Causal maps to create or destroy public values? An empirical study in three municipalities in France

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The fact that causal maps can be useful tools to create value has been explained by Eden and Ackermann (2014). However, we found no precision about which kind of values are created thanks to causal maps. Based on empirical case studies in three different municipalities, we highlight the unexpected effects of the use of causal maps (Eden, Ackermann, and Cropper 1992; Eden and Ackermann 2013, 2014; Ibrahim and Larsson 2017). Not only are causal maps a tool for debate and a way of creating values, but they are also a tool which destroy some other values.

Key-words: causal maps, public values value creation, municipality, democracy

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The fact that causal maps can be useful to create public values is raised by literature (Eden and Ackermann 2014). It compensates for the fact that there are a limited number of tools to analyze public value (Bozeman, 2002). However, we found no precision about which kind of public values can be created thanks to causal maps, and no reference to values destruction. If public values are worth being created, an exploration of the potential and constraints of a tool to obtain some results in this area is necessary.

Much has been written about public values (O'Flynn 2007; Jorgensen and Bozeman 2007; Meynhardt 2009, 2015; Bryson *et al.* 2014a; Fukumoto and Bozeman 2019). A Public Value Paradigm (PVP) emerged in response to the inadequacies and failings of other perspectives in public management, such as traditional administration, New Public Management (NPM) or public interest (O'Flynn 2007; Jorgensen and Bozeman 2007; Bryson *et al.* 2014a). PVP suggests that a long-term vision of public objectives must be proposed through the creation of public values, specific to this field. Public values are what define, delimitate, and separate the public field from other ones (Jorgensen & Bozeman 2007).

Jorgensen and Bozeman (2007) identified seven constellations of public values through an analysis of the state of the art on the subject (see **table 1** below). Bozeman and Jorgensen admit that a lot of these values contradict each other. For example, financial efficiency may impact the quality of service. Therefor, it seems necessary to rethink public management tools in order to allow the creation of these values and to explore possible value destruction. Indeed, the transformation of organization through values creation may imply that new values replace old ones.

The use of causal maps (Eden, Ackermann, and Cropper 1992; Eden and Ackermann 2013, 2014; Ibrahim and Larsson 2017) as a tool for debate has shown its usefulness in many fields such as strategy, collective decision making, problem solving or group support. It remains to qualify what emerges from the use of causal maps: which public values can be created or destroyed throughout the use of causal maps in public administrations?

Causal maps are useful to enhance the terms of a debate and to raise the diverse points of view of a controversy. Insofar as this tool can capture the idiosyncratic beliefs of all the players, it helps to establish an overall vision of all arguments available to the decision-makers. The

players may gain a keen awareness of the complexity of a situation. In other words, it gives full play to debate, particularly democratic debate, as it reveals the fundamental sticking points of a controversy. From this point of view, causal maps may: (1) help groups to make more sense of public decisions and offer an opportunity to think what's more useful for society, (2) improve democratic decision-making processes, (3, 4, 7) improve relationships between administration and other actors (politicians, environment and citizens) by creating more dialogue, (5) help to spread public culture (values) and (6) to clarify what is expected from public agents. In the same time, debate will lead the players to make choices between contradictory values and to destroy some of them while they create new ones. We will conclude from this analysis that causal maps are useful to create public values in the seven constellations identified by Jorgensen and Bozeman, but that they also destroy some values in the process, which leads to use this tool carefully.

To this purpose, first, we define causal maps and explain how we used them to improve debate. Secondly, we review PVP and what it means to create values. Then, we describe the intervention research approach we used in three French municipalities (here named M1, M2 and M3). After offering an account of the results obtained during this experiment, we discuss the role of causal maps to create and destroy public values.

1. Causal map as visual representation to reflect the contradictory and complex processes of values

Even if visual representation had been a blind spot in organization and management studies (Guthey and Jackson 2005; Strangleman 2004) until mid-2000, since then, it has confirmed its promise and potential (Kunter & Bell, 2006; Meyer, Hollerer et al., 2013; Bell & Davison (2020) even talk about a visual turn which follows a linguistic turn in management and organization studies. Visuals cover a broad range of artefacts: logos, graphs, drawings, moving videos, diagrams, powerpoints, architecture, etc. In our empirically driven paper, we focus on visual mapping.

1.1. Visual mapping

Huff and Jenkins (2002) describe maps as visual representations which establish landscape or domain. They name the most important entities that exist within that domain, and

simultaneously, place them within two or more relationships (p. 2). Despite unresolved debates about the ontological status of visual representation, it is undeniable that, in organizations, visual maps have been an important tool to strategize (Cumming & Wilson, 2003, p.4) or to detect 'emergent strategizing' (Eden & Ackermann in Huff & Jenkins, 2002; Eden & van der Heijden, 1995; Mintzberg and Waters, 1985) at various organizational levels: individuals (CEOs or managers) and groups, large companies and small ones, private and public organizations. Mapping techniques are as diverse as their purpose (Huff and Jenkins, 2002; Bryson et al., 2014b): decision-making, strategy, group support, problem solving, project management, change management, etc.

Mapping techniques	**To represent …**
Geographical map	A territory
Cognitive map	Thoughts, knowledge, beliefs, or values of individuals
Mind mapping	Knowledge area in education science
Ordering mapping	A certain classification of ideas or objects
Causal map	The links between different events, and decisions

Not only are visual maps used by practitioners, but also by researchers themselves to capture "invisible" processes in time (Parmentier-Cajaiba & Cajaiba-Santana, 2020). Causal map contributes to make explicit contradictory processes of values.

1.1.Causal maps

Ackerman and Alexander (2016) give an insight of how this tool has been used throughout the three last decades in management. A causal map consists of interconnected concepts, in a hierarchical or non-hierarchical fashion. It is called causal as it represents links between causes and effects (Eden *et al.* 1992). It can be defined as a "*a mean-ends structure that represents a way of both understanding and changing the world participants inhabit*" (Eden and Ackermann, 2014, p. 5), or, more simply, a "*graphical means-ends network*" (p. 6). Causal maps are useful to help us to manage complexity rather than reducing it (Ackermann and Eden 2011, 2014). It helps participants to negotiate reality by providing them a network of beliefs about how the world works and what is important, which allows them to agree about how they can change it. This tool obliges them to take into account the diversity of points of view of the

different players, instead of focusing on the common thinking. "*Some conflict generates the energy for creativity*" (Ackermann and Eden, 2011, p. 16). It is useful to make more sense of the situation and to improve shared meaning through participation and dialogue. In other words, it facilitates negotiation and compromises (Bryson *et al.* 2014b).

Causal maps are implemented differently according to the researcher's vision of this tool. Among the large diversity of approaches (Ackermann & Alexander, 2016), two main perspectives stand out. Eden & Ackerman 2002, Ackerman & Alexander 2016 highlight causal maps in an idiographic way, others consider it in a nomothetic way: "*Idiographic causal mapping is concerned with developing nuanced comprehension of a situation whereas nomothetic approaches aim to reveal themes or patterns that can be statistically generalized*" (Ackerman and Alexander 2016, p. 892). The latter is powerful to simplify and to model but the former provides a qualitative, complex and social understanding of the organizational context. It allows to capture rich, subjective data and to get access to "'soft' intangible factors such as politics and social issues" (Alexander & Ackerman 2016, p. 892). This approach is inspired from the vision of the psychologist Kelly (1955), who assesses three corollaries: individuality - each person interprets events in a unique way-, commonality - causal maps build a share understanding of the different interpretations- and sociality -shared understanding and common outcomes lead to an agreement. Thanks to causal maps, a large amount of data can be structured through interconnected 'chains of arguments' (Ackerman and Alexander 2016, p. 893).

Therefore, causal maps are considered transitional objects (Eden & Ackerman 2002; Bryson *et al.* 2014b). In other words, their main interest lies into the process of sharing different points of view, rather than in the map as an outcome. As an artifact, it gives opportunity for players to exchange beliefs, knowledges, and values. It can be defined as a vehicle for debate, that is to say a social process through which everybody can explore other players' way of thinking (Eden and Ackerman 2002). "*A causal map is a basis for action and change*" (Bryson *et al.* 2014b, p.10). The researcher observes and even participates to what it is happening inside the organization. . Visual Mapping, which includes causal maps, in considered by Langley (1999) as useful, if not perfect, tools to achieve this goal. Causal mapping in particular is a process of

laddering (Ackerman & Alexander 2016): laddering up to goals and objectives (consequences), and laddering down to options, constraints and triggers (explanations, causes).

It has been assumed that causal maps are useful to create values (Eden & Ackerman 2002 ; Bryson & al. 2014), especially public values (Eden & Ackerman 2014). Despite recent insightful use of causal maps in public sector (Eden and Ackermann 2014; Bryson et al. 2014b; Ibrahim and Larsson 2017), we found neither precision about how these values are created, nor about its corollary: values destruction. If causal maps are transitional objects that enable change in organization, then we should seek to understand how new values emerge and how old one decay or disappear more deeply. We will explore the ability of PVP to answer the question of values creation and destruction.

2. The potential of the Public Value Paradigm to answer new challenges

Values are an old issue in organization and management studies (Barnard, 1938; Weber, 1905). They have been analyzed through three different lens, especially in public management field. First, traditional administration paradigm separates political issues from administration processes (Bryson *et al.* 2014a). Elected representatives set the goals, and technical experts apply them. Efficiency is the dominant value of this managerial stream, and citizens are considered as electors. Then, the paradigmatic dominance of New Public Management (Hood 1991; De Vries and Nemec 2013; Dan and Pollitt 2015), which emerged during the 70s, favors the use of quantitative and utilitarian practices and methodologies. This way of thinking is based on the one hand on neo-liberal thinking and on a large number of economic theories, which sometimes contradict each other (public choice theory, agency theory, contract theory, theory of the firm, transaction costs, etc.), and on the other hand on "managerialism" originating from the private sector (O'Flynn 2007). It drives the players to use an increasing number of rationalization tools. Despite frequent examples of NPM tools being successful (De Vries and Nemec 2013; Dan and Pollitt 2015), particularly when they are implemented in a sensible and thoughtful manner, there has been a lot of criticism of this management method. At last, the public interest theory has been a main preoccupation of political sciences and public administration during decades (Jorgensen and Bozeman 2007). The main criticism against this theory is that it is ambiguous and inconsistent. As NPM, it is originated from neo-liberal economy and it focuses on market failures. Efficiency is also the main concern of this stream.

All these visions are embodied in rational economic theories, which are predominantly performing into all kinds of organizations (Cabantous and Gond 2010), and in public administrations specifically. These models are reaching their limits mainly because they put aside an important aspect of public management: meaning (O'Flynn 2007). Why do public agents do what they do, and why does it matter for them? This need to make sense of decision-making and action is at the heart of the emerging paradigm of Public Value (PVP).

2.1.Emergence of Public value

PVP offers, beyond these perspectives, a renewed vision of public management. This perspective prompts the creation of public values, specific to its field (Bryson *et al.* 2014a). Such creation of public values can be defined in these terms: "*any impact on shared experience about the quality relationship between the individual and 'society'*" (Meynhardt 2009, p. 212). This approach is partly the description of merging practices, partly normative (recommendations on the role of managers and the government), and partly theoretical, as a response to current challenges (Bryson *et al.* 2014a). Its agenda is to build a global, long-term vision of the relationship between the public sector and society (Meynhardt 2015). This field emerged from diverse visions and theories and still lacks coherence (Bryson *et al.* 2014a; Fukumoto and Bozeman 2019). It is not surprising in an emerging field. What we would like to insist on here is that, among these debates, a common will gather these authors: the desire to empower back the public sector and to focus more on what is worth for public players into a long-term vision theory. Citizens are more likely to be optimistic concerning the perspectives of collective social effort when the institutions work to connect people to a coherent representation system (Jorgensen and Bozeman 2007).

Moreover, two common preoccupations penetrate this paradigm. First, the desire to place democracy back (O'Flynn, 2007; Bryson *et al.*, 2014a; Meynhardt, 2015) at the heart of decision processes is one of its main aims. It leads to envisage public management in a more participatory way, in the political meaning: the inclusion of citizens and stakeholders in public processes, particularly through debate, negotiation and a broader consideration of the context. Thus, accountability is not only guided by the market (as in the NPM paradigm for example), but is also democratic (laws, values, political norms, professional standards, best interests of citizens, etc.). The democratic process no longer mainly operates through elections and legislative deliberations: the government creates a dialogue and responds to citizens.

Consequently, it is necessary to put relationships back onto the agenda (O'Flynn 2007). This paradigm encourages debate on values and institutions. The decision-making procedures preferred by those in favor of this vision are public inquiries, public debates, consensus conferences and deliberative polls. Such an approach to decision-making is based on the degree of interaction between individuals, the importance of which is recalled by various recent studies in terms of the success of collective choice processes (Eden and Ackermann 2014; Ratzmann and al. 2018; Nogueira, Borges, and Wolf 2017). Discussion, negotiation, and deliberation between the players regarding their beliefs and values enable new meaning and new solutions to be created.

Secondly and consequently, the concept of "values creation" becomes much larger than a financial concern (which would more care about "value creation", in an economic perspective) and talks about social progress and well-being. One of the main ideas of PVP is that public values are useful to society. The values citizens place on public action are no longer regarded as a simple aggregation of individual interests, but as a complex, divisive and at times irreducible kaleidoscope. Public values are « *from and for* » the public (Meynhardt 2009). This is how it appears possible to restore some meaning to public action. Today, it is essential to improve trust, legitimacy and the feeling of social justice with regard to the public sector. It therefore involves adopting a collective approach to public management, shaking off the obsession with outcomes to care about the processes too. Decision-making processes in particular: although the outcome of the choice should not be ignored, the legitimacy of the deliberative process which enabled this choice is a key element from a democratic perspective.

2.2.Limits and possible developments

Our first criticism is the tendency of PVP to reify values. When Jorgensen and Bozeman (2007) offer an inventory of public values, it seems obvious that they consider them as "things". We disagree with this perspective, and one of the contributions of this article is to think about values as processes. We cannot "grasp" values. We can only grasp the discourses about them. First because one value cannot be separated from the value system of individuals or collectives, being entangled in a complex and constantly moving cognitive scheme. Secondly because individuals and collectives learn constantly, which leads them to aggregate differently their values system. Consequently, values are evolving cognitions, rather than objects. They change, they flow through debate and discussion, they emerge and disappear.

To address these challenges, understanding the relationship between causal maps and values seems unavoidable. To explore and to clarify the potential of causal maps to create and destroy public values, we lead an empirical study in three municipalities. Research intervention have been chosen as the most relevant approach to detect, describe, and analyze what's at stake between causal maps and public values.

3. Intervention research in three fields

We describe the methodology we applied to experiment causal maps in public field and how it allowed us to create public values in three municipalities, but also the way values were destroyed in the process.

3.1.The intervention-research protocol

Radaelli *et al.* (2014) list three features necessary for theoretical advancement of management science: focus on change and development (Tsoukas and Chia, 2002), support for multi-level analysis, and facilitate polyphonic investigation. IR answers to these challenges.

Design science are still seldom, but they tend to develop and they recently became more legitimate and visible (Radaelli 2014; Avenier & Noury 1999). David (2002) quotes many research communities who develop intervention methods. Wefocus on two of them, which clarify how IR emerged: Lewin's Action research (1951) and Argyris *et al.*'s Action science (1985).

Lewin (1951) built a theory of change, based on a process of "***freeze-unfreeze-refreeze***". Change was at the heart of his concerns. Consequently, he focused on the field, as a "living space" defined by the group and its environment. That's why he insisted on conducting experiments outside laboratories, in 'natural' social groups. He considered that cooperation was necessary to produce valid ***theoretical and practical*** knowledge. This epistemological turn leads to recognize research itself as social action. The impact of the research on action was taken into account (David 2002).

Argyris et al. (1985) was interested in learning processes. To introduce learning process in organizations, he considered that the researcher had to lead a 'reflexive inquiry', in order to transform tacit knowledge into explicit ones (David 2002). Researcher aims atintroducing a double-loop system inside the organization, through participation, to increase the ability of the system to evolve.

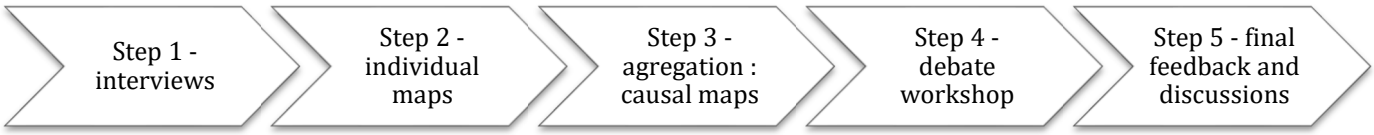
However, action research and action science are themselves models of collective action and do not aim to investigate action itself. They only ambition "to introduce contextual changes through a collaborative research protocol" (Radaelli 2014, p. 339). They focus on solving specific creative problems. IR, on the contrary, considers action as a research program (Hatchuel 2005). The research project is planned during the intervention process and intends to produce actionable and/or publishable knowledge (Avenier & Noury 1999). IR stands on a different theoretical level. IR stands that the quest of truth should be replaced by the quest of action, the central theoretical enigma (Hatchuel 2005; Radaelli 2014). Action is both the phenomenon to study and the observing process itself simultaneously. Scientific knowledge is not only applied, but also produced on the field, and transferred to a general theory of action (Radaelli 2014). The models of collective actions which emerge from inquiry can be generalized to other contexts. It uses the creativity of pioneering organizations to create innovative models of action. IR analysis the dynamics of collective managerial innovation (David 2002).

To reach this goal, researcher intervenes in organizations. It is also necessary that practitioners get involved in the research process. These interactions should not be seen as an obstacle, but as a way to knowledge (Avenier and Nourry, 1999). One of the most frequent use of IR consists in implementingmanagement tools in organizations (David 2002).

In our cases, Wwe conduct a total of 37 interviews (12 in M1, 16 in M2 and 9 in M3) which resulted in 37 individual maps. We also attend 2 executive committee meetings and 2 open meetings in M1, 5 meetings in M2 and 2 steering committee meetings in M3. The full process lasted 23 months, from November 2015 to September 2017.

Our process is divided into 5 steps (see **Figure 2**). This protocol follows the same path in three municipalities in the South of France.

Figure 2 – steps of the intervention



Step 1 – We interviewed each individual in order to understand his own explicative system.

Step 2 – We built individual cognitive maps on the base of the interviews. To create our maps, we used the software *Decision Exporer*[1]. We focused on the arguments given by the actors to explain their point of view to create constructs and arrows. We focused on linking words and expressions such as "*because*", "*as a result*", "*consequently*", "*that's why*", "*therefore*", etc. to catch their explicative system. This methodology "*links statements with arrows indicating how one statement leads to another*" (Bryson *et al.* 2014b, p. xi). Indeed, arrows mean "*might cause*" or "*might lead to*" or "*might result in*" or any other kind of influence relationship.

Step 3 – Our objective was not only to represent individuals' beliefs, but also to generate dialogue between them, in order to contrast the arguments, spark debate and "negotiate" reality. It helped us to consider the complexity of reality rather than to reduce it, including diverse points of view instead of excluding them (Eden and Ackermann 2014). We aggregated the individual cognitive maps to create causal maps, to reveal the points of agreement and disagreement. We compared them to show how the organisation has both a multiple perspective (idiosyncratic per individual) and a shared perspective (overlaps between the maps).

During this stage, we standardised our raw maps. For three reasons: to rigorously analyse the data using the Gioia method (2013) which we will be describing here; to be able to make the maps communicate with each other (for example by aggregating them or directly comparing them); and to simplify them and make them easier to read. It is important to remember that the researcher's aim is for the organisation's members to be able to take ownership of these maps. Yet the original maps are so complex that they are difficult for a novice to understand.

The Gioia methodology (Gioia and Chittipeddi 1991; Gioia, Corley, and Hamilton 2013) is based on the premise that inductive research has significant creative and revelatory potential. It

[1] Decision Explorer, Banxia software, created by Eden and Ackermann

can generate new concepts and original ideas. This method aims to provide rigour to the qualitative analysis of data taken straight from the field.

Gioia proposes firstly classifying the concepts according to a ***first order analysis***, which corresponds to the participants' perspective. Faced with the wealth of data obtained at the start of qualitative research, the researcher is in fact often lost: "*You gotta get lost before you can get found*". So codes must be established from the words used directly by the interviewee. These concepts that have come straight from the field are the ones we used to construct the raw maps. We listed the concepts of these maps in order to sort through them, compare them and reconcile them. This initial classification brings order and sense to this chaotic set of data.

This led us on to a ***second order analysis***, which corresponds to the scientist's perspective. This is an interpretation stage, where the researcher's schemas play the lead role. We established common "dimensions". Furthermore, we grouped together opposing concepts into one single concept, called a construct (Eden, Ackermann, and Cropper 1992). Second order concepts then take the following form: "A … non-A". This stage allows a data structure to emerge. The data become intelligible and can therefore be interpreted. The original wealth of information, hard to explore, makes sense.

Finally, these second order concepts were aggregated into ***more abstract categories***. These "aggregated dimensions" let you skip to abstractness ("*forced 'stepping-up'' in abstractness*") (Gioia 2013, p. 9). Standardisation therefore ultimately consisted of constructing lexical categories shared by the various players. Through a gradual increase in abstractness, we were able to develop concepts shared by the various interviewees and to relevantly reveal the agreements and disagreements of the participants of each project.

Step 4 – We organized debate workshops in order to discuss the causal map and to help the players to understand better the different points of view

Step 5 – We got back on the fields to discuss with the manager of each project of the usefulness of the maps and of the changes that occurred in the process thanks to the maps

3.2.Description of the cases

(M1) is a seaside resort which has been conducting a global tourism development project in its area since early 2015. An important challenge for the municipality is its classification as a

"seaside resort", due for review in 2017. If the town had lost its classification, it would have suffered significant financial consequences, as state grants would have been drastically revised downwards. Although the town is home to 12,000 residents during the year, it has 4,000 second homes and, during the summer season, 24,000 tourists stay in the various hotels, gites, guest houses, campsites and other accommodation. That is a total of 40,000 people. Therefore, its infrastructure must match these requirements. The drainage system, water treatment plant, supermarkets, railway station, car parks, etc. must be adapted accordingly. Classification as a resort means the town receives state grants commensurate with its maximum population. To obtain this classification, an overall improvement of the services offered by the town had to begin. In particular, the tourist office was taken on by elected officials in the form of an EPIC[2], which involved setting up a management committee involving all kinds of players (elected officials, municipality managers, shop representatives, accommodation providers and winegrowers, former tourist office volunteers), the role of which was to steer tourism in the town.

(M2) encountered management problems with its 'one-stop service centre'. The aim of this municipality scheme (created in 2013) is to join up all the childhood and early childhood formalities in order to reduce the number of records to be filled in, facilitate the procedure for families and have a global overview of the 5,000 and more children enrolled in municipal activities. This one-stop service centre involves the collaboration of a large number of municipal services (nursery, extracurricular, municipal sport, school canteen, school transport, NAP[3]). Many failings had been observed at each start of the academic year. In particular, inaccurate lists of the children and the activities they should have been doing posed problems in terms of responsibility. In fact, some children found themselves outside the municipality's control, which could have proved highly dangerous. It was therefore decided to undertake a thorough review of the entire functioning of this service to determine what the causes of these failings could be and find suitable solutions.

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[2] EPIC: a Public Industrial and Commercial Establishment

[3] NAP: new extracurricular activities, formerly TAP (extracurricular activity time). These are extracurricular entertainment schemes set up for schoolchildren as part of the French reform of the school year which has been the focus of a large number of debates.

(M3) has an ambitious environmental project: to be the first French 'positive energy' town of this size (a little over 20,000 inhabitants) in France. The town has a long tradition of energy use and has an industrial history which influences its culture. The mayor wants to take advantage of the municipality's many resources to produce more energy than it consumes. This project has three components: the installation of solar panels, which had already taken place at the time of our intervention, and the exploitation of landfill gases to produce electricity; the recovery of fatal energy discharged from local industry[4], a project still pending today; and finally, the part which we were really concerned with throughout our procedure, namely the exploitation of warm groundwater which has filled the town's abandoned mines in order to produce heat and air conditioning. In particular, pit Y, containing 60,000 m^3 of warm water, is attracting everyone's attention, as on its own it could supply the Y business park to be built on the land surrounding the pit. An agreement with EDF is being drawn up to formalise this bold undertaking. Furthermore, a SEM[5], whose majority shareholder is the municipality, is in charge of steering the project and has been tasked with finding a technical solution to the municipality's aspiration.

The following section will demonstrate the potential of causal maps for each of these projects to create public values.

4. Empirical analysis of the public value creation thanks to causal maps

In each field (M1, M2, M3), categories emerged from the Gioia's methodology used to analyse the maps. These categories will help us to understand what is at stake in each municipality, that is to say which values were created and which were destroyed. We will provide a simplified causal map for each field. The entire map in impossible to read because of its extreme density. We chose to keep only the more central concepts (after the calculation of the centrality of each

[4] These energies are "trapped" in the industrial processes and are therefore lost. For example, when an industry discharges hot water or steam and these are dispersed into the natural surroundings, they are known as 'fatal'.

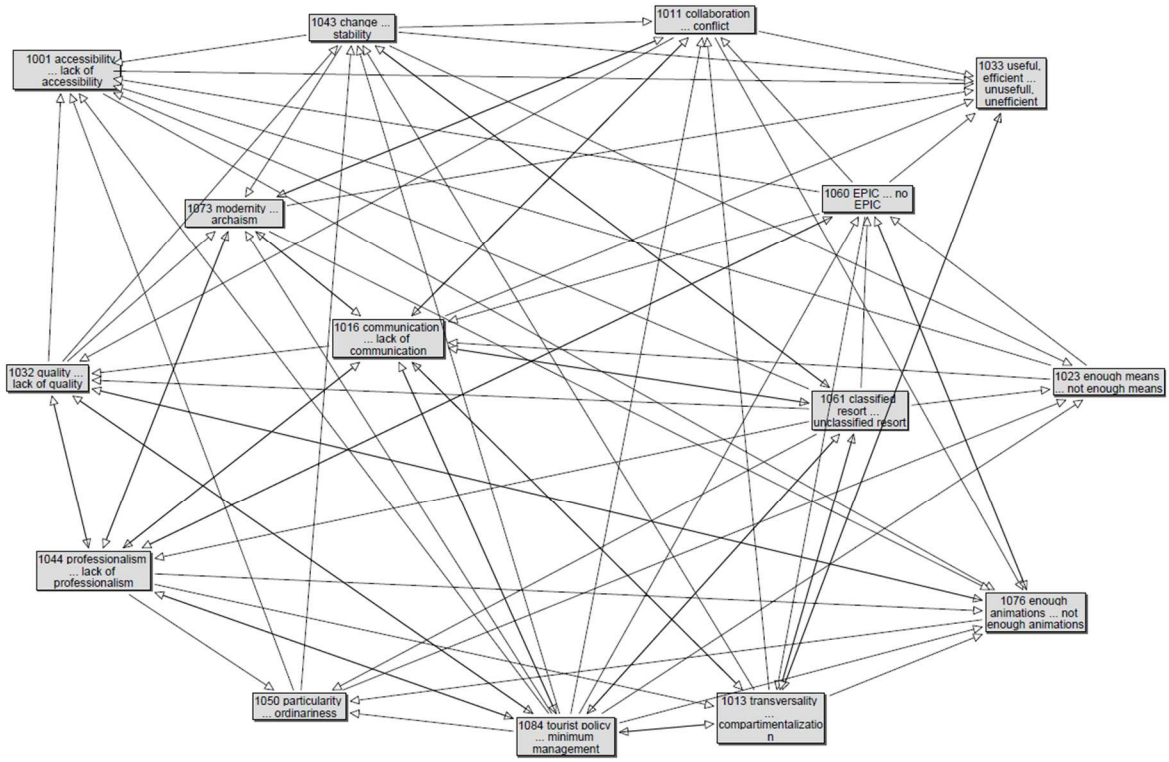
[5] SEM: A semi-public company, or in other words, a private business at least half of whose capital is owned by a public organisation

concept) so the maps can be read more easily. We will provide an analyse of each of these maps.

4.1. M1 – Improving relationships around the Tourist Office project

With M1, the mayor's "request" was to work on the remunicipalisation of the tourist office. The aggregation of individual maps linked this project with several other contextual issues. 8 categories emerged : "technical aspects", "communication and collaboration", "economy and finance", "efficiency and performance", "town image and identity", "resort and tourist office", "tourist offering and marketing" and "tourism policy".

Causal map n°1 – M1 – Tourist office



At M1, the very possibility of debate was one of the areas of disagreements with the mayor. He felt that debate should be reduced as much as possible by only focusing on the tourist population itself and that subjects such as management policy for beaches, harbours, second homes and year-round resident populations or cultural policy should not be encroached upon. The mayor feels that he is the only person who can legitimately make decisions since he was elected, and holding a debate with local players on various subjects of tourism policy distorts this legitimacy.

Yet our work showed that it was difficult to establish a tourism policy without taking the full complexity of the situation into account, especially by considering the opinions of all the players associated in the governance and the opinion of the citizens. Several players, especially public agents concerned by the project addressed the importance of opening up the services and improving communication between them, especially as many of them are affected by tourism (beach and harbour, culture, communication and entertainment services, technical services, etc.), as well as the need to interact more with tourism socio-professionals. The need for better communication was a main concern of the players as we can see in the **causal map n°1**. The aim was to increase efficiency and performance. Finally, many actors participated to the process and were integrated to the decision-making, despite the mayor's opinion. The democracy process was improved, and the tourism office director considered the diverse points of view emerging form the maps and the workshop to build the policy project of the town that he submitted to the mayor.

In the end, the contribution to society was increased as the opinions of more concerned players were considered. For instance, the causal map showed that most of the players were at first mainly concerned by the financial aspects of the project. But a few of them had a larger vision of the tourism question. Their divergent point of view raised the subject of the well-being of the inhabitants of the city and the environmental issues of tourism. These subjects had not been considered by a major part of the players at first.

Another emerging question was that of the necessity to extend tourism to year-round tourism by offering hiking activities or a winter festival for example. The town's image was also a central issue for deciding on Tourist Office activities. Do we prefer to develop the authentic, provençal, rustic, traditional farming identity or is it more appropriate to modernise the resort and give it a boost to attract younger and wealthier people, favouring for example the establishment of a night club or a casino? The points of view were divergent on these subjects and they had to be discussed during the debate workshops. It helped the participants to build together a more accurate understanding of what they imagined the tourism office could do for the city and to question the competitiveness of the seaside resort with its neighbours, which had chosen to become very modern, luxurious and "young" resorts.

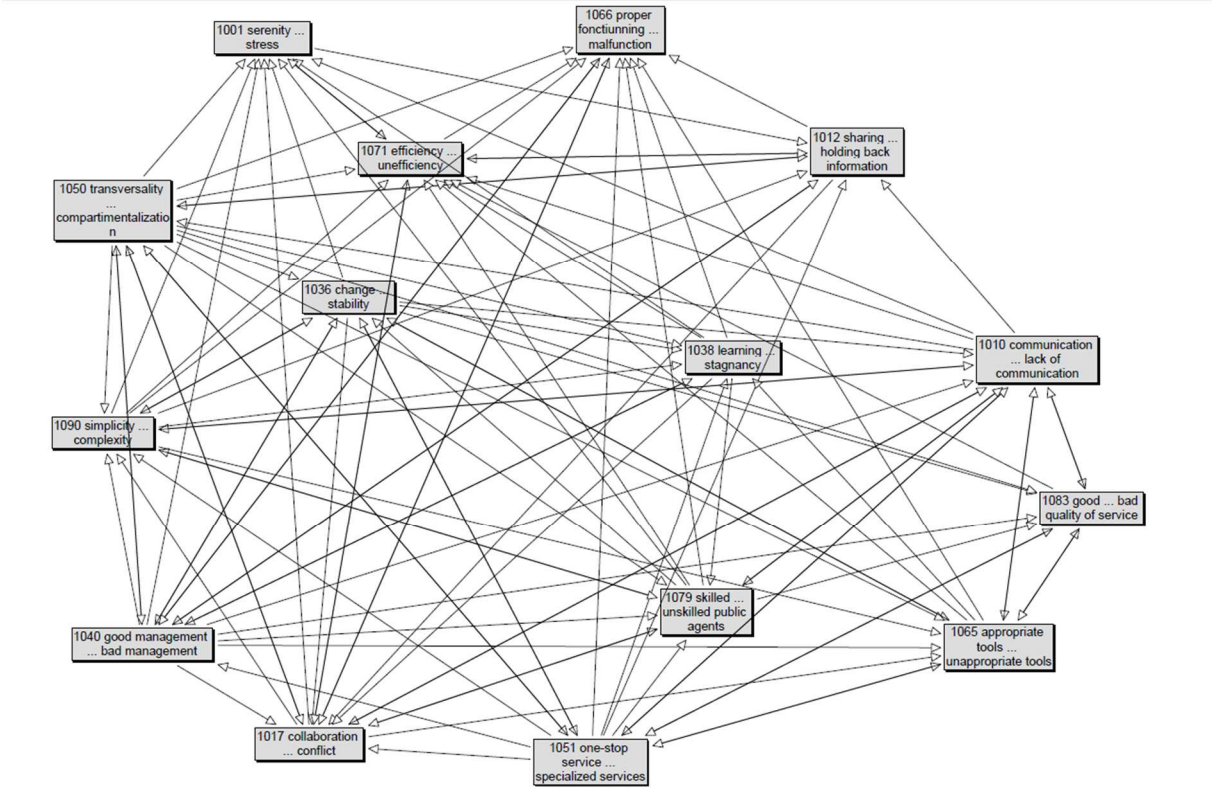
In conclusion, the main impacts of the map on this field were about better relationships, a more democratic process and a better consideration of the contribution of tourism to society. While

these values emerged strongly, the vision of representative democracy and the image of a modern luxury seaside resort decayed to be set aside.

4.2. M2 – Improving the intraorganizational functioning of the one-step service.

With M2, deputy executive director 1 (there are 3 of them) wanted to sort out a problem with incorrect lists of children and enrolment errors in the One-stop service center. The meetings with the players brought to light other concerns. We extracted 8 categories: "well-being at work", "communication", "context, environment, constraints", "management", "organisation and structure", "performance", "service quality" and "rationalisation".

Causal map n°2 – M2 – One-stop service center



In this municipality, the decision process was at first very authoritarian. After the research process, debate became more usual between the players. Moreover, the point of view of the citizens had not be taken into account. The fact to create a cognitive map of a citizen strongly involved in the actions of the town helped the agents to take into account their needs. The causal

map was helpful to create relationships between the agents which didn’t exist inside the organization before our intervention. Ten participants, on the sixteen interrogated, agreed to come to the debate workshop. It allowed some of them to express their disagreement. For example, the quality processes manager insisted that her service was often the target of accusations and aggressivity coming from other services. The researcher's intervention enabled what the quality manager called a "*relational audit*" to be conducted, which facilitated transversality among the services and led to a better understanding of the difficulties each of them face. The fact that the one-stop service centre was not invited to attend service meetings was, for example, raised as a shortcoming, which the players remedied. The process provided a better dialogue within the organisation and prompted the reorganisation of the way of communicating. "Well-being at work" was one of the 8 categories of this field, which shows how much this concern was important to them.

But the worth of such use of the maps is mostly expressed through the various unplanned decisions taken by the collective during the process. By coming together and discussing the various services' difficulties, the organisation's members realised that they faced common challenges to which they could provide joint solutions. That led to an online functional registration platform being set up, a single registration dossier being created (to avoid parents having to provide the same documents several times or repeatedly giving the same information to the various town council departments) and a single set of rules of procedure being written for all activities (which avoided citizens having to sign a large number of different rules of procedure). The information gathered during discussions therefore led to concrete decisions to improve the functioning and quality of the service, whilst lightening the staff's workload by simplifying and standardising certain tasks.

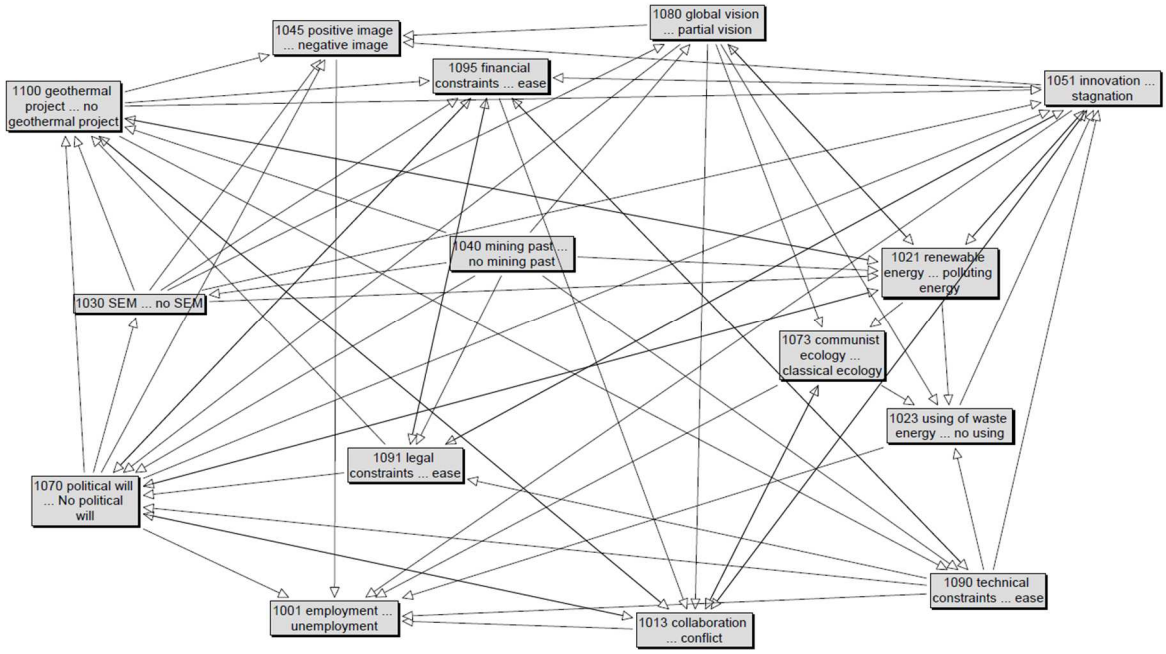
Organizational issues, such as problems with transversality and resources, managerial problems such as the leadership's bureaucratic, technical or human vision, or communication problems such as the feeling of mistrust and finger-pointing if problems occur, were raised. Sensitive issues which may explain the errors in the players' eyes, in that the way the organisation generally operates affects the staff's work. The causal maps highlighted the need to improve the performance and efficiency of the one-stop service centre, to increase the quality of service and simplify procedures through greater rationalisation of the organisation. The final aim was to contribute better to the society by improving and facilitating the processes of inscription of the families.

Values emerged from this field : better relationships between services, collective decision-making (participative process), better understanding of other's concerns, and more human management. Other values decayed : technical management, bureaucratic traditional administration.

4.3. M3 – Ethical and environmental issues around a geothermal innovative project

At M3, the mayor had invited us to take an interest in the business park's geothermal project. We defined 9 categories in this field: "industrial activities", "communication and collaboration", "energies", "management and organisation", "town image and history", "innovation and learning", "performance and efficiency", "policy and vision" and "geothermal project".

Causal map n°3 – M3 – Geothermal innovative project



In this municipality, the project was to build a geothermal innovative device. The interviews led the players to go well beyond the scope of the project and talk about much more politicised subjects, such as the regeneration of the mining areas, the town's industrial policy, pollution, employment and mining culture, all of which explain why the local elected representatives feel

so strongly about this project. These questions refer to values such as ethical concerns, contribution to society and political vision. We can see that “policy and vision” is one of the 9 categories which emerged from the maps. This shows how much this subject matters for the players. On this field, the individual objections were particularly strong and the beliefs particularly heartfelt. These revolved around very different notions of ecology: on the one hand, the desire to promote economic development whilst controlling pollution (the elected officials' point of view) and on the other hand staunch opposition to the industrial "criminals". The technical service manager in particular, who actually left during the process because of his disagreements with the mayor, had a highly critical view of the geothermal project, primarily due to the many risks (financial, technical and legal) and the underlying ideology, regarded as a form of "going easy" on certain polluting industrialists in the region. During the workshop, the debates were quite strong around the environmental question. The environmental and innovative aspect of the project was one of the main arguments raised by the actors to make the geothermal project happen. "innovation and learning" is one of the 9 categories which emerged from our analysis of the maps. The players were widely concerned by the impact of the industrial activities of the city on the landscapes, the ecosystems and the health of the citizens. This is why a lot of them, even in the opponents of the mayor, were quite convinced that the project was necessary. The geothermal pit is indeed a way to produce clean energy. The ecological ideology was a central construct of the map.

Moreover, one of the 9 categories was "town image and history". the desire to give the town a modern, rejuvenated and more environmentally friendly image is prompting the town council to commit to a global sustainable development process. Furthermore, the wound sustained by the community due to the closure of the mines in 2003, which led to massive unemployment, needs to be healed. Converting and preserving historical buildings for a positive use in terms of environmental impact is a way of making up for the suffering of the past. Not to mention that the creation of the business park will also create a large number of jobs (over 1,000 according to estimates), which enhances the value of the overall project. All these arguments were pointed into the causal map and helped the players to justify the legitimacy of the project. About the relationships with other partners, such as the company who was involved in the project, causal maps helped the players to think about the financial complexity of the project and to find solutions to be more competitive and to lower the price of the energy drawn from the pit.

If, finally, the mayor took much of the decisions concerning the project, the causal maps allowed the expression of some extreme points of view, even if they were not taken into account. We did not succeed to improve the decision-making process, but the SEM director regretted that the research work had not been done further upstream, as well as not taking more of an interest in our intervention at the beginning of the process. He thought in particular that he could have used it to develop his communication strategy for this project and to overcome misgivings and improve the relationship with all the players. He was therefore aware of the tool's potential to improve the decision process, but harnessed it too late in the research intervention. He intends to use this tool for future projects in the town.

Through empirical studies lead in these three municipalities, we can conclude that causal maps are useful to create values, but are also likely to destroy some values. We offer a summary of the changes that occurred on the fields in **Table 3**. We will discuss more deeply this potential in the next section.

Table 3 – Public values creation and destruction through causal maps

Municipality	**Values created**	**Values destroyed**
M1	Participative democracy Traditional and rustic resort (authenticity)	Representative democracy Loyalty to the mayor Luxury resort (money)
M2	"Human" management, participative management Better relationships	Technical management Traditional bureaucratie
M3	Innovation, sustainability, employment	Trust between employees and elected representatives Mining and industrial values

5. Discussion: causal maps improve public values creation … but not only

We were wandering in this article which public values can be created thanks to causal maps. As we could see it in the results, this tool improved public values creation. It also shows that when new values appear, old contradictory ones may be destroyed. The managers should be aware of this evolution.

In each field we intervened in, we could see diverse impacts of causal maps on the decision-making processes and we could see some change happen thanks to this tool. Even when relationships were very tensed and complicated, some good came out of the maps, which worked as vehicles to facilitate interactions and negotiations, improving the democratic process. Nowadays, organizations favour rational tools (Cabantous and Gond 2010), which tend to reduce complexity instead of embracing it (Eden and Ackermann 2014). Our objective in this article is not to replace more rational procedures or totally reject the NPM tools, which not only regularly prove their effectiveness (De Vries and Nemec 2013; Dan and Pollitt 2015), but which, in a contingent vision, may be utterly relevant once the context is taken into account. However, the use of tools such as causal maps can improve the governance and the public collective decision-making by introducing more debate into the processes. Public deliberation not only reveals public values, but it also contributes directly to them (Jorgensen and Bozeman, 2007). Eden & Ackermann (2011) also point the usefulness of such participative approach, which allows the players to use all the knowledge of the organization. Finally, our study shows how PVP theories can concretely have positive effects in organizations.

In addition, we offer some critical point of view concerning the maps. If they are useful to allow the emergence of new values, they are utterly likely to make some decay or even disappear. In some cases, this disappearance can be useful, but we must point the possibility that some "valuable values" are lost through change. The managers and the players involved in the debates should be careful about which values they wish to preserve and which they accept to abandon.

6. Conclusion

The PVP (O'Flynn 2007; Meynhardt 2009, 2015; Bryson et al. 2014a ; Fukumoto and Bozeman 2019) aims to offer a new vision of public management, focusing on the creation of public values. Through an empirical study in three public organizations, we showed that causal maps create public values. These tools have therefore a great potential to improve public management and to help the players to face the new challenges of our society. However, the process of value creation implies that some contradictory old values are destroyed through the organization's transformation. This must lead public managers to keep a critical view on the tool.

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