How individuals cope with institutional complexity in organizations: a case study in the energy transition

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June 22, 2016

HOW INDIVIDUALS COPE WITH INSTITUTIONAL COMPLEXITY IN ORGANIZATIONS: A CASE STUDY IN THE ENERGY TRANSITION

Abstract

The present article examines how employees cope with an organizational setting that is institutionally complex. The empirical setting is a French energy corporation that simultaneously pursues a logic of science and a logic of market through multiple research partnerships with public and private actors engaged in the energy transition. We draw on the literature on institutional logics and hybrid organizations to examine how employees of this French energy corporation deal with this institutionally complex environment. Our findings point to three strategies that individuals use to cope with institutional complexity in their organizational setting: aggregating, selective coupling and compartmentalizing. Each individual uses only one strategy. The findings further suggest three psychological factors that seem to explain which of these strategies a given individual adopts for coping with institutional complexity: tolerance for ambiguity, preference for holism, and preference for reductionism. We integrate these findings into a two-dimensional model. These findings contribute to illuminating how individuals cope with institutional complexity in their organizational setting, an insight that can help shed light on why organizations respond somewhat differently to the same institutionally complex field.

Key words:

Institutional complexity, multiple institutional logics, hybrid organizations, energy transition.

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The rise of societal dissatisfaction with how organizations and governments address societal and environmental challenges (Haigh, Walker, Bacq, & Kickul, 2015) are stimulating the emergence of new organizational forms and new complex partnerships. Various types of alliances are developing, notably between large generalist corporations, academics and specialized entrepreneurial starts-up with valuable knowledge and high reputation in a given market segment. These inter-firm cooperation structures are complex and often embedded in various institutional arrangements (Parkhe, 1993). Research on institutional complexity has revealed the tensions that some organizations experience as they are exposed to multiple and potentially conflicting logics and demands. These tensions can lead to internal conflicts (Glynn, 2000) and instability if the organization does not manage to strike a balance between the institutional logics at play (Battilana & Dorado, 2010).

Institutional logics refer to socially constructed and integrated sets of "assumptions, values, beliefs and rules" (Thornton & Ocasio, 2008) that give actors "organizing principles" for prescribing legitimate ends and selecting "the means by which those ends are achieved" (Friedland & Alford, 1991). Institutional complexity arises when organizations face simultaneous pressures from multiple institutional logics. While institutional logics may seem to be imposed on organizations, recent studies suggest that individuals can apprehend and interpret them somewhat differently (Creed, DeJordy, & Lok, 2010). At a micro-level, individuals may engage creatively with institutional logics (Voronov, De Clercq, & Hinings, 2013) in order to resolve any institutional contradictions that they perceive. Recent research also emphasizes differences in people's capacity to apprehend and resolve institutional contradictions (Voronov & Yorks, 2015).

Our inquiry addresses two related questions: 1) *Which strategies do individuals adopt to cope with institutional complexity in their organizational setting?* and 2) *which psychological characteristics explain their individual preferences for a particular strategy*? To answer these questions, we conducted an empirical study of a French energy corporation, whose employees engage in an on-going research partnership with a US energy corporation, a public R&D lab, a private R&D lab and a

private/public lab. All these organizations are active in the area of renewable energy, i.e., engaged in the energy transition. Our study investigates how managers and employees of the French energy corporation cope with the multiple challenges they experience in working with the other organizations, or organizational units, within this complex institutional context.

The findings of this study points to the existence of three strategies that individuals adopt to cope with institutional complexity: aggregating, selective coupling, and compartmentalizing. Each individual adopts a single strategy. We further identify three psychological, or cognitive-affective, characteristics that seem to explain which strategy a given individual chooses: tolerance for ambiguity, preference for reductionism, and preference for holism. We propose that these findings can shed new light on why organizations respond somewhat differently to the same institutional complexity in their environment.

The paper is structured as follows. First we review the literatures on institutional logics and hybrid organizations. We then present our case study and methodology, as well as our key findings. The paper concludes with a discussion of how our findings contribute to the literature on institutional complexity and hybrid organizations.

ORGANIZATIONAL RESPONSES TO INSTITUTIONAL COMPLEXITY

Institutional Logics

Research on institutional logics has shown that multiple logics often compete with one another (Thornton, 2002). It also demonstrates that previously incompatible logics can coexist, co-evolve (Dunn & Jones, 2010) and sometimes even converge (York, Hargrave, & Pacheco, 2015). It is widely recognized, however, that organizations experience difficulties when they simultaneously face, and embrace, multiple institutional logics.

In examining how organizations deal with the presence of multiple logics, researchers have primarily looked at *organization-level* responses to conflicting institutional demands. In so doing, they seem to have overlooked the individual level. In fact, "institutions are not inert categories of meaning; rather they are populated with people whose social interactions suffuse institutions with local force and significance" (Hallett & Ventresca, 2006). More recent research points to how individual actors engage institutional logics in the course of their organizational

practice (Lounsbury & Boxenbaum, 2013), and how they deal with institutional complexity and confronting demands (Pache & Santos, 2010). Research also highlights the institutional contradictions that social actors experience in their work setting (Bjerregaard & Jonasson, 2014) and points to how individuals pro-actively exercise a great deal of agency in their everyday organizational encounter with multiple logics (McPherson & Sauder, 2013).

A recent call invites researchers to investigate how individuals construct the relationality of logics in practice (Smets & Jarzabkowski, 2013). One suggestion in the existing literature is that all individual actors respond similarly to the same multiple logics and that they do so through selective coupling (Pache & Santos, 2010). Another suggestion is that individual responses fall into different categories (Voronov & Yorks, 2015). This latter finding echoes insights from identity theory suggesting that individuals adopt one of the following strategies to deal with institutional complexity in their organizational setting: compartmentalization, deletion, integration, and aggregation (Pratt & Foreman, 2000). Our study aims to extend this line of work by integrating insights from the identity literature into the literature on institutional complexity. We further identify some psychological, or cognitive-affective, characteristics that may explain why a given individual adopts a particular strategy to cope with institutional complexity. We argue that this individual-level insight can help us better understand why organizations respond differently to the same institutional complexity.

Hybrid Organizations

Defined as organizations that incorporate elements from different institutional logics (Battilana & Dorado, 2010), hybrids place equal emphasis on their common-good mission and their financial performance (Boyd, Henning, E., E., & D., 2009). As such, they blur the distinction between profit and non-profits entities.

Some hybrids, such as social hybrids for example, seem ideal organizational forms (Battilana, Lee, Walker, & Dorsey, 2012), yet they are by nature arenas of contradiction (Pache & Santos, 2013) and present multiple challenges for organizational members. First, their unique form can foster difficulties either in their legal structure, in their financing or in their legitimacy as perceived by customers and beneficiaries. Additionally, they often need to serve two or three masters at the same time (Haigh & Hoffman, 2012). As they serve simultaneously a societal logic, such as

helping the poor, and a banking logic to fulfill fiduciary obligations (Battilana & Dorado, 2010), hybrids tend to face conflicting external demands, competing internal claims, and ambiguity (Pache & Santos, 2013).

Tensions in hybrid organizations may relate to identity issues. For instance, members of a natural food cooperative seemed to subscribe to a common identity, yet "Natura struggled continually to balance the demands of cooperative process with capitalist production; the duality of idealism–pragmatism was inherent in its hybrid identity" (Ashforth & Reingen, 2014). Other types of identity duality have been shown to provoke inter-groups conflicts and risks of mission drifts. The study of the Atlanta Symphony Orchestra (Glynn, 2000) revealed that the dual character of its identity (economic utility and normative ideology) came into conflict during a strike. The case of two micro-finance organizations (Battilana & Dorado, 2010) showed the difficulties involved in maintaining the multiple identities of those hybrid organizations and to simultaneously balance social and economic duality, without mission drifts.

Various strategies for sustaining hybrids have been suggested, such as decoupling, compromising, combining competing effects or selective coupling (Pache & Santos, 2013). Managerial suggestions include the creation and maintenance of space of negotiation at the various employee levels (Battilana, Sengul, Pache, & Model, 2014), the consideration of hiring (Mael & Foreman, 1995) and socializing policies (Battilana & Dorado, 2010). However, there are insufficient studies on the daily operations of hybrids, which is unfortunate in as much as we need to improve our understanding of their sustainability over time. The present work aims to address this gap.

METHODS: CASE SELECTION, DATA COLLECTION AND ANALYSIS

The study builds on the empirical case study in a strategic partnership within the renewable energy sector. The study involved four months of intervention work, conducted within the organizational unit of a fairly recent R&D division within a large French multinational corporation operating in the renewable energy sector. The organizational unit studied (called French energy corporation) is specialized in photovoltaic (PV) energy and has developed a complex sets of research collaborations to interact with its collaborators, which involve a Private R&D Lab, which also is working with many industrials, a purely academic and public R&D lab in France and

a smaller US corporation that is a worldwide leader in PV technology and mainly focused, long term, on PV cells production (called US Energy corporation). French energy corporation acquired 66 percent of the shares of US energy corporation in 2011. Over the last three years, a new PV institute (Public/Private R&D Lab) was being created between French energy corporation, Public R&D Lab and several other academics and industrials organizations. Public/Private R&D Lab will be fully operational in 2017.

Employees analyzed in this work belong to the R&D branch of the French energy corporation, which has multiple research contracts with other research organizations. The actors of this study interact daily with four other organizations: the US private energy corporation, the Public R&D lab, the Private R&D lab and the Private/Public R&D lab. Each of those has their own means, norms and objectives. This case was selected because it represents high institutional complexity. As such, this study aims to understand how individuals in an organization cope with this highly complex environment.

Figure 1: Organizational composition of R&D partnerships in energy transition
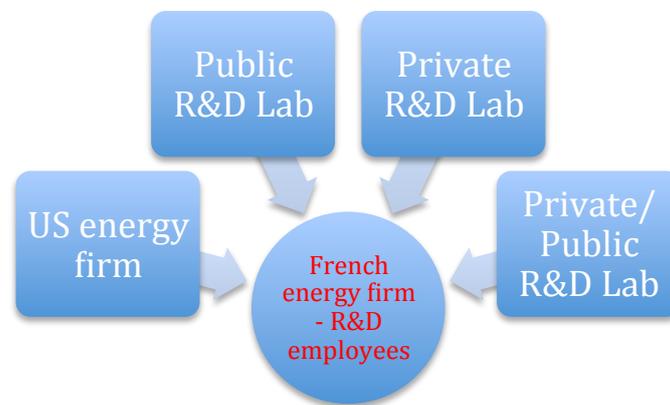
The data was collected in 2014 and consist of onsite interviews taking place at the French energy corporation's headquarter and at Public R&D Lab and Private R&D Lab. Individuals interviewed were selected following initial discussions with managers of French energy corporation. Out of a total of a team of 31 French energy corporation R&D employees, 18 people were interviewed. They are either based at French energy corporation headquarter or at the Public R&D Lab or at the Private R&D Lab and the distribution of these 18 individuals between the three locations is

almost equal. None of them are located at Private/Public R&D Lab nor US energy corporation, but they interact and sometimes take guidance from them. All individuals interviewed have a scientific background and ¾ of them have a PhD. Interviews lasted on average 47min, which totaled 17 hours in total. The choice of semi-structured interviews facilitated discussions with employees. The objective was to hear individuals talk about how they interpret their complex work environment, which challenges they perceive, and how they cope with them. Except one interview, which could not get recorded and was subsequently removed from the sample, all interviews were recorded, transcribed and coded.

After transcription of interviews, the first author proceeded to do an open coding of the data. As data analysis progressed, we began iterating with the literature and retained for in-depth data analysis an analytical framework on institutional complexity, informed by institutional logics. As we proceeded with the data analysis, we identified different strategies that actors adopted. We hence searched for literature analyzing individual strategies for dealing with complexity. First, we turned to identity theory from where we borrowed some strategies on how organizational members deal with multiple identities. Secondly, since two distinct logics emerged from the data, we turned to the literature on hybrid organizations. This literature sheds light on how individuals deal with dual logics. We deemed this literature to be relevant for our case, even if it is not *per se* a hybrid organization in as much as it does not have its own legal form.

Using this theoretical framework, the first author engaged in focused coding with a triple objective of identifying how each individual apprehended the various aspects of the collaboration, which strategie(s) each individual preferred and which cognitive-affective factors explained those strategies. We did this analysis by ongoing iteration between the data and the literature and by proceeding to a first level coding and a second level coding. Through these coding procedures we identified the existence of two logics, and three individual strategies for navigating institutional complexity. Once these three strategies were identified, we looked into which dimensions could explain that people working in the same organization would use different strategies to apprehend the same organizational setting. Once again, we iterated between data and the literature to identify second level coding.

Eventually, we looked for patterns in the relations between the type of individual strategies and cognitive-affective factors that seem to underpin individual

choice of strategy for coping with institutional complexity in their organizational setting.

HOW INDIVIDUALS COPE WITH DUAL INSTITUTIONAL LOGICS

In this section, we present the main findings pertaining to how individual perceive and interpret their institutionally complex environment in an effort to cope with the challenges of an organizational setting informed by two institutional logics.

The Presence of Two Institutional Logics

Three distinct themes characterize individuals' perception of their institutionally complex environment: perceived freedom, time horizon, and means-ends. Each theme expresses itself in the form of a dichotomy between two distinct logics that individuals perceive: a scientific logic and a market logic (see Table 1).

The first theme refers to the level of freedom that individuals perceive in the organizational environment. The R&D Labs offer an organizational environment that fosters creativity and autonomy, which seems well adapted to exploration type of research. This work environment is governed by a scientific logic. In contrast, the US energy corporation enforces much more control and pressure in the organizational environment, which fits with operational type of research and more routine tasks, such as exploitation or development type of research. This latter orientation reflects a market logic.

The second theme refers to individual's perception of time horizon for their work. There is a clear distinction in the organization between a short term research orientation, implying a sense of urgency, and a longer term research orientation that allows for more time to deeply investigate a topic, regardless of the time horizon. The longer term perception expresses a scientific logic and is most prevalent in the R&D labs and to a certain degree in the French energy corporation. The shorter term horizon reflects a market logic and is most predominant in the US energy corporation.

The third and last theme refers the means and the ends that individuals perceive as salient for the organization. They make a distinction between a type of research that targets publications as the end, the means of which are low-cost research and scientific methods, and another type of research that pursues patents as the end and privilege means such as KPI, financial ration, and empirical methods. While the

former means-end relationships reflect a scientific logic and are predominant in Labs, the latter reflects the market logic and predominant in the US energy corporation.

Insert Table I about here (Individuals' perception of dual institutional logics)

Taken together, two institutional logics seems to characterize the organizational environment including its multiple partnerships. On the one hand, individuals perceive the existence of a scientific logic associated with freedom, a longer time horizon, and the pursuit of publications through low-cost, exploration type of research. On the other hand, individuals perceive a market logic, characterized by less freedom, a shorter time horizon, and the pursuit of patents through production and development type of research.

Individual Strategies for Coping with Institutional Complexity

Individuals need to cope with institutional complexity when they work in this complex organizational environment, composed of dual institutional logics. As could be expected, navigating through a complex institutional environment with dual logics does not appear obvious. Individuals need to make efforts to understand and act appropriately in this complexity. Table II outlines the various strategies that individuals mobilize to apprehend their institutionally complex environment.

Insert Table II about here (Individuals' strategies for coping with institutional complexity)

Aggregating.

One first strategy consists in finding connections between the multiple elements of the organizational collaboration. Instead of experiencing confusion and lack of sense, some individuals explain how working with one of the partners helps them make sense of their work while working with another partner helps them gain an identity. Although the complexity of the collaboration creates confusion and struggle, some

actors experience their relationships towards the multiple collaboration parts as quite simple and straight-forward. When using this first strategy, individuals search for arguments that allow them to connect various pieces of the collaboration. They find justifications for these complementarities, such as one collaboration bringing nutriments to another. Interactions, links and collaborative words characterize this strategy. Through this strategy, individuals succeed in making sense of the partnership as a whole, and the various members are considered part of a global team.

We use the concept of **aggregating strategy** to characterize this type of individual apprehension of their complex organizational environment. It occurs when members focus on identifying relationships and synergies within their environment, in order to link all organizational parts, find complementarities and make sense of it as a whole. Sub-organizational differences are only interesting to the extent that they allow for those links, which in turn help individuals apprehend their complex setting. This process is facilitated by interactions.

Selective coupling.

Another strategy consists in identifying connections that are unique to each parts of the organizational collaboration. When using this strategy, actors apprehend and focus on the distinctiveness of each sub-group. Although each sub-group's specificities are perceived as salient, they overlap to some extent. Cognitive efforts are required to use this strategy to apprehend the institutionally complex environment since each actor creates unique relationships between two distinct entities. Individuals must sometimes interpret the role of each sub-group in order to manage a coupling between them.

We use the concept of **selective coupling** to describe this strategy that some individuals use to apprehend their complex environment. It consists in individuals combining the two logics by complying selectively with demands from each one and by adopting different links, practices and attitudes depending on the norms and demands of each sub-group. They use this strategy not just for coping with complexity, but also as a chosen strategy for managing incompatibilities in the organization more generally. While this strategy may require more cognitive efforts than the previous one, it enables individuals to make sense of the institutional complexity in their organizational environment without developing a buffer between the different organizational units and the two institutional logics.

Compartmentalizing.

The distinctiveness between different organizational sub-groups is also salient in the last individual strategy observed, but in this case individuals do not interpret their respective roles in a way to create any meaningful links between them. Instead, the solution they find for coping with the incompatibility between the two institutional logics is to create buffers between two sub-groups. This last strategy requires significant cognitive efforts and also seems less satisfying.

We refer to this strategy as **compartmentalizing strategy**. Individuals use this strategy when they choose to preserve the multiple logics but to separate them clearly from each other without any particular link between them. They do so by establishing a buffer between them. They do not seek any synergy between them but aim to lower the risks of tension between organizational sub-groups by keeping them separated.

Not only have we identified three individual strategies for coping with institutional complexity in the organizational environment, but our results also show that each individual adopts only one strategy for coping with institutional complexity. Table III presents the analytical support for this finding. Among the 18 employees interviewed, 8 adopted an aggregating strategy, another 8 chose a selective coupling strategy, and only 2 engaged in a compartmentalizing strategy.

Insert Table III about here (Strategies adopted by individuals)

Psychological Factors Underpinning Individuals' Perception of Complexity

We now turn to the psychological factors that underpin individuals' choice of strategy for coping with institutional complexity. Table IV presents an overview of the findings.

Insert Table IV about here (Psychological factors underpinning individuals' complexity perception).

Our data analysis points to two psychological components that can be characterized collectively as **"high tolerance for ambiguity"**. On the one hand, individuals describe an environment where things do not necessary happen the way they are officially announced. Surprisingly, the apprehension of this situation does not seem to require much cognitive efforts of individuals. Individuals seem to accept readily that communication is often tacit, unofficial, suggestive, and even secret. The capacity to be discrete and diplomatic, and to assert influence through lobbying is frequently suggested as a useful way to deal with this situation. On the other hand, individuals express that they are acutely aware of, and ready to accept, uncertainty as an important feature of their work setting. They talk about things often not being clear, planned, or even foreseen, characteristics that they attribute to the nature of R&D activities, as well as to the on-going construction of the multi-partnership collaboration.

Another key category emerging from the data relates to how individuals apprehend institutional complexity. Individuals seem to cope with the strong presence of dual logics in their work space through one of two cognitive-affective preferences. The first one is reductionism, defined as "analyzing and describing a complex phenomenon in terms of its simple or fundamental constituents" (oxforddictionaries: http://www.oxforddictionaries.com/definition/english/reductionism). We refer to this category, which combines two first order codes, as **"Preference for reductionism".** The other one is holism, which is "characterized by the belief that the parts of something are intimately interconnected and explicable only by reference to the whole" (oxforddictionaries: http://www.oxforddictionaries.com/definition/english/holistic). The category of "**Preference of holism"** is built by combining three first-order codes.

Preference for reduction expresses itself as a clear perception of the distinctiveness that characterize each organization (or organizational unit) in the partnerships, each one reflecting either a science logic or a market logic. Individuals who have a preference for reductionism also talk about the distinctiveness of their own personal and professional positioning, such as personal legitimacy, professional identity, contribution, and recognition. Finally, many of them express that they perceive the dual logics to be very present in their work environment and they clearly articulate the distinctions between them, notably the different norms and values that they convey.

Preference for holism takes the form of personal cognitive characteristics that individuals deem important for coping with the complex work environment, such as adaptability, opportunity, constructiveness, flexibility, an "up to us", capacity to sort things, and a positive mindset. Individuals preferring holism also talk about relational factors that they consider critical for being able to deal with complexity. This dimension is both cognitive (people, relationships, interactions, links, discussions, communication, talk, curiosity) and affective (friendships, trust). People highlight the importance of interaction between actors for sharing many things and for building trust. In addition, some individuals highlight "anchors" or positive myths as important tools for justifying, or making sense of, their work. These "anchors" can be related to their mission (e.g., working on the future of renewable/ green energy) or to their shared professional identity (e.g., high expertise, worldwide leaders in their field, high intellectual capacities). These common denominators help them find affective reasons for dealing with the challenges of complexity. These various components all emphasize the complex work setting as "one whole", i.e., as composed of many interrelated components.

Relations Between Individual Strategies and Psychological Characteristics

We have identified three distinct individual strategies for coping with complexity and three psychological characteristics that are salient for an individual's choice of strategy. These psychological characteristics pertain to how individuals apprehend their environment. We now turn to a pattern between these two dimensions of our findings. Our analysis suggests that actors with high tolerance for ambiguity and a preference for reductionism tend to adopt a selective coupling strategy for dealing with their complex environment. Actors with high tolerance for ambiguity but with a preference for holism tend to adopt instead an aggregating strategy. Lastly, those individuals (in this case only two) who have low tolerance for ambiguity tend to adopt a compartmentalizing strategy for dealing with complexity. These findings are reproduced in table IV.

Insert Table V about here (Relation between individual strategies and psychological dimensions)

From these findings, we propose a classification scheme of how individuals cope with multiple logics. This classification scheme, which is depicted in Figure 2, represents our core proposition about how and why individuals cope differently with dual logics.

Figure 2: Classification scheme of individual strategies for coping with institutional complexity
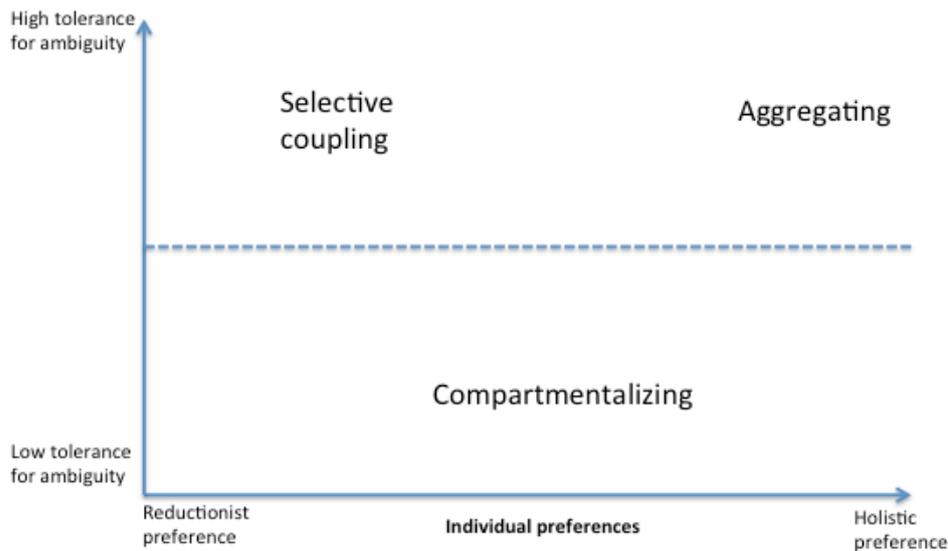
DISCUSSION

Research on institutional complexity addresses the tensions that organizations experience when exposed to potentially conflicting prescriptions from different institutional logics. Previous literature suggests that organizational identity impacts on managerial responses to such conflicting prescriptions; possible responses being: compartmentalization, deletion, integration, and aggregation (Pratt & Foreman, 2000). Managerial responses have also been studied empirically, for example in community hospitals (Fiol, Pratt, & O'Connor, 2009). Although studies of organizational responses to institutional complexity generally adopt the organization as the unit of analysis, some studies examine this topic through an analysis of interpersonal dynamics (Sluss & Ashforth, 2007). Institutional complexity expresses itself in intergroup and intragroup processes (Ashforth & Reingen, 2014), sometimes provoking intra-organizational conflicts. Such conflicts have arisen, for instance,

within a philharmonic orchestra, where organizational members simultaneously face an artistic logic and an economic logic (Glynn, 2000). While these studies analyze organizational micro-processes, they fall short of addressing potential divergence in how individuals respond to the same institutional complexity. This short-coming, which we addressed in this paper, matters to the literature on institutional complexity in as much as differences in individual responses sheds light on why organizations in the same institutionally complex field respond somewhat differently to identical institutional pressures.

Our study examined how individuals in an organization cope with dual pressure from the science logic and the market logic. The findings showed that all organizational members, employees as well as managers, make cognitive-affective efforts to cope with these dual logics in a way that avoids intra-organizational conflicts. The effort varies with the type of individual response they adopt. When adopting an aggregating strategy, individuals link various aspects of their complex organization by focusing on complementarities between different parts. When adopting a selective coupling strategy, individuals perceive more differences within their institutional complex environment and make more cognitive-affective efforts to deal with these differences. They interpret each part in a way that allows flexible and multiple connections among different parts of the organization. In so doing, they do not need a buffer for dealing with the complex setting. In contrast, individuals who adopt an aggregating strategy need buffers. This response requires much higher cognitive-affective efforts for dealing with institutional complexity. Our findings show that organizational members react differently, and display different levels of cognitive-affective efforts, in coping with institutional complexity. We recognize that it may be surprising that only few individuals display significant cognitive-affective efforts in their attempt to cope with their complex environment. One could argue that they have been sufficiently exposed to this institutionally complex environment to find sense in it, or alternatively to leave this work environment. However, small numbers (only two out of eighteen employees adopted an compartmentalizing strategy) may also be at fault. Studying a more recent organization and collecting a larger data set could be interesting for future research.

Existing literature on organizational identity can perhaps help us understand how members resolve contradictions that arise from competing institutional pressures. The hybrid organization of a rural cooperative embodied elements of both "business"

and "family" identities (Foreman & Whetten, 2002), prompting organizational members to embrace competing goals. Another response is to focus on a single identity of the hybrid organization, thereby running the risk of derailing some of the intended organizational outcomes (Anteby & Wrzesniewski, 2007). Other research highlights the potentially positive aspects of a multi-identity organization, rather than the challenges it presents. A hybrid organization can allow for the resurrection of a collective identity (Howard-Grenville, Metzger, & Meyer, 2012) and increase members' ability to deal with complexity (Shipilov, Gulati, Kilduff, Li, & Tsai, 2014). However, little attention has been devoted to studying differences in how individuals cope with complexity, including the question of why such differences occur. Our research findings offer a first step toward addressing this gap. Future research may build on our findings to examine additional patterns among individuals who adopt respectively a holistic and a reductionist approach, or who engage with a holographic versus an ideographic form of organizational identity (Albert & Whetten, 1985).

The literature on hybrid organizations has shed some light on organizational responses to institutional complexity resulting from an organization embracing conflicting logics. This literature highlights the need for "hybrid organizing" through policies such as hiring and socializing (Battilana & Dorado, 2010) and the creation of spaces for negotiation and interaction that allow members to discuss the trade-offs they face (Pache & Santos, 2013). A hybrid organization may also leverage the existence of multiple institutional logics and pressures for various purposes (Santos, Pache, & Birkholz, 2015). Recent research on micro-level strategies further analyzes how organizational members cope with the complexity of their hybrid organization. This line of work highlights the positive effects resulting from efforts to combine logics, such as new market opportunities (Dalpiaz, Rindova, & Ravasi, 2016). Although this line of research analyzes organizational micro-processes, including the role of individuals, they do not examine how cognitive-affective characteristics of individuals may influence their individual response to the same institutionally complex environment.

The results of our research point to two cognitive-affective factors that partially explain individual responses to institutional complexity. Our findings suggest that actors with a low tolerance for ambiguity will tend to adopt a compartmentalizing strategy for coping with institutional complexity. In contrast,

individuals with a high tolerance for ambiguity are more likely to adopt one of two alternative strategies for coping with institutional complexity: individuals with a preference for holism are apparently drawn to adopt an aggregating strategy, while those who prefer reductionism tend to embrace a selective coupling strategy. In highlighting individuals' cognitive-affective characteristics as a potential explanatory variable, our study contributes to shedding light on why organizations sometimes respond differently to the same institutional complexity. We did not consider other explanatory factors, such as the structural position of individuals and their past professional experience, but we recognize that they may also influence on individual responses to the institutional complexity they encounter in their organizational setting. We encourage future research to address a wider set of explanatory variables at the individual level.

Our findings also contribute to the emergent stream of research on emotions within institutional theory. Organizational and institutionalist scholars have traditionally paid little attention to the cognitive-affective characteristics that underpin the efforts of organizational members to cope with the institutional complexity they encounter in their organizational environment. However, it is increasingly evident that work at the intersection of emotions and institutions can help improve our understanding of the processes that intertwine people and institutions with one another (Voronov & Weber, 2016). Recent literature recognizes the importance of addressing the psychological mindset of individuals, including emotions, for better understanding the organizational dynamics related to institutional complexity (Voronov & Vince, 2012). To advance this research agenda, we have identified three strategies that individuals adopt to cope with institutional complexity, and the corresponding cognitive-affective dispositions that guide their choice of strategy.

Our work also contributes to the emerging stream of research on how actors exercise agency in their everyday use of logics (McPherson & Sauder, 2013). Our research results extend previous work on how organizational actors apprehend logics that are instantiated in organizations (Besharov, 2014). Our analysis shed light on differences in individuals' capacity to apprehend institutional contradictions and in their preferences for how to cope with these contradictions. This work contributes to an inhabited view of institutions (Hallett & Ventresca, 2006) and provides valuable new input to the debate on embedded agency, which is a topic of great concern for institutional scholars (Battilana & D'Aunno, 2009; Thornton et al., 2012).

CONCLUSION

The notion of organizational and individual responses to institutional complexity has become fundamental to our understanding of institutional instability and change (Smets & Jarzabkowski, 2013). However, little is known about how individual members of organizations cope with institutional complexity (McPherson & Sauder, 2013) and which psychological factors influence these responses (Voronov & Yorks, 2015). Our objective in this article has been to demonstrate that individuals exposed to the same institutional complexity use different strategies to cope with institutional complexity and to identify some of the cognitive-affective characteristics that explain their preferences for a particular strategy. Our work helps extend the literatures on inhabited institutions (Hallett & Ventresca, 2006) and hybrid organizations by means of an enhanced understanding of micro-processes at the individual level of analysis.

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Table I: Individuals' perception of dual institutional logics

Second-order categories	First-order categories	Representative quotes from interviews
• **Science logic**	Autonomy/ creativity/ exploration	- "Public R&D lab brings us freedom and creativity" (I) - "(Due to) our exploration type of research, there is no routine"
	Long-term horizon	- "I like to do deep into my work; if something is worth investigating, I cannot stop - else I would have done development" (S)
	Methods: Publications, Low-cost, Scientific method	- "Research in public labs is more interested in publications" (S) - "In research, financial investments are limited, it costs nothing" (D) - "One should not measure R&D with economic criteria - it does not make sense, as R&D does not produce, hence no revenue, they are not relevant" (G) - "US energy corporation has a work method very "production" oriented, that I sometimes consider more empirical then scientific"
• **Market logic**	Control/ Pressure/ Operational/ Development	- "There is this pressure with US energy corporation to deliver on short term" (B) - "US energy corporation is an area with much more controls" (I) - "The work that is proposed here does not require a PhD, it is development" (E)
	Short-term horizon	- "They (US energy corporation) are in the urgency of a production logic" (X) - "US energy corporation is very much focused on shorter term view and they lack somehow longer term view" (B)
	Methods: Patents, KPI/financial ratio, Empirical method	- "Research with private companies is more interested in patent" (S) - "(There are) KPI and process in the US energy corporation use because the maturity of their research is much higher" (S) - "Research in industry is usually very linked the business: how much shall we get in return? Usually there is a tough financial pressure, including pressure from ratio" (D) - "US energy corporation has the bad tendency (because of short term production focus) to go ahead even if that have not understood the root of a problem" (E) - "US energy corporation has a work method very "production" oriented, that I sometimes consider more empirical then scientific" (S)

Individual strategies	Definition	Representative quotes from interviews
Aggregating	At individual level, we use the concept of aggregating when members link or attempt to link all sub organizational parts. Their strategy is to identify relationships and synergies. The focus is to identify complementarities between the various aspects of the partnership, without need to create specific links between the sub-groups. This process can be facilitated by the creation of mediating myths or beliefs, helping giving sense to apparent identity incompatibility.	- "Research collaboration with the public labs gives us nutriments to feed the work with "US energy corporation". - "Working with "Public R&D Lab" and their more "naïve" academic community, gives us a balance to "US energy corporation", which might help managing better the pressure from it". - "We (at "Public R&D Lab") are more research while "US energy corporation" need to sell something at the end: this is where we complement each other. They are more short term while we have the choice and the need to do the effort of positioning ourserves on medium term: this is the strategy but also the reality". - "We complement each other, with different skills but I do not see this as an issue". - "We are exploring good options for the future, while "US energy corporation" maintains the control on short term and the factory, but of course you cannot decouple the long term from the short term research - we are on the 'far end' while they are on the 'close end' we work in very close collaboration with "French energy corporation". - "Overall, we are a global team, that helps each other, as each of us brings his/her brick".
Selective coupling	At individual level, we use the concept of selective coupling when members combine the logics by complying selectively with demands from each one. They will adopt this approach not just for coping with complexity, but as a chosen strategy for managing incompatibilities. Members may adopt different links, practices and attitudes depending on each sub-group norms and demands - but without buffer as in	- "The fact of being in this division gives us more flexibility then in other "French energy corporation" branches; we benefit from it while also benefiting from being part of a large group such as "French energy corporation". - "The complexity and ambiguious aspect of our collaborative partnerships works fine for me! You need to adapt, not talk the same way to the various stakeholders. Those elements can create confusion for some people, but for me, they are motivating!" - "I like to work with "Public R&D Lab" academics: they have theoretical knowledge which helps me a lot, and for them, their knowledge is useless if not applied - I develop process that works fine and you, your theory I need it! Unfortunately, people sometimes would like more - I think there is a way to endorse the roles which is not facilitating the whole constitution, and I feel like this is a general problem". - "It is like two different worlds of doing research touching each other".

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	compartmentalizing.	- "We can very well be the firewall between "US energy corporation" and the external world; "there are very few people with a global view on the entire process". - "Once a month I have a meeting on my PhD status with a guy from "Public R&D Lab" and my boss in our team; there she participates, suggest ideas on what we could do and gives us news ideas. But on the private projects she is working on with "US energy corporation", she does not say anything because of confidentiality. But this is not a problem; it would not be normal if information would flow everywhere" - "I suppose that people who want to have the overview and do a bit of everything, those would prefer to work on long terms things". - "When working with "US energy corporation", it is very structured; each have their job and do not need to look aside". - "It is politically correct to say that we should according to the official strategy, be working on exploration but this is not the case. But it is easy to understand: it a discourse that our managers like but in real life in it different".
Compart-mentalizing	At individual level, we refer to the concept of compartmentalizing when members choose to preserve the multiple logics but to separate them from each other. They do so, by establishing a level of buffering that does not exist in aggregating where multiple logics exist also, but they are linked to one another without buffer. They do not seek any synergy but lower the risks of tension between multiples by keeping them separated.	- "We are working in very compartmented areas and sometimes I am afraid that I may loose a bit what is going on if I am not taking care of my own academic training". - "The only interest of "Public/ Private R&D Lab" is to have our own private lab where we can develop our things in peace, just like "US energy corporation" does. This could also reduce a level of uncertainty "US energy corporation" may have towards us". - "Working on projects involving "US energy corporation" AND "Public R&D Lab" is very difficult. If any link to "Public R&D Lab" is needed, I prefer to have it done through a PhD student, who himself, will not have contact with "US energy corporation". - "If someone is asking me about a specific problem, then we hide it within a larger problematic; this is how we sometimes manage to communicate with colleagues outside the "US energy corporation" projects I work on". - "French energy corporation" is our Co, but we cannot really comment in our daily work with "US energy corporation", because everybody at "Private R&D Lab" is looking at what we are doing". - "(I prefer to only work on private projects with "US energy corporation), hence I do not work with "Public R&D lab" anymore". - "I was offered to work on "Public/ Private R&D Lab" (long term, few partners) project but for me it is too far from "US energy corporation" (exclusitivity, confidentiality)". - - "I do not discuss with anyone outside of the project (with "US

		energy corporation"); it helps to apply strictly their rules".

Table III: Strategies adopted by individuals

Individuals	Aggregating	compartmentalzing	Selective Coupling
A			X
B			X
C			X
D	X		
E	X		
G	X		
I	X		
J			X
K	X		
L			X
M	X		
N			X
O			X
S		X	
T	X		
X			X
Y		X	
Z	X		
18 individuals	**8**	**2**	**8**

Table IV: Psychological factors underpinning individuals' complexity perception.

Second-order categories	First-order categories	Representative quotes from interviews
High tolerance for ambiguity	Secret, unofficial, discrete, diplomatic, lobbying, influence, tacit	- "We do this on a **secret** mode"; "We have done this but it was **unofficial**" (B). - "My message to the outside world about our strategy is credible because I believe in it **but it does not mean that in practice, this is what we do**" (C) - "(In this environment), you also need to be **discrete and diplomatic**" (X). - "Our role between the various "US energy corporation" and "French energy corporation" teams are not defined by contract because it is that

	Suggest, unforeseen, unplanned, under construction, gap, not so clear	complex, it is **lobbying and influence**" (E) - "I am not sure this is very official, formally but it is **tacit**" (C) - "**Uncertainty** is of course the nature of R&D, this is the case everywhere" (B) - "I asked my boss for clarification about "where are we going to" and the question "sense making", I ask question but I wait for answers, so I **suggest them**..." (F). - "There are **necessary surprises, things unforeseen, unplanned** where you start (a new partnership). (…) Structure are in movements and keeps evolving, adapting; there is always a **level of uncertainty: this structure is clearly still under construction**" (M). - "This is **not quite clear how all of this works**" (I) - "One **uncertainty is the gap between what the management tell they want and what we do** in reality; but I think we understand why: it is a question of time" (T). - "French energy corporation" strategy is quite general, **not so clear**. However, we ("US energy corporation", "French energy corporation") prepare details plans together and then yes, I find sense in the strategy" (Z).
Preference for reductionism	Sub-orga-nisational specificities	- "The academics partners like "Public R&D Lab", their motivation is to **publish a paper**, whereas our **motivation is more patents**. (…) Research (in labs) needs more **freedom and flexibility** (then here). (…) We do **not have the same way of functioning as in the other branches**" (A). - "We have **different expertise then in the rest of the group**, because we work on a specific field" (B). - "I like to work with "Public R&D Lab" academics: they have **theoretical knowledge which helps me a lot**, and for them, their knowledge is useless if not applied - I develop process that work fine and you, your theory I need it! (…) I do not see how "US energy corporation" and "Public/Private R&D Lab" will work together with **completely different ways of working**" (J). - "When working with **"US energy corporation", it is very structured**; each have their job and do not need to look aside" (N). - "**Our division is completely different** from what "French energy corporation" is doing; the problem is that it is a small branch so job evolution opportunities are very limited" (O).

	Personal legitimacy, professional identity, contribution and recognition	- "With "US energy corporation" also, there is an **intellectual specificity**, more on the reflexivity mode then operational mode" (A). - "We find it difficult to catch "US energy corporation" interest" "Sometimes we feel like they treat us as **delivering some sort of service work**" (B). - "A strong motivation factor is to see that what we are working on a R&D team is making its way to production: this is a **motivation factor, that your work is of value because it gets sold**" (B). - "**My role is to be the bridge between "Public R&D Lab" and "French energy corporation"**; also to interact with new academic PhD student at "Public R&D Lab" (N). - "It has been a little **difficult for me; because I am a technician**, it was very difficult to have information about solar" (O). - "We are doing **engineer work although colleagues here have worked in academics with a PhD**, but we are engineer and "US energy corporation" is the same; they never call themselves for scientists" (L). - "We had to **regain legitimacy**, when we started working with "US energy corporation" (…) but eventually working with "US energy corporation" gives us more credibility in our field" (I)
Preference for holism	Adaptability, opportunity, constructive, flexibility, "up to us", sort things from another, positive	- "Skills needed in this job are to be able to **adapt to the various stakeholders** and to know where you are, as you are between many different stakeholders!" (X) - "With "Public/Private R&D Lab", it is unclear why we did it, so we try to find the best way to use it - it is like an **opportunity that was imposed on us, but it can be something positive and constructive**". - "We can bring more on longer term research, if we manage to convince them; usually we **manage to convince them** we are more here to bring ideas, open new things and new ways for them to do things. (…) It is also **up to us**, when they want short term results, to say "no" or may be at least "yes but": we have to **hang in there**! (…) Skills needed? **Flexibility** and **capacity to adapt**: we do a bit of everything… and not becoming schizophrenic!" (M). - "I have a high **capacity to adapt**" (J). - "I do not get frustrated, I **manage to sort out things from one another**. Yes we work more for "US energy corporation" but there are advantages of having a working contract rather then with a "French energy corporation" (T). - "Working with "US energy corporation" has been an **opportunity for me.** (…) It has been easy for me to adapt and see quick results: it has been **positive**" (Z).
	People, friendships,	- "When you start a partnership, you start with a modest agenda to allow stakeholders to get to know each other, **establish trust relationship**"(D).

	relationships, interactions, discuss, talk, links, trust, communication, curiosity	- "I **discuss with the various teams** about all info I have. (…) Despite different organizational cultures, the rule for things to go well is: **meeting one another, talking together** as much as possible so people create a link that is not just contractual" (E).
		- "A key conditions for successful partnerships is the **establishment of a high communication level, mutual trust and a space for managing conflicts**; time has nothing to do with it" (G).
		- "Attending a seminar at "French energy corporation" HQ is not just about the seminar but also the **people**. (…) I am a very **curious person**; I am the typical person who when I ask to understand, I need to know! I am not getting frustrated because **I am asking**, I do not like to not understand" (K).
		- "I not only work on "US energy corporation" project but also on European research project: this allows me to **keep the link** with "Public R&D Lab". (…) If I feel frustrated, then **we can talk between us,** as they are things we have in common: there is a good team spirit and a group mind".
		- "With "US energy corporation" we used to get minimum information (…) it took time to **build trust** but now it goes much better. (…) There are many collaborations between "US energy corporation", "Public R&D Lab", "Private R&D Lab" and shared projects so I **interact a lot** with all of them; I work with adorable people and I build many **friendship**s; we do not need "crazy researchers" only on their microscope, but people with **human skills**, not only R&D skills; the most important for me is not so much the sector I work in but the people I work with - that it works well between us" (T).
		- "A key motivation factor is to have a **good relationship with the people** around you. (…) **Language capacities are key**. (…) (In terms of skills), it is important to have someone you can **trust** (due to confidentially) then just someone with the correct (technical) background. (…) I need to find the balance with not forgetting my old colleagues, so sometimes I **go for lunch** with "French energy corporation" people and sometimes with "Private R&D Lab" people" (Z).
	Common denominator, share, future of renewable energy, green energy, high expertise, leaders, high intellectual = "anchor"s/ "positive myths"	- "Our **common denominator**, whether here in "Public R&D lab" or also at "US energy corporation" is really to work for the **future of renewable energy**. Between "Public R&D Lab", "US energy corporation" and the "French energy corporation" team, our tasks and jobs are different, but the **concept of renewable energy is something we all share**" (M).
		- "Who are we? Well, I think about both "French energy corporation" & "US energy corporation". I think: I am a part of a team **working the highest efficient solar cells in the world**. (…) We are a team part of a big company, working on its **green aspect**" (Z).
		- "We ("US energy corporation" & "French energy corporation") all have the **same goals: to be leader with high efficiency and low costs**"" (Y).
		- "Our population is made almost **entirely of doctors**, with the same education; with the same professional family - quite an homogeneous **population with high intellectual** and human levels" (A).

Table V: Relation between individuals' strategies and individuals psychological dimensions:

Second level coding	High tolerance for ambiguity		High preference for reductionism		High preference for holism		
First level coding	High tolerance for ambiguity	High tolerance for uncertainty	High perception of each sub-organisational specificities	High perception of personal legitimacy and professional recognition, identity	High capacity to embrace pro-actively changes & complexity	High importance of intergroup relations and trust	Strong perception of "anchor"s/ "positive myths"
A	x	xx	xxxx	xxx	x		
B	x	xx	xxxx		x		
C	xx	xxx	xxxx				
D	x	x			x	xx	
J		xx	xxxx		x		
N	x	x	xxxx	xxx	x		
O	x	xx	xxxx	xx			
L		xx	xxxx	xxx	x	x	
X	x	xx	xxx				
D	x	x			x	xx	
E	x	x				xxx	
G	x	x			xxx		
I	x	x			xxxx		
K		x			xxxx		
M	xx	x			xxxx	xxx	x
T	x	xx			x	xxx	
Z	x	xx			xx	xxxx	xx
Y			xxxx	xx	xxxx	xx	x
S			xxx	xxxx			

(Left column label, rotated: Individuals)

Selecting coupling strategy
Aggregating strategy
Compartmentalizing strategy