coherence arises. Actually, the setting-ups, migrations or sudden disap-

[3] Freescale did not renew its participation to the Crolles II agreement, thus striking a deathblow at the local scientific and industrial coalition. Grenoble turned to other partnerships, and industrials like STMicroelectronics did the same with IBM. Therefore, the management of territorial development becomes challenging, and has to adapt itself on extremely short scales of time.

pearances of activities obey local logics. The general articulation seems chaotic, and the territorial embedding a past notion. Finally, this general articulation is still to be defined, using not a single rule, but several differential rules. Innovation happens in place X according to place Y, and what is to occur at time T will be fundamentally different according to context. It amounts to saying that it might be possible to define a type of evolution at a given time for a given place, but that making broad statements is very complicated, not to say impossible as such.

3. GLOBAL INFORMATION, URBAN DEVELOPMENT PLANS

The key role of innovation sets information and knowledge at the heart of the system. Just like innovation, their role in regional and urban structuring is not new. The difference lies in technologies which allow information to be transported, stored and treated, since this treatment produces increasingly complex information. The speed of information, which keeps pace with the increasing speed of innovation, triggers new problems, linked notably with the difference between the time of companies and that of technology. At a time when the industrial, technical and technological culture of places is essential,[4] this differential is particularly disturbing and questions the adaptability of territories when faced with general destabilisation, even when the biggest metropolises are concerned.

3.1. Immediacy, Acquisition

The essential characteristic of the current informational world is the immediate access to an infinite mass of information. Admittedly, equipment creates at once a difference between the territories which are integrated into the system and those which are marginalised. The spiral of flows is going to make all the more damages since the ADSL technology using telephone lines is reaching its limit. Now, the ongoing thin cabling of the territory starts with metropolises, with interoperability and trade agreements between French telephone and internet companies as main obstacle.

[4] Many works have insisted on this dimension, starting with Marshall's (1890) seminal work, and the multiple works of researchers on districts since the 1970s: Becattini (1992), Benko and Lipietz, (1992), SPL and milieux innovateurs (Aydalot, 1986); Camagni and Maillat (2006). Geographers (Daviet, 2005) come to similar conclusions.

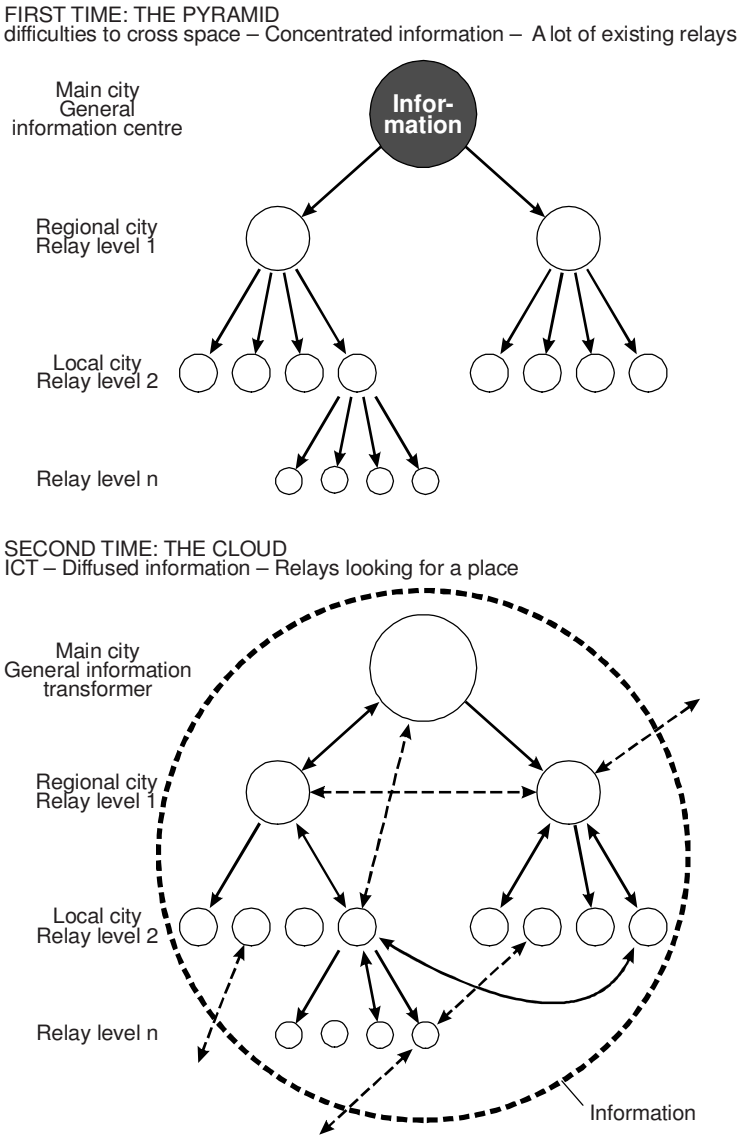

Fig. 1. From Christallerian structures to informational structures

But beyond this technical aspect, immediacy radically changes spatial connections. Indeed, the Christallerian and Löschian spatial connections used to be mainly based on informational connections between the cities which held information that could not easily cover great distances, and those which did not. Besides, the administrative meshing in developed countries had much more to do with the informative mastery of the territory than with the search for eco-

nomic balance. More and more administrative and political centralities came up in the course of time, along with ever stronger links between the information centre and its relays. We went from provinces in Ancient Rome, to counties in kingdoms and empires in the Middle Ages, whose power increased proportionally to the remoteness of the commanding centre, then to increasingly subordinated centres, from intendants in the Ancien Régime to prefects in modern history[5] (figure 1, time 1).

Nowadays, the most diverse central places have direct and immediate access to information (figure 1, time 2). Such immediacy challenges everything, starting with hierarchical links. Standard hierarchical pyramids are now replaced by a system in which every place in a given space can contact any other place. Everything thus seems possible, and according to some schools of thought, notably regarding clusters, not only is networked space possible at various scalar levels, but it also generates multiform configurations in which numerous types of spaces can meet. This results in public actions whose scientific validity is yet to be demonstrated. High-tech clusters organised in network, the German *kompetenznetze*, or even recent inter-clustering policies are based on the implicit belief that in this informational world, almost all configurations are possible, and that policy-makers can set off technological proximities that take the place of space agglomerates and localized accumulations. Again, reality is not that simple (Rallet and Torre 2007).

The reconsideration of the proximity and territorial continuity connection has another consequence. The main issue is not to receive information anymore, but to be able to transform it, thus establishing the classic difference between information and knowledge. The polarities structuring regional space are the ones that can receive, transform with some local added value, and emit a flow which is slightly different from the one they receive, but we will get back to this. That might seem insignificant, but it is not. Indeed, for centuries, numerous cities have only been information relays, and have kept a substantial workforce to treat information. The whole administration network in modern countries and in international firms was based on that. Companies like IBM have weaved a network of regional management relays – sometimes even local ones, when the market was suitable – whose role was to manage commercial and technical information for a given space.

Things have radically changed since then. Indeed, with ICTs, it is now possible to manage an increasing amount of ordinary, standardised information, and to treat it automatically. This means that the role of information relays is now obsolete. They will not disappear instantly, but public utilities and company

[5] The combined reading of many synthesis works shows the importance of politics, but also of fate in the moulding of central places and urban networks which later shaped the embedding points of economic activity (Mumford, 1964; Pinol, 2003; Agulhon, 1983; Roncayolo, 1985).

administrations are going through numerous reorganisations, aimed at skipping these relays or decreasing their importance. For example, the complete revision of the French tax office network, bank network or of services which used to be public and are now under privatisation, like post offices, is undermining traditional connections in the territory. In a large metropolis, this restructuring goes unnoticed. In a rural village, it may come as a shock, all the more so since there is sometimes a direct dependence on public or semi-public employment. Besides, the decision to nationally decentralise information processing centres to mid-sized cities moves the heart of information according to new logics. In the private sector, the location logics of call centres, or the system of on-line sales, are a sign of time. They show that companies are now able to treat continental, even global information from a unique data centre. The role of complex information is made even more obvious. The very idea of community service becomes blurred. However, the accumulation of such small facts, which often go unnoticed when considered separately, raises the broader issue of the utility of a central place, whatever its dimensions, because now ordinary information has no specific reason to be treated there.

Consequently, if a city, whatever the size, wants to exist, it has to bring something more to global information. This extra value is necessarily connected to time, and so it evolves according to innovation and knowledge, as we will see later.

3.2. The Fragmented Space

This informational organisation changes the very structure of space. Indeed, informational relations between the various elements of the urban networks cannot be taken for granted anymore, they need to be justified. The city loses its almost natural role and has to build itself one. Thus, the structure of space in hubs and spokes, analysed in the 1980s, illustrates the bypassing of established hierarchies and networks to establish new ones (De Roo, 1993). Camagni's (1992) analysis show the same thing under a different angle, by putting forward the connections between cities, and how they become more complex and renewed, as opposed to the established hierarchy. But the current territories of innovation dismantle the structure of relations even more. Indeed, the former transverse possibilities complicated the plan. Now, it is the very existence of the plan that is questioned. For instance, in the area of Nantes, towns like Ancenis are integrated into a metropolitan system. Other towns have specific and original dynamics (La Roche sur Yon and the plastics processing industry). Finally, others are undergoing either a structural crisis which raises the issue of their integration into the Nantes system (Cholet), or a deep crisis which raises doubts about their possible recovery (Châteaubriant).

The same problem arises everywhere and on every scale. Saarbrücken, a mid-sized land capital, operates as an isolated entity, and has a strategy of integration into knowledge economy which is independent from what takes place in nearby cities. There are some cooperation attempts (the cross-border Saarbrücken-East Moselle metropolis; the Quattropole, a network of four cities), but in the end, it leads to few concrete results (Gobin, 2007, 2008a). Besides, as far as innovation is concerned, the city is stuck in a difficult situation. Given its size, Saarbrücken needs to cooperate with its rival cities, but at the same time, it might be taken over as a satellite town.

To switch to another perspective, the Irish city of Cork also has its own, very offensive strategy, banking on a combination of Irish and local assets. The Irish assets are those which generated the 'Celtic tiger' miracle (Walsh, 2007, p. 55) (European grants, fiscal strategies targeting FDI, return of the American-Irish…). Cork's main asset is the location of the city in the South, and thus its ambition to become a 'gateway' to Ireland, an interface. In addition to that, the city has launched the building of a park science connected to the university (Guihard 2008). This strategy has generated much growth, but also some vulnerability, which was brutally confirmed by the 2008 crisis, when many sites closed down as fast as they had opened.

Thus this informational revolution changes the very nature of spatial proximity. Physical proximity within territorial continuity used to be the standard. Now, the notion of territorial continuity does not have the same meaning anymore.

Space is fragmented even in its operating logics. Multiple cells of various sizes work in juxtaposition, either jointly or discretely. The nature of connections has changed completely. Indeed, once operating according to a classic hierarchical order, spatial relations are now based either on a power struggle, or on a spirit of cooperation. To go back to the case of the Cholet area, the city has been compelled to include a high level of cooperation with Nantes and Angers within its strategy. Indeed, the idea of the 'Child Pole'[6] is based on the connection and interaction of all the types of skills that have to do with children (Fache, Leblond and Vallée, 2005). Yet, the Cholet area has very low expertise in some of these fields (educational games software, for example, with a single leading company established in the area), and none in others (child psychology, paediatrics). It is thus necessary for it to try and work with nearby knowledge clusters, even if the outcome is uncertain. Indeed, as far as child-oriented medical skills are concerned, there is no reason why Nantes would chose to give up expending sectors, especially since its declared strategy is to create a European-class biocluster, and it already has difficulty competing with existing bioclusters of the same category (Fache, Bambou, Billaud and Le Nuz, 2009).

[6] Child pole = *Pôle Enfant*.

In other cases, the economic power struggle leads to a whole region being overpowered by another. The Toulouse region constitutes a good example, as the Airbus system is based on an extremely strong centre-margin relationship, which affects both population and commercial issues (Zuliani and Leriche, 2003; Zuliani, 2005b; Zuliani and Jalabert, 2005). Moreover, this functioning brings about the reversal of the regional structure, because the classic ascending relationship – with the city being the product of its development region, or of its regional hinterland, as Christaller would say – is reversed and replaced by a structure in which the region becomes the product, the 'child' of a ruling metropolis (Fache 2008b; Anderson 1993). This logic has been identified by Hall (1966, 1999; Derudder and Witlox, 2004) in his work about world cities, which embody in his opinion an advanced level of the Christallerian system, which followed a different logic. What is different about the current evolution is that the process is spreading, and do not affect only very large cities any more, but also mid-sized cities.

3.3. Competition, Cooperation: Squaring the Circle

The consequence of this explosion is the increasing competition between territories. Henceforth, with the loosening of local networks and the new opportunities on hand, anything is possible. At least, it is a widespread opinion. This situation results in territories constantly wavering between cooperation and competition, with the latter option apparently prevailing.

As such, the use of the term 'metropolis' is quite evocative. Almost every French capital of region likes to think of itself as a metropolis. The logic beyond their action is clear. With the development of science parks, cities tend to focus on this model. They all want their own technological pole, sometimes more than is sensible. The efforts to achieve territorial cooperation meet the exact same objective: achieving the networking of some mid-sized cities to reach a rather imprecise threshold, from which they can make up together a European-level metropolis.[7] These gatherings go against local-scale political strategies, and for independent spaces, it is next door to impossible to unite on a joint spatial project (Gobin, 2008b).[8] For instance, in the West of France, the cities of Nantes and Rennes have been rivals for ages, and it is still difficult for them to work as a team. Brest will not be easily connected to a network either. Surely, many

[7] The ambitious call for projects on metropolitan cooperation in 2005 is consistent with this perspective. Cf Agences d'Urbanisme et de Développement de l'Ouest (2006), APEREAU/ DIACT (2006).

[8] The research of Gobin (2008b) shows very accurately the tangle of political structures and the competitions between structures of power like urban communities and cities on one hand, and regions on the other hand.

obstacles can be overcome with ICTs, but in the end, there is still an actual physical distance to be covered by people and goods.

The metropolitan fever does not stop at our borders. Many mid-sized cities try to play in the major league. In that regard, European classifications are not neutral, as for many policies, they come out with objectives which are far from being plain reference points. Nantes regrets ranking below the fiftieth place in Europe and wishes to climb up the hierarchy, whatever the classification; Lyons calls attention to its progress of several ranks up in the classifications as a sign of political success.

These circumstances seriously question some political actions, as polycentrism, which has been underlined by the SDEC (Peyrony, 2002) and integrated to the meshed polycentrism policy of former DATAR. Actually, in addition to differences in the very definition of polycentrism, these actions recommend the preservation of the Christallerian structure inherited from decades, not to say centuries of socio-spatial practices. Cities of any size become indispensable to the organisation of the territory and to the life of its inhabitants (Allain, Baudelle and Guy 2003). True, it may be advisable to avoid metropolitan overcentralisation, but the real problem is to know if the territory which is defined by these schools of thought still exists, and if it does so on two levels.

The first level is the economic rationale for companies, and knowledge economy in particular. At the present time, concentration is acceptable, especially regarding rare skills. Thus, high tech activities, which are often real driving forces, are grouped together in more or less compact, interrelated cluster.[9] Now this sometimes extreme logic of metropolitanisation is totally at odds with that of polycentrism.

The second deals with lifestyles. Populations in developed countries are urban, and those in developing countries are on the way to becoming so. But what kind of cities are we talking about? World metropolises? Region capitals of 500,000 inhabitants? Towns of 10,000 inhabitants? If there is undoubtedly a renewed interest in mid-sized cities, it is hardly the case for small towns, especially if they are isolated. Because this is the point: numerous small and medium cities develop in the orbit of a powerful metropolis which prompts them. Are cities like Angers and Le Mans growing because of their attractiveness or because they are close to Paris? Of course, the answer is not crystal-clear, but it is enough to question some dogmas of polycentrism.

Actually, every entity goes its own way, which often strays away from centuries-long lines of thinking, but also from the life of the population itself. In that regard, politics plays an essential role, because, as polycentrism shows, it is

[9] It is the case for biotechnologies, for example. Cf. Zeller (2004). It is also the case for aeronautics, but with different constitution logics. Cf. Beckouche (1996); Fache (2005, 2007); Zuliani (2005a).

obvious that the structure of a territory is influenced by social and cultural practices and by political action, which tend to induce inertia, as much as it is shaped by economic flows. It is thus necessary to look for other theoretical tracks to deal with regional and urban networks.

4. THE SPATIAL DEVELOPMENT PLAN BEFORE THE ECONOMIC LAW

To leave on new tracks means studying the elements of structure in a territory. Innovation implies a certain number of new principles.

4.1. A Geography of Sensors

Economic geography tends increasingly to be a geography of transmitters – transformers – receivers (which we shall call TTRs by convenience). Indeed, as we have seen already, integrating the knowledge and innovation economy implies the ability not only to integrate information flows, but above all to bring something more, some transformation and extra value to the circulating information (figure 2). Without this essential transformation, activities have no particular reason for settling in city X, which would *de facto* be reduced to a hardly useful transmitter-receiver. These specific points may establish some manufacturing or assembly work, but they belong to the category of interchangeable informational spaces. The final aim is not to be easily interchangeable anymore.

This logic corresponds to a radical change in the functioning of territories, whose informational role is being questioned, as we have seen. Some territories build up around this strong informational role (Grenoble – Bernardy, 1996; Boisgontier and Bernardy 1988; Cambridge…), sometimes after starting from almost nothing (Sophia-Antipolis – Fouich, 1977). Others are in great difficulty in this new system. For instance, mining cities are trying to redevelop through innovation and knowledge, but with doubtful results. The basin of Lens is steadily declining, and for the moment, engineering schools and the university have not produced the expected effects. Creating knowledge is not the most difficult part. What is problematic is its location, or its embedding once the people are qualified. And Lille and Paris are quite close to Lens…

This situation conjures up the major question for any centre space, which is to know which type of TTR it can be or become. For international-level metropolises, the question hardly arises, since they may be engaged in a wild competition with its rivals, while remaining integrated into an information exchange network. For small towns, the local informational role also seems granted. Populations need local centres for many administrative functions and

basic services. Between both lies the core of the problem. Indeed, many subprefectures, for instance, are undermined by new technologies, and so are many industrial cities. So they need to come out with a new position.

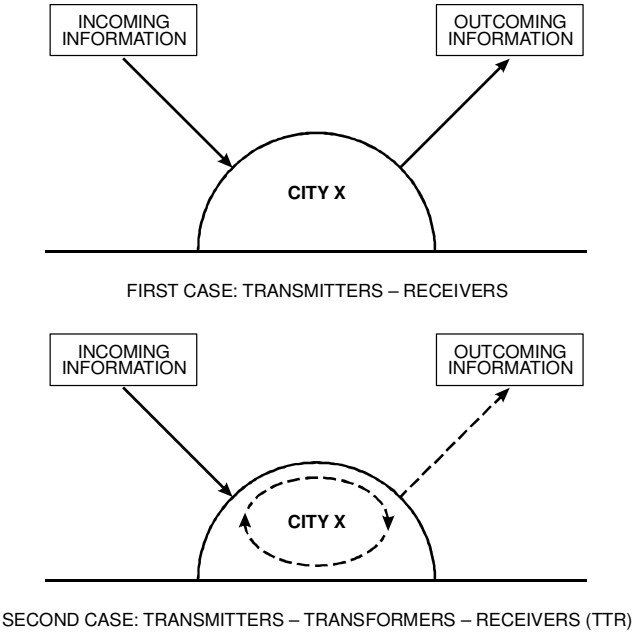

Fig. 2. From informational centres to TTR

In fact, TTRs have a status that do not depend on their inherited position or their size anymore. A city like Grenoble owes a part of its success to legacy, but has a status among innovation spaces which has nothing to do with its demographic weight. The most important thing is the capacity of a city to make plans, and thus to constantly develop its legacy and local potential. This progressive approach concurs with the school of thought of innovative sectors.

4.2. A Centrality: The Political Project at the Core

This geography of sensors highlights the characteristic acentrality of space (Fache, 2007, 2008a, b). Acentrality is the quality of a central space whose social and economic organisation is in no way connected to pre-existent laws and balances, which tend to 'naturally' establish themselves in the name of economic rationality principles, among other things. Acentrality consists in asserting that spatial organisations result from social, cultural and economic constructions which mostly have nothing to do with economic laws to begin

with, but rather with strategic, administrative and political logics; economy also plays a part, but only to some extent. In numerous cases, economy adapts itself to existing circumstances (Fache, 2008a). Acentrality is not a new characteristic of space. It has always been there. But it has been concealed for a very long time by multiple factors, such as the rugosity of space, the difficulty for information and innovation to circulate, the weight of subsistence economy… Only recently has technological progress allowed spaces to gradually emancipate from some constraints (Duprat, 2006), therefore highlighting this principle. Acentrality underlines the construction of territories, thus the role of politics, which has been omnipresent in the examples quoted above, as well as in history.

History brings us tools to understand the role of politics. The development of mining cities in Europe and in the United States brought out very different results according to the political criterion. In Europe, nineteenth century extraction was coupled with a political and administrative structuring of places which induced that, once the coal cycle was over, public authorities maintained the same spatial organisation and tried in a proactive way to substitute another economic engine for the weakening mining. In the United States, western mining answered a mere logic of plunder economy. Minimal political and administrative structuring did the rest: the end of exploitation cycles often lead to the disappearing of population centres. True, context and temporality were much different and the comparison is somewhat delicate. But the fragility of purely economic dynamics is apparent in many other cases, including in Europe. The trading towns established on the Baltic Sea during the Hanseatic League period have met different ends, depending on their politicisation and administrative establishment (Pinol, 2003).

Besides, the role of politics is also relevant in the making of economic centre spaces. Policies like privileges, mercantilism or, at a local level, fiscal exemptions for markets and fairs, are obvious signs of this. And so is the development of university poles, which often have political or religious origins. Closer to us is the development of scientific and economic centres, which also has to do with politics. In the field of biotechnologies or microelectronics, equipments like particle accelerators are essential, especially since a network of micro-enterprises cannot invest in large and expensive equipments. Population proximity may then be misleading sometimes, since it is distorted by the technical dimension.

Beyond the obvious role of politics lies the question of meaning. Indeed, the classic school of thought of spatial theorisation holds as basic principle, either explicitly like Christaller and Lösch, or implicitly, that politics are meant to make the liberal capitalist system more efficient, and thus to allow spatial development to be more efficient. But one cannot fail to notice that mere facts prove this theoretical and ideological wish to be both inaccurate (as Lösch realised from the start) and questionable. Actually, public action ties in with both

tendencies, either trying to adapt to some economic rules, or trying to modify them for reasons which deviate from strictly economic logics.[10]

Therefore, the idea of construction do not set the business rationale, but the urban territorial plan for local or regional development at the heart of spatial organisation. This plan implies a territorial strategy. Generally speaking, what is remarkable in the evolution of public action is that the business rationale is increasingly integrated into a general territorial system also including culture and society (Arvanitis, and Petrakos, 2006). For instance, Nantes bets on the redevelopment of its old shipyards and the building of a new city district on the Isle of Nantes (Fache, 2008c; Devisme, 2001, 2007). This urban plan plays on the image of the city, its cultural dimension and its individuation, and is much alike the type of projects carried out in Florida, without acknowledging it.

In Norway, the city of Bergen deals with the economic issue in an all-encompassing way, again with a combination of actions focused on innovation and research, but also on culture and heritage, with a part of the city centre being classified as a UNESCO world heritage site (Deraeve, 2008). The case of Bergen is interesting in many respects. Indeed, beyond its rather common strategy, it raises the issue of the confrontation of scales within the context of globalization. Within Norway, Bergen is at the top of urban hierarchy, and is therefore a metropolis, that is to say an economic and intellectual commanding centre.

But the integration to a global system changes scales. Bergen becomes an ordinary city in terms of size and has difficulty achieving recognition, as regards its number of researchers for example. Therefore, the Norwegian scale is strongly disrupted by the scale induced by global urban networks. A city on top of hierarchy can become an insignificant central space at the European and world scale. The strategy of politics is thus complicated, because it do not correspond to the current reality of the city and its rank in Norway, but to its projection in a world system which weakens it.

These two examples, taken out of an endless number of others, bring to mind another aspect. If the acentrality of space shows itself gradually, and if the role of plans and strategies is reinforced, the situation of territories becomes more and more unstable. Indeed, inertia is shaken by political innovation and by the cycle which *de facto* imposes itself as for any innovation. Concretely, the question is not only to act anymore, but to act at the right time, while differentiating from other territories. It was the case for the cycle of science parks.

This example is significant. Indeed, creating a science park only makes sense when it allows a territory to become part of the information and knowledge

[10] The 1979 study of Allen and Sanglier is very interesting in that regard, because its auto-organising approach also includes a new perspective on politics which are responsible, in their opinion, for the modification of the conceptualized order.

space, but also to establish a differential advantage against other territories. Sophia-Antipolis and Meylan have achieved that, using radically different models of development, among other things because they were science park pioneers which had established a strong differential against other territories(Ciapetti, 2009). Political innovation then spread and lost some of its power (Daviet and Fache, 2008). Launching such operations does not make much sense today, except for specialized scientific and economic centres which support and revitalise a sector (biotechnologies in Paris or in Lyons, for example). As a result, there are not new technology parks created today in France, because with already more than forty structures, most of the top of the urban hierarchy is equipped, but also because such an equipment would not be capable anymore to generate the necessary differential for such a development to be relevant anyway. To achieve recognition, a territory now needs other political innovations.

Another element to consider: cycles are getting shorter, and the advantages they generate are more and more transitory. Indeed, the benchmarking studies supported by many cities and regions allow a faster spreading of information, and the possible duplication of what has worked well in some place. In that regard, the redevelopment of Bilbao has gained major following. Exchanges of experiences are besides widely promoted, as with the REVIT (2007) program in the European Union. It is thus necessary for a territory to always try and have a head start. There are major territorial repercussions at stake, and sometimes they can be devastating. A project requires appropriate human resources. Sometimes, these resources run out, or they aren't qualified and skilled enough. The primacy of innovation propels in the foreground high qualifications and the capacity to be creative and to flexible, to get the information and transform it. Again, TTRs are essential there. But many cities can not afford them. Thus the numerous plant lockouts and relocations which regularly make the headlines can surely be read as the result of some economic processes, but also as the sign of the tremendous difficulty through which some territories go to set up a viable plan and adapt to the new deal. It must be acknowledged that big metropolises are also subjected to site lockouts. What's different about them is obviously their size, their diversity, but above all their capacity to prepare for the future, as showed by Sarah Bambou's work on biotechnologies in Paris (Bambou, 2009).

This analysis raises the delicate issue of time. Indeed, if innovation requires the structuring of space, it also induces strong differentials in temporal evolution. In other words, while metropolises run up the stairs, depressed cities have to reinvent their basic skills, their economic foundations and their integration to the system. Naturally, this takes a great deal of time, because a new plan deals with technical matters, but most of all with mentalities and culture. These dimensions are essential in the structuring of territories (Daviet, 2005).

Thus central places develop in places which are often in no way prepared for anything like this, and their future depends to a great extent on local actors' initiatives, which can completely turn the system one way or another.

4.3. Temporalities of Political Action

In such a context, political action has to include the temporal dimension to achieve efficiency. Indeed, the incorporation of the new information networks or of the principle of acentrality has to be coupled with some reflection about the moment when action is taken. So, political action can be considered as innovation, and treated as such (Daviet and Fache, 2008). Therefore, it is essential to consider the general situation as regards TTRs during the initiative.

The field of biotechnologies is significant in that regard. The development of activities related to so-called modern biotechnologies was achieved very early in some dominant central places like Paris, Cambridge or the Silicon Valley in the 1970s, in keeping with functioning and financing procedures which brought to mind the emergence of electronics in the 1950s (Binder, 2008). When cities like Montpelier (Brunet, Grasland, Garnier, Ferras and Volle, 1988) or Strasbourg entered the biotech race between the 1970s and 1980s, they were just a small step behind the Silicon Valley or Paris. The main differential here has less to do with chronology than with the very structure of the sector, which was dominated to a great extent by public players in France, while big companies were being created in California. Each city leaned on a tradition of research on human health, or sometimes other topics, like in Montpellier.

But some cities like Nantes experienced a very slow and particularly late start, because they had no preceding knowledge of the field. The Atlanpole science park was created in 1987, but the political impulse towards biotechnologies only arrived only about ten years later, in a world where powerful polarities were already well-established and could drastically disrupt the development of emergent poles by sizing its start-ups and researchers. The embedding of a company like Eurofins, a success story in Nantes, is regularly questioned.

What must be acknowledged in particular is that while politics are trying to develop emergent biotech centres, the oldest poles are already moving on. Green technologies are becoming a reality in the Silicon Valley, where young companies have already exceeded 'simple' start-ups by their size and importance, and are likely to become real giants in this field (Nora, 1990). Therefore, the question of public action shifts. Now, the real question is: to what extent is the intrinsically relevant strategy of development put into perspective, or even neutralized by some new context at a precise time?

5. CONCLUSION

The question of the embedding and mobility of activity and population, of their territorialisation or de-territorialisation, arises in the fundamentally new frame of innovation, information and acentral space today. This perspective conjures up an answer which is different from the easy discourse that is now prevailing about the de-territorialisation of activities. The embedding of activity is still relevant today. The problem of modern societies is that the word 'embedding' has changed meaning. The Christallerian and Löschian viewpoint is over, as the notion of balance is now questioned. Spatial installation is more and more unstable, but not necessarily fleeting. In other words, the original frame which allowed the installation and embedding of an activity has to be constantly developed, or rather reconstructed. The question of time, speed and adaptability arises with renewed intensity and is difficult to solve, because politics and societies are still relying on the Löscho-Christallerian frame.

One of the major issues at stake for the future is to conceive a theoretical frame for the structuring of post-Löschian cities, urban networks and regional structures, maybe using TTRs as a foundation. As urgent is the necessity of weaving a link between this necessary theorisation and the political world, whose responsibility it is to devise plans suiting their vision of the future territory, although their focus remains too often stuck in the handling of already existing structures. Tomorrow's economic space cannot possibly be apprehended with yesterday's territorial logics.

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