"I'd give my right arm to be ambidextrous": Middle Management Roles and Practices in Organizational Ambidexterity

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Résumé :

Efficiently exploiting an existing business while simultaneously exploring new opportunities can generate tensions for actors who find themselves at such a crossroad. These tensions arise, in particular, for managers of exploration entities, who need to pursue long-term exploration missions, but are often evaluated through short-term exploitation-oriented corporate governance rules that conflict with the nature of such missions.

Based on four longitudinal case studies of exploration entities, we shed light on the specific practices that exploration entities' managers adopt to overcome these tensions. We label the four emerging strategic roles as promotion, conformism, transformation, and decoupling. Our results illustrate how middle-management individual factors aggregate at the collective level and can be linked to the way the exploration entities evolve over time and how these factors facilitate or impede the organizational ambidexterity.

Mots-clés : ambidextrie; middle managers, tensions, labs d'innovation

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INTRODUCTION

For the simultaneous development of incremental and radical innovations, Tushman and O'Reilly (1996) proposed separating the organizational units in charge of these initiatives and integrating them through top managers (O'Reilly and Tushman, 2004; Smith and Tushman, 2005). Organizational entities dedicated to exploring new opportunities within established companies have developed rapidly in recent years in response to increased competition from innovation brought by new players who are disrupting entire industries (for example, hotels, transportation, banking, and insurance). We will refer to these units as "exploration entities".

In our research on these structures we have repeatedly noticed the following pattern in the field: after an initial phase of enthusiasm and support, during which the entities are allowed a high level of autonomy, top management tries (without changing the exploration mission) to progressively steer the units more strictly and/or imposes reporting via indicators that are traditionally used in the rest of the company (project return on investment, number of patents filed per year, etc.). The exploration entities' managers, who are middle managers (MMs), then find themselves facing a contradiction between the exploration mission and the governance rules. They must therefore address the tradeoff between exploration (the mission) and exploitation (the governance rules); they are at the heart of the interface between exploration and exploitation.

Despite the regular occurrence of this tension, the specific roles of the exploration entities' managers in achieving organizational ambidexterity by making choices and

appraising tradeoffs between exploration and exploitation has, surprisingly, rarely been studied *per se*. Indeed, the stream of research on organizational ambidexterity has mainly focused on the top management team (TMT), at the cost of neglecting middle management. This research (Andriopoulos and Lewis, 2009; Mom et al., 2009; Smith and Tushman, 2005) has focused on how senior executives make decisions in this context, embrace paradox, and acted ambidextrously.

On the other hand, the academic perspective on middle management's influence on organization-level processes has mainly been focused on strategic change. Campbell et al. (2012) have called for identifying the individual microfoundations of competitive advantage and have suggested that the role of MMs be taken into consideration. We intend to answer their call and explore how the practices of the MMs in charge of exploration entities constitute microfoundations of organizational ambidexterity at the individual level.

We begin with a literature review on both the foundations of organizational ambidexterity, and how MMs influence organization-level processes. Next, we present our research design. With four longitudinal case studies of exploration entities, we shed light on the main patterns of practices of the managers who face contradictions generated by the search for organizational ambidexterity. Based on these practices, we identify four main overarching strategic roles of exploration entities' managers and the relation of each role to organizational ambidexterity. Finally, we discuss the main contributions of our research and conclude with managerial recommendations.

1. THEORETICAL FRAMEWORK

1.1. ORGANIZATIONAL AMBIDEXTERITY AND ITS FOUNDATIONS

A number of researchers (Duncan, 1976; Jansen et al., 2012; Junni et al., 2013; Raisch et al., 2009; Tushman and O'Reilly, 1996) have suggested that organizational ambidexterity enables the concurrent development of incremental and radical innovations, and thus the

simultaneous deployment of exploitation and exploration learning processes. Various models of ambidexterity have been outlined. Raisch and Birkinshaw (2008) distinguished between ambidexterity within the boundaries of the firm and ambidexterity across its boundaries, such as network ambidexterity (Kang et al., 2007; Lavie and Rosenkopf, 2006; Rothaermel and Alexandre, 2009), where exploration is undertaken by partners (suppliers, startups) with whom alliances and relations are built in order to share the produced knowledge.

Within the boundaries of the firm, ambidexterity can be achieved through various configurations. Ambidexterity is said to be "structural" when it relies on setting up a specific entity that is separate from the rest of the firm and dedicated to the development of radical innovations. Although separate, this entity is integrated with the rest of the firm at a strategic level (Benner and Tushman, 2003; Christensen, 1998; O'Reilly and Tushman, 2004; Tushman and O'Reilly, 1996). As highlighted by O'Connor and DeMartino (2006), establishing a specific entity in charge of exploration enables sustaining attention and resources (King and Tucci, 2002), accumulating common experience and exploration learning (Argote, 2012), improving practices (Kogut and Zander, 1992), and developing appropriate competencies without being trampled on by the rest of the firm (Dougherty, 1995).

These potential benefits of structural ambidexterity help explain the recent proliferation of organizational entities dedicated to exploration; between March and October 2016, 87 of these structures were launched worldwide (2017 Report, CapGemini Consulting; Fahrenheit 212; Altimeter). These exploration entities are corporate venture units. They are referred to by a variety of terms such as "innovation labs", "social tech labs", "innovation centers", "change labs", "design labs", or simply "labs", and share the same objective: to explore new methods (creativity, agility, rapid prototyping) and new areas (artificial intelligence, digital technology, new services, social and inclusive business, etc.) for the company (Ben Mahmoud-Jouini,

2015). However, with some exceptions (Hill and Birkinshaw, 2014), we still know little about the specificities of the management of these exploration entities.

The role of individuals in achieving organizational ambidexterity has so far mainly been studied using the contextual ambidexterity approach, which suggests that the balance between exploitation and exploration can be ensured through the development of a supportive organizational context involving a carefully selected set of systems and processes (Gibson and Birkinshaw, 2004). We still need to better understand the actors' actions, decisions, accounts, practices, and roles that underlie organizational ambidexterity (Mom et al., 2009). Indeed, several scholars have recently proposed further longitudinal exploration of how individual practices might facilitate or impede the achievement of organizational ambidexterity over time (e.g., Birkinshaw and Gupta, 2013; O'Reilly and Tushman, 2013; Turner et al., 2013). More research is therefore needed to gain knowledge about the multi-level interdependencies involved in organizational ambidexterity, for two main reasons.

First, Jansen et al. (2009) demonstrated that structural ambidexterity provides a necessary, yet not sufficient, condition for organizational ambidexterity, as ambidextrous organizations need routines and processes to mobilize, coordinate, and structurally integrate separate exploration and exploitation activities at all levels of the organization. Andriopoulos and Lewis (2009) highlighted that ambidexterity generates a need for integration tactics such as behavioral integration among the upper management (Lubatkin et al., 2006), cross-functional teams (Jansen et al., 2005, 2009), and a synergetic combination of optimized organizational practices (Kim and Rhee, 2009), at both the macro level, through the creation of separate organizational entities, and the micro level, by pushing employees to be accountable for their results and creating a favorable climate for innovation (Agostini et al., 2016). On this view, launching an exploration entity is "only" the first of several steps. It is

the individual practices in day-to-day organizational life that will eventually aggregate at the organizational level into a sustained dynamic capability, that is, organizational ambidexterity (Dong et al., 2016; Fallon-Byrne and Harley, 2017).

Second, in these streams of research, the TMT regularly appears as the key actor in developing an organizational context that is favorable for organizational ambidexterity. March (1991) described the contradictions that arise from the coexisting exploration and exploitation learning modes. Some authors (Lewis, 2000; Smith and Tushman, 2005) have analyzed these contradictions at a strategic top-management level. Ben Mahmoud-Jouini and Charue-Duboc (2012) demonstrated that the contradictions occur because the exploratory and exploitation units are both separate and integrated. These contradictions arise, for example, in the form of potential cannibalization of products or strained relations with customers or suppliers. They also arise because the mission of the exploration entity (to search for new sources of growth, identify societal trends, changes, and technologies that could potentially disrupt the market, etc.) involves repeated tradeoffs between activities that involve the same resources (He and Wong, 2004; Hill and Birkinshaw, 2014). Andriopoulos and Lewis (2009) also highlighted the contradictions that occur when a company simultaneously seeks to develop capacity for the future and secure its current success. The consequences for the company's leadership have also been studied (Lewis, Andriopoulos, and Smith, 2014; Smith, 2014). However, apart from making ambidexterity a corporate priority and providing a supportive context, top management does not directly monitor the balance between exploration and exploitation, which is instead delegated to the middle management. Similarly to the TMT, managers of organizational entities dedicated to exploration can encounter tensions when trying to sustain organizational ambidexterity on a daily basis. These MMs can find themselves at crossroads between exploration and exploitation activities, facing intricate tradeoffs and contradictory

organizational demands. However, surprisingly, research exploring the role of MMs in organizational ambidexterity is still very scarce (Birkinshaw and Gupta, 2013; O'Reilly and Tushman, 2013).

1.2. MIDDLE MANAGERS AND ORGANIZATION-LEVEL PROCESSES

It is hard to find a consensual definition of what, exactly, MMs are (Rydland, 2015): the term encompasses a broad range of levels and responsibilities in contemporary organizations (Woolridge, Schmid, and Floyd, 2008). In line with Huy (2001), we consider MMs to be actors situated at least one level above frontline employees and at least one level below the TMT. We adopt this definition because business unit managers are designated in the MM literature. The definition also includes managers of organizational entities dedicated to exploration, who are often one level below the CEO or the VPs (often of R&D or strategy) and at least one level above the entity's frontline employees.

The vast majority of studies that have explored how MMs' individual-level roles and practices socially "aggregate" (e.g., Barney and Felin, 2013) in organization-level processes have focused on the scope of strategic change processes (e.g., Floyd and Woolridge, 1992). These contributions often shed light on how MMs contribute to the strategy from their intermediate position in organizations (Browne, Sharkey Scott, and Mangematin, 2015; Rouleau, 2005). This stream of research has progressively shifted from casting MMs as foot-draggers leaning toward the *status quo* during the strategic change process to recognizing their importance as change agents (Rouleau and Balogun, 2011; Rydland, 2015).

Based on their synthesis of the earlier literature, Floyd and Woolridge (1992) described four different strategic roles that MMs might adopt during strategic change processes, each of which is distinguished by a unique combination of behavioral and cognitive components: framing the situation that is at stake, which can be divergent from or convergent with the TMT's framing, and behavior during strategy formulation and implementation, which can be

upward toward the TMT or downward toward their teams. Floyd and Lane (2000) clarified the discussion of managerial strategic roles by distinguishing roles for top, middle, and operating managers. More recently, Browne, Sharkey Scott, and Mangematin (2015) studied deliberate strategy divergences between MMs and the TMT and identified five different MM responses to strategic issues: good scout, obedient child, local expert, shirker, and challenger. These responses are differentiated based on the MMs' framing of the strategic issues (aligned or misaligned with the TMT's framing) and their actions or operationalization of the strategy (aligned or misaligned with their interpretations of the TMT expectations). They focus on the fact that MMs *interpret* the TMT's expectations. However, it should be noted that the TMT's expectations can also materialize through the governance rules it imposes on the MMs.

Surprisingly, less academic research has focused on exploring the role of MMs in implementing and sustaining organizational ambidexterity (Birkinshaw and Gupta, 2013; O'Reilly and Tushman, 2013). In this regard, previous research on MM activities during strategic change is helpful but not sufficient. Indeed, to sustain organizational ambidexterity in the day-to-day organizational life, MMs must combine their framing and understanding of their exploration mission (for example, identifying promising market opportunities), the TMT's expectations (for example, quantifying a project's expected return on investment), and their team's expectations (for example, absorbing demands from corporate governance that might interfere with their team's exploration activities).

It is therefore necessary to mobilize a lens that can explore more deeply "how individual level factors aggregate to the collective level" (Barney and Felin, 2013: 145). Such a perspective will explore how the social aggregation of MM practices might constitute the microfoundations of organizational ambidexterity, as a better micro-understanding of MMs' strategic roles will eventually provide us with a more comprehensive understanding of

organizational ambidexterity as a dynamic organizational capability (Dong et al., 2016; Fallon-Byrne and Harney, 2017).

1.3. RESEARCH QUESTIONS

Our research questions aim at providing deeper insights into the practices of MMs that underlie organizational ambidexterity as a dynamic capability, for two main reasons. First, the research stream exploring the foundations of organizational ambidexterity has mainly focused on the strategic roles of the TMT, which decides to launch an exploration entity. However, we still need to learn more about the individual-level roles and practices of the MMs who must sustain the day-to-day exploration activity. Second, the research on MM practices has been focused on strategic change processes and articulated around dichotomies (for example, either upward or downward) that might be less relevant when studying the individual microfoundations of organizational ambidexterity, which are more about dilemmas and tradeoffs than dichotomies. Moreover, the traditional dichotomy that opposes the phases of strategy formulation and strategy implementation also seems less suited to research on organizational ambidexterity, in which these phases are entangled. Hence, our research questions are:

What are the specific patterns of MM practices that facilitate or impede organizational ambidexterity?

What are MM's main strategic roles with respect to organizational ambidexterity that emerge from these patterns of practices?

2. DATA AND METHODS

2.1. RESEARCH DESIGN

We adopt a multiple case-study research design that involves detailed, inductive investigation (Eisenhardt and Graebner, 2007). The research setting consists of four companies (INDUS, ESTAT, AERO, and CONST) that had launched organizational entities

dedicated to exploration. Analyzing the creation and evolution of these exploration entities can help to illuminate practices that might otherwise be hard to study (Siggelkow, 2007). To secure data that would allow us to answer our research questions, we decided to focus on companies that adopted structural ambidexterity, because we thereby ensured that the TMT was committed to achieving organizational ambidexterity. Focusing on this single type of organizational ambidexterity would also help to increase the coherence of our findings.

In choosing an inductive design, we traded off concerns about limited external validity against the opportunity to gain deeper insights into a poorly documented phenomenon (Eisenhardt, 1989; Yin, 1984). Our research approach aimed at identifying diverse examples of MM practices and roles related to organizational ambidexterity and investigating how these emerged and changed over time (Birkinshaw et al., 2017). A multiple longitudinal case-study design allowed us to observe emergent patterns of practices, rather than aiming at confirming or disconfirming predetermined roles previously found in the academic literature. We restricted the scope of our research to companies that had recently (less than 18 months at the beginning of data collection) engaged in the launch of an exploration entity, as they were more likely to be willing to reflect on their practices. The organizations we studied were selected based on their potential to provide theoretical insights, revelations about an understudied phenomenon, and elaboration of emergent theory (Eisenhardt and Graebner, 2007). We selected four exploration entities that had different trajectories, among a corpus of our research in exploration entities.

2.2. DATA COLLECTION

We gathered data for this study from multiple sources (see Table 1). Our primary qualitative data collection mode had three components. First, we interviewed the managers and employees of the entities and the main corporate stakeholders (for example, the R&D director). Second, we observed and recorded (whenever we were allowed) meetings inside the

exploration entities (e.g., the entity's manager detailing the new corporate priorities to her team) and outside of these entities (e.g., the entity's manager presenting the entity's new projects to the TMT). Third, we collected detailed observations of the day-to-day organizational life inside the exploration entities by being there and experiencing the workplace with the team. We also collected relevant secondary data (Twitter feeds, internal documents, memos, reports, presentations, email, etc.)

We collected our data between May 2014 and August 2017, the specific period depending on the company. We conducted 74 interviews, observed 52 meetings, and had periodic conversations with the entities' managers, their teams, and the TMTs throughout the period. We used open-ended questions, which allowed respondents to raise avenues for discussion that we had not yet considered. To minimize respondent bias, we interviewed the exploration entities' managers several times over the course of the case studies and solicited multiple perspectives on specific topics. Table 1 provides an overview of the data we collected for this research.

Table 1
Data collected

	INDUS	ESTAT	AERO	CONST
Exploration unit	EXPLOR1	EXPLOR2	EXPLOR3	EXPLOR4
Period of study	November 2014 to January 2016	April 2015 to January 2016	May 2014 to August 2017	January 2015 to August 2016
Primary data	Meetings (9), interviews (35), observations (112 half days)	Meetings (25), interviews (22), observations (71 half days)	Meetings (12), interviews (10), observations (48 days)	Meetings (6), interviews (7), observations (48 days)
Secondary data	Twitter feed, letter of mission	Mail, documents presented during meetings, benchmarks	Presentations of the lab, documents presented during meetings	Reporting documents
Sector	Industry	Services	Industry	Services
Company's size	50000	3000	10000	50000
Unit's size	22	11	26	3 + 4 part-time externals
Unit's budget	Approx. 3M €	Approx. 3.5M €	Approx. 4M €	Approx. 750k €
Origin of unit's members	Mainly recruited from outside the company	Mainly recruited inside the company	Mainly recruited from outside the company	Mainly recruited inside the company
Exploration unit's initial mission	Identification/generation of opportunities + incubation of projects	Identification/generation of opportunities + incubation of projects	Identification/generation of opportunities + diffusion of an innovation-centric culture	Identification/generation of opportunities + incubation of projects
Exploration unit's mission after 18 months	Identification/generation of opportunities + incubation of projects	Internal consulting on innovation topics	Identification of opportunities related to business needs	Ended

2.3. DATA ANALYSIS

We used established approaches for qualitative inductive data analysis and followed an

iterative process of theory development and analysis (Eisenhardt, 1989). First, we transcribed and analyzed data using established coding techniques (e.g., Langley, 1999). Following a longitudinal study approach (Ambos and Birkinshaw, 2010), we first developed a schematic representation of what was happening in each exploration entity over time. Next, we identified the various practices undertaken by the managers over the period of study, aiming to understand the differences and commonalities across the practices. Then, based on an iterative process of evaluating the data against the literature, we identified two main dimensions that were emerging and could explain differences and commonalities across the patterns of practices. (4) Next, we identified the overarching strategic roles that were emerging from the MMs' patterns of practices. (5) Finally, we examined the contexts over time to understand the circumstances in which each middle managerial role emerged as well as its relation to organizational ambidexterity. We initially conducted these analyses independently, and then we jointly discussed and revised them.

3. FINDINGS

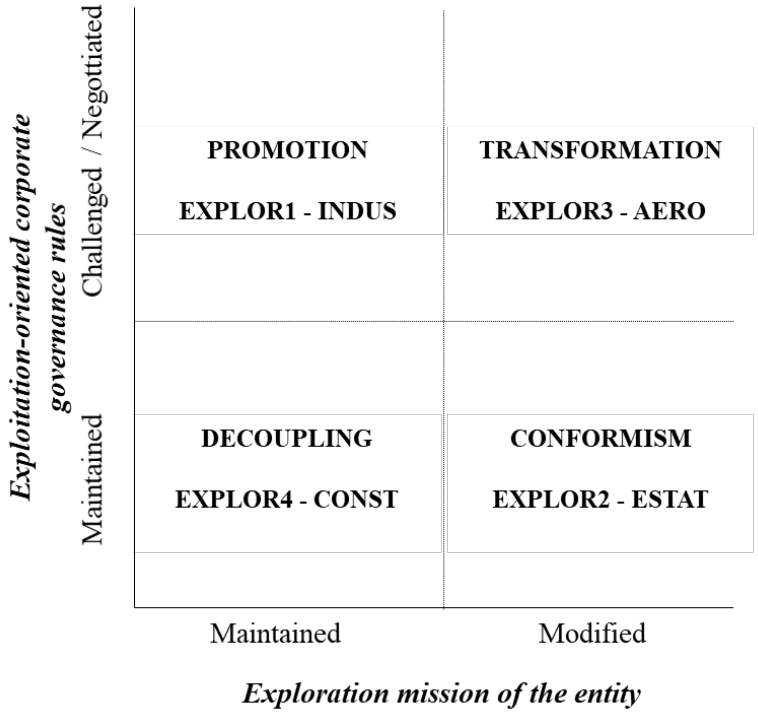
In this section, we present our model of four MM strategic roles related to organizational ambidexterity. Each role resulted from our analysis of the practices of exploration entities' managers. The findings emerged through an iterative process of analysis, balanced between inductive and deductive phases. Our starting point was a prior surprise in the field when we observed the recurrent tensions that organizational ambidexterity raises for the managers of exploration entities. This motivated us to look at the academic literature, which helped us to shape our research questions. We then analyzed the data we were collecting in exploration entities, and the emerging findings led us to take another look at the academic literature to guide our discussion of the findings, which we present in a separate section.

We began our analysis with three assumptions: First, exploration entities are launched by

companies who are committing to achieve organizational ambidexterity. Second, during the reporting exercise, the TMT often mobilizes traditional exploitation-oriented governance rules, which generate tensions for the exploration entities' managers. Third, faced with these tensions, the managers develop various practices, which can either lead the firm to achieve organizational ambidexterity or hinder it from doing so.

We found that, faced with the tensions between the entity's mission of exploration and the exploitation-oriented corporate governance rules, MMs of exploration entities adopted practices that (1) either complied with or challenged the governance rules and (2) either maintained or modified the exploration mission of the entity. The combined possibilities revealed four roles that MMs have regarding organizational ambidexterity: promotion (affirming the exploration mission and challenging or negotiating the corporate governance rules), conformism (modifying the exploration mission and complying with the corporate governance rules), transformation (modifying the exploration mission and challenging the corporate governance rules), and decoupling (maintaining the exploration mission and complying with the corporate governance rules). The following sections illustrate each role with an example case study.

Figure 1
Middle management strategic roles in organizational ambidexterity



3.1. PROMOTION

INDUS is a major industrial company in France that was experiencing a slowdown in sales growth. In response, the TMT decided to create an exploration entity (EXPLOR1) within the R&D department. Its mission was to analyze key societal and technological changes that could either pose a threat or present opportunities that could lead INDUS to *"finding a billion in 15 years"*. The team was composed of the exploration entity leader, three other managers under his supervision, and 18 employees. During the first year, EXPLOR1 reported its activity to the TMT based on presentations that highlighted neither value nor business plans, but rather societal trends and potential innovation domains that could be explored.

Apart from the mission, no practical arrangements were specified regarding the governance. The first questions regarding assessing the value creation of EXPLOR1 and appraising its performance arose after 18 months of operations, when the R&D VP (a member

of the TMT) asked EXPLOR1 to begin preparing for switching to a traditional R&D dashboard (project return on investment, number of patents filed per year, etc.).

Until this point, EXPLOR1 had come up with promising proposals (new market opportunities, analysis of fast prototyping technologies, mapping of the ecosystem in search of technologies or startups that could help target these opportunities, etc.). However, even though these first results were fully in line with EXPLOR1's mission, their value could not be assessed in accordance with the R&D criteria. In addition, the traditional biannual reporting timeframe was too short for EXPLOR1's activities that aimed to explore completely new areas for the company. A full move to the traditional governance would mean that EXPLOR1 would have to generate revenues based on projects that were not yet mature enough. EXPLOR1 could end up being poorly assessed if judged according to traditional development criteria and therefore lose its funding.

MIDDLE MANAGEMENT PRACTICES UNDERLYING PROMOTION

Facing the mismatch between EXPLOR1's exploration mission and the new corporate governance rules, the unit's managers sought to maintain the exploration mission while delaying implementation of the rules that would risk interfering with the mission. EXPLOR1 managers took actions in two areas.

First, the unit's managers tried to gain time by showing that the entity would soon be able to present financially profitable projects. They presented the TMT with partnerships with startups *"to be able to show projects that could generate revenue in the near future"*. During one meeting, an EXPLOR1 manager explained to the entity's team:

> *"The R&D VP wants us to gradually move to a more traditional P&L* [profit and loss] *system. Let's say that reporting will increasingly focus on more financial subjects…. So we have to take that on board."*

EXPLOR1's management team also highlighted the specific nature of their activities and pointed out the incompatibility between traditional dashboards and their exploration mission:

> "*The Executive Committee needs to learn what we can bring to the table. We need to explain to them that we do not operate in the usual manner, especially not in the way R&D does. They need to be reassured and we need to show them B2B examples that are like us."*

In addition, the entity's management team invited successful startuppers to a TMT committee meeting in which the entrepreneurs explained that it was critical to develop knowledge about usage, technology, and the business model before thinking of profitability.

In a second step, EXPLOR1's manager pointed out the variety of value created by the entity. He explained how the perceived legitimacy of EXPLOR1 in INDUS could be boosted through alternative contributions. He also underscored the entity's specificities in an argument presented to the R&D VP:

> "*The very reason our unit was created was to be different from R&D: to bring radical rather than incremental innovations. That's why we decided to use new methods such as ethnography, which take time.*"

This pattern of practices is characterized by the entity's management's will to maintain the exploration mission while negotiating a specific governance. We label the emerging role as "promotion". The contradiction between the entity's mission and the governance rules was overcome through partial compliance with corporate rules, claims of specific new rules, numerous explanations, and demonstrations of alternative value creation. Promotion involved both subtle negotiation and open conflict, highlighting how the rules were unsuitable and arguing for implementation of alternative indicators. Promotion required a lot of effort and resources that were consequently not dedicated to the exploration mission. This role was

particularly time-consuming for the entity's manager, but he indicated that it finally led the TMT at INDUS to shift their position:

> *"The R&D and finance divisions are working on revising the traditional criteria from R&D performance to innovation performance measurement. Things are looking up. Our interlocutors see the advantages, but the subject still needs to be developed."*

3.2. CONFORMISM

ESTAT's culture is centered on operational excellence and profitability, and each project is assessed according to these criteria. However, ESTAT's TMT decided to launch EXPLOR2, an exploration entity consisting of a manager and 10 employees, for two main reasons. The first reason was to centralize innovation, and the second was to address a threat from ESTAT's main competitor, which had just launched its own exploration entity.

One of EXPLOR2's first initiatives was to foster participative innovation and encourage sharing initiatives and ideas inside ESTAT. To this end, the entity manager proposed a tool to the TMT that would be custom built to support this collaborative mindset. However, the TMT turned down the project, underlining that the benefits of a collaborative tool would be too difficult to convert into financial savings, given the context of a "*tight budget for non-core-business investments*".

MIDDLE MANAGEMENT PRACTICES UNDERLYING CONFORMISM

Therefore, EXPLOR2's manager also had to contend with a contradiction between the entity's mission and the governance rules: the value creation of a collaborative innovation platform was difficult to justify in a context where the TMT expected a clear financial return on investment for the tool. Unlike the managers of EXPLOR1, EXPLOR2's manager and his team gradually altered their mission to adapt to the governance modes and indicators imposed by the TMT.

Notably, in response to the TMT's refusal to invest, the entity manager added a CRM (consumer relationship management) layer to the collaborative platform project, as this was easier to assess in terms of value, in line with ESTAT's criteria: the value of a CRM tool can, for example, be measured in terms of operational margin improvements. EXPLOR2's manager then chose a solution editor with ambitious benchmarks for the potential return on investment offered by its CRM tool. Even though this editor's CRM tool was generally considered to be the best available, this was not true of its collaborative solution capability, which was deemed lacking in maturity, simplistic, and limited in its features.

The TMT finally accepted this new iteration of the project, even though it was more expensive than the initial proposal. The roll-out began with the collaborative part, and the implementation quickly proved to be more complicated than originally expected. The collaborative tool exhibited numerous bugs, and ESTAT's users did not find it user friendly. A decision of the TMT made the situation worse: they asked that the innovation initiatives shared on the collaborative tool be non-confidential, arguing that "*it has to be a corporate tool and not some sort of Facebook*". ESTAT employees were not comfortable with unfinished work documents and rough ideas being visible to the line management, and they stopped using the tool.

Once the TMT heard of the mixed user feelings about the first part of the platform deployment, it canceled the CRM roll-out (even though it was, paradoxically, the addition of the CRM layer that led to the choice of this editor). The investment pressure led to a situation where it was difficult for the manager of EXPLOR2' to suggest terminating the project at the end of the pilot phase (even if it was very unsatisfactory) without placing himself at risk for having chosen a bad solution and wasted money. This led the entity's manager to decide to launch the collaborative part of the tool for the entire company, even though the solution was

known to be unsatisfactory. Thus, the collaborative innovation project was finally launched for all ESTAT employees, only to be abandoned 18 months later because it did not meet users' needs.

This pattern of practices is characterized by compliance of the entity's management with the imposed corporate governance rules and modification of the entity's mission, abandoning its exploratory dimension. We label the emerging role as "conformism". The entity's manager handled the contradiction between the entity's mission and the corporate governance by accepting the latter as prevailing over the former and, through a restructuring of EXPLOR2's activities, gearing the entity's activities to be in line with the company's exploitation-oriented governance rules. Rather than acting to preserve the entity's exploration mission, the entity's manager dropped certain exploratory activities to concentrate on others that were more valued by the governance system.

3.3. TRANSFORMATION

AERO is a big multinational firm leader in the aeronautic industry. AERO has two types of customers: the aircraft manufacturers that assemble and integrate its products, and the airlines that use these products. Because AERO products have a long life cycle, the firm has an important maintenance and repair department that contributes greatly to its revenues. In addition to its strong R&D and engineering department, AERO developed an initiative to collect its employees' ideas regarding the plant. Over the months, this participative innovation initiative proved to be a big success, considering not only the number of ideas submitted by employees, but also that they were funded, developed, and brought into the field. These initiatives mainly concerned process innovations.

Convinced by the power of this initiative, the TMT wanted to extend it to product innovations. Indeed, despite AERO's strong competitive position in the sector, the TMT wanted to explore two large trends that were considered crucial in the aeronautics sector:

servitization (i.e., developing solutions mixing products and services rather than only products) and the big data opportunity (i.e., exploration of the huge amount of data produced during the life cycle of their products in order to generate value for themselves and their customers). For this purpose, the TMT created EXPLOR3. The entity's initial mission was *"to develop, through an agile and user-centric approach, high-value-added digital services"*. The entity was located within the maintenance and repair division, because this was the unique division that provided services in this product and technology-driven firm.

EXPLOR3 was composed of a single leader who managed a team of 25 persons. Many employees were recruited externally to bring new skills to AERO, including UX (User eXperience) designers, UX researchers, ergonomists, business developers, and employees in charge of purchasing, communication, and IT. The entity also included a maker space for prototyping digital services. AERO employees were given the opportunity to submit ideas for services to EXPLOR3, and an internal committee would select one of these ideas each month. After the idea was refined, its sponsor had to pitch it before a quarterly committee composed of internal stakeholders, such as functions or business units (BUs), who might be willing to support the idea and suggest it to customers. EXPLOR3 had the role of providing methodological support and being the catalyst for the projects proposed by employees.

After one year, several projects for AERO were selected to be developed further within EXPLOR3, including, for example, a predictive maintenance service and a training service for the airlines' pilots with the purpose of reducing fuel consumption. Eighteen months after the creation of the entity, 17 projects had been selected. EXPLOR3 employees used innovative methods such as design thinking to identify opportunities and to understand the pain points of the customers, such as the airline pilots or maintenance technicians. EXPLOR3 employees

also used experimentation and rapid prototyping to obtain feedback and comments from users.

The first problems appeared with the delivery of the first projects, which included the concept, a value proposition validated by users, and rough technical feasibility and economic viability. The internal customers/supports (BUs and functions) rejected the deliverables, stating that they had expected detailed specifications that they could follow to develop and industrialize the services, as they usually did with products. The internal customers were expecting validated, tested prototypes, whereas EXPLOR3 delivered proofs of the concepts that showed only value propositions, but not detailed development, which required digital skills that were not internally available. Therefore, the BUs and functions did not choose any of the projects, and EXPLOR3 could not show the TMT any newly developed business. Moreover, the TMT did not value the activities dedicated to the diffusion of a new culture of innovation, which represented 20% of EXPLOR3's activities.

MIDDLE MANAGEMENT PRACTICES UNDERLYING TRANSFORMATION

EXPLOR3 went into a crisis, and the TMT challenged the entity's existence. EXPLOR3's manager obtained an extension of one quarter, provided he would suggest a roadmap for the center and fix previous issues. The manager made several proposals. First, he would refocus the center's mission of exploration activities *stricto sensus*. Second, he would specify the interface between EXPLOR3 and the BUs and functions; he suggested creating the role of a translator between the center's deliverables and the expectations of the internal customers. Third, he would ask his teams to go further in their exploration activities, i.e., beyond the proofs of the concept, in order to help the BUs in their adoption of the innovation. EXPLOR3's manager summarized his approach:

"*Actually, since we are using design thinking for our internal customers, why not also use the method for designing our organization? It's an iterative process with the top*

management. We dynamically adapt our entity and its business model. It's a process in between an ongoing negotiation and a collective construction."

The TMT accepted the manager's reframing of EXPLOR3's activities. The TMT urged the internal customers to accept the remaining uncertainties in the center's deliverables and not consider them as specifications ready to be developed and industrialized. Some members of EXPLOR3 left after this reframing and refocusing, especially those who were very active in the internal culture transformation and the UX research.

This pattern of practices allowed the entity's manager to address and eliminate the emerging contradiction between the entity's exploration mission and AERO's exploitation-oriented imposed governance. We label the emerging role as "transformation". The manager adapted the exploration mission while also renegotiating custom-made governance rules and criteria with the TMT.

This situation of double negotiation and reciprocal adjustment can lead to very different results, depending on the organizational setting, particularly in terms of the nature of any changes to the exploration entity's mission. This evolution may only involve a minor change to exploration activities, for example, at the time-scale level, but it can also involve a major change to the entity's mission and a focus on specific subjects, for example, digital technologies.

3.4. DECOUPLING

CONST is a big multinational contractor leader in the construction industry. It is a project-based organization (PBO), i.e., the organization plans and executes the construction project work that it is awarded after a competition and a call of tender process. Each project is specific. CONST operates in a very competitive sector where the price is the main consideration. Like many firms in the construction industry, it has a very low R&D budget (around 0.3% of the turnover). CONST mainly develops process innovations to reduce the

costs and delays of its work. The projects vary from a single building to a group of buildings, such as a district. CONST generally operates on large buildings that are open to the public and partially or entirely state owned. Such buildings entail complex ecosystems and many regulations. CONST operates in a B2B environment, with mainly real estate developers as customers. As in many sectors, digitalization impacts the construction industry in multiple ways, including smart buildings, smart cities, and project management through BIM (building integrated modeling). These are potential opportunities that CONST must explore because they can represent differentiation levers. Indeed, real estate developers increasingly include issues related to digitalization in their call of tender.

For these reasons, CONST decided to launch an exploration entity, EXPLOR4, at the corporate level. EXPLOR4's initial mission was "*to design and promote offers for building and beyond, including digitalization*". Its scope ranged from smart buildings to smart districts (connected urban zones including several buildings and services). EXPLOR4's team included three people: two members and one manager, with business development, engineering, and commercial backgrounds. This team had to report to a strategic committee composed of a member of the CONST TMT (a corporate VP) and three VPs from the largest subsidiaries of the firm that met biannually. A steering committee that met every two months and involved one member of the strategic committee and three members from the management of the three subsidiaries supported EXPLOR4 for technical and operational issues and was supposed to facilitate leverage of the firm's internal resources, thanks to the members' networks. The team also relied on a consultant in methodology recruited from outside the firm. Because EXPLOR4 had a small core operating team, it had to build its own resource networks (internal and external) to rely on.

EXPLOR4 was mandated to develop knowledge along several dimensions: competitive analysis (What do the competitors in this emergent field offer?), ecosystem analysis (Who are the potential relevant players in this field?), technology analysis (What are the potential technologies that can be embedded and integrated?), and usage analysis (What are the potential new usages for the inhabitants?). The mission emphasized a user-centric approach, which was entirely unusual in a firm accustomed to executing works by following very detailed technical specifications. Considering the knowledge to be acquired, the user-centric orientation, and the uncertainty associated with the emerging field of building and city digitalization, EXPLOR4 was a radical innovation entity.

MIDDLE MANAGEMENT PRACTICES UNDERLYING DECOUPLING

After the first six months, EXPLOR4's team reported the following activities: analysis of the ecosystem of smart cities, benchmarking the competition, identification of startups operating in the areas of smart buildings and urban agriculture, and identification of potential values to offer the inhabitants, real estate developers, and owners. Creativity sessions uncovered ten ideas that could be explored simultaneously with the construction projects, such as offering an app that helps the owner manage the building once it is inhabited. The strategic committee was very satisfied with EXPLOR4's results, and they rephrased its mission as "*exploring new business models and opportunities in the smart city emergent field*".

At this point, EXPLOR4's members were considered to be the CONST community managers regarding the topic of smart cities. Therefore, during the second semester, the team focused on digital initiatives beyond building construction *per se*. They developed specific external and internal mappings to identify resources that could be involved in such initiatives. The steering committee decided to cancel the engagement of the consultant; therefore, the

team also had to benchmark similar exploration entities in other firms for inspiration and applying adapted exploration and creativity tools.

During the second strategic committee meeting at the end of the second semester, the members of EXPLOR4 presented many potential projects, for example, a digital fence for construction sites that offered several services to the neighbors, which would facilitate greater acceptance of the work and the related nuisance. The objective of this meeting was to select which project to develop and invest in. After EXPLOR4's manager presented the projects, the committee asked him to apply the traditional criteria used at CONST to support decisions such as whether to bid for a call of tender: expected profitability, potential synergies with other projects, familiarity with the customers, technical strength, and so forth. None of these criteria were satisfied for any of the presented projects. Because of the novelty, high level of uncertainty, and ambiguity of such exploratory projects, none were selected. EXPLOR4's manager stated:

> "*We're disappointed. During the committee meeting we wanted to introduce an innovation* [the digital fence] *that could be a game changer in 10 years for the entire industry, but all they* [TMT] *asked was 'What is your risk evaluation?' and 'What is the expected return on investment?'*"

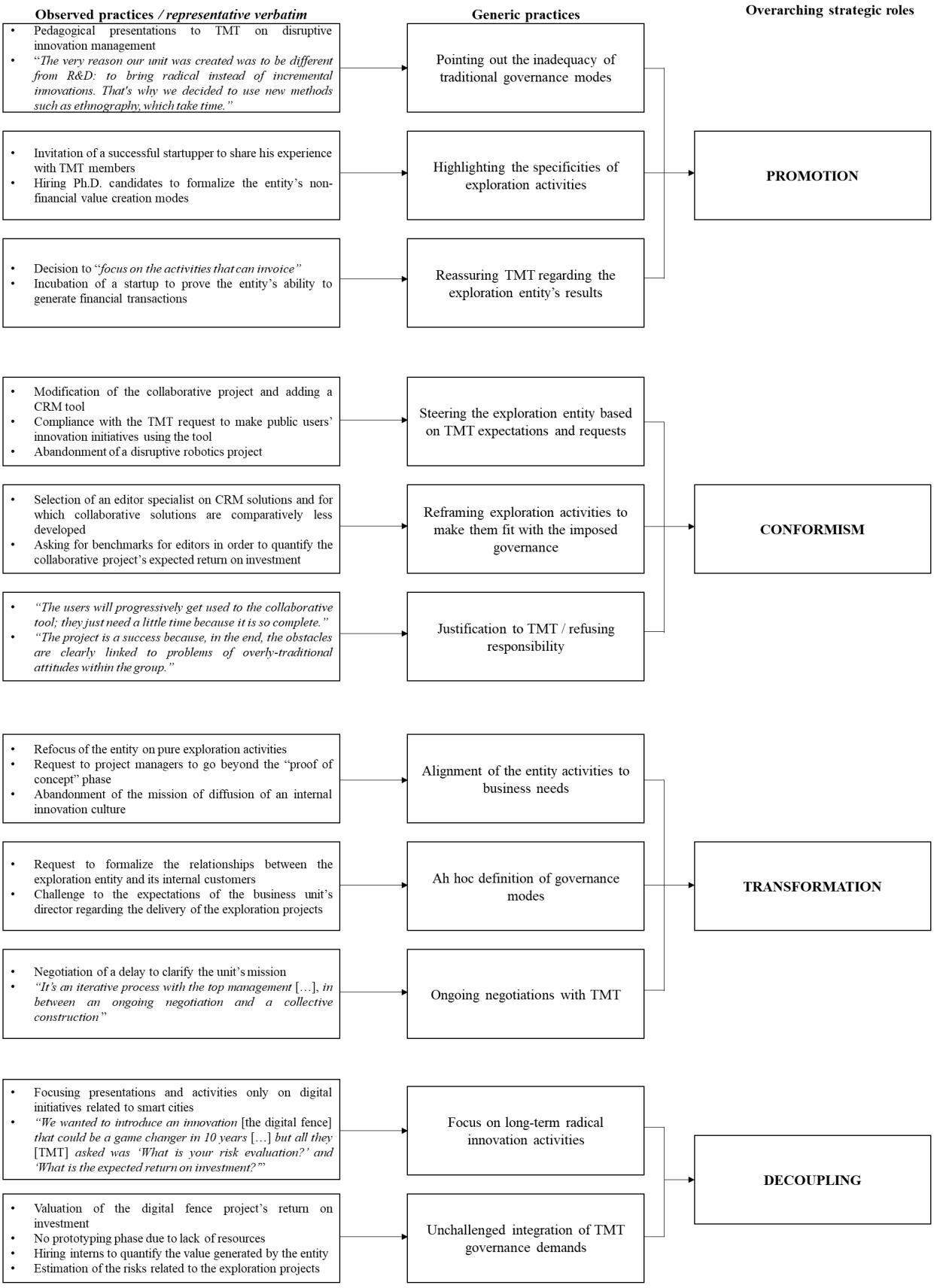
Selection of a project was postponed until EXPLOR4 could gather more data to address some of the criteria. During the third biannual reporting exercise, EXPLOR4's manager was unable to derisk the projects, especially because he did not have any prototyping resources. Indeed, projects at the city or district level have a wide scope of impacts, and experimentation requires specific resources. Furthermore, considering the complexity of the urban and building ecosystems, experimentation would require the commitment of several players, which the steering committee was expected to secure. The committee once again decided to

postpone the decision to invest in a project and reassigned the two affected persons on EXPLOR4 to a part-time basis. Two interns were recruited to document all of the activities undertaken by the entity and to map the knowledge developed by the unit.

During the following reporting exercise, the strategic committee members asked the sole remaining manager of EXPLOR4 to show the entity's outcomes after 18 months and the value they generated. As this was a project-based organization, the value was mainly measured through the number of projects launched. However, the manager could not use the traditional value measures (turnover, profitability, number of projects, etc.) to value the entity's intangible outcomes, such as the knowledge it developed regarding digitalization in construction and smart cities. After 18 months, EXPLOR4's manager was completely demotivated, and the entity shut down.

This pattern of practices did not enable EXPLOR4's manager to overcome the contradiction between the unit's exploration mission and the governance rules imposed by CONST. To the contrary, it led to a paradoxical situation in which the entity's manager maintained the exploration mission without challenging the exploitation-driven governance modalities—which therefore remained unchanged—and finally the gap between the mission of EXPLOR4 and its governance became too large. We label the emerging role as "decoupling". EXPLOR4's members, most specifically its manager, progressively found themselves dealing with an unsustainable dual constraint that led to the entity's closing down.

Figure 2
The four middle management strategic roles that emerged from observed practices and verbatims



3.5. CONSEQUENCES OF MM STRATEGIC ROLES FOR ORGANIZATIONAL AMBIDEXTERITY

Each of the described situations sheds light on a specific strategic role of the exploration entity's MM, stemming from specific practices and sustaining a certain level of exploration for the entity and therefore relating to a specific level of organizational ambidexterity capability.

The settings where tensions between exploration and exploitation were either avoided by conformism (ESTAT) or resulted in an irreconcilable contradiction handled through decoupling (CONST) respectively correspond to the entity favoring exploitation and incremental innovations or a shutdown of the exploration entity. Neither of these situations is characterized by an actual dynamic and sustained organizational ambidexterity capability. The settings that do correspond to organizational ambidexterity are those in which exploitation-oriented governance rules were renegotiated or challenged while the exploration dimension was—at least partially—maintained. In the first setting (INDUS), the exploration mission was maintained and preserved thanks to the MM's promotion, and the governance rules were negotiated with the TMT. In the third case (AERO), involving transformation, the exploration mission of the entity was transformed in either its scope or its scale while retaining its exploratory nature. In such a setting, the scale and nature of the exploration activities as well as the dynamic organizational ambidexterity capability vary with the extent of the adjustments that are made to the exploration entity's mission.

4. DISCUSSION

The motivations for our research are both empirical and theoretical. On the empirical side, we have mentioned the increasing numbers of entities that have been created within established firms to achieve structural ambidexterity, following the recommendations that flourished in the stream of research dedicated to this subject (e.g., Duncan, 1976; Tushman and O'Reilly, 1996; O'Reilly and Tushman, 2004). However, the performance of these

corporate venture units has been challenged (Jansen et al., 2012; Junni et al., 2013). We noticed in our fieldwork that many entities do not achieve the exploration mission they were charged with, and some shut down subsequent to the enthusiasm of the launch and the top management sponsorship, which has led authors such as Hill and Birkinshaw (2014) to investigate why and how some units survive while others do not.

On the theoretical side, the contradictions generated by simultaneous exploration and exploitation have already been highlighted in the literature on organizational ambidexterity but have mainly been addressed from the TMT perspective (Smith and Tuschman, 2005). Moreover, although this literature has highlighted the contradictions inherent to the simultaneous development of both exploration and exploitation, it does not address how to reconcile the latter at different levels, despite Andriopoulos and Lewis's (2009) suggestion that organizational ambidexterity requires a multilevel perspective. Therefore, our purpose in this research was to address these contradictions at the MM level, which has scarcely been studied *per se*, despite the fact that MMs are upfront in experiencing such issues. We did this by focusing on the managers of exploration entities that had been launched to achieve structural ambidexterity. In addressing this gap, our intention was to make two contributions.

The first contribution is related to organizational ambidexterity: A better understanding of its microfoundations at the individual level (Mom et al., 2009) will facilitate avoiding the organizational tensions that might hinder its achievement. The second contribution is related to the "middle management perspective" (Woolridge, Schmid, and Floyd, 2008) and the study of MM impacts on organization-level processes. We develop these contributions in what follows.

Based on our analysis of four exploration entities and their evolution over time, we have highlighted two dimensions that we consider relevant for the strategic role of exploration

entities' MMs: the MMs' attitudes regarding the mission determined by the TMT at the launch of the entity and the MMs' attitudes regarding the governance rules adopted by the TMT to evaluate the entity. We have observed that MMs develop practices that reveal either acceptance of these dimensions as such or challenging them. By default, the TMT seems to maintain the contradiction between these two dimensions, namely, an exploration mission with exploitation-oriented governance rules. We have observed that to achieve and sustain organizational ambidexterity, which is the TMT's strategic intent in launching the exploration entity, the entities' MMs must challenge the governance rules. If not—that is, if they accept both dimensions (decoupling) or only the rules (conformism)—ambidexterity is not achieved (see Figure 1). The governance rules embody the expectations the TMT has for MMs, and MMs achieve ambidexterity only when they challenge these expectations (the exploitation-oriented rules) in order to reconcile them with the exploration mission, which in turn is either maintained (through promotion) or slightly modified without jeopardizing the exploration aspect (through transformation; see Figure 1).

The four strategic MM roles that we have identified (promotion, transformation, decoupling, and conformism) offer detailed longitudinal insights regarding the microfoundations of organizational ambidexterity. In line with Mom et al., (2009) our work demonstrates that managers' exploration and exploitation activities are not mutually exclusive, and that they generate needs for integration tactics at multiple levels. However, companies tend to delegate the management of the ontological gap between the governance and the mission of exploration entities to their managers, and it is worth noting that this perspective is also implicitly adopted in most of the academic literature. Research into paradoxes (e.g., Smith and Lewis, 2011) reports irreconcilable tensions between the stakes of a company and its exploration entities, yet managers are expected to create *ad hoc* solutions in

the midst of these tensions. The same assumption can also be found in paradoxical leadership studies (Lewis et al., 2014) and studies of strategic agility in response to contradictions and dilemmas (Smith, 2014), which underscore how management is expected to deal with the contradictions that are intrinsic to complex and dynamic global environments in order to maintain strategic agility. It is generally up to the managers of exploration entities to take the leading role in overcoming contradictory challenges and finding a means to ensure the entities' legitimacy, in a context of uncertainty and ambiguity (Rydland, 2015) where power relations between the company and the entity are imbalanced.

The roles we highlight complement the work of Hill and Birkinshaw (2014), who examine why and how some corporate venture units survive and others do not. The authors highlight that the units need to strike a delicate balance between exploitation and exploration. While they consider exploitation from the perspective of leveraging existing capabilities, we focus on the governance rules associated with exploitation, and we adopt a complementary detailed longitudinal perspective. Furthermore, like these authors, we expand the perspective on these units beyond being pure exploration entities. Indeed, the transformation role we have highlighted is one where the unit's manager develops practices related to exploitation as well as exploration and therefore renegotiates the scope of the mission.

Our findings also contribute to the study of strategy dynamics (Woolridge and Floyd, 1990; Floyd and Woolridge, 1992; Woolridge, Schmidt and Floyd, 2008) and are in line with an ongoing approach to organizational change rather than a static approach that distinguishes the articulation of the strategy from its implementation. We shed light on how lower-level individual practices explain higher level of analysis, and how the behavior of individuals (MMs) within the structure shape the evolution of this structure (Chwe, 2001). Our results offer insights that are complementary to the typology of Floyd and Woolridge (1992), which

is articulated in terms of dichotomies that seem less relevant in the specific context of organizational ambidexterity.

Our results illustrate the need to initiate a deeper, organization-level, reflection on exploration entities' governance modes in order to prevent these from interfering with the pursuit of organizational ambidexterity. The ongoing formulation of exploration entities' governance modes enables the TMT to maintain dynamic control over the entity's managers, but it appears that this may also hinder organizational ambidexterity. Other studies, for example, in terms of faces (i.e., coercion, manipulation, domination, and subjectification) and sites (i.e., power enacted 'in', 'through', 'over', and 'against' organizations; Fleming and Spicer, 2014) between the TMT and entities' MMs, could provide further areas for discussion.

At this stage, we can formulate several hypotheses regarding factors that determine which strategic roles MMs will adopt when faced with the contradictions between the exploration mission and the corporate governance rules, and thereby enrich the discussion on individual employee ambidexterity. These hypotheses and their implications need to be further developed and tested. The first factor concerns the entity's team member profiles. For example, the EXPLOR1 and EXPLOR3 teams consisted of members whom INDUS and AERO hired externally for this purpose, while the EXPLOR2 and EXPLOR4 teams were made up of employees from within ESTAT and CONST. It seems plausible that a team that consists primarily of external employees will find it easier to encourage different standards and activities and challenge existing ones, while a team of in-house employees will lean more towards conforming with the current governance arrangements. Another profile characteristic is the MM's experience in exploration activities inside or outside the company. Having such previous experience can give the MM confidence regarding changing the TMT's expectations related to exploration. Finally, the MM's psychological attributes and ability to support

deviant behavior, ambiguity, or non-compliance with rules and standards also appear to be an important factor.

The rigid characterization that we propose may be extreme, due to our case selection and our taxonomy conceptualizing polar oppositions. At least two variants are possible: on the one hand, intermittent mobilization of roles according to the exploration entity's development and maturity phases and, on the other hand, the adoption of hybrid behaviors that combine multiple roles to different degrees. In addition, our framework considers the mission of the exploration entity to be at the core of the analysis, and we have apprehended it through the activities undertaken within the exploration entity. However, it is possible to challenge us regarding the potential ambiguity of the exploration entity's mission, which is generally articulated in a broad and open manner.

5. CONCLUSION

As researchers studying exploration entities, it appeared paradoxical to us when we observed multiple organizations investing important resources in exploration entities in order to achieve ambidexterity and then progressively imposing unsuitable exploitation-oriented governance rules on the entities that hindered them and deprived them of their potential benefits. We wanted to address this paradox that we repeatedly observed in the field.

Our research provides insights into the practices and roles of the managers of exploration entities, thereby contributing to the literature on the foundations of organizational ambidexterity as well as to the middle-management perspective. Through a longitudinal approach, we have emphasized how some roles (promotion and transformation) facilitate organizational ambidexterity, while others (conformism and decoupling) hamper it. We have characterized these roles based on the attitude of the exploration entity manager regarding two dimensions: the mission assigned to the exploration entity and the governance rules adopted

to evaluate it. We studied the behavior of the exploration entities' managers along these dimensions: either accepting them as such or challenging and negotiating them.

Our focus on the microfoundations of organizational ambidexterity needs to be further pursue to gain additional insights about how individual-level factors socially aggregate to collective-level processes that underlie dynamic organizational capabilities. Such academic efforts will help us not only to better understand the individual microfoundations of organizational ambidexterity, but also to clarify the roles of MMs in other organization-level processes. In the future, we hope to further cultivate the framework developed in this article.

Our longitudinal case studies allowed us to shed light on four strategic roles of MMs specific to organizational ambidexterity. Additional research inside exploration entities might also provide insights in alternative organizational settings (public sector, NGOs, etc.), and further research outside exploration entities might shed light on other individual factors that may also influence organizational ambidexterity.

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