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Repair and reuse networks? A practical application of a spatio-temporal analysis method

Julie Gobert, Romain Allais

1 Introduction

1.1 General introduction

In order to go beyond the recycling strategies and consistent with the European directives, different institutional initiatives have recently emerged in France promoting Circular and Cooperative Economy: Energy Transition for Green Growth Act, call of projects from the Environmental Agency… Re-employment, re-use through repair, are taking more and more space. For example, for furniture waste, the rules specify that it is appropriate to "encourage the re-use of elements whose functional and sanitary status is satisfactory or the reuse of waste of furniture." Communities can dedicate a portion of demolition to rehabilitation by creating recyclers or rankings (Pacreau, 2016). Numerous local and national initiatives are tested and implemented from the associative sector or the Social and Solidarity Economy (SSE) to promote reuse, reemployment and repair, sometimes for a long time (like the Emmaüs network) as pointed by (Horne, Maddrell, 2002), (Defalvard, 2016) or French Environmental agency (ADEME, 2007, 2010, 2012, 2014). Despite the diversity of the existing solutions, repair and reuse activities remain limited.

Causes of this lack of interest are multiple. First, the practices developed by the ESS and particularly by associations promoting re-employment do not necessarily have a positive image to create a sense of trust and accession (Schmidt et al., 2015). The lack of 'recognition' of institutions and consumers is a brake. In fact, the lack of public sensitivity and the weak institutional recognition of SSE initiatives (often located far away from the urban centres) due to a negative representation (Gregson and Crewe, 2003). In addition, audiences of consumers and/or users remain small due to the lack of awareness and a sometimes negative vision of citizens to donation practices and deposits of objects for repair/reuse (ADEME, 2014) (Rumpala 1999, Anstett et al., 2015). Path dependencies contribute also to the under-deployment of repair and reuse activities. In fact, the current structuring of waste processing and recycling channels leaves little room and legitimacy for these emerging networks (Pacreau, 2016) and the consumer's habits and formatting also: «*values associated with ownership and accumulation appear to be important development brakes to new forms of economy*» (consumerist habitus, developed in particular by Herbert and Collin-Lachaud, 2017). In addition, traditional business models (i.e. wealth creation thanks to selling of products) constraint the product development process: design to cost implies the use of low quality material or components and the impossibility to repair products. This leads to different types of planned obsolescence (aesthetic, technical, technological…), a core mechanism of the consumption society that create ready-to-dispose devices with the constant increase of waste and their associated socio-ecological issues.

1.2 Presentation of the recyluse project

The RECYLUSE project aims to promote the ecological, economic and social transition to the circular economy through the deployment of repair and reuse. In contrast to the current waste management model, which is centralized and subject to the techno-economic imperatives of industrial means of waste processing, it is assumed that the future of waste management is not a unique place but a network of territorialized initiatives based on repair and reuse activities with high social and environmental values.

Recyluse is a research and operational project targeting to better understand the nature of the different resistances against and interests in repair and reuse. This project is based on two case studies to better understand these legitimacy deficits (with questionnaires, observations and semi-directive interviews of waste operators, representatives of recyclers, public authorities, users and non-users) and then create living labs on both territories, integrating repair/reuse professionals, designers and users. This project questions the collective capacity to build circular networks of reuse and repair, while taking into account local characteristics, path dependences and technical lock-in.

The project seeks first to understand the determinants and resistances by analysing the representations of the actors and singularly those of users/non-users. Then, to identify design modalities adapted to product repair. In operational terms, we try to provide answers to the following questions: How can the different consumer profiles be adhered to the repair and reuse of manufactured products? How to better integrate these consumers into repair and reuse networks? How to stimulate collaboration between heterogeneous actors? It is therefore a question of creating tools for decision-making regarding the structuring of "territorial networks of repair" (Tyl et al., 2015).

Regarding design activities, even if co-design (Fuad-Luke, 2006) has been little invested in a repair-reuse logic (Tyl et al., 2015; Liedtke et al., 2015), its deployment during living labs must suppress some of stakeholders' resistances. Co-design is a participatory design process in which all relevant stakeholders are directly involved. In fact, living labs allow the exchange of know-how and knowledge between the parties involved. They seem to be an appropriate modality to change representations and thus unblock certain defiance and create paths for territorial innovation. Observations during the living labs provides insights on the motivations of each actor, its integration to the collective, its ability to pass on its skills and collaborate to improve the repair of products.

Consequently, this paper gives a partial and provisional answer to the following research question: Which kinds of resources and stakeholders' configuration do have a positive effect to support reuse and repair circularity? Our main assumption is that repair and reuse activities can enable to develop new local economic schemes if stakeholders succeed in coordinating their respective efforts.

This communication focuses on the implementation of a method to support analyse of the emergence, structuring and operation of territorial projects. This analysis framework considers both temporal and spatial dimensions in addition to stakeholders' network. First, authors present the analysis framework then its application to two cases. While analyzing these two case studies throughout the methodology presented above, we intend to determine which endogenous, exogenous and generic resources are employed to build projects and particularly repair and reuse networks. These cases are then discussed and future work are presented.

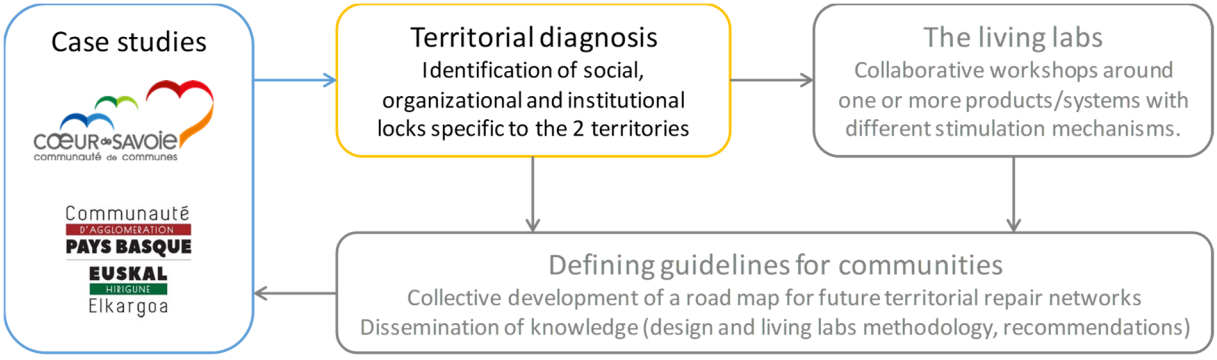
1.3 Method

Recyluse combines different scientific disciplines: engineering sciences and social sciences with quantitative and qualitative approaches (i.e. survey, semi-directive interviews, observation, and organisation of living labs). This project relies on two French case studies and different work sequences: territorial diagnosis, organisation of living labs.

The first part of the project, the territorial diagnosis aims at determine the socio-genesis of ressourceries/recycleries[1] projects thanks to semi-structured interviews and observations. The structures, interlocutors and their functions are detailed in table 1 and 2. During these interviews, researchers identified what resources the stakeholders mobilize and what are the obstacles encountered from an organizational and institutional point of view. Then, thanks to enquiries on consumption habits of the users and non-users of repair/reuse, individual representations and resistances emerged.

The second part of the project, the living labs, ambitions to create co-design spaces and supports for a large number of stakeholders as citizens, industrials and community employees or elected representatives. They can design together modus operandi for the emergence of repair territorial networks from the product level (i.e. repair and upcycling of textile or furniture), at the repair workshop level (i.e. values and organisation) and at the territorial level (i.e. resource pooling, creation of actors' network). Living labs are not detailed here but will be subjects of future communications.

Figure 1. Methodology



COEUR DE SAVOIE

The community of communes Cœur de Savoie (CdS) (43 rural and rurban municipalities, 35000 inhabitants) is an EPCI[2] born in 2014 after 10 years of cooperation between the four previous communities of communes around the themes of agricultural, tourism and economic development. CdS develops a territorial sustainable development project confirmed by the positive energy territory label (TEPOS) obtained in November 2015, and was named "Positive Energy Territory for green growth" (Territoire à énergie positive pour la croissance verte _

[1] Workshops which integrates the selling of second hand commodities and often repair activities, and then encourages reuse.

[2] A public institution of intercommunal cooperation (EPCI) is a French administrative structure combining several communes in order to exercise some of their competences in common.

TEPCV) in July 2016. Semi-directives interviews were conducted to better understand this context and the attempts existing in repair and reuse (Table 1).

Table 1. Interviews conducted at Coeur de Savoie

Struture	Function of the interlocutor
Companies	Carpenter & designer (upcycling activity)
Structures working in the waste recovery	Co-director - Insertion association
	Site director - waste recycling company
	Designer and site director - ressourcerie
	Director - waste collection company
	Director - intercommunal union for household waste
	Director – insertion association
Public institutions Community representatives Elected officials	Mayor and project leader Zero long-term unemployed, former project holder of recyclerie
	Waste service manager - Coeur de Savoie
	Circular economy project manager in charge of the zero waste territory initiative – regional agency
	Business development project manager- regional agency
Repair – reuse initiatives	Recyclerie project holder – La Salamandre
	Bike workshop manager
	Textile workshop manager
	Repair café manager
Territorial association	Director – animation
	Member – Restoration and Maintenance Trail paths
Digital tool developers (not included in the study)	Recyclerie consultant - training for project holders and stock management software
	Market place founder specialized in reuse and upcycled products

BASQUE COUNTRY

The agglomeration community of the Basque Country is a territory comprising 158 municipalities (including Bayonne, Anglet, Biarritz and Mauléon), or 309 723 habitants. Bil Ta Garbi, the mixed waste management union of the Basque Country has shown particular interest in being the project's study area. This territory presents for the RECYCLUSE project two major interests. (1) The syndicate responsible for waste treatment, Bil Ta Garbi, deals with the waste of the agglomeration, is thinking about a policy favouring the repair and reuse of products at the end of life. In 2013, it opened two recycling centers, Canopia and Mendixka, which reduce landfill by half. It is a particularly dynamic territory with regard to the number of actors operating in the field of 3Rs. (2) the project carried by the union was labelled in 2015 Territory "Zero Rubbish, Zero Waste" by the Ministry of the Environment. This project aims to integrate

all the actors of the territory (project leaders, citizens, businesses, communities) in the management of waste in the Basque territory. For the research different kinds of stakeholders were interviewed: companies developing specific actions for waste valorisation, public institutions, associations and repair and reuse activities (Table 2).

Table 2. Interviews conducted on the Basque Country conurbation

Structures	Function of the interlocutor
Companies	Director – sailing manufacturer
	Environmental project manager & sustainable development manager – large sportswear company
Public institutions Community representatives Elected officials	Mission manager – waste management union
	Director and mission manager- territorial development organisation
	Deputy mayor of Hendaye - Community counselor of Agglomeration community
	Sustainable development and social and solidarity economy project managers – Agglomeration Community
	Mission manager – Social and solidarity economy territorial incubator
	Director in charge of waste- Agglomeration community
Territorial associations	Members - Environmental association
Repair – reuse initiatives	Recyclerie project holder – under development
	Technical supervisor – bicycle repair association
	Director – furniture upcycling company
	Chairwoman and seamstress – sewing collective
	Recyclerie project holder - fail
	Second hand market director – humanitarian and charity association
	Recyclerie project holder – repair, upcycling, multi-product
	Director – insertion association
	Recyclerie project holder – under development
	Sport recyclerie director – repair, second hand, upcycling

In order to support the analysis of these two territories and understand their specificities, authors develop a framework that considers the stakeholder network development by the prism of resource mobilization. This framework is presented below.

2 Presentation of the spatio-temporal analysis framework

The concept of perimeter of action, defined by the evolution of stakeholders' network and their mobilization of resources, was presented in previous articles (Allais and Gobert, 2016; 2019). These resources may be tangible (e.g. wood or machine tool) or intangible (e.g. patent, knowledge), territorial (i.e. specific to a territory), exogeneous or generic but they are all socially built. These resources are assessed thanks to the framework for (im-)material flow

analysis that consider resources at multiple analytical levels, described as micro, meso and macro levels (Gobert and Brullot, 2017).

Since our framework concerns the mobilisation of territorial resources over time by the actors, the project shapes the perimeter of action through the stakeholder areas of competence (e.g. the firm for entrepreneurs, the administrative constituencies for public authorities), their common readiness and capacity to influence project implementation (Gobert and Allais, 2016) and the scalar projection of their activities on the project level (Allais and Gobert, 2019).

The perimeter of action is dynamic and embedded in a history: both inherited (i.e. previously constructed networks, geographical perimeter, sector ...) and built during the structuring and realization phases of a project. Amongst the four steps of territorial project development, our case study analysis focuses here on the three first steps described below.

- Time 0: upstream of the project. Specific local resources, stakeholders, networks that can be mobilized but are still 'latent', inactivated for the project, define the initial perimeter of action.
- Time 1: project launch. A need emerges or one or more stakeholders build a strategy (cf. time 0). They will seek to activate resources, create other relationships to find new partners possessing assets necessary for the launch of the project, such as founders (e.g. government, banks), external expertise (e.g. university, consulting firms). The perimeter of action will evolve in accordance with the project objective and the input of these new partners.
- Time 2: the project. The activation of territorial resources and the recruitment of the missing external skills (subcontractors…) for the realization of the project will concretize the perimeter of action.
- Time 3: downstream of the project. This is an evolution of time 0: the network developed becomes a latent network that may be activated for a new project, or conversely, in the event of conflict or failure, may be broken up.

3 Case studies

We analysed the data obtained by interviews to identify for each case the evolution of the perimeter of actions, the role and the number of stakeholders and the resources mobilised at the different steps of the project.

COEUR DE SAVOIE CONURBATION

Coeur de Savoie is a new conurbation; the executive board is then trying to define coherent and consistent public policies on its new area. However, this spatial change requires time before being effective and creating efficient synergies. Moreover, concerning the waste management, this administrative area inherits from the past a specific configuration, which can hamper projects promoting repair and reuse.

On the one hand, the waste collection and treatment are divided in two areas and managed differently: for one side, directly by the administration of the conurbation, for the other side by a specific organisation (SIBRECSA), a syndicate of municipalities putting together some

municipalities of CdS, as well municipalities of the bordering department. This division creates difficulties to harmonize public policies and further the progress of repair and reuse initiatives. On the other hand, on the area managed by the syndicate of municipalities, an incinerator was built in the 1970's and a renovation was recently financed. Consequently, one of the objectives of the administrative board is to make profitable this investment. This could create a technological lock-in, which could prevent elected representatives to be active for encouraging repair and reuse.

We will relate the different steps explaining how the project of recyclerie emerged and became a project designed by different stakeholders.

Time 0: An initial idea studied in an associative structure

Creating a recyclerie was at the beginning an idea supported by a local association (*régie de quartier*), whose ambition is to enable cultural, social and economic development and to create job opportunities for inhabitants (non-competitive activities). The project was partly inspired by the experience of a mayor of one municipality of CdS. Indeed, he is a former researcher, was president of another *Régie* and participated in the early 2003 in the creation of a recyclerie in Grenoble. However, regarding the investments in terms of time, human resources and funds, the initial idea was temporally rejected.

Few specialised initiatives have emerged in CdS. A craftsman (Api'R Bois) working from wood second-hand commodities and transforming them in other products (upcycling) has freshly set up at Saint-Pierre-de-Soucy. The *Régie de territoire* created a few years ago a sewing activity (*Fibr'ethik*) from canvas sheet, advertising and truck tarps waste; the objective was firstly to socially and professionally integrate female job seekers. They are part of departmental, regional and national networks for administrative and creative collaborations, and they find inspiration and partly sell their products online (e.g. upcycling market place…). An activity of self-repair in the main city of CdS (Montmélian) opened in 2018. In addition, a project holder, who frequented a large fab lab, *La Casemate,* in Grenoble (50km from CdS – 16.0000 inhabitants) is trying to create a repair café and fab lab in La Rochette, with the support of a local association.

Time 1: TZCLD, the recyclerie emergence

This association, in relation with local charities (ADMR and ATD Quart monde), took the opportunity offered by a national call for tenders (*Territoire Zéro Chômeur Longue Durée)*: local communities were invited to propose new local solutions for long-term job seekers. The stakeholders created a specific network of associations, citizens, local officials and national institutions (Pole Emploi and la Dirrecte). A dynamic emerged from this brainstorming and the tender writing. The consortium proposed nine development axes (e.g. proximity services development, improve the quality and cleanliness of the living environment or reduce and recover waste). Amongst the numerous solutions to create economic activity for long-term job seekers, a suggestion was to develop a *recycleri*e on the CdS area.

Numerous resources were pooled together for the writing of to the TZCLD project. Initial project holders (charities) collected local data on long-term unemployment while evaluating the potential opportunities of the TZCLD call. CdS supported the project by mandating its management team to participate in the committee's work and visit national and regional

exemplary territories. The consortium was finally composed of 22 associations and structures from local, regional and national levels, 63 citizens, including 25 unemployed and 6 local officials from 27 communes of the conurbation CdS.

The TZCLD project was not funded but the some of the actors are still involved into the recyclerie project.

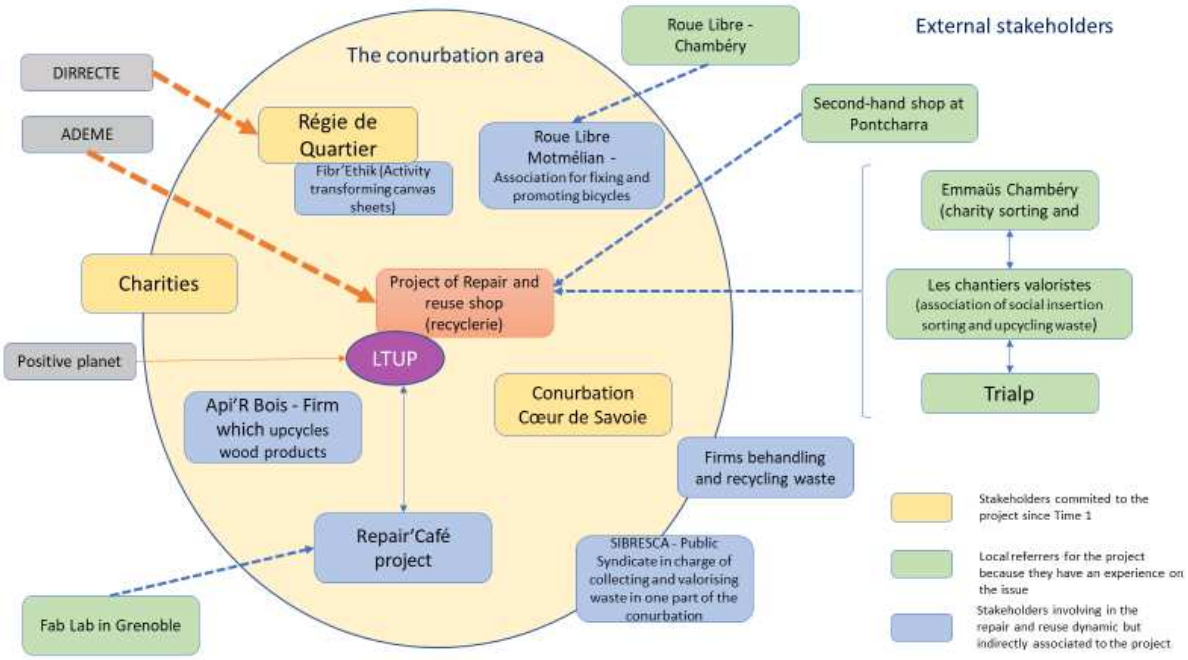
Time 2: La Salamandre

On the basis of the TZCLD proposition, a long-term unemployed person (LTUP) took over the portage of the project of recyclerie. In association with CdS conurbation and Positive planet, they study the business model and technical feasibility of *La Salamandre*, the recyclerie of Coeur de Savoie. Positive planet is a national association implanted in La Rochette, to accompany project holders free of charge in the creation of businesses. They ambition to create economic activity for eight persons and two technical and administrative managers. First, both administrative and technical management was the responsivity of LTUP but they realize he was not able to manage these two tasks, lacking time and skills for the administrative part. They propose the administrative support was taken in charge by the *R de Récup'* manager but there were two difficulties. First, she also misses time to engage in this new project and secondly, *the Salamandre* is considered as a territorial project. Consequently, it raised administrative difficulties as the DIRRECTE *(*a deconcentrated service of the State which distributes financial aids for the creation of insertion jobs) works on a specific area (Département). Besides *CdS* and the *Régie de Territoire* were reluctant to give this project to an actor outside the conurbation. The *Régie de Territoire* finally employed LTUP and is now managing the *Salamandre* project.

Considering the technical aspects, the location and the access to a surface of 950 and 1000m² is still a difficulty for making true the project. An old industrial building in a commercial area was first analysed but heavy investments were required to fulfil safety standards; the proposition was then rejected. Another opportunity appeared at Saint-Pierre d'Albigny through the creation of a third place with multiple activities in a former industrial site. As the business model for this third place became more precise, the area available for the recycling project decreased until the project was no longer feasible.

The mobilised resources and the perimeter for action

Figure 2. The internal and external stakeholders involved in the recyclerie project



The analysis of the different interviews does not show a cooperation between the different reuse and repair initiatives. Actually, the spatial proximity of these initiatives is not a catalyst of cooperation, as the valleys deeply divide the landscape and lengthens the routes. The perimeter for action of the Salamandre project is less the whole conurbation, that one part of this, depending of available premises and the stakeholder's involvement.

Different initiatives, located outside the conurbation area, mainly influence, inspire and/or support the recyclerie project in CdS and play a role of referrers. They were solicited at different steps of the *Salamandre*, particularly for the time 1 and 2. *R de récup* is a recyclerie in Pontcharra, a city near but outside CdS conurbation but located in the SIBRECSA waste management perimeter. It is considered as a model to replicate on the conurbation area (inspiration). It also provided both technical skills and insights on the management of a recyclerie. As well, the development of an activity of self-repair was the result from a cooperation between a local association promoting cycling mobility and an activist association for cycling in Savoie (Roue Libre) located in Chambery (20km from CdS – 60.000 inhabitants). The *Emmaus community, les Chantiers valoristes* and *Trialp*[3] were also referrers for CdS stakeholders. These actors are particularly close, because they share the same objectives: facilitating the insertion of vulnerable persons while empowering them, enabling them to develop skills and giving them possible step by step to integrate the labour market. The holders of the *Salamandre* shared this core value as they intend to use waste valorisation as a means to valorise people.

We note that the perimeter for action of the repair reuse initiatives are mainly defined by the affinities and worldviews shared between the actors. Thus, the different initiatives of the

[3] Thanks to the revenues earned by reuse and waste management activities, an *Emmaus community* established since 1970 in Chambery accommodates vulnerable persons (homeless, refugees…) and "employs" them for different tasks. Another insertion company, *Les Chantiers valoristes,* assists persons without employment thanks to economic activities related to the dismantling of products, the recovery and resale of materials, recycling and wood workshops, etc. Trialp is a company collecting and revalorising waste with an objective of social and professional insertion.

territory CdS consistent with the initiatives of Chambéry or Grenoble (e.g. *Roue libre* implantation in Montmélian or the FabLab at La Rochette) or more distant or digital inspirations for API'R bois or Fibr'Ethik.

The involvement of the public authorities is both a lever and a difficulty. The help of the conurbation was decisive for Roue libre - Montmélian to find the premises, as well for La Salamandre. Generally, the conurbation administration displays ambitious objectives to reduce waste flows and enable their transformation. However, its view of repair and reuse workshops is not systematically shared, particularly when the initial impulse comes from the conurbation[4]. Some national actors (ADEME or DIRRECTE) provide expertise and fund social jobs or investments.

THE BASQUE COUNTRY

The Pays Basque is administratively a new conurbation, but it comes from a very long process and a strong involvement of local actors, promoting the Basque identity.

Time 0: A fertile territory for repair and reuse activity

Numerous initiatives have emerged the last years, notably specialized in repair/reuse services, as well upcycling undertakings. The territory was the basis of multiple projects that failed, under construction or already operating (listed below):

- *AIMA* is a charity that runs several second hand shops; it does not propose repair workshops.
- *Recycl'Arte* is a project of repair and reuse workshop, but the access to available premises impedes the initiative to grow as planned.
- *Emmaüs Tarnos* is an "old" and well-established stakeholder for the selling of second-hand commodities.
- *Txirrind'Ola* is a participative repair shop, which enables people to fix by themselves their bikes and promotes cycling in the public space. It provides users with advice and tools adapted for bike repair. Moreover, cycling classes are given for children. The bikes that are employed for these lessons or sold are collected in the centers for waste sorting.
- *Le Hangar du Sport* is a second-hand shop dedicated to sport products. This initiative tries to combine selling, repair activities and sport center.
- *Orratzetik Hari* is a group of couturiers and fashion designers who creates new models or accessories from scraps of clothes. They propose couture lessons for children.
- *Api'up* is an association and a brand that works with firms to collect their office waste and transform them into new furniture. It is not located on the Basque Country conurbation. It is perceived sometimes as a model, sometimes as a counter model.

Each initiative tries to enlarge its main activity (repair or second-hand selling) with other actions to strengthen its business model. Even if the different holders of initiatives know each other and that they are not yet in competition, they have not formed a territorial formal network.

[4] As an example, it launched a call of project for organising repair café, but was unfruitful, even though some citizens are willing to be committed to this kind of projects. Moreover, as we organised creative workshops with the conurbation (particularly for finding a location, for inviting people…), we felt a silent resistance.

Time 1 – Attempt to create a local network gathering repair and reuse stakeholders

Bil ta Garbi, the syndicate managing waste in the Basque Country, was interested in creating local dynamics for reuse and repair. This objective was the results of different stakes:

- Firstly, the syndicate was recognized in 2015 "Territory - Zero rubbish, zero waste" and aimed at implementing a global policy for reducing and managing waste while promoting circular economy. Encouraging repair and reuse is one of the stated objectives. Contrary to the above case study, whose motor was human insertion, they focus their project on waste management and reduction.
- Secondly, as it has the responsibility of the household waste centres, it was face to an increasing demand of associative actors to obtain an access for collecting commodities (bicycles or other items, which can be fixed, cleaned and then reused). It appears impossible to build or to leave the dedicated places/skips for each of them. From the point of view of Bil ta Garbi representatives, it would have been more coherent, the association mutualise their means for the transport of commodities, etc.

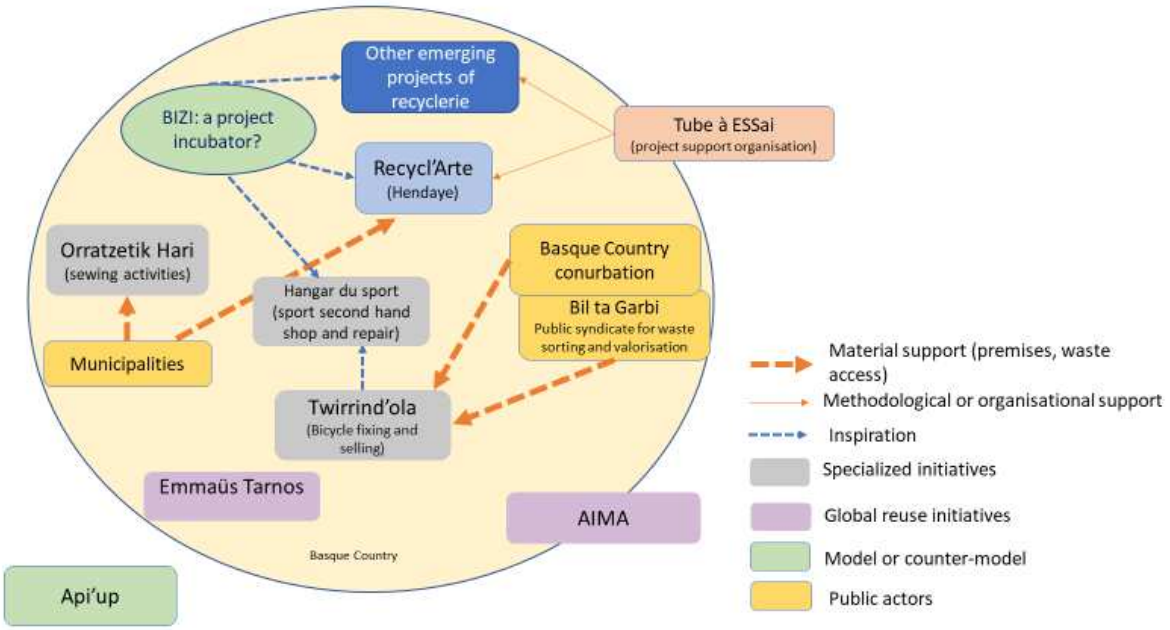
As a consequence, *Bil Ta Garbi* organised different meetings and events, trying to give the impulse for structuring a local network for reuse and repair. Nevertheless, this has encountered resistance from some stakeholders involved in repair and reuse. Moreover, Bil ta Garbi legitimacy is regularly questioned by other stakeholders. On the one hand, some actors guessed Bil ta Garbi's main objective is to make their recent investment (Canopia) profitable and not to encourage larger waste sorting. On the other hand, as the leader of "Zero rubbish, zero waste", the ways the projects concerning repair and reuse are chosen and financed are criticized.

The large size of the territory and the distribution of the various initiatives seems not to require formal collaboration in the Bask country. However, the recent emergence of recycling projects in the city of Bayonne (one of which is carried out by BIZI) raises the question of how these actors coordinate to avoid regulation by competition and market.

The mobilised resources for the project

Even if "there is no consensus on what being Basque means or on what grounds people can define themselves as Basque or "something else"", political leaders and many inhabitants recognize themselves as Basque, because they have a common language and history, which were the cause for confrontation. This Basque identity profoundly pervades the initiatives we investigated, not only because many stakeholders want to promote the economic development of the Basque Country, but also because they consider their initiative could become a place for speaking Basque. The Basque identity is then an important resource strongly mobilized by different stakeholders, but for all that, it does not facilitate the consensus between stakeholders.

Figure . The internal and external stakeholders involved in repair and reuse activities (Basque Country)



Despite the absence of coordination, the trajectories of these leaders show that the informal resource constituted by past or present involvements in the same organisations are decisive. We can guess Bizi (an environmental organisation) played a role of incubator promoting new representations over waste and resources. However, different persons, now committed to the creation of initiatives, considered that the role of environmental objector and lobbyist towards public decision-makers was not sufficient. They wanted to be involved in very practical actions and not just in theoretical reflexions. Txinrrind'Ola or Recycl'arte were both build by previous BIZI members. Likewise, Txirrind'Ola was more or less a space of exchange and prefiguration of other initiatives. It has acted as a referrer, because it was the first specialised repair and reuse workshop and it has supported some new initiatives by giving advice. Some leaders were volunteers at the workshop, as well.

The public sphere provides different resources for these initiatives (e.g. administrative support, low cost rental or loan of premises, funds…). The conurbation of the Basque Country collects waste and the syndicate *Bil ta Garbi* manages the households waste centers, where the repair and reuse initiatives can collect commodities. In addition, these entities are currently reflecting of the best way to promote reuse and repair on the territory, for example while transforming waste centers, improving public awareness. However, this institutional asset is not always accepted.

Some public-private structures can have a role of intermediary like the social and solidarity economy territorial incubator *Tube à ESS'ai* that helps project holders to sharpen and administratively, organisationally strengthen their territorial proposition.

4 Discussion

Methodological reflexion

At this moment of the research, different difficulties have been raised. The distance from one case study brings about difficulties to put into practice the planned methodology, to organise workhops and to conduct surveys.

The purpose of the study must be clearly defined: The Salamander project in CdS, the territorial network project conducted by Bil ta Garbi in the Basque Country because it imposes to differently apprehend the context, the geographical area or the involved actors. Besides, each of these dimensions are in interactions and co-evolve during the study, as repair and reuse are at the heart of global dynamics. Inasmuch the studied set of stakeholders and the projects quickly evolve, i was consequently not easy to plan meetings and workshops, particularly when open or discreet conflicts are revealed or emerge during the research time. However, we succeeded in outlining the essential resources needed for repair and reuse projects, their spatial and organisational projection and explaining why some stakeholders' coordination can encounter difficulties or be facilitated.

Material and immaterial resources essential for repair and reuse activities

From the two case studies we can draw a first picture of the needed resources for developing repair and reuse workshops and maybe territorial networks between initiatives and actors involved to waste management. The converging results coming from the two cases reveal that some resources are decisive so that the holders of repair and reuse initiatives could succeed in.

To have an access to material resources (waste collected in rubbish dumps or directly in retail shops; places/business premises where the different reuse and repair activities can take place), the initiatives often require the help of public actors, because they are in charge of critical competencies like economic development promotion, waste collection and treatment. The public support may have a real positive impact to accelerate the development processes, if the public governments or actors respect the independence and the way of thinking of non-governmental organisations. Otherwise some mistrust can appear between them. This institutional resource depends on the political dynamics (which appetence has the executive board of a conurbation to go forward) and the past experiences, which may have drawn a trajectory and already found, activated and mobilised helpful resources.

On the other hand, repair activities cannot be developed without a specific immaterial resource: skills for fixing, sewing, etc. The lack of this technical resource may hamper or stop a project. As well, it was noticeable that, the role of "models" or referrers, which can guide the holders while anchoring their project on the territory, are determining, and can be "employed" or called at very different times of a project.

Confronting perimeters of action and customer/user catchment area?

The mobilisation of external intangible resources (experience in repair and reuse, expertise in waste management…) shows the necessity to overcome the territorial limits of the conurbation. The perimeter for action evolves in relation to the resources mobilised and the capacity to act and to convince the different stakeholders.

The shared values play a large role in the choice of referees and partners. For CdS, initiatives holders engage with actors from places outside the CdS territory (Chambery, Grenoble, Pontcharra…), national, regional or departmental networks (e.g. national ressourceries

network or upcycling networks) or online resources (e.g. online market places…). They could glean information, formations, advise and expertise. They could also obtain financial aids for different elements of their project (funding of job creation, of investment to transform and adapt technical and commercial premises). The resort to referrers is possible because people share common values. Conversely, the recourse to subsidizers, providing financial support, is more pragmatic; according to calls of tender, opportunities, the initiatives holders.

In order to facilitate the collaboration between actors, the value system co-construction and the referees' identification are integrated into the living lab tools and methodology and tested within the two territories.

The perimeter for action has not to be confused with the competencies/customer/user catchment area. For the conurbation Coeur de Savoie, it appears that the Salamandre's supposed catchment area does not correspond to the administrative boundaries. This is due partly to the natural landscape that constraint the infrastructures and communications between the two valleys of the territory. People do not imagine to have a motorised journey, lasting more than 20 min.

In the case of Basque Country, Bil ta Garbi has a territorial view matching its competencies and area of action, that is to say the whole Basque Country. The studied repair and reuse initiatives have a perimeter of action more limited as their project attempts to sensibilise inhabitants living close to the initiative location. That is one reason for this two kinds of actors do not find a common ground for instituting a repair and reuse network with organisations motivated by different objectives.

Shared values: a lever of coordination and resources pooling

Inspiration, worldviews and "orders of values" or cities (Boltanski and Thévenot, 1991) play a major role in the possible coordination between actors for this kind of environmental and human-centred activities. Each stakeholder involved in a project would like to make progress repair and reuse, but different core values stir them. Public actors and syndicates are mainly driven by the principles of efficacy and their values essentially match the industrial city. They attempt to defend their investments because they are aware of not being able to rapidly adapt their technical infrastructure and administration. Conversely, numerous project holders consider that society has to radically change and particularly the ways of consuming, producing and wasting have to be profoundly modified. Their main objective is to diminish the human footprint on the environment. Their values correspond to the "civic city" (as they refer to participation, adhesion…) and the "inspired city" (creativity). Two ways of considering repair and reuse activities bring into opposition: Those who considered that initiatives must lead to traditional economic activities and become independent on public subsidies, those who prefer building an alternative social economy.

5 Conclusion and future work

This paper aimed at displaying a current research on repair and reuse activities and the first results obtained, enabling to understand the resources necessary for building initiatives and

networks. Even if there are sometimes some distortions between values and misunderstandings between stakeholders, local arrangements can progressively be negotiated.

As we intend to more deeply work on the data gathering during our research, we will attempt to answer the following questions: What impact does the compliance of orders of values have on the ways of revealing, considering (valuing) and employing resources? Which compromises (structurally justified) or punctual arrangements (feasible and pragmatic action) can be found between the stakeholders as they are imbedded in very different frames of reference? Can repair and reuse take part to the definition of an order of values corresponding to the "environmental city" (Lafaye and Thévenot, 1994)?

To integrate users' point of view, we will strive to see how these kinds of short local systems of waste valorization can be implemented and whether they meet the users' expectations, representations and appropriations (Akrich, 2016). This should give inputs for decision takers at the local and regional levels and enable to understand what kinds of new services and systems can be brought for improving territorial circularities (Schmidt et al., 2015).

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