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Contribution to the theory of territorial development: a territorial innovations approach

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ABSTRACT

This paper provides a new definition of territorial development based on two engines, production and governance relations, and linked to a broader conception of territorial innovation. Starting with a short survey of previous works, it presents the two major building blocks, and proposes a detailed categorisation of territorial innovations, their origin, and their contribution to production and governance dynamics. It then draws a definition and a description of territorial development processes based on these two engines, and in conclusion opens the way for future researches on bifurcations and ruptures of trajectories emerging from territorial innovations.

KEYWORDS

territorial development; territorial innovations; governance; production

JEL R, R1, R5, R11

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1. INTRODUCTION

In a somewhat forgotten article today, Walter Isard, the father of regional science, described the link of humans to the territory from the parable of a cosmonaut returning from space and landing on Earth (Isard, 1956). As his ship approaches the surface of the planet, the astronaut observes ever more detailed landscapes, and passes from a very global point of view to the observation of the components of the territories. He travels through the range of spatial and economic scales, from macro-systems to territorial development processes, and finally, before landing, he is able to observe the activity and daily life of the populations as well as the mobility of the actors or the networks that link them.

In a sense, this fable describes the evolution of regional science approaches over time and illustrates the importance of the territorial dimension, with the diversity of local stakeholders, the essential role of land-use issues and the consideration of social and economic processes in interactions between people, firms or institutions. It also raises all the issues of territorial development, from the interest to examine the very characteristics of the life of the territories to the need to understand their operating modalities and to describe the behaviours and concerns of the actors, closest to the ground.

The question of development awoke again in industrialised countries at the beginning of the 21st century. Until then, it was especially reserved for emerging countries (successively referred to as underdeveloped, or developing), whereas the Northern regions seemed to have abandoned this concern and turned to issues such as firm competitiveness or knowledge production and dissemination. However, the persistent economic crisis and unequal global growth have put this issue at the forefront again. Today, rapid changes in spaces and institutions sometimes related to COVID (Bailey & Usai, 2020) (see the rise of short supply food chains, or of the relocations in peri-urban areas) call for new models explaining territorial dynamics, even as socio-spatial disparities widen. At the same time, reflection is sharpened on development indicators; they seek to exceed the traditional gross domestic product (GDP) per head by indices measuring the well-being or happiness of populations and individuals (Moreira & Crespo, 2017; Organisation for Economic Co-operation and Development (OECD), 2020). Thus, the human development index (HDI) and inequality-adjusted human development index (IHDI) make it possible, beyond income, to take account of certain local population characteristics such as life expectancy, education (Ranis et al., 2006) and inequalities (Martínez, 2012).

All these changes call for a differentiated development and a specialisation of local areas. And one can observe a profusion of actions, initiatives and new practices coming from the territories, which take the forms of new modes of development. These dynamics must be carefully analysed,

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without their proliferation leading to excessively optimistic interpretations. Nevertheless, a development revolution is taking shape, coming from the territories themselves and their stakeholders, productive actors or forces of civil society. Far from being limited to peripheral areas, it is also deeply rooted in the heart of cities and peri-urban areas. New forms of decentralisation are taking place, often outside the public policies decided from above, but coming from the initiatives of the territories.

The term 'territorial development' was coined relatively recently. Scholars have tended to approach spatial development from a regional or macroeconomic perspective (e.g., Capello, 2017; Capello & Nijkamp, 2019; Stimson et al., 2006), and have focused primarily on the major regional issues, whether by using neo-classical approaches to growth (Pike et al., 2017), economic base theory (Alexander, 1954) or more recently the research conducted following Krugman's (1991) work. However, several authors who preferred to use the terms 'local development' (Coffey & Polèse, 1985) or 'development from below' (Stohr & Taylor, 1981) started paying attention to development processes at a smaller scale in the 1980s. Their works reflected the will to consider local specificities, in various areas with very diverse resources and spirits, and local population often struggling against macroeconomic policies decided by the central state. A highly systemic approach appeared and gave rise to various decentralised policies put in place to encourage the economic development of cities or rural areas, such as local production systems and science parks, land-use planning operations (natural parks, etc.), or Leader programmes at the EU level. Then, and by successive enrichments, territorial development imposed itself. It is different in nature from regional development because it is defined at a larger geographical scale, which is that of the territory, but it also differs from the so-called local development because it involves all the stakeholders of the territories and considers the dimensions of land use and occupation as well.

This paper contributes to the theory of territorial development by enriching it, generalising it and extending it to dimensions of governance and land use, which are not yet integrated by previous authors. We build on the various contributions to its development, gradually adding new elements, and even proposing a more unified approach. The notion of territorial development, which evokes the possibility of evolutions that are more or less autonomous or independent of that of nations, or even of regions, is now taking place in public actions and policies. It is useful to come back to the legitimacy of this concept, to define more precisely its meaning and implications, and to contribute a stone to the theoretical edifice under construction. This article summarises research conducted on the issue of territorial development over the past recent years (Torre, 2015, 2018, 2019). The developments presented here are also based on a rich experience field, developed through numerous applied studies, conducted in Europe or in various emerging countries over the past two decades.

We start by a short review of previous works and present the basic building blocks of territorial development in terms of production and governance relations. We then propose a detailed categorisation of territorial innovations, showing how they come about and contribute to the production and governance processes. We continue with a definition of territorial development and a description of this process based on the two engines of production and governance relations. In the conclusion we open the way for future researches on bifurcations and ruptures of trajectories emerging from territorial innovations.

2. TERRITORIAL DEVELOPMENT: A SHORT REVIEW OF PREVIOUS STUDIES ON PRODUCTION AND GOVERNANCE

The study of production relations is at the heart of the analysis of territorial development. Development analyses are often based on the founding intuition of Schumpeter (1934), for whom innovation makes it possible to break the routine of production processes and gives rise to phenomena of creative destruction, with the emerging of new products or methods that declassify the old ways of doing and thinking. This approach is taken up and amplified by different territorial variations, which emphasise its technological dimension. We will show that another facet needs to be considered, with the territorial governance dimensions, the recognition of the multiplicity of stakeholders and their action in the territories.

2.1. Territorial development driven by production processes: various contributions

From classical economists to reflections on emerging countries, the definition of development is inseparable from that of production. The emerging literature on territorial development processes is no exception, focusing on productive activities and their territorial anchoring (Zimmermann, 2001). Production is seen as the main driver of development, with an emphasis on two central dimensions: technological innovation and the systemic content of local relations. This approach insists on the singular character of development according to the territories. The vision of local production systems is based on a dual theoretical filiation. On the one hand, national systems of innovation (Nelson, 1993), which reveal the idiosyncrasies of productive, institutional and organisational structures: production processes cannot be identical in Hong Kong and Los Angeles because of local particularities, different rules, laws and economic policies. On the other hand, the polarisation approach (Perroux, 1955; Hirschman, 1958), which favours large firms and industries that could lead to the growth of a territory through spillover effects spreading through the local economic structure.

The analysis is based on the relations between local actors, building a territory by their collaborations and joint projects. Vertical and horizontal interactions, homogeneous social body or relationships based on the repetition of exchanges, the important thing is the creation of a local fabric. This territorial development has some resemblances with the subregional focus and productive dimension of the development from below (Stöhr, 1986),

but expands it through networks of alliance and cooperation and the ability to renew and transform itself in response to exogenous shocks. It has inspired many local or government-led policies all over the World: competitiveness poles, growth poles, innovation systems, technological clusters, etc.

2.1.1. From the importance of technological innovation …

An important body of literature has focused on the figure of the entrepreneur (Casson, 1982) as a bold innovator, but Schumpeter also underlines the systemic nature of groups of innovative firms and clusters of innovations. For the historians of techniques (Rosenberg, 1982) an innovation never appears alone. The idea of a rupture resulting from the genius of a man is tempered by the existence of collaboration and cooperation between firms or engineers, and of technical complementarities: the development of the railway is due to the discovery of the steam engine but also to the progress made in the solidity of the rails, the improvement of the switches or of the transmission techniques.

For evolutionary economists, these approaches reveal how the transformation of knowledge and inventions into innovations gives birth to technological trajectories (Nelson & Winter, 1982), resulting from the strong opportunities offered by certain technical and economic combinations (the easier mechanisation of cotton manufacturing compared with wool). Innovations first spread from one company or sector to another, and then become incremental and routinised, producing lock-in effects. The accumulation of knowledge, the institutional stability and the high inertia of the dominant technological model (Dosi, 1988) make any change difficult: path dependency blocks the possibilities of innovations not compatible with this paradigm (David, 1985). In addition, commodities are transformed into high-tech goods, by skilled labour or robots incorporating knowledge and innovation (Lundvall & Maskell, 2000).

The theoreticians of transition (Geels, 2002) explain the break-up of this routine model by the passage to a new socio-technical regime (Fuenfschilling & Truffer, 2014), resulting from one or more radical innovations. Carried by outsiders and protected from the dominant system by public subsidies or private strategic investments (Van de Poel, 2000), the latter incubate and develop in niches that allow the learning of technology and the birth of an increasingly stable and promising socio-technical alternative. When technological limits or geopolitical, cultural and demographic changes appear in the overall landscape, 'windows of opportunity' are opened, in which the most developed niche innovations sink. Some will break through, impose themselves, and give birth to a new socio-technical regime.

2.1.2. … to local production and territorial innovation systems

These approaches in terms of systemic innovations make also the observation of the spatially concentrated nature of knowledge, without really entering the black box (Jaffe, 1986; Feldman, 1994). They find an echo at the territorial level with the analysis of localised production systems, or territorial innovation systems (Moulaert & Sekia, 2003; Doloreux et al., 2019), whose canonical model was imposed in three stages:

- The myth of industrial districts, based on Marshall (1919), was born in Italy in the 1970s (Brusco, 1982; Becattini et al., 2009). The localised grouping of people and firms proved to be competitive on the world market despite their (very) small size, such as the textile production of Prato, emblematic of this low-technology endogenous development. Sociologists and economists stressed the social dynamics and widespread character of these communities of firms historically linked by a division of labour within the same sector (Becattini, 1991), which exchange products and skilled workers on a mix of competition and cooperation relations.
- Quickly, this approach extended to other types of localised groupings of producers, involving research and development (R&D) laboratories and firms of different sizes not always belonging to the same sector (Markusen, 1996). Milieus approach emphasised a more generic model, with formal relationships and exchanges, in which knowledge production is essential to territorial development (Maillat, 1995) and abroad to territorial knowledge dynamics (Jeannerat & Crevoisier, 2016). Enterprises, linked by cooperative relations, share complementary activities within a specialised set, increasingly marked by a strong technological dimension.
- Finally, Porter (1985, 2003) imposed the canonical term of clusters: a grouping of firms and laboratories working in related industries, in a close environment, and whose interactions in terms of technologies and know-how allow to increase performances, competitiveness and the level of innovation. By its analytical flexibility and its sense of marketing this notion quickly became a great success, despite or perhaps thanks to its analytical blur, with an extension to systems less focused on high-tech activities or a lower level of performance (Giuliani & Bell, 2005) and then as a development policy tool at local or national level (OECD, 2001).

2.1.3. New topics and extrapolations

The previous approaches are prolonged by the birth of new avatars, such as business ecosystems (Stam, 2015), which start from the firm and its insertion in networks of co-evolution and coopetition relations (Brandenburger & Nalebuff, 1996) made of multiple actors (companies, laboratories, centres) (Clarysse et al., 2014). Other analyses further extrapolate the initial model, leaving urban areas and technology, such as the local productive arrangements, which refer to the sometimes incomplete or emerging nature of productive interactions in developing countries (Cassiolato et al., 2003). Some works focus on the notion of territorial capital, at the basis of the dynamism and resilience of a territory (Camagni & Capello, 2013; Perucca, 2014).

The rise of environmental concern brings an even more radical rupture, with the awareness that development is achieved at the expense of the limited resources of the planet. The approach to socio-ecological systems (Anderies et al., 2004; Ostrom, 1990) investigates the relationships between local actors and biophysical and non-human biological entities, as well as the uses and collective management of resources. The analysis of industrial ecosystems goes further by integrating the recycling of production outputs (Korhonen, 2001) and gives birth to circular economy approaches. They propose to replace the linear process ranging from the use of raw materials to the sale of products with a more resource-efficient circular model, which reintroduces waste in the production cycle (Frosch & Gallopoulos, 1989). The territorial anchorage of these models based on examples of circular local systems such as the famous Kalundborg symbiosis (Jacobsen, 2006) is essential: the international circulation of recycled or reused materials leads to a considerable impact in terms of pollution and emission of toxic gases (Bourdin et al., 2021).

2.2. The central role of territorial governance processes

These approaches made decisive contributions to the theory of territorial development. But the later does not concern only the increase, improvement or diversification of production; it covers many other dimensions, such as the mental and social changes of populations, as well as changes in institutional structures (Perroux, 1955). To decide and try to master their future, nations and territories have an interest in taking it in charge and initiating their own development projects.: territorial development cannot be understood independently of the processes of government and governance of public affairs. This idea appeared in the 1970s (Foucault, 1991). But it took time to assert itself at the territorial level, for two reasons: (1) the domination of a vision of development in terms of productive structures or levels of innovation, with a marked interest of local or decentralised public policies in favour of the competitiveness of firms and territories; and (2) the persistence of bottom-up development approaches often based on the myth of a spontaneous or 'natural' organisation of local actors, expressing themselves or acting without organisational or structuring opinions tools.

Paradoxically, the solution came from the literature on corporate governance, in particular the internal organisation of firms and forms of outsourcing of activities (Williamson, 1996). A part of them spilled over to the territorial level, with a concern for the management of subcontractors and suppliers owing to the same ecosystem, and then consideration of the governance modalities of local systems. The success of certain science parks or high-tech activity areas (such as Silicon Valley) logically refers to their modes of governance. It is based not only on the competitiveness of firms or the quality of their networking, but also on the capacity of local authorities to manage complex socioeconomic systems and to enforce rules accepted by all participants.

2.2.1. From the rise of governance issues …

Governing means making decisions, arbitrating oppositions and conflicts, managing modes and production processes, and contributing to the regulation of economic and social activities (where possible).

The idea of government has long dominated, hierarchical, top-down and binding, with its laws and public policies. Then, gradually, emerged the concept of governance, sometimes polysemic and vague, which designates more flexible forms of power, based on the coordination of actors, social groups and institutions in order to achieve common objectives (Le Gales, 2011). The normative side of governance refers to precepts and methods: the 'good governance', advocated by the World Bank or the International Monetary Fund (IMF) (Woods, 2000), proposes receipts supposed to guarantee the competitiveness of countries or territories. But the term also refers to the experimentation of new methods of public action and the participation of actors in decisions; horizontal governmental approach is challenged by more flexible forms, closer to people and organisations. Networks of economic and social actors thus see their wills and capacities of expertise and innovation taken into account in the elaboration of policies and public action (Kooiman, 2000): integration of public–private partnerships, private sector participation in the definition of development objectives (Wettenhall, 2003), participation of various organisations (associations, organisations, companies, non-governmental organizations (NGOs), etc.) in the elaboration of laws, rules and regulations (Pierre, 2000), mechanisms to facilitate stakeholders participation in decision-making processes. The question of governance has become a major concern for policymakers and crystallises reflections on issues of interaction, collective action and participation, of general interest and consultation.

Initially very global, the focal point slowly moved towards the territorial issue, with the integration of actors and their proximity relations in the definition of objectives and the implementation of public decisions (Loughlin et al., 2012). Policies evolved – from the search for macroeconomic equilibria to the principle of subsidiarity – and territorial public action emerged (Keating, 2013). The models of relations with the central power have multiplied, in their institutional, territorial, political dimensions, etc. (Pasquier, 2012), by integrating economic and social levels as well as sovereign functions (Lascoumes & Le Gales, 2007). Gradually, the territory became the place of application of multilevel governance (Hooghe & Marks, 2001; Bache & Flinders, 2004), with the idea that territorial decisions depend not only on the directives and requirements of the public authorities, but also on Brussels, the decentralised services of the state and local authorities.

2.2.2. … to the emergence of territorial governance

The tension between the territories and a state that governs remotely through public devices and instruments (Le Gales, 2011) has fuelled the reflection and development of territorial governance issues, based on the idea

that the different local stakeholders contribute to the management of the territories, whether it is public authorities, communities, firms or different groups of inhabitants (Simard & Chiasson, 2008). The associations and NGOs, long focused on challenging public decision-making, become partners of public discussion, collaborative development (Faludi, 2012), and construction of protocols for elaborating norms at the local level.

Beyond the numerous laws, regulations, public policies or financial instruments, territorial governance is also based on planning instruments, which determine the occupation of the space, such as the local plans of urbanism, managed by municipalities, urban agglomerations or watershed unions. These tools in the hands of local actors are constrained by national or federal rules, and give birth to changes of all kinds in terms of organisation and functioning. Consultation makes it possible to construct common objects that can facilitate joint, present or future decision-making (Stead, 2014). The creation of the conditions for cooperation, for example around the collective design of a project or the planning of a resource or an area usage, contributes to the development of shared projects, on the basis of more or less balanced and hierarchical coordination relationships.

We define territorial governance as a process of coordination between different types of stakeholders or actors (be there productive, associative or individual ones, or public and local authorities), with asymmetrical resources, gathered around territorialised issues and contributing to the elaboration of joint projects for the development of territories with the help of appropriate tools and structures (Torre & Traversac, 2011). This pragmatic vision, which refers to the citizen-oriented dimension of territorial development, is based on the construction of shared tools and representations (Sy & De Wita, 2018) and on the definition of territories as places of joint projects. It also incorporates the idea that the development approach is not limited only to productive aspects but also encompasses institutional dimensions (Boschma et al., 2017), and therefore that governance can be conceived as an innovative and evolutionary process.

3. INVESTIGATIONS INTO THE ORIGINS AND FORMS OF TERRITORIAL INNOVATIONS

The previous analyses laid the foundations for an approach to territorial development. But some fundamental elements and principles remain neglected or relegated to their background. It is necessary to enter into the black box of territorial development relations by exploring the functioning and major causalities of its two drivers. Namely, to understand how territorial innovation is manufactured through governance and production processes, and lead to processes of structural changes. The reference to innovation remains central, as it is considered to be the engine of change and the key to the evolution of local systems. But its content varies from that of previous works; from the moment we integrate the different stakeholders of the territories and we are interested in governance issues, it becomes necessary to adopt a broader vision of innovation. Territorial innovation is no longer confined to technological dimensions, but also encompasses all organisational, social and institutional changes.

3.1. Different types of innovations at the heart of production relations

Farming products, energy, ores and minerals occupy a central place in economic development as well as in the production of technological innovations. The use of primary resources (Gylfason & Zoega, 2006) allows to set up the production process and to feed an efficient and performing work force. But their unrestrained exploitation can lead to highly unbalanced territorial development models, exemplified by the Dutch disease syndrome (Corden, 1984) or the staple approach (Innis, 1930). Using successively different raw materials (Watkins, 1977) leads to a chain of acceleration phases and strong recession stages, accompanied by negative structural changes. Other aspects such as the exploitation of agricultural and natural resources (Krugman, 1991), the exportation of intermediate production (Krugman & Venables, 1995) and the concentration of trained and educated workers (Lucas, 1988), create a strong incentive in terms of agglomeration of people and activities and help to lead the race for economic development.

3.1.1. An assessment of innovation trajectories

The technological trajectories approach, which provides an explanation of development, has the limit of not considering the social or institutional dimension as a source of innovation and treating it as a simple accompaniment. The niches analysis and their transformation into technological opportunities (Geels, 2002): (1) applies only to strong innovations, or disruptions, etc.; and (2) is supported by a so-called socio-technical paradigm which is above all of a technological nature. However, an important part of territorial innovations is clearly (1) modest (Drucker, 1998) or frugal; or (2) of a social and organisational or institutional nature (see the examples of small or incremental innovations, or innovations produced by citizens or administrations below).

This approach reveals a limited validity at the territorial level. In fact, technological innovations, which spread and are adopted throughout the productive structures, are often imported from outside. Although their induction function proves to be essential to technical progress and economic growth, their role in the development of territories is actually much more limited. This is evidenced by the failure of many local innovation systems, which struggle to build a network of creators of local technological innovations. In the end the places where technology is produced remain extremely limited on the planet: a few clusters, in a few regions, within a very small number of countries, effectively excluding most of the territories (Torre et al., 2020)

3.1.2. The multiple forms of territorial innovations

There are many reasons to extend the analysis of localised production systems to other forms of innovation. First, industrial consumers play a leading role in defining products and improving their characteristics before they are sold on the market. Lead or competent users, 'pilot users', maintain close links with the manufacturers of end products, enabling them to improve their creations and refine technological innovations, most often in a logic of sharing and exchange (Von Hippel, 1988). In addition, new ways of innovative interactions emerge in the territories. 'Micro-clusters' are service platforms for meeting, exchanging, interacting, or even developing projects or building technical objects together for local actors. These third places are characterised by their hybrid character between work and leisure activities, mixing professionals, citizens and users (Oldenburg, 1991), and the episodic interaction between participants. These innovations combine scholarly and profane knowledge. They are thus essentially of an organisational or social nature.

Finally, the production systems approach neglects modest innovations, which are often based on the valuation or the specification of resources by local actors (Torre, 2015). We think of social innovations such as crèches or solidarity grocery stores, food banks, assistance for people with disabilities, etc. or organisational innovations involving changes in production methods, such as short channels, direct sales, local currencies, etc. This is also the case with the commons, and their collective management of certain land spaces or local resources. Far from being anecdotal, these activities now represent a significant volume of jobs and an important development opportunity of the territories. Thus, territorial innovations are not limited to the single technological and disruptive dimensions. We integrate social (Moulaert & MacCallum, 2019), institutional (Hargrave & Van de Ven, 2006) and organisational innovations (Le Chevalier, 2019), as well as more modest and incremental innovations (Loreto et al., 2016), into the territorial development process.

3.2. The innovative character of governance relations

Cooperation and negotiation processes facilitate the production of joint projects, the introduction of novelties and the birth of new dynamics and transitions in the organisational layout of the territories. However, it is important to avoid a purely collaborative and deliberative vision of territorial governance, and to admit that its functioning can often be difficult and undermined, because it is based on asymmetrical relations, opposition and power. Devices, instruments and governance structures facilitate interactions and contribute to its implementation through the enactment of tangible rules, institutional tools and innovative mechanisms. But obstacles remain: it is from the expression of conflicts and the overcoming of these laboratories of public action that a part of territorial innovations and development projects are born.

3.2.1. From innovation tools and mechanisms …

Territorial governance meets several objectives:

- Contribute to the development or support the implementation of development projects.
- Facilitate the coordination between heterogeneous stakeholders within the territories.
- Prevent certain actors from leaving the territory (process of desertification or abandonment).
- Prevent blocking oppositions.
- Decide on development paths.

Coordination between diverse stakeholders is neither obvious nor the result of spontaneous arrangements. To work together, local actors must use or build heterogeneous devices composed of people, institutions, arrangements, but also discourses, rules and laws, etc. (Foucault, 1991). The implementation of verbal elements, tools, operating methods and organisational structures makes it possible to develop a common language necessary for work and concerted actions and to initiate shared projects. Then, the resilience of territorial development processes is based on the repetition of interactions and on learning processes. Tools and instruments thus occupy a central place in governance arrangements, whether they are complex social–economic systems, governance structures, and technical instruments such as texts, programming documents, contracts or charters. They are structuring the behaviour of actors, who spend time building or appropriating them.

3.2.2. … to obstacles and challenges in the governance process

Governance engineering devices designed for the appointment of representatives or deliberation methods play a central role in the construction of development paths. Indeed, despite the proliferation of tools and instruments, several obstacles can hinder the progress of territorial negotiation, or tarnish decisions with serious suspicions.

The success of the governance process depends on two preconditions:

- Acceptance of the rules of the game. Stakeholders may refuse to enter the process of defining a common project and prefer to leave the party. But the vote with feet (Tiebout, 1956) is often proving impossible. The most common case is one in which several actors, reluctant to the choices or methods implemented to achieve territorial development, abandon the stage and choose not to express themselves or to ignore standard governance mechanisms;
- The appointment of the participants around the table. They will discuss and implement the territorial projects, and then share the potential benefits. The membership elaboration presupposes an arbitration phase, and a selection and exclusion of certain actors. The necessarily small size of these bodies leads to the identification of specific groups, represented by delegates bringing

their ideas and opinions, and thus raises questions of representativeness and expression of opinions.

3.2.3. Conflict is the mother of territorial innovation

The body of governance tools and decisions induces contrasting reactions of local populations, which sometimes tend to react and oppose public or private initiatives. Their protest is expressed through court actions, media interventions or demonstrations of violence and mainly focuses on major infrastructure projects (transport, energy production, waste treatment) as well as the spatial modes of land using (Local Plans of land occupation, building permits, etc.). These conflicts correspond to resistance to decisions that leave some local actors dissatisfied (Darly & Torre, 2013), or to the questioning of the composition and representativeness of decision-making bodies. They speed up or they prevent governance dynamics and transitions. They represent another way that cooperation to enter into discussion on the issues and paths of territorial development. Their protagonists can hope to influence decisions by taking part in the process from which they had been previously excluded (Dowding et al., 2000), or by imposing a change or even a refusal of the proposed technical arrangements (Sabir & Torre, 2020).

So, conflict is an integral part of the territorial deliberation process. Some innovations – new infrastructure, land-use choices, governance structures – give rise to more or less significant oppositions. During the conflict, many social and organisational (formation of new groups of actors), institutional (new norms or regulations) or technical (new solutions) innovations appear. A collective learning process, made up of trial and error, is set up, which makes it possible to refuse, amend or improve certain proposals, define new elements of public decision-making and reintegrate harmed or forgotten stakeholders. It also helps to make the opponents give up or influence their decision by incorporating some of their arguments, while maintaining dialogue, including during the tensest opposition phases.

3.3. A typology of territorial innovations

Based on the previous developments, we propose a definition of territorial innovations (Morgan, 2004) which does not refer to any value judgment on the types of behaviours or processes. We follow the definition of Schumpeter: innovation is a novelty, imported or produced by different components of the economic and social system in response to exogenous impacts or local initiatives. Considered positive by some or unfavourable by others (ex; a nuclear power plant, a prison, an airport), it induces in all cases changes in previous modes of functioning. They can be technological innovations or disruptions, or more common forms of novelty (in the sense of Loreto et al., 2016), whether organisational, social or institutional. These innovations are based on inventions, then validated by the market, or on new projects, which will receive validation of the society to acquire the status of innovations (Table 1, vertical reading).

They also fall into two coordination categories (horizontal reading).

(1) Cooperative or concerted innovations result from the acceptance by the market or society of novelties from outside, and from the implementation of joint projects, cooperative and sometimes trust relations, between different categories of stakeholders or companies. These are:

- Technological innovations, such as new production processes within value chains, etc.
- Organisational innovations, such as short circuits or recycling processes, local cooperatives or charters, etc.
- Institutional innovations, such as the creation of governance structures, borough councils, public debate commission, regional ecological coherence schemes, plans of local development, etc.
- Social innovations, such as local currencies, local food production associations, shared crèches, solidarity grocery stores, , etc.

(2) Conflict or competitive innovations emerge in response to initiatives taken by public or private actors, local or external. These initiatives provoke either a competition between different solutions, or reactions and oppositions, leading to the selection of a solution by the society or market. Some technological innovations involve competitive processes between firms and/or laboratories, but they are not always well received or adopted. They can provoke resistance, even conflict, and be rejected by all or some local actors (the introduction of looms in the eighteenth century of the contemporaneous debates around 5G). This observation is even truer for social and institutional innovations, often subject to more or less important opposition from the local populations. These are:

Table 1. A typology of territorial innovations.

	Technological and organisational innovations	Social and institutional innovations
Cooperative and concerted innovations	Produced by cooperation	Produced by consultation
Competitive and conflict innovations	Produced by competition	Produced by conflict
Origins	Inventions	New projects

- Technological innovations, such as new production or recycling processes, etc.
- Organisational innovations, such as new roundtables or the restructuring of lobbying groups.
- Institutional innovations, such as new modalities for public debate, the organisation of negotiating groups, etc.
- Social innovations, such as changes in power relations between opposing groups.

4. PRODUCTION AND GOVERNANCE, THE TWO ENGINES OF TERRITORIAL DEVELOPMENT

We will now discuss the mechanisms of implementation of the engines of territorial development and the way they produce territorial innovations. Our analysis of the paths of development process is based on an extension and a reinterpretation of the *exit*, *voice* and *loyalty* approach of Hirschman (1970), which proposes a powerful explanation of the coordination modalities. Relations to territorial innovations and territorial development processes take three possible forms: *loyalty* or cooperation, *voice* or competition, spatial *exit* or relocation.

4.1. A definition of territorial development

The rise of the notion of territorial development was slow and went hand in hand with the uneasy acceptance of the concept of territory in development studies, mainly related to its multi-semantic and multidisciplinary nature. If we stick to the popular definition of Sack (1986), the notion of territory refers to relationships organised between local actors, and to specific groups or populations, linked through common projects. Human territories are not only related to spatial dimensions. Most of all, they are jointly produced and managed by a human group, its peculiar population, its territorial governance processes and its organisation patterns and mechanisms. Territories have a long history, with cultural habits and political traditions, and local or imposed rules of organisation. They are always under construction and subject to changes and evolutions developed through oppositions, cooperation and compromises between local actors and external stakeholders.

We define territorial development as the improvement of the well-being and wealth of the stakeholders of a territory, given their relations of competition and cooperation, their initiatives and their oppositions, and the dynamic of territorial innovations (Jean, 2008; Torre, 2015, 2018).

The validity of this concept implies five differences from analyses of regional development (rather macroeconomic) (Grillitsch et al., 2020), and local development (mostly related to production). These differences are drawn from Torre (2019) and expanded (Table 2):

- Territorial development processes encompass more actions than the single behaviours of productive actors and institutions in charge of development policies. They are also handled by other territorial stakeholders such as local or territorial governments, decentralised public departments, consular bodies, local organisational devices (regional or natural parks, industrial or technological clusters, etc.), associations and NGOs.
- It deals not only with competitive relations but also with cooperation and social construction processes. New social and institutional practices are not anecdotal or residual, they lie at the very heart of territorial innovation processes. The will of groups and networks of local stakeholders to define and manage their development models is expressed through various actions. It can be related to joint collective actions, but also to clear opposition to the decisions and projects of states or large firms or corporations.
- The types of policies are different. Usual regional macroeconomic policies imitate those driven by states but with fewer resources and more limited capacities and skills. For the territories, it is usually municipalities or inter-communalities that are at the helm, with policies very focused on local expectations, such as land management, transportation or the setting of short channels, etc.
- Governance is different: we move from multilevel governance, with its layers of competence and decision-making, to governance that includes in addition the opinions and oppositions of local populations (see below).
- The questions of land-use and land exploitation appear really crucial nowadays regarding climate changes and disruptions. Land scarcity, competition between various uses and users, soil degradation, erosion and artificialisation and land grabbing by Countries looking for new and rich land cannot be ignored. Taking into

Table 2. Regional and territorial development: differences.

	Regional development	Territorial development
Boundaries	Region: institutional definition	Territory: defined by the actions of local actors
Main actors	Productive actors + public authorities	Different types of stakeholders
Modes of coordination	Competition between firms	Competition and conflict behaviours
Types of policies	Macroeconomic policies	Municipalities
Types of governance	Multilevel governance	Territorial governance
Land use	Macro-planning	Local land-use and land exploitation

account land-use and land planning strategies might contribute to the reconciliation of land-use analysis and regional science approaches.

We give a crucial place to this last point for two reasons. (1) The territories we are dealing with are (rather) small. Given their reduced surfaces, the possible development choices, but also any type of productive or construction activity have a strong impact and imply major choices in terms of land uses (the decision to protect a natural area will affect the rival land use of tourist activities or industrial production). (2) Soils are characterised nowadays by their increasing scarcity worldwide, be there for farming activities or for the extraction of heavy or rare metals for energy, for example (Intergovernmental Panel on Climate Change (IPCC), 2019). Everybody can notice the changes compared with periods where land availability seemed pretty common (OECD, 2017).

4.2. Production of territorial innovations through governance processes

Territorial governance is an interaction between forces that encourage cooperation and others to conflict (Torre & Traversac, 2011). Territorial development processes are made up of phases of negotiation, collaboration or appeasement, but also of much more animated, or conflicting, periods in which certain groups or categories of actors oppose each other, sometimes with virulence, to define the course of action and decide about the possible future options. These two complementary facets contribute to the production of territorial innovations and their mutual importance varies according to periods and situations (Glazer & Konrad, 2005).

Our analysis of these processes rests on Hirschman's (1970) tripod *exit*, *voice* and *loyalty*, which proposes an explanation of the dynamics of cooperation (loyalty), opposition (voice) and defection (exit) between actors (see Grillitsch & Sotarauta, 2019, for another approach). This three-option model, initially developed to describe the behaviours of consumers when confronted to quality changes, was later extended to spatial situations (Storper, 2013), always with three main types of strategies. Be there production relations or governance issues, they correspond to development or non-development processes (Torre, 2019). Whereas in the Hirschman's approach loyalty plays a minor role, we give equal weight to each option.

- *Loyalty* consists in accepting a decision made by others, mainly political authorities or large firms, and in 'playing the game' silently and cooperate. It can also be associated to the co-construction of territorial innovations in a cooperative way. This option is related to the acceptation of the current development processes and projects, in other words the lack of expressed opposition to the (public or private) decisions or the strategy of waiting for the next elections to express a possible dissent. It can also correspond to the support of a development project, or the start of a new operation following a successful consultation process. In this case, the potential opponents give up and prefer to bow to the majority decision or to provisionally accept that made by powerful public or private bodies.
- *Voice* consists of opposing a decision and challenging it publicly, legally or by means of protestations. One of the main expression of voice is conflict behaviours, which emerge when all or part of the local actors and citizens are discontented with decisions or projects, are poorly represented in governance structures or have the feeling that it has not been given fair consideration during negotiations. *Voice* can be either individual or collective. Individual oppositions are related to small-scale or neighbouring conflicts. Collective opposition means that (1) a larger number of actors feel dissatisfied about large-scale projects and (2) they rally against the latter, or (3) are in favour of a change of territorial governance rules and processes (Dowding et al., 2000). Their action is then often directed towards public authorities or large organisations. Its aim is to challenge their decisions and to stop or to influence the ongoing territorial governance process (Sabir & Torre, 2020).
- The *exit* option corresponds to defection. It is another expression of the Tiebout's (1956) vote with the feet model, which means to leave the territory, and to abandon any type of local behaviour. But this non-territorial development behaviour is not always easy to implement. Consider the example of the decrease of land prices due to the geographical proximity to a polluted site or an airport, or the impossibility to find a good place to relocate elsewhere related to financial, cultural or physical constraints. This situation, also called 'spatial exit', is mainly exemplified by some rural or peripheral areas affected by desertification, anomy or economic and institutional isolation. It concerns also areas where conflict is so violent that any regulation seems impossible and recommends exile, where territorial links tend to vanish, or prove insufficient to contain rising tensions.

This presentation of territorial governance processes is more complex than the often-described situation of cooperation, based on the shared wishes of the local stakeholders. The cooperative dimension (*loyalty*) must be accompanied by another situation, which reflects the dynamics of opposition and separation. This conflict (*voice*) dynamics will alternatively give rise to other paths of development, born from the adjustments made to the initial plans proposed by private or public actors, or to their withdrawal and replacement by other plans. A third way has to be mentioned, linked the incapacity of local actors to generate or maintain solidarity and exchanges relations, be there conflictual ones. When this situation occurs, some of the actors can leave the territory (spatial exit), and this process often coincides with the appearance of spirals of decline and abandonment. Non-development then takes over.

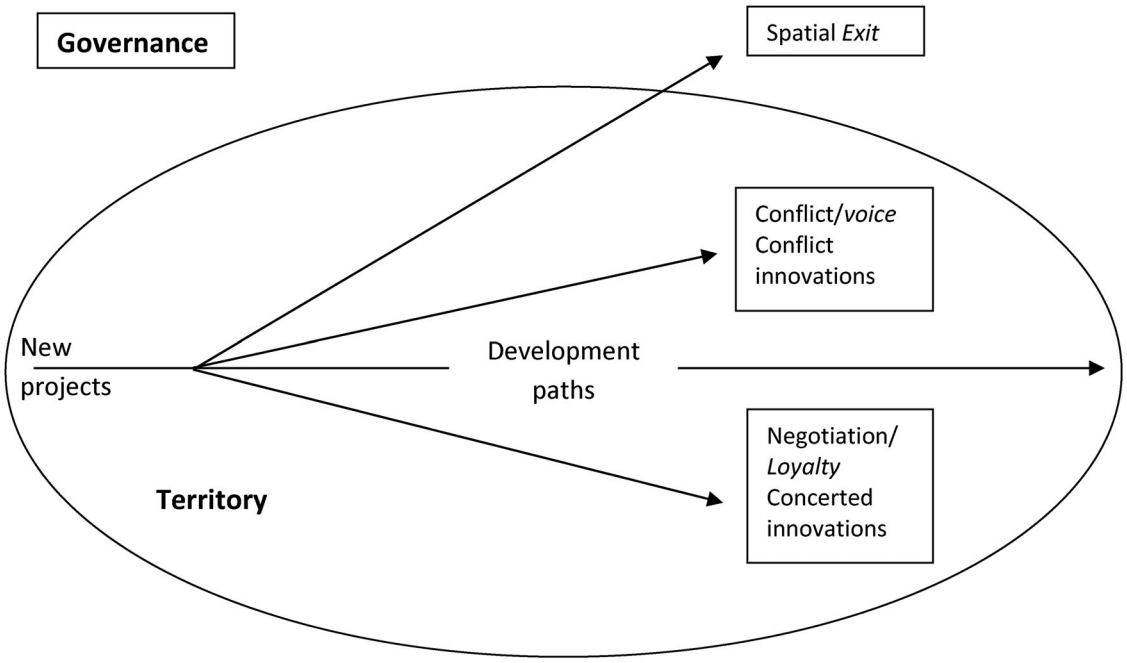

Figure 1. Governance figures and fabrication of territorial innovations.

Figure 2 provides a schematic representation of these three main types of situations, considered from the governance viewpoint.[1] For the sake of simplicity with have fixed a given moment of time, but it is part of a dynamic process of evolutions and transition. The limits of the territory are represented by an oval. Novelties are the consequences of two movements: they can either result from the actions of local stakeholders or be imported from external actors; and they can be modest or radical. In a Schumpeterian spirit, we will only attest the emergence of innovations at the end of the process, according to how society accepts, refuses or modifies them. The possible solutions correspond to different ideal-types of actors' behaviours: cooperative strategies, conflict behaviours or spatial exit. The subsequent development paths respond to different types of novelties and further innovations. They are not mutually exclusive and several development paths generally coexist in time. However, the local atmosphere is given by the dominance of some types of innovations, which take the upper hand; they design the more or less collaborative, sluggish or conflictual spirit of the territory.

The conjunction of the common wills of the stakeholders (negotiation/*loyalty*) gives birth to the dynamics

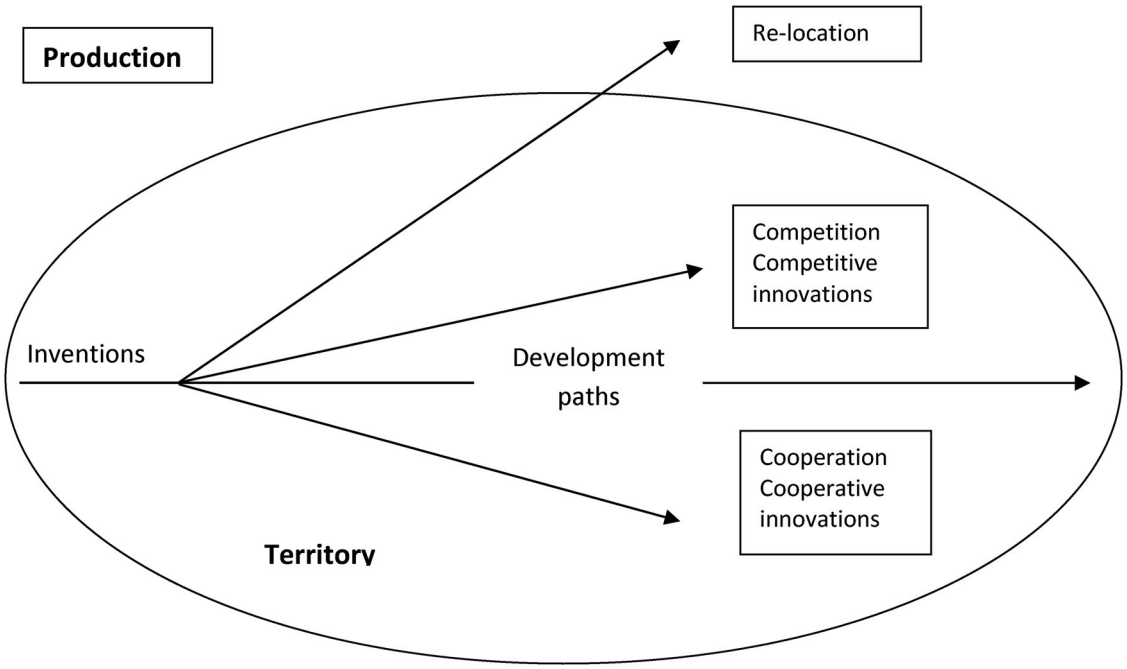

Figure 2. Production figures and fabrication of territorial innovations.

of cooperative projects and leads to the production of cooperative innovations. When the dynamics of opposition and separation (conflicts/*voice*, exclusion) are prevalent, the absence of general agreement on the types of projects dominates, and leads to multiplication of opposite options and strategies of reconfigurations. These conflicting processes give birth to conflicting innovations and new paths of development thanks to the modification of the initial plans of private or public stakeholders or the emergence of new plans. The mechanisms of exclusion can contribute to isolate particular groups of actors and lead to a spatial segregation (ghettos, gated communities, etc.) contributing to the fragmentation of territories. Finally, the absence of solidarities and exchanges – cooperative or conflicting – can cause spatial *exit* when an important part of the actors leave the territory, with the possibility of appearance of process of languor and land abandonment. The absence of production of innovations gives birth to non-development processes (Figure 1).

4.3. Production of territorial innovations through production processes

Let us draw a parallel with the role played by the production relations in the processes of territorial development, extending the initial tripod to productive behaviours. Again, the basic logic is based on three main figures. Cooperation relations take the form of joint work projects, alliances and networks. The competitive relations between firms or on the labour market are challenged by the processes of firms' relocation (Torre, 2019) (Figure 2).

Competition is not always exacerbated at the territorial level, where oligopoly and monopoly situations often dominate, except for services and marketing activities, where competition rages between different retailers. However, in localised production systems, firms often combine competition and cooperation relations, alliance or opposition strategies according to the functions concerned (R&D, production, marketing, etc.).

Relocations correspond to an exit from the territory that may involve all the functions of an enterprise or only a part of them (transfer of a stage of production, an industrial process or a service) (Brouwer et al., 2004). For a long time limited to intra-national displacements, they have grown with globalisation, extending to other countries. Whether it is a complete cessation of activity or complex circuits of commodities caused by the international value chains (Crescenzi & Hamrman, 2023), they cause a net employment deficit for the territory of origin, especially when they affect already fragile or specialised industrial areas.

5. DISCUSSION AND CONCLUSIONS: ON THE DYNAMICS OF STRUCTURAL CHANGE AND TRANSITIONS

Figures 1 and 2 present possible situations of territorial development at a given point in time. Let us now illustrate the processes of bifurcations induced by these choices, and follow the dynamics of territorial innovations and their contribution to the transitions.

Figure 3 provides a simplified picture of the possible development paths, and exemplifies the fabrication of various types of territorial innovation, accepted by the market and the society or resulting from internal or imported inventions or projects. It shows how, once adopted and adapted, new projects or inventions lead to bifurcations, mutations and changes in trajectories, which initiate new paths of development and further new dynamics. Here are described the different possible paths, starting from an initial situation and considering various endogenous or exogenous events. For example, the development path [I1, IC2, I5, S5] consists of several phases of successive cooperative/concerted and conflictual/competitive ruptures, and offers a profile of major bifurcations and non-linearity. On the other hand, the path [I1, I3, S3] is much more straightforward and consensual, while [I1, IC2, IC4, S4] relies largely on conflicting or competitive dynamics, whose repetition traces another possible development path.

These paths are not exclusive, or even cohabit at the level of a territory (coopetition, for example). But the dynamics and the atmosphere of a given territory will be mainly influenced by the dominance of one or the other path during a medium-time period. In terms of production, the local system can be rather competitive (a local cluster with many firms or labs specialised in the same type of production or innovations), cooperative (a Marshallian or Italian district), or depressed (an old industrial area subject to plant closures). In terms of governance, rather based on cooperative and trust behaviours between various groups of local stakeholders, on conflict between the promotors of new projects and major part of local population, or on the succession of phases of agreement and of periods of strong oppositions.

At the level of the whole territorial system, these changes and bifurcations lead to a process of structural changes (Pasinetti, 1981), characterised by dynamic evolutions in the structures of production and governance and diffused both through the local economic input–output structure and in the governance structures of local groups of actors. We can draw an example from Figure 4, which shows the possible future developments, starting from the current situation (right side). The left side reveals the state of the structure of the local system given all the development paths and bifurcations that have led to territorial innovations in recent periods. It reflects the governance of transitions, with its advances and hesitations due to conflicts or common projects, and the way cooperative or competitive dynamics spread within the structure of local networks and innovation systems (Coenen et al., 2016) and modify and impact them.

These schematic figures must be developed and give rise to more detailed analyses. Certain aspects such as the link to consumers, financial or monetary dimensions, the role of global pipelines, the importance of circular economy processes (Skjølsvold & Coenen, 2021) deserve additional elaborations and need to be integrated in the future.

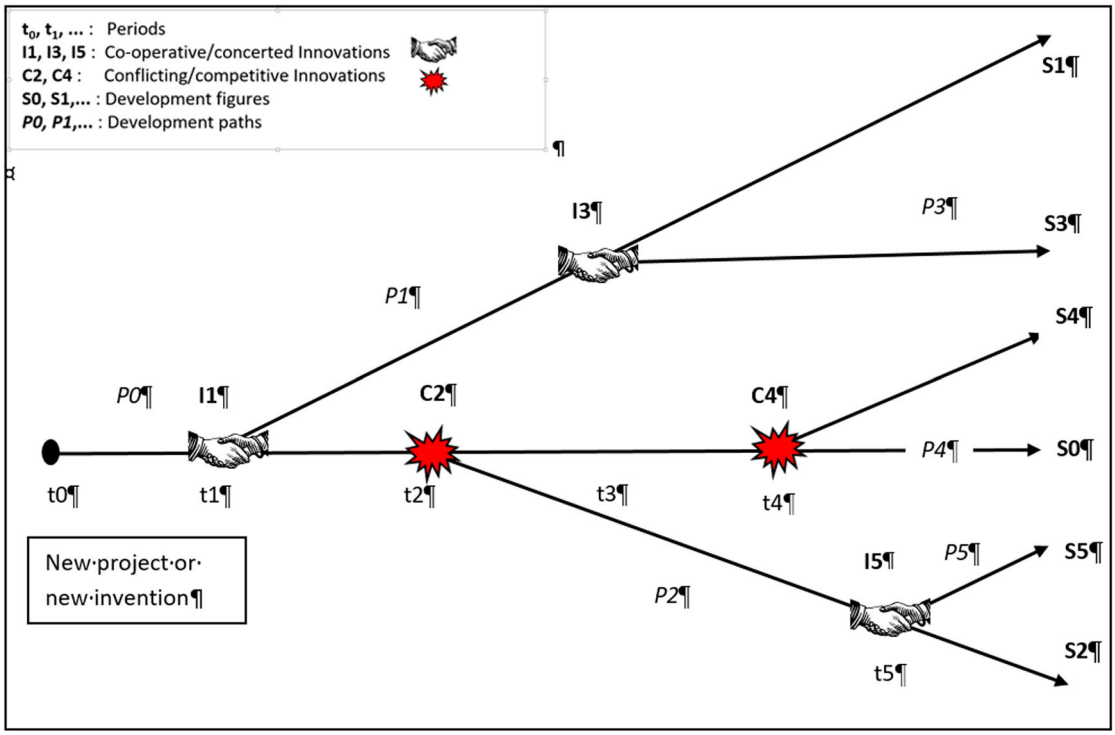

Figure 3. Possible paths of territorial development.

Despite these limitations, they reveal how, through the process of path dependence, the continuation of possible future trajectories is conditioned by both past and present states of the local system (Martin & Simmie, 2008), and they provide elements of understanding of territorial development dynamics. Thus, this approach participates in the contemporary movement of reflection on the conditions and dynamics of development, and it contributes to their enrichment by the addition of several factors; the clarification of the notion of territorial innovation, the integration of conflicts and oppositions in the analysis of development paths, and the implementation of three different solutions to a novelty and its possible transformations into innovations. Perhaps most important is the recognition of the value of an approach to territorial development, independent of other analyses at local or

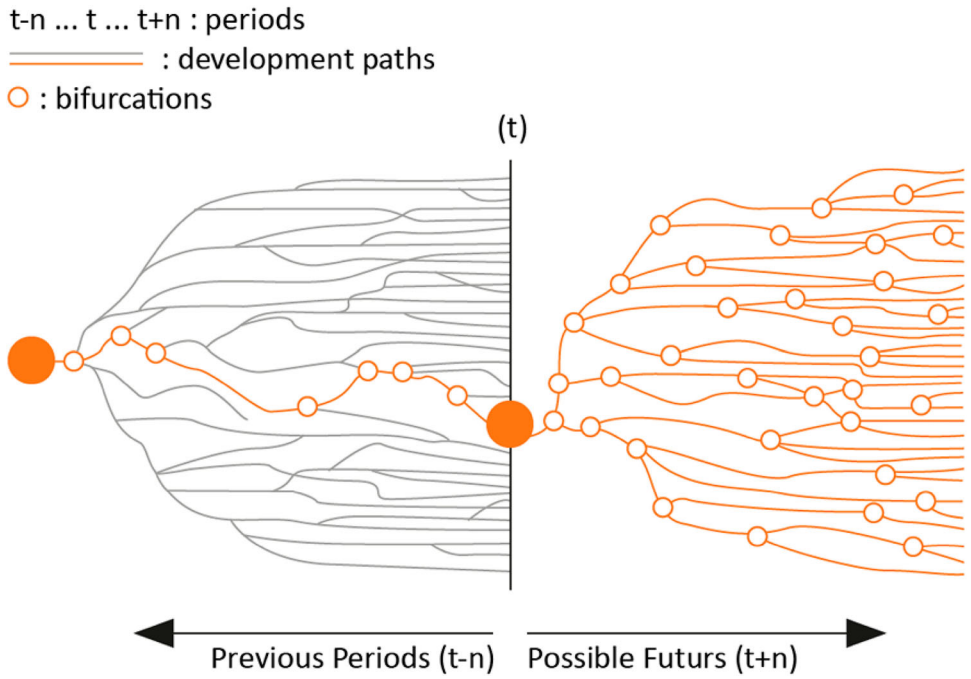

Figure 4. Territorial development and structural change.

regional level, and the proposal for an operational definition of territorial development, rooted in local realities.

Discussion, elaboration, protestation, including through new means of communication such as social networks, are an essential part of territorial development processes, and they express the diversity of human behaviours and projections to the future. They contribute to build territorial governance. It is on that basis that a process of creative destruction, with its dynamics, ambiguities and contradictions, can emerge and be maintained, and that territorial innovations arise from conflicts and cooperation. The other engine of territorial development, productive activity, is based on enterprises, private and public services and farms, which exploit and generate territorial resources. Technological and organisational innovations, developed locally or transferred and adapted from the outside, induce changes in production structures, leading to the emergence of new products, new manufacturing methods or new firms, new economic relationships, making old ways of doing things obsolete and threatening existing jobs and structures. The irreversibility they give rise contribute to the reorganisation and evolution of local socio-economic systems.

Thus, the process of territorial development is born of the incessant interlacing of production and governance dimensions, and of the roar of its two engines. Its dynamics results from the conjunction and the combination of different development paths, with their rapid advances, their blockages or even their backtracking.

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DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

NOTE

1. This representation is deliberately limited in order to emphasize the cooperative and conflictual dimensions of the fabrication of innovation. It neglects the complexity of the definition of territory, and does not directly express interactions with consumers, or financial and monetary impacts, for example.

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