Managing tensions and paradoxes between stakeholders in a complex project context: Case study and model proposal

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Abstract

Stakeholder (SH) management has recently undertaken a turn from the traditional management "of" to managing "for" and "with" SH. Relating to this relational trend, identification and management tensions between SH is an important area of study. Indeed, from how to live with and/or resolve or not those tensions depend on the possibility of building the most beneficial cooperation possible between SH for the continuation of the project, to obtain win-win results, and to promote the shared value and common good. For this purpose, a theoretical model is suggested, based on the approaches of paradoxes and conventionalist economy of worth, supporting the identification of tensions between SH and their justifications, and the clarification it helps to bring as to win-win or shared value outcomes, or the absence of such, in the context of a complex project. The suggested model is then used in an exploratory case study. The goal is to assess its relevance, usefulness, and quality. Two theoretical contributions emerge from the data analyzed: 1) several tensions over various categories (allegiance, dimensional, temporal, learning, performance and spatial) can draw on the same justifications (rationale that opposes industrial and domestic conventions); 2) prioritization of tension categories can make it easier to resolve them.

Keywords: complex project management; paradox approach; tensions, shared value, stakeholder management

1. Introduction

1.1. Stakeholders and complex projects: an inextricable link

Since the turn of the century, project management is gradually recognizing the importance of shifting from managing the Stakeholders (SH) to managing for and with the SH (Eskerod, Heumann, & Ringhofer 2015a; Labelle & Leyrie, 2012). This concept of openness to SH answers to 4 rationales that condition the success of projects, especially those perceived as complex: *"First, the project needs contributions (financial and nonfinancial resources) from stakeholders; second, stakeholders often establish the criteria for assessing the success of the project; third, stakeholders' (potential) resistance may cause various risks and negatively affect the success of the project; and fourth, the project may affect stakeholders in both negative and positive ways (see, e.g., Aarseth, Rolstadas, & Andersen, 2011; de Bakker, Boonstra, & Wortmann, 2011; McLeod, Doolin, & MacDonel, 2012; Morris & Hough, 1987; Sallinen, Ahola, & Ruuska, 2011; Turner & Zollin, 2012; Vrhovec, Hovelja, Vavpotic˘, & Krisper, 2015)."* (Nguyen, Mohamed & Panuwatwanich, 2018). Whether SH carries economic, social or environmental demands, the consideration of their expectations in the design and development of complex projects will help lead the way for new strategies in project management, including one that crystallizes around the concept of sustainability (Silvius, 2017).

1.2. The debate around the notion of shared value

Some authors suggest going beyond the traditional "stakeholder" model and propose a new name, that of the "stake partner" model (Labelle & Leyrie, 2012), based on long-term relationships and recurrent exchanges between the various SH affecting and affected by the project. With this new notion, "for and with" the SH, whether their expectations are economic, social, or environmental in nature, these are not used to serve the purposes of the projects but are considered to have their own legitimate purposes. This corresponds to the normative perspective of the SH theory suggested by Freeman (1995) and Donaldson & Preston (1995). From this perspective, the success of the projects is assessed according to the criteria set out by the SH (Turner, 2014). Such success should reflect on all SH and provide what is known as a win-win outcome. The notion of a win-win outcome for all the SH, although present in the work on the subject by classical authors, such as Freeman (1995), Donaldson & Preston (1995), was particularly popularized by

Michael Porter with the concept of "shared value" in the field of strategic business management. For Porter & Kramer (2011), *"The concept of shared value can be defined as policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates. Shared value creation focuses on identifying and expanding the connections between societal and economic progress." (Porter & Kramer, 2011, p. 66).*The shared value model presents itself as a new way of shaping the relationship between the company and the society, which must go beyond tensions to focus on win-win outcomes. As per Porter & Kramer (2011), those tensions come from a persistent idea among business leaders that there is a cost associated with sharing with other stakeholders: "*to provide societal benefits, companies must temper their economic success." (Porter & Kramer, 2011, p. 64)*. The concept of shared value differs from this approach to focus on the idea of a possible common enrichment that results from the confluence between societal and economic: *"it is about expanding the total pool of economic and social value." (Porter & Kramer, 2011, p. 65).*

That being said, the notion of shared value and of win-win outcomes brings its share of inquiries and critics. Thus, Crane, Palazzo, Spence & Matten. (2014) and Epstein & Yuthas (2010) criticize the idea of shared value for the lack of reflection and proposal on the tensions between the economic objectives, on the one hand, and the other objectives of the SH, whether social and/or environmental. The win-win concept suggested by shared value is a distortion of reality (Crane et al., 2014). Decisions on issues that juxtapose economic, social and/or environmental issues frequently manifest themselves in terms of dilemmas where worldviews, identities, interests, and values collide. Win-lose situations are often the lot of the parties who experience them: *"They can be better described as continuous struggles between corporations and their stakeholders over limited resources and recognition" (Crane et al., 2014, p. 136)*. Ignoring noneconomic tensions in a process where multiple SH are involved is a methodology error that can lead to management problems (Martin & Sunley, 2003; Epstein & Yuthas, 2010). In that respect, Crane et al. (2014) point out that: *"While seeking win-win opportunities is clearly important, this does not provide guidance for the many situations where social and economic outcomes will not be aligned for all stakeholders." (Crane et al., 2014, p. 136).*

Those critics are also present in literature more specific to project management. This is what emerges from the writings of Eskerod, Huemann & Savage(2015b) and of Nguyen et al. (2018): "*[...] organizations, and especially projects as temporary organizations, face many stakeholders with interests that conflict with the interests of other stakeholders. […] Thus, the normative statement that an organization should search for win-win solutions […] is very challenging, particularly for projects that are temporary endeavors.*" *(Eskerod et al. 2015b, p. 9);* "*Stakeholder interrelationships are a source of project complexity (Debrie & Raimbault, 2016; Ommen et al., 2016; Yang, 2014). A large number of stakeholders […] can lead to: (1) a complex interaction of actors with varying stakes (Afreen and Kumar, 2016; Caniato et al., 2014; Martinez, 2016); (2) conflicting stakeholder interests (Burgin et al., 2013; Yang, 2014), concerns (McKenna & Metcalfe, 2013) and perspectives (Walton, 2013); and (3) inadequate understanding of the complex stakeholders (Sæbø et al., 2011).*" *(Nguyen et al. 2018, p. 76).*

1.3. The importance of studying further the tensions between stakeholders

Eskerod et al. (2015a) raise the stakes and point out that: "*The main critique is that the strive for win-win situations is unrealistic in the real world, which may lead to solutions that are not very ambitious*." (*Eskerod et al., 2015b, p. 45*). However, and except if we consider an environment of complex projects as merely a place of conflict and advocacy, it is important to better understand the tensions between SH and their sources in the context of complex projects. From how to live with and/or resolve or not those tensions depends on the possibility of building the most beneficial cooperation possible between SH for the continuation of the project, to obtain win-win results, and promote the shared value and common good.

Thus, this article subscribes to the theoretical discussion, based on the approach of paradoxes, supporting the identification of tensions between SH and their justifications, and the clarification it helps to bring as to win-win or shared value outcomes, or the absence of such, in the context of a complex project. The objective is theoretical and exploratory. It aims to build and present a framework for analyzing categories of tensions, be it the scale on which SH agree or oppose to the proposed projects, and the justifications that support the SH favorable or unfavorable positions on the various categories identified. The theoretical framework model is then used to

study a case. Ultimately, the goal is to assess the relevance, usefulness, and quality of the theoretical framework suggested.

The article is organized as follows after this first introductory section. The theoretical framework is presented in the second section. First, a model of recognition of the categories of tension between the various SH affected and affecting complex projects, be it projects that involve and impact multiple SH with multiple perspectives on multiple issues, is proposed. This work stems from the paradoxes approach, particularly those of Lewis (2000), Smith & Lewis (2011) and Hahn, Pinkse, Preuss & Figge(2015), which allows us to construct this list of categories of potential tensions between various SH. Second, to better understand the foundations on which SH adopts positions that are in tension with those of other SH, the theoretical framework is complemented by the "*Économies de la Grandeur*" (Economies of Worth) model (Boltanski & Thévenot, 1991). This model addresses specifically the general principles evoked by individuals to justify their position in discussions. The hybridization of those models is used to study a case that is presented in the third section. The analysis of the case, in the fourth section, makes it possible to verify the usefulness and relevance of the theoretical framework suggested and then to enrich it during the discussion in the fifth section.

2. Construction of the theoretical framework

In this section, we first define the notion of tensions from the perspective of the approach to paradoxes. Then we present three complementary models: the Smith & Lewis model (2011) and the categorization of tensions within an organization – a project is a temporary organization (Lundin & al., 1995); the Hahn, Pinkse, Preuss & Figge (2015) model and the identification of tensions between an organization and the stakeholders from a sustainable development perspective; and the justification of the rationales of the stakeholders, whose difficulties in coordination are at the source of the tensions, according to the Economies of Worth model (Boltanski et Thévenot, 1999). Those three models are combined to form a theoretical framework that addresses the categories of tension experienced first by the project direct stakeholders (Smith and Lewis model, 2011), and then between SH that are affected or affecting the project (Hahn et

al., 2015), and at a second level, to the rationales that justify the parties positions on the various categories of tension listed.

2.1. Tensions according to the approach of paradoxes

According to researchers who support the paradox approach (Lewis, 2000; Smith & Lewis, 2011), tensions and contradictions are inherent to situations and do not undoubtedly result in win-win outcomes. The paradox approach distinguishes four perspectives that are mobilized in the writings about relationships between SH. For example, Van der Byl & Slawinski (2015), who address SH relationships in the context of sustainability, propose the following distinctions:

> Approach 1 – "win-win": it corresponds to the shared value and win-win approach and suggests that certain environmental, social and economic aspects can be aligned and organized to generate positive benefits for all SH. In this context, the company that participates in relationships with other SH manages to achieve more economic benefits with those strategic alignments. It is an instrumental approach where the goal of the management "of" stakeholders remains the maximization of benefit for companies;
>
> Approach 2 – "trade-off": rather, it considers that social, environmental and economic objectives are in conflict and that a priority selection must be made, to the detriment of other spheres of sustainable development;
>
> Approach 3 – "integrative": it considers that the economic, social and environmental aspects are equivalent and must be fully integrated into a single model. It is management "for" the SH. That equifinality is a priority for all SH, including the companies;
>
> Approach 4 – "paradoxes": it considers that the economic, social and environmental aspects or objectives are not necessarily reconcilable, but that it is possible to operate by maintaining tensions under management. Rather than trying to reconcile the positions of each STKH at all costs, the paradox approach suggests recognizing contradictions and tensions, then trying to mitigate them, most importantly allowing management of the contradictions.

Thus, the perspective based on the paradox approach explores how administrators concurrently meet competing demands that are addressed to them and which cause tensions (Smith & Lewis,

2011). By looking at those tensions, the approach cannot ignore situations where they also result in win-win or conflict situations (Van der Byl & Slawinski approaches 1 and 2). In this sense, the approach through paradoxes is a metatheory, an integrative framework that allows us to consider tensions and their management in multiple contexts, mobilizing theoretical and methodological considerations and a multitude of variables of varying scope (Lewis & Smith, 2014; Schad, Lewis, Raisch & Smith, 2016). In this metatheory, tensions are the focal point, the unit of analysis, to which researchers pay particular attention. They are perceived by individuals and organizations facing divergent demands that are often contradictory and interrelated. This puts them in conflictual situations and challenges that cause stress, discomfort, and anxiety (Putnam, Fairhurst & Banghart, 2016). The following definition of the concept of paradox provides a better understanding of the dimensions of this approach: *"We define paradox as contradictory yet interrelated elements that exist simultaneously and persist over time. This definition highlights two components of paradox: (1) underlying tensions – that is, elements that seem logical individually but inconsistent and even absurd when juxtaposed – and (2) responses that embrace tensions simultaneously." (Smith & Lewis, 2011, p. 382).*

The paradox presents a situation where two divergent or contradictory aspects of the same issue coexist in the same organization or between several organizations. It differs from the dilemma that involves a choice between two options (either one or the other) that are not necessarily in competition, and the conflict that places options in eliminatory qualification (Grimand, Vandangeon & Schäfer, 2014). In all those cases, tensions are felt and must be managed. In fact, proponents of the paradox approach suggest that organizations need to learn to deal with those tensions while stakeholders try more to avoid them or to view them as marginal and temporary singularities to mitigate.

To distinguish between different categories of tension and to support the development of methodological tools that allow them to be identified in interactive situations, some typologies and integrative frameworks are suggested in recent literature on the subject, including that of Lewis & Smith (2011), frequently cited as a founding text. This is how Cunha & Putnam (2019) treat it, taking a look at the evolution of this school of thought, which has been increasingly present for 25 years. The Hahn et al. model (2015), which is already well-established,

complements Lewis & Smith's by focusing more on the relationships between SH from multiple organizations and various perspectives.

2.2. Tensions as per Smith & Lewis model (2011)

Smith & Lewis (2011) propose a categorization of tensions experienced within organizations. To achieve this, they distinguish four categories of tension: *"The four categories of paradox represent core activities and elements of organizations: learning (knowledge), belonging (identity/interpersonal relationships), organizing (processes), and performing (goals)." (Smith & Lewis, 2011, p. 383).*

Ozanne, Phipps, Weaver, Carrignton, Luchs, Catlin, Gupta, Santos, Scott & Williams (2016) summarize the four categories and use them as a methodological framework to conduct a case study that demonstrates the usefulness of this categorization:

1. Belonging tensions (allegiance): Individual parties in organizations, bearing their own identity, are placed in a situation where several subgroups coexist, each with culture, values, members and special roles. While those individuals identify more with one subgroup than another, they experience tensions between their own values and those of the subgroup, and then between them with the culture and values of the other subgroups or the organization.
2. Performance tensions: The plurality of SH that revolves around corporate projects implies a diversity of strategies and objectives that reflect multiple conceptions of performance.
3. Organizational tensions: They are more at the macro level and occur during restructuring or change. It is then the entire organizational system (structures, processes, practices) that is in tension with its environment. For example, it will be the tension between mass production versus custom production, the planned strategy versus an "emerging" strategy that is gradually developed with partners.
4. Learning tensions: They occur when organizational paradigms are not aligned with contextual changes. The company's key skills are ill-suited to today's market requirements. Tensions also arise when different time horizons are juxtaposed, for example during periods of growth whose results will occur in the long term when short-term results are needed to maintain business operations.

If tensions arise within each of those categories, they can also be heightened by the necessary cohabitation of those categories. For example, tension may arise at the junction of the "learning" and "performance" category, while the development of abilities to be competitive in the future is contradictory to the achievement of performance in the present (Smith & Lewis, 2011).

That being said, the Smith & Lewis model is virtually silent about the tensions that can arise between multiple SH and between levels of analysis (individual, organizational, systemic). While the Hahn et al. (2015) model makes it possible to do.

2.3. Tensions as per Hahn, Pinkse, Preuss & Figge model (2015)

From a sustainable development perspective, Hahn et al. (2015) identify a series of tensions to consider when studying the relationship between the company and SH. This approach can be applied to a context of complex projects that need to be carried out while considering the demands and expectations of various parties, including those dealing with social and environmental aspects. Among those tensions, the following five draw attention:

1. Dimensional tensions: There are apparent tensions between the economic, environmental and social aspects that are not always conciliatory due to *"the incommensurability of environmental, social and financial performance criteria (Margolis and Walsh 2003; Orlitzky et al. 2003) ". (Hahn et al., 2015, p. 301).*
2. Level tensions: the SH to be considered carry requests or expectations that are at various levels of analysis, i.e. at the systemic, organizational and individual level. They are to be assessed and may be at odds (e.g. individual objectives against project objectives).
3. Change tensions: Tensions may arise depending on the type of change to be made and those desired: are the changes to be made radical, incremental, or depending on the urgency of the situation?
4. Time tensions: The temporal dimension is a source of tension on several subjects, for example, and in general, the financial parties' objectives are more short-term and quantitative in nature, while environmental and social objectives are envisaged over a longer period of time.

5. Spatial tensions: Those tensions refer to intragenerational equity. This is particularly true for companies in various locations, various regions, where environmental and social standards are different. Thus, some SH associated with projects in different places may have to adjust to different institutions, cultures, standards, customs, depending on the particulars of the territories. Those tensions may also arise about the use of the space itself. According to Caron &Torre (2004), tensions and spatial conflicts arise in proximity relationships and maybe related to dynamics of the vicinity, development, use and/or access to the resources involved, and also to politeness in good-neighborly relations between parties.

Applied to the project management context, this analytical framework identifies the various SH from multiple levels (individual, organizational, systemic). Those SH are influenced by spatial and temporal notions that affect them differently depending on their values, preferences, ethical view, etc.

The combination of the two models, Smith & Lewis (2011) and Hahn et al. (2015), contributes to the categorization of tensions. From this work and those who have mobilized them, it is possible to identify the main categories of tension between SH that are affected or affecting the complex projects summarized in table 1.

Table 1: Categories of tension recorded in the theoretical framework

Smith & Lewis (2011)	Hahn et al. (2015)
Belonging tensions (allegiance)	
Performance tensions	
Learning tensions	
Organizational tensions are included in the Level tensions	Level tensions (systemic, organizational and individual)
	Dimensional tensions (economic, social, environmental)
	Change tensions (radical, incremental, urgency of the situation)
	Temporal tensions
	Spatial tensions

That being said, the recognition of those categories of tension does not capture what builds the position of each of the parties on those subjects. For example, how to explain why one STKH wants to consider the long-term benefits of a project while another prioritizes short-term benefits. To support the analysis of the parties' positions, it is necessary to have a tool that will better understand the tensions between the rationales, the ideals that influence their preferences, the arguments that support their positions. This is specifically what the Economies of Worth model do.

2.4. Tensions as per Economies of Worth model (Boltanski & Thévenot, 1999)

The Economies of Worth model allows analyzing situations where parties, with different rationales and conventions[1], seek to, or should, coordinate their actions. One recognizes those conventions when parties assert what they consider valid and right and that supports their point when they want to justify their positions while debating the issue with other parties. Those multiple rationales and conventions are not confined to the economic type arguments but extend to all spheres of human activity where coordination issues are constraining (Boltanski & Thévenot, 1991; Enjolras, 1994; Boltanski & Chiapello, 1999).

There are several social constitutive conventions that are all "*ways of specifying the common good*" *(Boltanski & Thévenot, 1991, p.28).* The basic model has six: market value, industrial, civic, domestic, inspired and renowned convention. The development of those six conventions is based on field studies and analysis of arguments put forward by parties in different contexts, including debate. Together this set of six conventions has allowed to better grasp the justification of the acting parties. A seventh convention emerged from the work of Boltanski & Chiapello (1999), the connectionist convention, or by the project. However, the latter convention was developed from management texts issued in the 1990s. Moreover, it is more reflective of a particular era, that of what the authors call "*the new spirit of capitalism*" which represents management practices that were put in place in the late 1990s and early 2000s. It, therefore, seems less timeless than other conventions. Moreover, this 7th convention essentially reflects the spirit that emerges from project management, the spirit that will be studied in this article. Thus, to

[1]It should be noted that the authors associated with this research stream use as synonyms the following concepts: Worth, rationales, forms of coordination (Boltanski & Thévenot, 1989, p.V), value systems (Chiapello, 1991, p. 336) and rationality (Derouet, from Boltanski, Thévenot, 1989, p. 19).

prevent it from obscuring the other conventions under consideration for the study of a particular project, it will not be applied to the case study presented in this article.

Table 2 below describes each of the conventions that are based on higher principles and shows what the parties who use the value as a priority. These principles allow establishing orders of "worth" in a given social world, hence the name of the model. The orders of worth in a social model do not determine worth in other social worlds. For example, possession of the property is not what determines worth in the domestic world. Rather, it is the etiquette and good manners (Enjolras, 1994, p.99) that make it possible to decide about the worth in this social world.

Rationale	Market value	Domestic	Civic	Industrial	Inspired	Renowned
Higher principles	Competition	Tradition	Collective will	Effectiveness	Inspiration, aesthetics	Public opinion
What is valued	Wealth	Good manners	Public interest	Measurement and forecasting	Idea, flash of genius	Fame

Table 2: Conventions and their higher principles

(Adapted from Boltanski & Thévenot, 1991; Chiapello, 1991; Boltanski & Chiapello, 1999; Jetté, 2001; Labelle & Pasquero, 2006)

That typology allows us to qualify the positions of the SH, the rationale that drives them, the conventions they carry. The existence of a plurality of convention is a source of tension, hence the interest of this analysis grid to complete the paradox approach.

2.5. Theoretical framework suggested

In the following diagram, the three models presented in the previous sections are combined. The categories of tension listed are multiple and are shown within the circle. The parties' potential

justifications to support their position that causes tensions are indicated outside the circle. To avoid duplication, the organizational tensions from the Smith & Lewis (2011) model are considered in the level tensions suggested by Hahn et al. (2015).

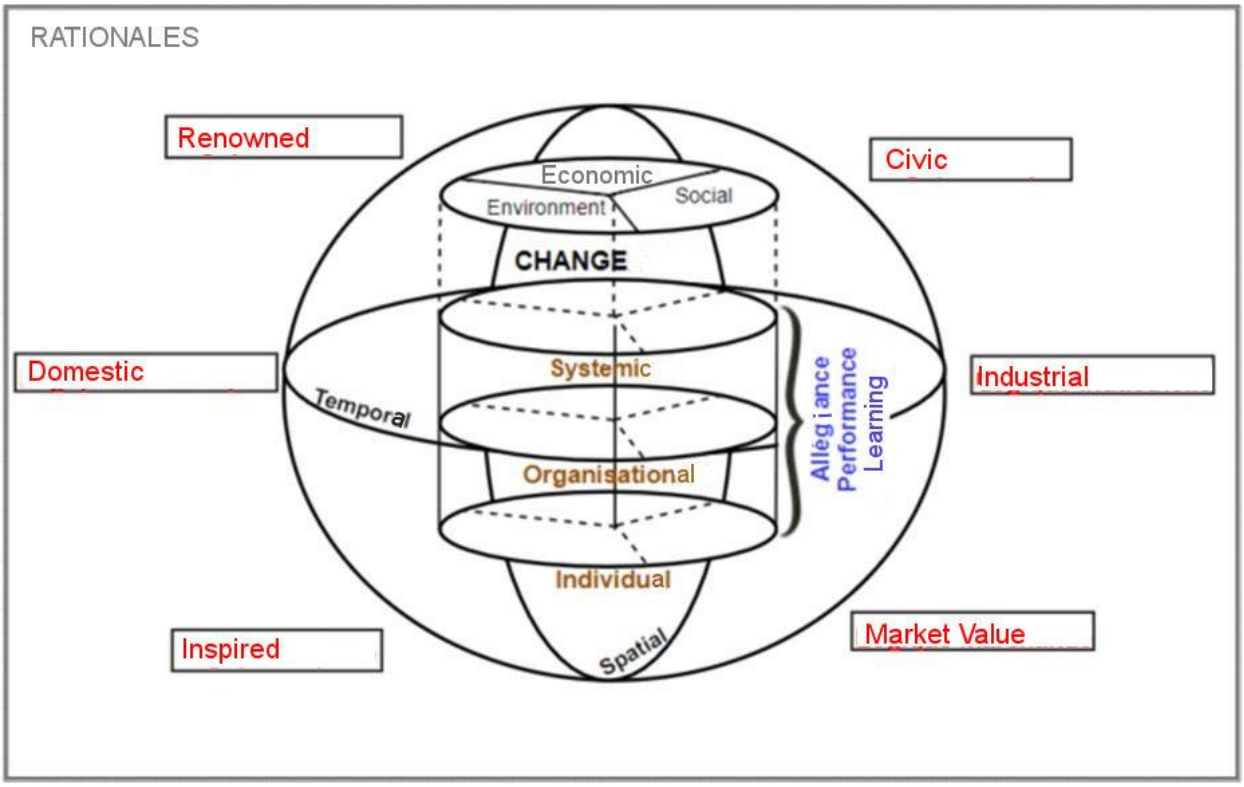

Figure 1: Suggested theoretical framework diagram (the diagram is inspired by that of Hahn et al., 2015)

3. Methodology and empirical experimentation

3.1. Methodology used

To test the usefulness and relevance of the model suggested, we apply it to an exploratory case identified by theoretical sampling (Glaser & Strauss, 1967), a case that allows us to examine a variation in the phenomenon under study, namely the tensions and their justifications between the SH of a complex project. This is a construction project, which allows following in vivo the tensions (our unit of analysis) that ravel and unravel as events unfold.

We also chose this case for reasons of convenience: two researchers from the group were already involved in the study of this case from a different angle, which allows easy access to the data. In

addition, their knowledge of the case also helps to refine the understanding of the elements of the context and of the events marking the development of the project.

To ensure credibility in the process, we respect the principles outlined in qualitative research, namely a triangulation of sources (press clippings; public presentations; interviews; participant observation; some confirmative meetings). In short, we used the following material:

- 35 press clippings between 2011 and today from local and national newspapers (to respect the anonymity of the parties, we will refer to those press clippings by citing them by a number).
- 54 meetings with all parties associated with the project (anonymized data).
- 21 of those meetings dealt, among other things, with the issue of the host community (one of the two SH that caught our attention in this article).
- Participation in meetings as an observer (observation notes).

The data from this corpus were coded according to the suggested analysis grid (the categories of tension – the justifications of the positions of the SH), first by two researchers who have no direct link with the project team, and then this coding was reviewed by two researchers who have direct links to the project who were able to validate or question the coding choices of the first team.

To enrich the model from the analysis of an in-depth case, it focuses on the dynamic relationship between two major parties in the project's development process, a non-profit organization (NPO) that acts as the project manager (PM), then a host community, which has the resources essential to carry out the project. Spokespersons from both parties will be presented to the results section. The choice of the tension in between those two SH as a unit of analysis to verify the relevance of the model is justified by the criteria suggested by Mitchell, Agle & Wood (1997) to establish the management priorities to be given to SH, namely the criteria of power and legitimacy of the stakeholder and the urgency of the situation that concerns it. The presentation of the case highlights those elements.

3.2. Presentation of the case

Located in the Province of Québec (Canada), the 'Vision 2023' project initiated in 2010 aims to construct a first forest residues biorefinery in Canada. The investment required for this project is $1 billion (Canadian). The plant will use 1.2 million metric tons of biomass per year for an annual production of 207 million liters of biodiesel. This amounts to the consumption of 150 000 road vehicles. The raw material consists of residual biomass left on cutting beds as a result of conventional logging operations. The project plans to create nearly 800 jobs, 500 of them during the construction phase. In addition to strengthening Québec's energy independence, it helps tackle the issue of climate change with a CO_2 emission reduction estimated at 575 000 tons/year for 25 years. (press clipping 1; 18 January 2017)

This project is managed by a non-profit organization created in 2015 under the aegis of 3 forest engineers, 1 university professor, 1 representative of a high-tech company. The mandate of the NPO is to establish all the necessary conditions for the development of the bioenergy sector in the targeted territory, including the production of renewable fuels. The permanent employee and its president represent the project managers (PMs). They have established the project from the start with a view to sustainable development with shared value goals, win-win outcomes for SH affecting or affected by the project. The project's objectives as presented by the PMs are to:

- to diversify the supply of liquid fuel dedicated to mobility through the production of biodiesel, renewable green energy;
- promote socio-economic diversification in a region where 40% of jobs are directly linked to logging and timber processing, two industrial sectors that have been hit hard for years by the decline in the use of pulp and paper;
- ensure sufficient profitability to meet the expectations of private investors needed.

In the fall of 2016, the project received $1.5 million in financial support from the Government of Québec, used as leverage for a $4.6 million financial package necessary to carry out techno-economic studies and involve different Québec and international scientific institutions (press clipping 2; 12 September 2016). The timetable for those studies is set at two years to demonstrate the viability of the biorefinery. This formal support kicked off several activities, including

feasibility studies, which attracted the interest of SH. Those developments have publicly raised concerns from SH that reflect some positive anticipated outcomes, but also potential tensions.

Among the SH who have expressed concern about the project, one stands out according to the criteria set out by Mitchell et al. (1997). That stakeholder owns the land where it is found the resource essential for biodiesel production, which is why we will call it a host community. Their sovereignty over that territory gives it scrutiny right. It also enjoys great legitimacy that is recognized by the public authorities (provincial and federal governments). Then, the socio-economic situation experienced by the members of that community is also unanimously recognized as urgent. It is, therefore, a priority STKH, and it is the relationship between the PM and that STKH that will be the focal point of the following analysis.

4. Results

The theoretical tools developed highlighted the categories of tension as well as the positions of the two main parties associated with the project: the MP (NPO represented by its administrator) and the host community (represented by its elected spokesperson). In the following section, we present the main tensions that have been identified from the data coding.

4.1. Allegiance tensions

On several occasions, the host community, through its representative, declared its willingness to be an integral part of all stages of the project, and stated that it did not feel integrated right from the start (press clipping 3; March 2, 2017). The host community spokesperson said that "*we have been completely ignored and yet it is on our territory that it will happen. We want to work together to benefit from the economic development as well*" (press clipping 4; September 8, 2016). That is a "domestic" justification that invokes the respect of the landowners by the other parties. The political council of the host community deplored the fact that it has been faced with a *fait accompli* by learning about the project through the local media, without being invited to a formal meeting. *"We were not consulted, we got knowledge of the project in the media. We were not approached. We're the ones who approached [the people in charge]. They do not understand the legal reality in Canada. "* (interview 1; August 25, 2016). The legal reality invoked is

complex to grasp in detail, but it indicates that the agreement of the host community, which has aboriginal rights, is essential to carry out a project on its territory. Moreover, according to the same legal reality, the project manager could not enter into direct negotiations with the host community since this process is devolved to government representatives. The PM said, *"We want to work with [the host community]. In any case, all forest, mining, or natural resource development must always be done in perfect symbiosis with the communities present in the territory. [...] But it's a complicated issue. For example, in regards to logging, it is up to the provincial governments to negotiate agreements with them. "* (interview 2; June 22, 2016). In fact, '*no agreement can be reached with [the host community representatives], because they negotiate exclusively and directly with the government*.' (interview 3; June 2, 2016).

In such circumstances, the PM has been more closely linked from the start to financial and academic partners to analyze the techno-economic feasibility of the project. Those SH share more of an "industrial" rationale. The host community felt excluded from the project and that generated tensions of allegiance that could jeopardize the project considering the legal power, the legitimacy possessed by this SH. Those tensions had to be managed as a priority later.

4.2. Dimensional tensions

Dimensional tensions (economic, environmental and social) are likely to emerge in relation to the way in which the resource is processed. In the industry, the perception of biomass is mainly productive and economical. It is seen as exploitable capital in monetary terms, as a consumable commodity, or even in CO_2 stock. According to one of the influential parties with the MP, *"When you cut down a tree, you cut the head, [...] [this one] stays in the forest, [...] 650 000 to a million metric tons [of wood residues per year] get wasted like that. And all this ... makes CO_2. [...] that gets wasted in our forests, but that we will be able to use in our vehicles"* (interview 4; August 3, 2016).

This "industrial and commercial" productivist rationale does not match with that of the host community. For the latter, the forest has a more cultural dimension. For example, their native language is closely linked to the forest environment. *"It is a language that has been developed from the forest. To preserve culture, it takes a minimum of untouched territory and language is*

the basis of the culture. " (interview 5; August 4, 2016). Among community members, the forest also carries a spiritual dimension, with the harvesting of forest medicinal plants in relation to their traditional ceremonies. *"On the spiritual side, medicinal plants are an integral part of all our ceremonies. That's why we often go to the forest to pick them up. But when the forest machines pass on it, they break the spirit of the plant."* (interview 5; August 4, 2016). This "domestic" view of the forest is another source of tension to be considered by the PM.

4.3. Learning tensions

Learning tensions may emerge as SH use divergent rationales, domestic in nature for the host community, and more industrial for others who have influence and power over the PM. The host community has a significant need for training and jobs for its local population in order to respond to strong population growth. *"We want to create jobs to ensure income security and bring in money. We want to have more jobs related to the development of the territory. And if there are jobs to be captured, it's in forestry"* (interview 5; August 4, 2016). *"We need jobs, we need training. It doesn't matter what kind of job. Training and school are good, but if you go to school and you don't have a job afterward it is useless. That's what young people say."* (interview 1; August 25, 2016).

Other SH, closer to the PM, also point to a significant need for labor, some of which with a high level of skill. This needs to match the positions to be filled and the qualification of the workforce is of an "industrial" nature; it would be a matter of effectively matching the resources in the system to be developed. To achieve this, it is envisaged to make the area more attractive. For example, the former mayor of the city suggested, *"We want to put in place infrastructure to attract people to our region. We have ski slopes, ski trails, a golf course in the middle of the city, we have accessible lakes and rivers. We want to attract people to settle their families. We are trying to attract young people because we are going to need technicians and engineers ... we are going to train new workers, we are going to create a research center. "* (interview 4; August 3, 2016).

Thus, depending on the needs of each individual, learning tensions are highlighted: there is an abundant workforce in the host community, but their skills and learning needs do not match with the need for a highly-skilled workforce required by the project.

4.4. Performance tensions

The learning tensions mentioned are related to performance tensions. For the host community, the socio-economic enabling and empowerment of its population and its leaders is a goal to be achieved through the implementation of the project. Ultimately, the community wants to be able to meet its needs independently in terms of investment capacity and technology implementation so that it can take part in decisions about development projects on its territory. In this regard, the forest policy advisor to the host community deplores the state of poverty in which it is plunged. This is an important barrier to its participation in development projects. *"The benefits are proportional to their wealth, compared to the investment put in. [...] [The host community] does not have the capacity to invest, thus to have a fair weight in decisions."* (interview 6; August 27, 2016).

This objective of empowering the host community is not fully shared by the PM at the start of the project, while it must also meet the expectations of other SH who do have the infrastructure, technical and financial capacity to get involved in the project. *"We have almost completed the funding for the feasibility study, we talk several million dollars. We're going to do an experimental plant, we're talking about a hundred million dollars ... we have all the ingredients to succeed. See 30 000 km^2 of territory and 30 000 linear km of roads. We have the land for the plant just out of the city with all the infrastructure; water, sewers, it's all there."* (interview 4; August 3, 2016). For those, the performance is more industrial in nature, i.e. carrying out the project with controlled timetables and costs for sufficient economic benefits.

4.5. Temporal tensions

The industrial rationale supported by several parties to the PM roots from a short-term perspective. In fact, the construction of the plant is planned for 2023. "*The longer we wait, the less chance we will have to use this resource at home for our energy needs and for our GHG reduction needs*" (interview 2; June 22, 2016). The perception of time among members of the

host community seems more complex. "*We talk about economic conditions when the price is low, but we do not talk about "ecological" conditions for the forest or cultural conditions… They are on long-term cycles*" (interview 5; August 4, 2016). This general comment on forest management is also detectable with regard to technology. *"Because, when it comes to technology, they have their own way of doing things: speed, and the cheapest possible, because there is global competition. But we don't have the same expertise as them, the same mentality."* (interview 5; August 4, 2016).

This concept of time holds another subtlety based on seasonal cycles related to the economic and territorial activities of the host community. The emphasis on traditional seasonal (domestic) activities in relation to forestry activities is a potential source of tension. The course of industrial operations is part of a continuous temporal continuum, while the host community's way of life calls for a concept of time that is more aligned with the seasons. A representative of the host community indicated that *"Our way of life follows 6 seasons. Currently, while we're talking about the territory, there is the issue of blueberries. Forestry workers let go of activities to go harvest blueberries. "* (interview 5; August 4, 2016). This polyrhythm is likely to affect coordination between SH.

4.6. Spatial tensions

Space tensions emerge from deferred representations of perceived space. That of the proponents who influence the PM is based on an industrial rationale that sees the territory as a resource to be exploited. On the other hand, the host community sees the territory as a living environment. Unlike many other SH that revolve around the PM, the host community lives in this territory. The project will affect both its socio-economic practices as well as its aesthetic and immediate living environment. The host community has a traditional view of the territory based on perceptions related to long-standing mores and customs belonging to a domestic rationale.

This duality of perspective related to space is likely to generate tensions. For example, forestry clear-cutting practices historically carried out by the forest industry can disrupt game supplies, a vital resource for the host community. When the Forest Act was introduced in 1987, this tension led to a project to seek legal redress. *"The first Forest law was issued in 1987, that's when they*

started logging. They gave permits to companies and big machines came in to clear-cut. We thought we'd go to court about that, the argument we wanted to use was: "a cut tree already has an impact on wildlife" and when wildlife is affected, it affects the population because 90, 95% of people feed on the game. If the game becomes rare because of certain operations, it really affects the [community]. " (interview 5; August 4, 2016)

Other negative impacts have been observed, notably concerning the health of the soil, which has been severely compromised by the passage of forest machinery. Those recurrent findings fuel a sense of suspicion among the host community about the logging methods of the forest industry, which are often managed from outside the territory.

4.7. Mitigation of tensions

The numerous tensions identified from the theoretical tools developed and experienced by the parties involved in the development of the complex project posed a threat to the continuation of the activities. Indeed, the host community wants its vision of the development of its territory to be integrated into the project. Otherwise, the inherent tensions may escalate. This was announced by the host community spokesperson: *"We would like to share the management [of the territorial development] but not in the sense that they understand. It's paternalistic; we want partnerships. [...] Often the image that comes back is that there cannot be two hands on the steering wheel. […] All we're saying is that it is possible to see things differently [...] but if it continues the same way, I think the relationship will deteriorate. […] So, the only way to be heard is the blockade [logging]. It affects everyone. It's not the best solution but it is when you're facing the wall, even if you don't want to get to that point. "* (interview 5; August 4, 2016).

To resolve that impasse, the PM initially focused on allegiance tensions. It is in that spirit that a first-hand meeting was organized between the PM and the host community representatives. The PM's comments reflect the atmosphere at the meeting: *"This first meeting, at once cordial, open and professional, allowed us to see that the visions and principles of development between the [host community], [the GP] and a [technology firm] are aligned. The job creation, even of new businesses, for the region, but especially for our people, especially for young people [in the host community], is a shared vision. While much work remains to be done, support [from the host*

community] is another important step in ensuring the success of the [Vision 2023] forest biorefinery project" (press clipping 3; March 2, 2017).

Following that meeting, a representative of the host community was added to the NPO board of directors, which acts as a PM in this project. Then, it was decided to accede to a request from the host community and to set up the NPO headquarters on the grounds of the local community (press clipping 5; 19 January 2018). Those two concrete actions were a way to ease allegiance tensions and open up a discussion about other potential irritants. As a result, the PM became more aware of the needs of the host community and has stated that steps shall be taken to find solutions. According to the PM, *"To power a large refinery like the one we are going to have, we will need biomass preparation sites. Those sites will be installed in [host communities], creating jobs and new businesses"* (press clipping 1; January 18, 2018). In addition, the PM also reaffirmed the focal points between the SH, including the clear inclusion of the project in an environmental rationale, which facilitates the allegiance of all and helps to mitigate spatial tensions. In that regard, the PM recalled that *"it is at the level of environmental issues that we have to communicate with [the host community]; promote site regeneration, improve animal circulation; we don't want to harm the environment! "* (interview 2; June 22, 2016). The project feasibility studies also present an environmental component whose objective is to identify areas where the removal of forest residues would have the least negative impact on soil and ecosystem regeneration and which would allow easing some of the spatial tensions.

Thus, the dialogue that began between the SH after the meeting, and the concrete actions that followed, helped to establish a relationship of trust between the parties. This confidence was underlined during a unifying discourse by the host community spokesperson in November 2017 where he reiterated its support for the Vision 2023 project and the development of the sector on the host community territory.

5. Discussion and conclusion

The suggested theoretical framework allowed detecting tensions and resolving them based on a complex project case. The tools mobilized, namely the Smith & Lewis (2011) and Hahn et al. (2015) models made it possible to sort categories of tension and to better understand the risks

associated with the management of SH. The categorization of tensions provides an enriched understanding of the relationships between the parties involved and also allows us to observe mandatory steps to mitigate certain tensions in order to open the discussion to find others.

The contribution of the Boltanski & Thévenot model (1991) was also an enriching experience. It sheds light on the justifications of SH positions on different categories of tension. Understanding those justifications is an indispensable tool for managing tensions as well as risks of conflict and crisis between SH that would jeopardize some complex projects. In that sense, the proposed theoretical framework appears to be useful and relevant from a practical perspective and deserves to be enriched by other field research.

That being said, the use of the model and its application to a case allow to propose two theoretical perspectives that emerge from the data analyzed and which can contribute to the following models:

1. Several tensions over various categories can draw on the same justifications;
2. Prioritization of tension categories can make it easier to resolve them.

5.1. The same sources of tensions

Figure 2 below illustrates the observation that allegiance, dimensional, temporal, learning, performance and spatial tensions are linked by the same stress situation with regard to the rationales that oppose industrial and domestic conventions.

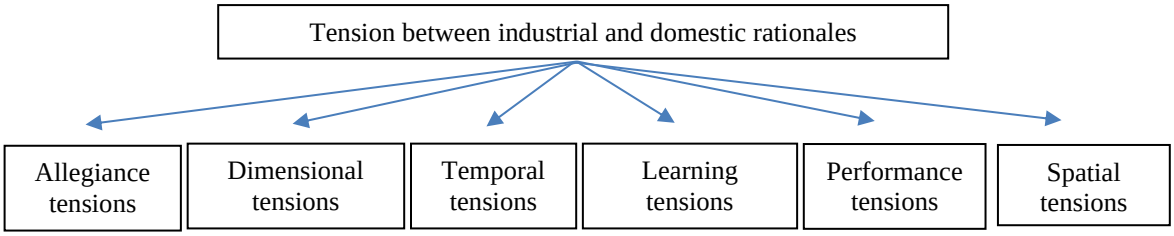

Figure 2: Relation between the categories of tension and the rationales

In this case study, the PM first mobilizes technical partners (technologists, researchers, financiers) to illustrate the feasibility of the project through plans and specifications that meet institutional demands (e.g. government levels and investors). The scientific approach, the

performance, the efficiency, the forecasts, the measures, the investments are constant concerns during the first mobilizations of parties. The content analysis of interview notes and press clippings allows associating those concepts with industrial rationale. This rationale is present in each of the identified tension categories. In addition, references to heritage, territory, local, and traditions are associated with the domestic rationale described in Boltanski & Thévenot (1991) work. This rationale is also present in each of the tension categories studied and is supported by the host community representatives. Chronologically, it was after bringing together several partners who share the industrial rationale that the PM had to acknowledge a series of tensions emerging from claims of a different nature, a domestic nature.

Those findings support the idea of giving paramount importance to the justifications of the parties' positions in order to understand the tensions on each of the categories listed. This is a theoretical contribution to the Lewis & Smith (2011) and Hahn et al. models (2015) who do not consider that second level of analysis in their respective work. This theoretical contribution responds to one of Cunha & Putnam's (2019) calls for the recognition of double paradoxes, those that are structured within another paradox. This observation also provides a practical contribution since the easing of several tensions can come through the mitigation of one of them from another level if it is correctly identified.

5.2. The prioritization of the categories of tension

Without a reduction in tensions of allegiance, no other tension could have been eased. Without an opportunity for the host community to feel that they are truly priority SH to the project, the other topics could not be discussed. In this case study, there is a mandatory step that allows the resolution of the impasse and opens the way for the discussion in regard to the sources of tension in the context of mutual trust. The tensions we are talking about here are at the same level of intervention, one not at the heart of another as is the case with the tensions between the rationales. That being said, there is a prioritization of tensions found in the case that is not integrated into the Lewis & Smith (2011) and Hahn et al. models (2015). That recognition is a theoretical contribution, whereas the determinants of scheduling would be an avenue of research to be pursued. In fact, under what circumstances do allegiance tensions take precedence over others? The question can be asked for all categories of tension. In addition, that finding enriches

the PMs practice who wishes to identify the key factors for the success of a complex project – identifying priority tensions provides access to the questions and ambiguities that can then be studied in order to be resolved.

5.3. Limits and future research

Finally, some limitations related to this study and the results must be outlined. First, at the theoretical level, the models chosen to be combined were selected as a complement to the Smith & Lewis base model of 2011. Why that one? Because it is recognized as being at the core of the theoretical conversation about the paradox model. Other models could have been combined to complement each other in order to recognize the dimensions of tension in the organization, between organizations and in terms of the justifications for those tensions. The risk with such a choice is that of exclusion of tensions not identified by the basic model. That is the limit reported by Cunha & Putnam (2019): "*Two shortcomings – exclusion and isolation – can result from readily adopting an a priori category system. Exclusion refers to ignoring other types of paradoxes that do not fit neatly into the four-part classification system*." (*Cunha & Putnam (2019), p. 98*)

Secondly, the presentation of the results, which mainly concern two major parties linked to the project, does not capture all the tensions, agreements, disagreements, arrangements involving other SH related to the project. A more inductive approach, without a previously developed theoretical framework, would allow tracing in more detail the development of the collective compromise that allowed the project to be structured in agreement with the parties involved.

The other limitation is the choice to consider SH as homogeneous groups that share common visions of the project, visions represented by their spokespersons. While this premise seems reasonable when it comes to the PM, it seems more questionable when it comes to the host community, which is made up of several subgroups whose visions may vary between them. A more comprehensive study of those subgroups positions and their influence on their spokespersons would provide more qualified results.

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