

How to boost clusters and regional change through cooperative social innovation

Juan Ramón Gallego-Bono & Rafael Chaves-Avila

To cite this article: Juan Ramón Gallego-Bono & Rafael Chaves-Avila (2020) How to boost clusters and regional change through cooperative social innovation, Economic Research-Ekonomika Istraživanja, 33:1, 3108-3124, DOI: [10.1080/1331677X.2019.1696694](https://doi.org/10.1080/1331677X.2019.1696694)

To link to this article: <https://doi.org/10.1080/1331677X.2019.1696694>



© 2020 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 03 Dec 2019.



Submit your article to this journal [↗](#)



Article views: 858



View related articles [↗](#)



View Crossmark data [↗](#)



Citing articles: 4 View citing articles [↗](#)

How to boost clusters and regional change through cooperative social innovation

Juan Ramón Gallego-Bono  and Rafael Chaves-Avila 

Department of Applied Economics, University of Valencia, Valencia, Spain

ABSTRACT

The aim of this paper is to illustrate how social innovation is promoted and spread by cooperative clusters in order to develop regional change. This paper focuses on the main drivers of the spreading and exaptation processes of social innovation. The cooperative cluster model, the exaptation concept, the top-down approach, the meso-institutions concept and the meso-level perspective are used to capture the strategic approach of spreading social innovation. The study analyses two successful clusters: Mondragon, made up of industrial SMEs, and Anecoop, an agricultural cooperative group, both leading clusters in their respective region. Qualitative methodology is used to compare both case studies. Among the findings, this paper is one of the first attempts to explain the territorial institutionalisation of social innovations by way of their exaptation. It presents adaptation and exaptation as distinct but partly sequential processes: the adaptation of social innovations in cooperative clusters paves the way for the subsequent leap via exaptation of these innovations in the whole of the territory.

ARTICLE HISTORY

Received 4 June 2019

Accepted 4 November 2019

KEYWORDS

Social innovation; clusters; institutional exaptation; cooperatives; Mondragon; Anecoop; regional change

JEL CLASSIFICATION

L31; L35; L30; P13; P43

1. Introduction

The German Chancellor Von Bismarck regulated the public social security system for the first time in Europe in July 1883. This social security model had been designed and experimented with for decades before by friendly societies, which were grassroots social economy entities. By extending this social innovation, which sought to respond to local problems, to the whole German territory and therefore benefiting the whole of German society, the chancellor led an exaptation process of this innovation, extending it and institutionalising it for a function that it was not originally designed for.

In the evolutionary literature, the exaptation of an innovation is considered as a mechanism of evolution and diffusion of innovations of a discontinuous nature and

CONTACT Rafael Chaves-Avila  Rafael.Chaves@uv.es

© 2020 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

alternative to diffusion by adaptation (Dew, Sarasvathy, & Venkataraman, 2004; Dew & Sarasvathy, 2016; Andriani & Cattani, 2016). The concept of exaptation was introduced by Gould and Vrba (1982) to refer to the unintended innovations that ended up being applied in other fields. The two classic examples are microwave ovens that started life as radar magnetrons and feathers being used as thermal insulation. However, this literature has focused on technological change, and has avoided addressing the processes of exaptation linked to social innovation (SI) and territorial change.

Social economy enterprises, such as cooperatives and cooperative clusters, have demonstrated a great capacity for social innovation and for being social innovation drivers (Windrum, 2014). However, the literature on social innovation, cooperatives and social economy has not considered the capacity of cooperatives and their management teams to be top down drivers of exaptation. Because until now, this ability to transform cooperatives has been primarily associated with a bottom-up process and a primarily continuous and adaptive transformation of the territory as a whole (MacCallum, Moulaert, Hillier, & Haddock, 2009).

The aim of the article is to illustrate that social economy clusters can transform territories through a process of spreading social innovations not only by adaptation but also by exaptation. The hypothesis consists in considering that *cooperative groups or clusters* are capable of transforming their territorial ecosystem and influencing the behaviour of other public and private actors. Adopting a top-down perspective, these clusters can affect the set of social relations of the territories in which they operate. This perspective is essential for understanding that the cooperative promotion of social innovations itself makes these innovations penetrate the territory by adaptation. And this adaptation process paves the way for the exaptation process selected by the market. The extension of SI in the territory is explained as a process of *territorial institutional exaptation*. This is defined as the process of spreading of a SI from cooperatives and social enterprises to other public and private actors that finally transform their territory. It organically integrates a double process of innovation penetration, first, by territorial adaptation of SI and second, by exaptation, when the market adopts it in a different and more general function to the original. The theoretical framework is presented in the next section. It takes into account the concept of exaptation from a combination of the micro-meso-macro approach (Dopfer & Potts, 2008) and the strategic action fields approach (Fligstein & McAdam, 2012).

The article is important because it represents one of the first attempts to explain the territorial institutionalisation of social innovations by way of their exaptation. This article contributes to the literature because it presents adaptation and exaptation as distinct but partly sequential processes: the adaptation of social innovations in cooperative clusters paves the way for the subsequent leap via exaptation of these innovations in the whole of the territory.

Using a qualitative methodology, two paradigmatic cases of the large cooperative clusters, Mondragon MCC and Anecoop, are studied. These are relevant cases but are sufficiently differentiated to highlight the proposed interpretation. The results are presented and discussed, ending with a conclusion section.

2. Theoretical framework

Faced with the globalisation challenge, scientific literature has shown that along with private and public ways of modernising clusters, there is a third way that is represented by cooperative innovation clusters (Gallego & Chaves, 2015, Bretos, Díaz-Foncea, & Marcuello, 2018). These cooperative clusters also present a great potential to generate social innovations, which underlie and contribute to the technological innovation processes (Gallego & Chaves, 2016). However, there is a lack of studies that address the capacity of these cooperative clusters to transform the territories in which they operate, making them more dynamic and competitive. The concept of SI presents a great heuristic capacity in this context.

The notion of social innovation recovers the concept of institution of the classics of Sociology and Economics (Moulaert, 2009), according to which institutions would evolve slowly and would be rooted in the deepest of the economic and social structure, including values and social norms (MacCallum, Moulaert, Hillier, & Haddock, 2009). In this sense, SI has been defined as a process that, on the one hand, implies an innovative way of satisfying unmet needs, and on the other hand, a change in social relations that entails a new form of “organisational and institutional hybridisation” of the private, public and civil society sectors (Moulaert, 2009, Nicholls & Murdock, 2012, Moulaert, MacCallum, Mehmood, & Hamdouch, 2013). The key element consists in conceiving social innovations as new forms of relationship between actors, new *social technologies* (Nelson & Sampat, 2001).

2.1. Social innovation, meso-rules, and Meta-institutions

According to the micro-meso-macro approach, changes in a socio-economic system occur when generic meso-rules change. These rules or institutions operate at an intermediate level (meso) of abstraction and consist of a set of cognitive, behavioural, technological and social routines. These are generic meso rules because changes do not take place when the new rule is adopted by an innovative (micro) entity (for example, a company in a certain sector), but when this rule is disseminated between the whole of entities that make up a population. The meso level is the one defined by this population. From this perspective, the change describes a meso-trajectory of various stages: (initial) generation of a rule by an individual or innovative entity followed by the adoption, dissemination, and retention or institutionalisation of the rule by its assumption by the generality of the population (Dopfer & Potts, 2008).

The meso-rules constitute social innovations according to Nicholls and Murdock (2012) and Moulaert (2009). Since cooperative clusters integrate very heterogeneous cooperatives, the adoption of meso-rule social innovations is not direct but conditioned. Firstly, it requires the cluster to have a vision (Witt, 2007) or cognitive focus (Nooteboom, 2009) that maintains the cohesion of the diverse entities that make up the group. In terms of cooperative clusters, Gallego and Chaves (2015) demonstrated that the leaders of these clusters play a *Schumpeterian social and collective entrepreneurship* role, and therefore, they are the focal points that are capable of promoting behavioural meso-rules and initiatives that ensure coherence in the group's internal diversity.

Secondly, for the diffusion of social meso-rules, it is necessary that cooperatives are inserted into wider territorial networks, such as communities of practice and epistemic communities. The communities of practice are made up of people who develop a set of similar tasks following the same norms, usually in different organisations, while the epistemic community is a particular case of a community of practice devoted to scientific-technological and/or artistic-cultural activities. Both communities generally extend over heterogeneous clusters, companies and entities. The insertion of cooperatives in both types of communities gives them the potential to absorb and articulate the necessary network connections to acquire the knowledge and attitudes necessary to adopt the meso-rule (Amin & Roberts, 2008, Nooteboom, 2009).

The interrelation of several meso-rules forms a macro order. However, this order is not homogeneous but heterogeneous because it is composed of different populations of entities that follow the routines of specific meso-rules. Therefore, the diffusion of a new meso-rule can generate distortions in the macro order because it can destabilise other populations. But these imbalances can be regulated thanks to the existence of a series of rules or meta-institutions that operate at a high level of abstraction, such as the principles and values engrained in a society. Being very abstract, the meta-institutions allow for the limitation of changes to the meso-rules by keeping them within certain margins that make their changes compatible with each other while preserving the macro order (Dopfer & Potts, 2008; Hayek, 1988).

2.2. Territorial diffusion by adaptation of cooperative social innovations

In the same territory and constituted by heterogeneous populations, cooperatives operate and interact with other entities (private traders, public administrations, etc.). The objectives, values and operating principles of each one makes up the meta-institutions and meso-rules of the territory and can be coinciding, complementary or conflicting with each other. For cooperatives and/or other entities to become embedded in the territory and in the markets, it is necessary that their own principles and values prevail over or coexist with those that the other entities represent.

According to the strategic action fields approach (Fligstein & McAdam, 2012), the different actors of an ecosystem, or field of strategic action (policy field), interact with each other in the meso scope modelling the order of that field. The interaction among these private, public, and civil society actors is not only based on interests, power, and material issues but also bear in mind rules and values, it is also based on other “existential” elements that are fundamental to understanding the “core of human sociability and a related capacity for strategic action” (Fligstein & McAdam, 2012, p. 2).

Adopting this approach, the cooperatives interact with the other actors through collective meso actions generating new “existential” elements such as new identities and values principles, which are shared by the different actors. This process is favoured by the *geographical* proximity and by the *organised proximity*, understood as the reduced cognitive distance in the organisational, technological or cultural-institutional spheres existing among the individual actors (Torre & Walllet, 2014).

In this cultural and institutional context, three elements are crucial for the spreading of social innovations (rules). First, the wide and permeable scope between communities of practice and epistemic communities. It's a strategic field of interaction –institutional interface- among the actors of the territory. Second, a directed impulse (top-down) of new rules from the leading cooperatives, using shared behaviours and values of the territory. And third, by the introduction of a set of meta-institutions that help make sense of the macro-order, contributing to the generation and consolidation of territorial identities.

2.3. The territorial diffusion by exaptation of cooperative social innovations

We have just conceptualised how cooperative clusters spread a set of meso-rules among their members and drive a series of meta-institutions. However, this process necessarily occurs through interaction with actors other than cooperatives which have their own rules. Therefore, the success of cooperative clusters will bring about penetration into the territory via adaptation of some features of the meso-rules and meta-institutions defended by cooperatives by means of epistemic communities and creation of new territorial identities, etc.

However, the previous processes are insufficient to explain how some forms of SI, that have constituted genuinely cooperative forms of social relations, have been adopted by rival companies and organizations from a social and economic perspective. And given this rivalry, the explanation is not that other entities have embraced cooperative principles and values, but rather that the social innovations of cooperatives have been exapted by private entities, since they are suited to responding to a completely different (and possibly broader) function than the one that caused the retention of these social innovations by cooperatives. Faced with the process of spreading social innovation by fundamentally incremental adaptation, the process of exaptation of said innovation is radical or disruptive (Ganzaroli, De Noni, & Pilotti, 2014; Dew & Sarasvathy, 2016).

The genuine nature of social innovations is that they constitute new forms of relationship between actors. But these new forms of relations are institutions that are defined in the territory through the interaction between actors and that leave an imprint on all of them. From this perspective, we will argue that cooperatives establish new forms of relationship between actors, initially to fulfil a series of cooperative functions, but which have subsequently been exapted to define a new broader relational paradigm as a result of market demands. From this perspective, although what is described in the previous section is a true diffusion phenomenon by territorial adaptation of cooperative social innovations, it cannot explain the adoption of social innovations by entities that have a different business function and motivation in the absence of a radical change in the market. Hence, we talk about an *institutional territorial exaptation* process because it is the territory that creates the conditions for a certain continuity between the adaptation and exaptation processes.

Our approach to exaptation is close to that of Ganzaroli et al. (2014) in their study on the freeing-up of an industrial district, because they give social entrepreneurship the ability to promote an exaptation process that operates in two phases. The first is

knowledge accumulation and generation of network externalities without a predetermined purpose associated with the interaction of the actors in the territory. And the second is deliberate business use of this accumulated knowledge to exploit new market opportunities. A product innovation is therefore generated that deals with a lock-in situation in the district of Lumezzane (Italy) which is specialised in powder metallurgy.

3. Methodology and sources of information

The hypothesis of the study is that cooperatives generate SIs in the form of new modes of relationship between actors. These new relational modes are spread throughout the territory by a double process, of adaptation and exaptation, as consequences of the market's own demands, defining a new, broader relational paradigm.

Consistent with the concern to study the change in a collective analysis unit (a cooperative cluster), a qualitative methodology is used (Gallart, 2002) based on the study of two cases of similar but different realities so that the comparison is relevant. Both cases, Mondragon and ANECOOP, the main qualitative information comes from carrying out in-depth personal interviews with an open questionnaire to key actors in shaping the SI system in the organisational-business, training-technological, and university contexts. The selection of the sample of key informants followed a snowball system in a context of longitudinal research. A total of 32 interviews were conducted. Interviews addressed technicians, professors, and managers of university departments, technology centers, cooperatives, farmers, private companies, business associations, trade unions, and public administrations. The questions focus on the SI processes' key factors, the innovation networks' dynamics, and the tensions between actors and the type of institutions that regulate the relationships between these actors over time. The interviews were recorded and the texts resulting from their transcription were processed using the ATLAS.ti programme. In addition to the in-depth interviews, the activity reports of Mondragón and Anecoop and different material (videos, reports, etc.) collected from the testimonies of the protagonists of the processes studied were reviewed. The combination of documentary records of cooperatives, in-depth interviews and participant observation of the authors define an exercise in methodological triangulation.

4. Mondragon's social innovation cooperative system

4.1. Origin and evolution of the cooperative experience of Mondragon

The Mondragon Group (MCC) is considered the largest cooperative cluster in the world (World Cooperative Monitor, Bretos et al., 2018). Its employees are the owner-members of the 98 cooperatives and the more than 150 subsidiaries that make up the Group. In 2017 it had 80,818 average jobs, it invoiced 11,936 million euros and devoted 8.6% of industrial added value to R&D, with 15 R&D centres, 1928 full-time researchers and 11,010 students in training centres (Mondragon, 2018).

The "cooperative experience of Mondragon" arose in the Basque Country in the 1950s, on the initiative of Mr José María Arizmendiarieta, the priest of the town of

Mondragon. It was carried out in an area of great industrial tradition and workers' and nationalist struggle. Arizmendiarieta designed cooperativism as a way to generate work, for personal fulfilment and for the development of the community. He attributed an essential value to effort, education, and training as a way to a fair society (Irizar & MacLeod, 2010). At the origin of this cooperative group is the creation of associations and educational institutions, fundamental for the deployment of their beliefs and values and for training qualified people with knowledge and entrepreneurship. Five engineers founded the first cooperative in 1956, ULGOR, which is currently Fagor. Subsequently, new industrial cooperatives linked to local development emerged. "As the objective was to develop profitable, relatively labour-intensive cooperatives, we chose to explore medium-level technologies" (M. Quevedo, ex Head of Ikerlan, personal communication, January 13, 2015).

4.2. Meso-rules and social innovation system in the Mondragon group

In the protectionist Spain of the 50s and 60s, Basque industrial and cooperative companies proliferated with relative ease. But maintaining this impetus over time required the introduction of key organisational and SIs (Gallego & Chaves, 2016).

The first and most important innovation was the creation of the second-tier credit cooperative CLP (Caja Laboral Popular - *Popular Labour Fund*) in 1959. In addition to its financial dimension, CLP was the first institutional tool (a key SI) for cooperative relations among cooperatives (Irizar & MacLeod, 2010). The incorporation of new industrial cooperatives to the Mondragon group involved the mandatory signing of a *partnership agreement with CLP*. Under this contract, the cooperatives assumed mandatory rules and guidelines, in fact meso-rules, such as maintaining an exclusive relationship with CLP and the full reinvestment of profits. In return, the cooperatives received first-rate financing and business advice from CLP.

The reinvestment of profits rule constituted the second main SI. This innovation responded to the need for financing derived from the industrial positioning of cooperatives in capital-intensive sectors and the limited capacity and propensity of the worker shareholders to finance business projects. "With the passage of time worker contributions were decreasing, and profits reinvestment gained relevance" (I. Irizar, personal communication, January 10, 2015). The reinvestment of the profits, that was initially introduced for reasons of prudence, modernisation and solidarity, became a meta-coordination mechanism: an abstract standard internalised by the diversity of participating actors. This norm will be capable both of overcoming internal tensions and resisting the pressures of the environment and of influencing it.

As José María Ormaetxea, one of the founders, recalled, "Mr. José María Arizmendiarieta had an ambitious idea but not a specific idea, which is why he called it the *Cooperative Experience*" (Fagor, 2012; Urresti, 2018). From this perspective, it will be leadership and the proactive capacity to anticipate future needs instead of a reactive attitude, which presides over the launching of SIs and, in reality, the SI system defined by the set of formal and informal institutions that make up what Irizar and MacLeod (2010) have called the "inter-business cooperation framework". So Arizmendiarieta will act as *cooperative shumpeterian entrepreneur* (Gallego &

Chaves, 2016) along with some of its founders, promoting socio-organisational innovations coherent with their vision which will go on creating a system as an emerging reality.

However, the systemic competitiveness of the *Cooperative Experience* required digging deeper into the development of inter-business cooperative relationships among heterogeneous cooperatives. Sectoral and regional groups of coops were formed, often promoted from CLP (Mondragon, 2018). These groups of coops allowed the development of economies of scale and economies of scope, to set a collective strategy and the establishment of common behavioural patterns.

Together with CLP, each of these sectoral groups created specialised Technology Research Centres. The first R&D centre, Ikerlan, created in 1978, is of a generalist nature. IDEKO was created in 1987 and was the first technological centre with specific sectoral specialisation: it contributes to the development of the machine-tool sector (I. Irizar, personal communication, January 10, 2015; M. Quevedo, 2015, personal communication, January 13, 2015).

The socio-organisational innovations and the commitment to reinvest profits within the divisions and the MCC group reinforce the cooperative technological synergies and enable a strategic overall direction for the Mondragon group. Together with the Lagun Aro mutual benefit society, they also legitimise inter-cooperative solidarity, with mechanisms such as the redistribution of profits and staff between cooperatives.

These socio-organisational innovations and rules will be increasingly important from the 70's. Then begins a technological modernisation process based on the creation of R + D centres, systematic relations between companies and technological centres and a growing openness to international markets.

4.3. Meso-rules and territorial transformation of the Mondragon group

Over time, Mondragon group SIs exceeded this cluster and spread to the Basque territory through meso-rules and meta-institutions.

The diffusion has been carried out in three meso fields: the socio-cultural, the economic, and the political. A series of partial exaptation processes are recognised since cooperative social innovations are entering the territory by adaptation and are co-opted, at least in part, to fulfil functions different to those that caused them. In addition, it paves the way for a general exaptation process that integrates the three areas.

The socio-cultural influence. The “Experience” of Mondragón was greatly influenced since its beginnings due to the Basque socio-cultural environment, but its leaders always defended a development path that would mitigate the capital-labour conflict and that would promote Basque culture. Mondragon group multiple strategic actions have helped to reinforce the Basque identity and sense of group belonging, shaping the regional *institutional identity* (a meta-institution). On the one hand, the marketing campaigns launched by CLP not only forged certain behaviours and the value of savings in the population as a whole, but also the territorial identity. For example, the “savings book or suitcase” campaign by CLP, in addition to raising awareness among cooperative members about the importance of saving to sustain the

investment effort and the generation of cooperative employment in the region, emphasised the commitment with the Basque Country and the reinvestment within the Basque Country of the resources obtained there, being in tune with general values (Urresti, 2018). This economic-identity penetration is reinforced by the cooperatives' commitment with the Basque language and culture, and its commitment to training as mechanisms of personal and territorial development. The Mondragón group has therefore had a great socio-cultural influence on Basque society through the large number of initiatives deployed at all levels of the training system.

Influence on the economy and public policy. The diffusion of SIs of cooperatives in the Basque territory also takes place from the perspective of the Basque industrial and technological policy, through the influence of cooperatives on the competitiveness strategy of private industrial companies. At the end of the 1970s, the Basque territory lacked relevant R&D centres (Moso & Olazarán, 2002), in addition to the poor relationship between the Basque university and the productive system. This contrasted with the situation of the Mondragon group, which had innovation-generating structures, such as testing laboratories, technical schools, business associations, and Ikerlan, the reference R&D centre. The policy makers of the new Basque government which belonged to the PNV (Basque Nationalist Party), had deep links with industrial interests and training in engineering studies. These factors decided the Basque technological policy towards the promotion of technological centres and applied research aimed at industrial sectors in the face of a more scientific policy (M. Quevedo, 2015, personal communication, January 13, 2015; Moso & Olazarán, 2002). The Mondragon group was the key reference.

The limited tradition of cooperation and business associationism in the Basque Country in coherence with its character as an old industrialisation region (Moso & Olazarán, 2002) contrasted with the existing wealth in the field of cooperatives in this regard. This meant that both the technological policy and the cluster policy were initiated at the beginning of the 1990s, based on the existing relational, sectoral, and territorial base, it was based on the Mondragon cooperatives.

This process reinforced the contribution of cooperatives to the formation of political-ideological-cultural fields that integrate diverse actors, such as cooperatives, private companies, and political parties. A political process that is supported and fed back into the full integration of the workers, specialists, managers, professors, and researchers of the cooperatives in a dense network of communities of practice and epistemic communities, linking managers and business and political leaders, which were cross-sectional in the Basque territory. The policy for reinvesting profits (and the reinvestment of profits as a meta-institution) consolidated a competitiveness strategy via innovation that has spread to the fabric of SMEs and large Basque industrial companies, both through the industrial and technological policy of the Basque government, as well as in the Basque private companies themselves, due to the competitive territorial pressure exerted by cooperatives and cooperative groups; "One of the keys to the dynamism of the Basque industry lies in the harmonious relationship between large and small companies, and the cooperatives of Mondragon constitute a benchmark in this regard" (Basque Government Deputy Minister for Industry, personal communication, May 6, 2016).

5. ANECOOP's social innovation cooperative system

5.1. Origin and development of Anecoop

Spain is the world's leading citrus exporter (FAO, 2016). ANECOOP is one of the first citrus exporting multinationals in the world and represents around a tenth of Spanish citrus exports (ANECOOP, 2016). It was founded in 1977 in the form of a second-degree cooperative by 31 Valencian agricultural and horticultural cooperatives and it progressively integrated new similar cooperatives from other regions.

The cooperatives and Anecoop were formed in order to respond to a structural problem in the region's citrus sector. This horticulture sector was characterised by a widespread fragmentation and by a heavy dependence on private traders (dealers) on the part of farmers. Added to the dependency were generalised practices of speculative behaviour in the farmers/trading relationships (Bono, 2010): each actor tried to take advantage of their informative advantage with respect to the rest of stakeholders to make the most of their profits. For example, farmers delayed the sale of the product as much as possible to take advantage of possible price improvements and private traders tried to take advantage of the uncertainty for farmers in order to close deals at low prices and therefore obtain high profits. For more than a century and a half, a "speculative convention" has been formed that operates in traditional Mediterranean fruit and vegetable systems (Gallego & Lamanthe, 2011) as an authentic meta-institution mechanism (Gallego & Chaves, 2016).

5.2. Meso-rules and social innovation system in Anecoop

With significant growth since the 1960s of the 20th century (linked to the low liquidations of private traders at that time), the development of citrus cooperatives was carried out historically through the creation of one or several cooperatives in each municipality (Gallego & Lamanthe, 2011). This limited the growth in the size of the cooperatives and has contributed to the lack of professionalism when management reverts back to the same partners. In municipalities with a cooperative culture, private traders will have less influence and some large cooperatives will be developed.

Within the ANECOOP cluster, heterogeneous cooperatives coexist in terms of size, entrepreneurial dynamism and technical and managerial professionalisation. Although it was initially founded to improve the export capacity of its member cooperatives, ANECOOP has led a collective innovative response to the radical change in the environment in which the citrus cooperatives operate. A change marked by the alteration of marketing conditions, where the large distribution chains now dominate, and the conditions of quality, food safety and respect for the environment established by them and by the public administrations themselves. This required a change in the meso-technological rules with the entry of scientific knowledge in a sector dominated by practical knowledge.

In order to respond to this immense challenge, ANECOOP had to develop organisational innovations to ensure that all cooperatives provide the product under the required conditions. This process is based on four basic mechanisms. First, the improvement of the competences, absorption capacity and external connectivity of

ANECOOP (Gallego & Chaves, 2015). Second, the second-level cooperative helps improve the procedures of grassroots cooperatives and shares innovations with them (ANECOOP, 2016). Third, ANECOOP makes its cooperative members incorporate technical personnel (mainly agronomists). This has led to the existence of a large number of specialists in the cooperatives, which are the basis for their insertion in dense networks of practice and epistemic networks with all stakeholders in the territory. Fourth, a stable exclusive relationship between Anecoop and the member cooperatives has been institutionalised, so that the latter agree to only operate with Anecoop.

Although cooperatives have improved in citrus marketing, they had difficulty gaining market share in commercialised citrus production in the early 1990s (Gallego & Lamanthe, 2011). This situation, together with the tensions between large and small cooperatives, has led Anecoop to promote two significant organisational innovations. On the one hand, mergers of cooperatives, attempting to improve efficiency via size and professionalisation of management (Julià, Melià, & García, 2012). On the other hand, the development of the Anecoop Cooperative Business Group has been facilitated. The group integrates the cooperatives to shape a unique cooperative enterprise (ANECOOP, 2016).

In short, cooperatives have generated a radical SI in a speculative context: they have institutionalised stable, transparent, qualifying and smooth relations between farmers and cooperatives that acquire their products.

5.3. Meso-rules and territorial transformation of Anecoop

The diffusion of Anecoop's SIs over the territory and its private and public actors has been carried out within three areas. This dissemination process legitimises cooperatives in the territory and therefore paves the way for the exaptation of cooperative social innovations by the private sector in the form of various radical organisational innovations that try to deal with the new market requirements.

The socio-cultural sphere is the first area of dissemination. The grassroots cooperatives maintain a municipal SI model linked with the policy for the development of services (petrol station, etc.) and leisure and recreation (open meeting places). This intervention model constitutes a mechanism of irradiation of solidarity and reinforcement of the sense of belonging between the cooperatives and the territory that exceeds the cooperatives themselves. The same happens with the credit sections (financial entities) of the Valencian agricultural cooperatives, which return the local savings that they obtain to the territory; a territorial social commitment that has the sympathy of the local citizens (J.V.Pitxer, territorial expert, personal communication, October 15, 2017).

The second area of dissemination is about the citrus economy and innovation policy. Cooperatives and their technicians are strategic instruments for the dissemination of innovations and the territorial absorption of information from innovation policy. This strategic positioning of the cooperatives in the territory derives from three factors: a) the local implantation of the cooperatives; b) the high presence of technicians and c) the regional government's attribution to cooperatives of the role of technical advice to agriculture in general (Gallego & Chaves, 2015).

The relations of the cooperatives technicians with the researchers and public officials of the other entities of the citrus innovation system, have been especially creative within the framework of the National Citrus Group. In this Group, the technical representation is essentially held by the cooperatives, which is very relevant in light of the novelty of the research in health and the plant protection that it entails, the strong teacher-student relationships and the high confidence and cognitive proximity of its members (V. Dalmau, Head of the Government Plant Protection Service, personal communication, March 20, 2013).

A second aspect is the influence on private traders and farmer-business relationships. Individual cooperatives have established a stable relationship with farmers for decades, which meant a continuing commitment to acquire and purchase their production valued according to the sales price actually achieved in the market. On the contrary, the traditional farmers/private trade relationship is unstable over time, but any trader is obliged to pay the agreed price regardless of the final sale price in the market. With the great importance acquired by the large supermarket chains in the marketing of fresh products and the growing concern of the European authorities, there has been an increase in the quality, food and environmental safety requirements of the products since the 1990s. In order to meet these conditions, particularly in a context where small farms dominate, the existence of a stable relationship between dealers and farmers is imposed so that the former can advise the latter and be sure of compliance with the rules. For that reason, private commerce has exapted the stable relationship between cooperatives and farmers, responding to market demands. The stable relationship innovated by the cooperatives is exapted to the rest of the citrus sector with two types of basic experiences. On the one hand, the informal stable relationship of the farmers with the “brand owners”, who are traders who still have reputable brands and sell in traditional markets and who usually pay a better price to farmers in exchange for product quality and cultivation following their recommendations. On the other hand, stable and more formal relationships between traders and producer groups that create a SAT-firms,¹ in order to ensure quality, traceability and other market demands. However, now private traders acquire the production of farmers in any of these two modalities without the latter knowing the sale price of their product, which is only settled months later. And dealers appeal to the practice of the cooperatives to legitimise this behaviour.

Finally, the type of synergies (exchanges of production between warehouses, specialisation, etc.) that exist among the cooperatives of the Anecoop Business Group also exist among the leading private traders’ dealers (V. Ramos, executive of a leading trade company, personal communication, April 24, 2014). This suggests alignment between the strategies of dealers and cooperatives, both in the areas of production and marketing, and the large contribution of cooperatives to this process.

6. Discussion

In the two cases studied, the diffusion of the original innovations introduced by cooperatives to the whole territory, can be considered as a process of institutional exaptation. By virtue of this process, the SIs introduced by the cooperatives anticipate

a change in the relational paradigm that will place those innovations precisely at the centre of the new paradigm. Therefore, the stable relationship that ANECOOP and its grassroots cooperatives have established between farmers and marketing cooperatives as an essential way to reduce uncertainty and gain security for farmers has been extended after for a different purpose. Indeed, it has become progressively generalised throughout the citrus sector as a new and necessary farmer/dealers relationship model to face the demand new requirements.

In the same way, in Mondragon cooperatives, a whole web of relations of interdependence and rules between big companies and SMEs has been devised to ensure solidarity between them and their own viability. However, over time, these practices have largely become a cooperation model between large companies and SMEs. The latter has especially occurred in the Basque industry, in need of an improvement in the competitiveness in new sectors with significant presence of large companies (national and multinational) and SMEs.

Both in the cases of ANECOOP and Mondragon, it is evident that the requirements of the market are essential in this change of relational paradigm. However, this does not mean that the market pressure alone is capable of causing this change in the relational paradigm, as evidenced by the competitiveness of Basque industry and the Valencian citrus sector in the international arena. It shows that all the territories have not been able to adapt to the new demands. That is to say, the process of institutional exaptation has a marked territorial character that confers continuity to the process in spite of operating through change of relational paradigm.

Andriani and Cattani (2016, p. 127) proposed this relationship between exaptation and paradigm change in the technological field, for example in the area of the treatment of mental disorders, with the passage from psychoanalysis to psychiatric biology as the dominant paradigm. However, they place more emphasis on supply (technology) than on demand as the driver of the paradigm shift. On the contrary, faced with the idea that new technologies can create new market niches, Dew and Sarasvathy (2016) challenge the conception of markets as independent selection mechanisms and place the emphasis on the own business constitution of the market niches for these new technologies. Now, in both approaches, the exaptation proceeds through a discontinuity between the original use of a new technology and its use to cover needs in a different field than initially intended. In our case, and due to the very nature of SIs, we have maintained that they must gain a general scope to be consolidated in a territory and in markets where organisations of a different socio-organisational nature compete (cooperatives, private companies, public administrations, other civil society organisations), things will operate differently.

On the one hand, we argue that exaptation operates through a relational paradigm shift, in the sense that SI is diffused because it presents characteristic features capable of fulfilling not only functions different from the original ones but more general functions.

On the other hand, compared to the literature on exaptation in the field of technological innovation, in the field of territorial SI, there is an element that could confer continuity to both adaptation processes and *exaptation of SI*, because the original SI can influence the nature of the dominant relationships and values in the territory.

Therefore, in our case, it is precisely the territorial dimension that offers a connection between the original institutional innovation and its “diffusion” with a paradigmatic character. The reason is that between the original meso-trajectory of diffusion of innovations in cooperatives and the meso-trajectories of “diffusion” in other populations other than cooperatives to fulfil a new function, a type of institution with a higher level of abstraction and ability to coordinate different actors will mediate. Indeed, a set of shared meta-institutions and a co-definition process between stakeholders of the territory will operate. This process is based on the creation of a network of relations in which certain basic principles of cooperatives are disseminated and merged with other broader values among the actors of the territory, creating the bases for the exaptation of SI. For all these reasons, in the process of *institutional exaptation* (of SI) although there may be a functional change, there is also a necessary institutional continuity, or proximity, so that the quick response to the change in market requirements can occur.

Therefore, from our perspective, there will be two key vectors that frame the process of *institutional exaptation* of SIs. On the one hand, the actions (with varying intentionality) exercised by the governing bodies of cooperatives with a view to extending their innovations, visions and values among other socio-organizationally different actors and the population of the territory in general. The second vector is the pressure exerted by the market in favour of the SIs originally introduced by cooperatives. From this perspective, it is expected that the processes of institutional exaptation of SIs will be inscribed in the continuum defined by both vectors.

7. Summary

7.1. Conclusions

One of the main features of social innovations is that they imply a change in the nature of social relations and a new way of meeting needs that were previously unsatisfied (Moulaert, 2009; Moulaert et al., 2013; Nicholls & Murdock, 2012). Under these conditions, it is not surprising that the capacity to transform territories is attributed to SIs (MacCallum et al., 2009). On this basis, this article has introduced a new form of theoretically and empirically comprehending SI and its potential for territorial transformation. To this end, the concept of *territorial institutional exaptation* has been introduced. It attempts to integrate adaptation and exaptation as two moments in the process of *territorial diffusion of SIs*. Additionally, cooperative clusters constitute drivers of this territorial institutional exaptation.

Considering the triple micro, meso and macro scope of the SI processes (Nicholls & Murdock, 2012), the meso scope has been prioritised as the key field of SI. In this meso area, the focus of the strategic action fields (Fligstein & McAdam, 2012) has been relevant to comprehending the interaction between different types of actors and the meso-rules. Therefore, from a theoretical perspective, it has been argued that cooperative clusters are likely to stimulate a process of change through the impulse of socio-organisational meso-rules and meta-institutions of a higher level of abstraction which are capable of regulating the tensions associated with the deployment of the latter. And the most original idea of the article is that the relative adaptive success of

these meso-rules and meta-institutions is to overflow the scope of cooperatives, spreading through the territory and influencing the very meso-rules and meta-institutions that govern in private, public and civil society stakeholders. On the one hand, this process is due to the double capacity of cooperatives to deal with certain organisational problems shared with other stakeholders with greater success, such as the dissemination of innovations among heterogeneous entities, and, on the other hand, to develop cross-sectional meta-institutions and new societal identities that can be shared among the different actors of a territory.

The relevance of this new way of comprehending the integral character of SIs and the role of cooperative clusters in it has been evidenced by demonstrating the important commonalities presented in this respect by cases as different as those of Mondragon and Anecoop.

In the Mondragon case, a powerful business group has been developed and consolidated, thanks to the leading capacity of its founders and management teams to generate socio-organisational innovations in the form of meso-rules. These innovations have fostered business cooperation among the cooperatives and the development of highly competitive companies and industrial groups. The diffusion of these meso-rules to the whole of the Basque industry by exaptation and adaptation have been possible thanks to various meso-mechanisms.

In the case of Anecoop, a progressively integrated business structure has been built. It has been able to introduce a series of socio-organisational innovations (meso-rules) in a very heterogeneous set of grassroots cooperatives.

These meso-rules have supported a significant process of technological modernisation. To begin with, this relative success has not been able to neutralise the strength of the meta-institution of speculative behaviour associated with a sector-territory which is very oriented to the market and especially to the private sector. However, the new requirements in the markets have led to the imposition of a new and more stable forms of interaction between farmers and production packaging companies (private and cooperative) that operates as an increasingly dominant mechanism of intermediate level of abstraction between the meso-rules and meta-institutions. In this way, the cooperative meso-rules have penetrated into the territory.

7.2. Policy implications

Governments have a major challenge to boost cluster and regional change through territorial spreading of SI. The results of this study offer a framework to understand this territorial spreading process of SI. It highlights two sequential phases of the innovation spreading, adaptation and exaptation, the leading paper of the cooperative clusters and the crucial role of the institutional interfaces. Governments have two ways to foster the territorial institutional exaptation. First, they should promote interaction and meeting spaces between different actors as a way to promote their capacity for incremental (adaptation) and radical (exaptation) innovation. And second, they should improve the use of these institutional interfaces (meeting spaces) as a vehicle for their general policy (supply perspective), but also play the role of a catalyst and accelerator of certain market changes (demand perspective) with greater disruptive ability.

Note

1. A SAT-firm (Agrarian Transformation Society) is a Spanish new legal form of a civil entity with both social and economic purposes focused to address rural and agricultural issues. In practice, it is a stable relationship between a private trader and farmers who agree to deliver the produce and to cultivate following the private trader indications.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This work was supported by the Spanish Ministry of Science, Innovation and Universities under the research project number (GOBEFTER II Project, CSO2016-78169-R).

ORCID

Juan Ramón Gallego-Bono  <https://orcid.org/0000-0003-3147-296X>

Rafael Chaves-Avila  <http://orcid.org/0000-0003-4087-1284>

References

- Amin, A., & Roberts, J. (2008). Knowing in action: Beyond communities of practice. *Research Policy*, 37(2), 353–369. doi:10.1016/j.respol.2007.11.003
- Andriani, P., & Cattani, G. (2016). Exaptation as source of creativity, innovation, and diversity. *Industrial and Corporate Change*, 25(1), 115–131. doi:10.1093/icc/dtv053
- ANECOOP. (2016). ANECOOP memoria RSC 2013/2014. Valencia: Anecoop, S. Coop. Retrieved from <http://anecoop.com/>
- Bono, E. (2010). *Naranja y desarrollo. La base exportadora de la economía del País Valenciano y el modelo de crecimiento hacia fuera*. Valencia: Publicacions de l'Universitat de València.
- Bretos, I., Díaz-Foncela, M., & Marcuello, C. (2018). Cooperatives and internationalization: An analysis of the 300 largest cooperatives in the world. *CIRIEC-España, Revista de Economía Pública, Social y Cooperativa*, 92, 5–37. doi:10.7203/CIRIEC-E.92.11480
- Dew, N., & Sarasvathy, S. D. (2016). Exaptation and niche construction: behavioral insights for an evolutionary theory. *Industrial and Corporate Change*, 25(1), 167–179. doi:10.1093/icc/dtv051
- Dew, N., Sarasvathy, S. D., & Venkataraman, S. (2004). The economic implications of exaptation. *Journal of Evolutionary Economics*, 14(1), 69–84. doi:10.1007/s00191-003-0180-x
- Dopfer, K., & Potts, J. (2008). *The general theory of economic evolution*. London and New York: Routledge.
- Fagor. (2012). Fagor historia.avi–YouTube. Retrieved from <https://www.youtube.com/watch?v=TLIxS1yHbUE>
- FAO. (2016). FAOSTAT. Crops and livestock products. Retrieved from <http://www.fao.org/faostat/en/#data/TP>
- Fligstein, N., & McAdam, D. (2012). *A theory of fields*. Oxford: Oxford University Press.
- Gallart, M. A. (2002). *Veinte años de educación y trabajo: la investigación de la formación y la formación de una investigadora*. Montevideo: OIT/Cinterfor.
- Gallego, J. R., & Chaves, R. (2015). El modelo cooperativo de sistemas agroalimentarios de innovación: el caso ANECOOP y el sistema cítrico valenciano. *Información Técnica Económica Agraria*, 111(4), 366–383. doi:10.12706/itea.2015.023
- Gallego, J. R., & Chaves, R. (2016). Innovation cooperative systems and structural change: An evolutionary analysis of Anecoop and Mondragon cases. *Journal of Business Research*, 69(11), 4907–4911. doi:10.1016/j.jbusres.2016.04.051

- Gallego, J. R., & Lamanthe, A. (2011). ¿Por qué las cooperativas no dominan en los sistemas hortofrutícolas tradicionales? Una comparación entre España y Francia. *CIRIEC-España, Revista de Economía Pública, Social y Cooperativa*, 72, 9–41.
- Ganzaroli, A., De Noni, I., & Pilotti, L. (2014). The role of social entrepreneurship in leveraging exaptation in locked-in industrial districts: the case of Idrogenet in the industrial district of Lumezzane. *Innovation: The European Journal of Social Science Research*, 27(3), 254–274. doi:10.1080/13511610.2014.904742
- Gould, S. J., & Vrba, E. S. (1982). Exaptation—a missing term in the science of form. *Paleobiology*, 8(1), 4–15. doi:10.1017/S0094837300004310
- Hayek, F. A. (1988). *The fatal conceit. The errors of socialism*. Chicago: University of Chicago Press.
- Irizar, I., & MacLeod, G. (2010). *32 claves empresariales de Mondragon*. Oñati: GARAIA polo de innovación.
- Julià, J. F., Melià, E., & García, G. (2012). Strategies developed by leading EU agrifood cooperatives in their growth models. *Service Business*, 6(1), 27–46.
- MacCallum, D., Moulaert, F., Hillier, J., & Haddock, S. V. (2009). Introduction. In D. MacCallum, F. Moulaert, J. Hillier, & S. V. Haddock (Eds.), *Social innovation and territorial development* (pp.1–8). Farnham: Ashgate.
- Mondragon. (2018). Informe Annual 2017. Retrieved from <https://www.mondragon-corporation.com/informe-anual-2018/assets/doc/INFORME-ANUAL-2017.pdf>
- Moulaert, F. (2009). Social innovation: Institutionally embedded, territorially (Re) produced. In D. MacCallum, F. Moulaert, J. Hillier, & S. V. Haddock (Eds.), *Social innovation and territorial development* (pp.11–23). Farnham: Ashgate.
- Moulaert, F., MacCallum, D., Mehmood, A., & Hamdouch, A. (Eds.). (2013). *The international handbook on social innovation*. Chenttenham UK and Northhampton, MA: Edward Elgar.
- Moso, M., & Olazarán, M. (2002). Regional technology policy and the emergence of an R & D system in the Basque Country. *Journal of Technology Transfer*, 27(1), 61–75.
- Nelson, R. R., & Sampat, B. (2001). Making sense of institutions as a factor shaping economic performance. *Journal of Economic Behavior & Organization*, 44(1), 31–54. doi:10.1016/S0167-2681(00)00152-9
- Nicholls, A., & Murdock, A. (Eds.). (2012). *Social innovation. Blurring boundaries to reconfigure markets*. Hampshire (UK) & New York, NY: Palgrave Macmillan.
- Nooteboom, B. (2009). *A cognitive theory of the firm*. Chenttenham, UK: Edward Elgar.
- Torre, A., & Wallet, F. (2014). *Regional development and proximity relations*. London: Edward Elgar.
- Urresti, G. (2018). *Arizmendiarieta. El hombre cooperativo*. Bilbao: Urresti y Altube Filmeak.
- Windrum, P. (2014). Third sector organizations and the co-production of health innovations. *Management Decision*, 52(6), 1046–1056. doi:10.1108/MD-03-2012-0166
- Witt, U. (2007). Firms as realizations of entrepreneurial visions. *Journal of Management Studies*, 44(7), 1125–1140. doi:10.1111/j.1467-6486.2007.00731.x