



Lancaster University
Management School

PhD in Management
Department of Entrepreneurship, Strategy & Innovation

**WHEN PROBLEMS KNOCK AT THE ORGANIZATION'S DOOR:
A THEORY OF MOTIVATION TO CHANGE, PROBLEMISTIC
SEARCH AND CHOICE OF ACTION**

Organization Theory Under a Behavioral Lens

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December, 2016

Al mio Unico Senso

Logic will get you from A to B. Imagination will take you everywhere

(Albert Einstein)

DECLARATION OF CONTRIBUTION

I declare that the research reported is my own and has not been submitted for any other academic award. Some of the research papers included in this doctoral dissertation have been submitted for consideration to peer-reviewed academic journals and are currently under review. Where I have consulted the published work of others, this is always clearly attributed; where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work.

Three out of four of the papers included in this dissertation are multi-authored. I declare, and my co-authors can confirm, that, for each of these papers, I have substantially contribute to the conception and design of theory and the analysis and interpretation of data. I fully acknowledge my co-authors for their contributions to the acquisition of data and for critically drafting and revising the works included in this dissertation for academic publication. I am fully accountable for all aspects of this thesis related to the accuracy and integrity.

ACKNOWLEDGMENTS

First and foremost, I would like to express my sincere gratitude to my supervisors, Alfredo De Massis and Sascha Walter. Their advice and guidance on both research as well as on my career have been priceless. The constant enthusiasm they demonstrated towards my research ideas and abilities as well as their fresh ways of thinking, moral support and the freedom to pursue my research interests, helped me to overcome many tough moments. Besides my supervisors, I would like to thank the rest of my thesis committee, my external examiner Dr. Federico Frattini and my internal examiner Dr. Josip Kotlar, for their time, patience, and effort.

I am particularly indebted to Josip to have contributed immensely to my personal and professional development during the PhD journey: our conversations have played a fundamental role in shaping this dissertation as well as other projects. I still remember my first day at LUMS when Josip entered my temporary office suggesting me an interesting reading: “Organizational Aspirations, Reference Points, and Goals: Building on the Past and Aiming for the Future” by George Shinkle. Looking backward, I can say that event was a true initiation! My gratitude also goes to Jess Chua, who is a great source of inspiration and knowledge. Jess has always showed great availability and provided support throughout the whole PhD journey.

The development of this dissertation has benefited from the comments and interactions with other colleagues at LUMS. Particularly, I would like to thank Allan Discua Cruz and Martin Friesl for being constructive discussants of my research proposal. My gratitude also goes to Ellie Hamilton and Sarah Jack who have always been extremely supportive, kind and caring.

My first paper on problemistic search benefited from the comments of Henrich Greve, Eero Vaara, Martin Friesl, Silvio Vismara, Luigi Marengo, Gautam Ahuja, and anonymous reviewers. Some of their comments could not be taken care of in this thesis, but are a valuable cache of ideas for sharpening this work and continuing with this line of research. I am also grateful to James J. Chrisman, Marco Cucculelli, and Thomas Zellweger for making challenging and developmental comments on earlier versions of my paper on conformity in family and non-family. I wish to express my gratitude to all the reviewers of my papers at various research conferences and workshops, such as the 14th Theories of Family Enterprise Academic Conference (University of Alberta, Edmonton, Canada), the Academy of Management Annual Meeting 2015 (Vancouver, Canada) and the Trans-Atlantic Doctoral Conference 2015 (London Business School, UK).

Also, this thesis would not have been possible without the generous financial support provided by RADMA Association and the Regional Growth Fund (RGF) for my PhD education and my research.

My deepest thanks go to my colleague and friend Emanuela. I was very lucky to share this journey with you. Our sleepless nights, endless conversations, laughs, and tears have helped me overcome many difficult situations, have improved me as a person and will remain with me forever. I would also like to thank other lecturers and PhD students in the Department of Entrepreneurship, Strategy and Innovation at LUMS - Allan, Ed, Ricardo, Feranita, Pari, Muaz, Shuangfa, and Andi - who not only proved to be great colleagues, but also became close friends. Thank you Fera for your support, generosity and complicity, and Pari for having lightened up my days with your smile and having helped me downplay even the toughest moments. My gratitude goes to all my friends at

Lancaster University, Maria, Riccardo, Nicolò, and Giorgio and to my flat mates, Matteo, Ioannis, Emilien, and Danilo for making my stay in Lancaster unforgettable.

I would like to thank my family for all their love and encouragement, and most of all my loving, encouraging, and patient mother Francesca whose faithful support during this journey was priceless. She spent sleepless nights waiting for me while I was working on this dissertation in my office at home and spent hours listening to and trying to understand my research ideas and projects. Your advice and guidance made me what I am today. You are my motivation! Finally, I would also like to express my gratitude to all of my friends who have always encouraged and supported me, despite the distance. My gratitude goes especially to Giordano, close family friend, who has always been extremely supportive and caring.

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ABSTRACT

In this dissertation, I focus on how decision makers respond to multiple performance-aspiration discrepancies by first using their firm's position relative to aspiration levels to make sense of observed performance, and then making decisions based on their own interpretations of available information. In particular, the theoretical and empirical contributions of this thesis relate to the causes, underlying dynamics, and consequences of organizational change and the research methods involved in their study. Specifically, I take an approach that combines multiple theoretical perspectives – including the behavioral theory of the firm, threat-rigidity theory, institutional theory, and organizational learning theory – and multiple methodologies – such as computer simulation and statistical analysis (dynamic panel data analysis and multilevel modeling) – to stake out what I feel are new and dynamic avenues for exploring how decision makers interpret and act upon information concerning the performance of their organizations and the external environment. Such an exploration has occurred in two synergistic streams of research: the first stream investigates how and to what extent performance relative to aspiration levels affects organizational search (Paper 1) and

strategic change (Paper 2, Paper 3). In so doing, it develops theory of managerial attention to goals, sense making, and decision making. The second, investigates how and to what extent in family firms the pursuit of a variety of non-economic goals shapes family owners' and managers' cognitive frameworks and their interpretation of the environment, entailing systematic differences between family and nonfamily firms in decision making (Paper 4). The cover essay provides the conceptual framework of the thesis and summarizes the main findings. The four appended papers analyze more deeply the different research topics.

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1. INTRODUCTION

According to behavioral theories of decision-making, the underlying principle of organizational change is the process of outcome evaluation, search, and choice of action (Cyert & March, 1963). Because decision makers are boundedly rational and can only access limited information (Cyert & March, 1963), they use aspiration levels – minimal organizational outcomes deemed satisfactory for a goal variable – to cognitively frame situations as either losses or gains (Fiegenbaum, Hart, & Schendel, 1996). Situational framing affects managers' subsequent motivations to act and take risk, thereby shaping organizational responses (Chattopadhyay *et al.*, 2001; Greve, 1998). Specifically, when a goal is not attained, decision makers search for solutions – or, more specifically, engage in problemistic search – which may produce outcomes above the aspiration levels (Cyert & March, 1963).

Although the question of how decision makers make sense and respond to performance aspiration discrepancies has attracted considerable attention in organization theory, extant research has primarily focused on explaining variations in the amount of failure-induced effort, both in terms of invested resources and realized outcomes, which organizational decision makers employ to reverse negative aspiration-attainment discrepancies for profitability. For example, an accumulating bulk of research in this area is supportive of the effects of profitability above/below the aspiration level on R&D expenditure (Chen & Miller, 2007; Greve, 2003; Vissa, Greve, & Chen, 2010), innovation and new product launches (Gaba & Joseph, 2013; Greve, 2003), factory and capacity expansion (Audia & Greve, 2006; Desai, 2008), alliances and acquisitions (Baum *et al.*, 2005; Kim *et al.*, 2015; Iyer & Miller, 2008), divestitures (Moliterno & Wiersema 2007; Shimizu, 2007) and major organizational change (Greve, 1998). While the strong effect

across a wide range of strategic decisions and organizational outcomes leaves no doubt that profitability is an active goal variable (Shinkle, 2012), these findings somehow contradict the prescriptions offered by the attribution theory (Weiner, 1986) at the individual level, and the behavioral theory of the firm (Cyert & March, 1963) at the organizational level, that goals need to be local and sufficiently specific to allow managers to ascertain causal perceptions, particularly the perceived causes of success and failure in goal achievement and their locus in the organization.

The behavioral theory of the firm as originally phrased assumes that multiple goals are active in an organization, and sees the choice of goals as an important theoretical question. While some goals are used to assess organizational performance, others exist to serve the interests of stakeholders and other groups external to the organization (Fiegenbaum *et al.*, 1996; Greve, 2008). While some goal variables are set for strategic inputs, including cost reduction, quality improvement, and R&D activities, others, such as profitability and growth, are used to assess strategic outputs (Fiegenbaum *et al.*, 1996). Decision makers can attend to goals either sequentially or simultaneously, depending on whether a particular goal fully dominates the other in the eyes of the firm's decision makers (Cyert & March, 1963; Greve, 2008). Some studies analyzing the effect of different types of goals on organizational outcomes yielded no interactions among goals (Greve, 1998). However, other work has indicated that decision makers may base inferences on associating the same event with multiple goals to decide on an appropriate response (George *et al.*, 2006). This happens either when different goals are relevant to the decision at hand (Chrisman & Patel, 2012; Ross & Murphy, 1996) or when goals are causally linked in a hierarchical fashion, so that decision makers try to fulfill multiple goals simultaneously in service of an overall high-priority goal (Greve, 2008). Such

inconclusive evidence generates interesting opportunities for further research. To this end, the context of family firms can be particularly germane for understanding the effect of multiple goals on decision-making and relevant organizational outcomes. In fact, compared to non-family firms, family firms pursue a broader spectrum of goals, both economic and non-economic (Chrisman *et al.*, 2012), in service of an overall high-priority goal: the preservation of the family's socioemotional wealth (SEW) (Gómez-Mejía *et al.*, 2007).

Finally, in regard to the activity that decision makers perform to identify alternatives to current behavior when goals are unmet – that is, problemistic search – scholars has largely treated it as the underlying logic explaining variations in the causal relationship between negative aspiration-attainment discrepancies and the extent of organizational change. By doing so, they have inevitably limited understanding of the behavioral pattern required to perform problemistic search and the mechanisms regulating the behaviors of decision makers involved. In my paper-based research dissertation I try to address these limitations, by investigating how decision makers across different organizational contexts (family vs. non-family firms) make sense, interpret, and react to multiple aspiration levels and how they search for solutions when these level are unattained. The area of investigation is quite broad; therefore, the thesis is structured as a collection of articles in order to disentangle the several dimensions of analysis. Figure 1 provides an overview of the whole configuration and the conceptual framework of the thesis.

Insert Figure 1 about here

The thesis aims to answer two main sets of questions. The first one is more general and relates to the motivations for organizational change: *Why and when do firms change their behaviors? Do performance discrepancies, either above or below aspiration levels, facilitate or hinder organizational change? What are the causes and underlying mechanisms entailing heterogeneity in organizational responses to similar problems? How do organizations search for solutions to unmet goals? To what extent do problem framing and interpretation affect subsequent search for solutions and organizational behavior?* The second one is more specific and investigates how and to what extent heterogeneous preferences across the members of organizational dominant coalitions affect the way in which decision makers interpret and respond to both unattained aspiration levels for such goals and external demands, with a special focus on family firms: *How and to what extent does the pursuit of a variety of non-economic goals shape family owners' and managers' cognitive frameworks and their interpretation of the environment, entailing systematic differences between family and nonfamily firms in their reactions to external pressures?* These questions are addressed in four papers, which constitute the core of the thesis. The papers are quantitative and employ dynamic and multi-level econometric analyses to test the hypotheses using panel data on a sample of Spanish manufacturing firms from 1998 through 2012 – with the exception of the first paper. In this paper, in fact, we employ computer simulation to tease out how the process of problemistic search unfolds and how different approaches to search may lead to heterogeneous responses to problems. Our aim here was to examine how, as problemistic search progresses, its outcomes can become far more heterogeneous than previously theorized. To do so, we develop a formal model of the problemistic search process. In addition to its analytical rigor, clarity and logical power (Davis et al. 2007, Harrison et al.

2007), theorizing about dynamic processes with the benefit of a formal model enables “capturing reality in flight” and explicitly accounting for sequences of events, actions and activities unfolding over time and their relationships (Harrison et al., 2007, Pettigrew et al. 2001).

Specifically, in my first dissertation paper, entitled “*Problemistic Search Revisited: A Metric Space Theoretic Reconceptualization and an Iterative Model*” I and my co-authors draw on the mathematical foundations underlying the notion of metric space and develop a reconceptualization of problemistic search that captures the multidimensional nature of the construct along three dimensions: knowledge distance, temporal distance and spatial distance. Building on this reconceptualization, we articulate an iterative simulation model that allows careful consideration of the search patterns along the three proposed dimensions and their heterogeneity across different organizations. Analyzing the problemistic search process of organizations in this way leads to question some commonly held beliefs in organization theory. For instance, initiating search across multiple strategic domains can be dysfunctional when an organization specializes in exploration, but may speed up the identification and implementation of a viable solution when the organization engages in exploitation.

In my second dissertation paper, entitled “*What’s the Problem? Perceptions of Stability and Controllability, and Problem-Driven Influences on the Growth of Production Assets*”, I explore variations in the relationship between aspiration discrepancies for productivity and the rate of production asset growth induced by managers’ perceptions of problem stability and controllability. Using a longitudinal sample of 2,479 Spanish manufacturing firms from 1998 to 2012, I find that managers’ causal attributions help explain the heterogeneity of organizational responses to aspiration

discrepancies. Overall, this study provides a more complete and nuanced understanding of the association between performance aspirations and the capital allocation process recognizing managerial perceptions of problem situations as a cause of variation in the relationship between aspiration discrepancies and both the mean and variability of strategic investments.

In my third dissertation paper, entitled “*Learn to Learn or Mimic to Impress? Trait-Based Imitation in R&D*”, an attempt is made to respond to various calls to examine whether external goals enter the goal formation process and if such goals can to some extent be “internalized” and prioritized by the dominant coalition. Specifically, the purpose of this study is to advance current understanding of the determinants of firms’ engagement in trait-based imitation and examine whether organizational learning and neo-institutional theories complement or compete with one another in explaining imitative behavior in R&D. The results suggest that concerns for developing competence and knowledge, and acquiring new skills for more efficient R&D, dominate over those responding to external pressures and revising R&D resource allocation in a way that facilitates collective approval.

In my fourth dissertation paper, entitled “*Blending in While Standing Out: Selective Conformity and New Product Introductions in Family Firms*”, I and my co-authors investigate the implications of family owners’ and managers’ special concerns for socioemotional wealth for decision-making, specifically the decision to conform in the context of product innovation introductions by Spanish manufacturing firms between 1998 and 2012. We hypothesize and find that both family and non-family firms conform selectively, but are driven by different motivations and follow different rationales for conforming. The avoidance of social losses orients family firms toward aligning with

their closest peers, whereas the opportunity for social gains orients non-family firms toward conforming to a group of firms displaying attributes that depart from their closest peers. Moreover, even when family and non-family firms experience similar propensities to conform, such propensities translate into more substantive organizational responses in family firms.

Table 1 summarizes the studies' major elements, including research question(s), underlying theoretical perspectives and constructs, approach and methodology, and contributions, which will be analyzed more deeply in the following sections.

Insert Table 1 about here

This cover essay is organized as follows. In Section 2, I provide a review of the theories employed in the dissertation, discussing their relevance, their differences and inconsistencies, as well as their synergies and points of integration. Section 3 describes the methodology I adopted in the thesis, providing a detailed description of the data used in the dissertation, sampling criteria and analytical techniques. Section 4 states the rationales underlying the papers, the main findings, and the intended contributions of the dissertation. It also contains a discussion of the limitations and suggestions for future research. Concluding remarks follow.

2. THEORETICAL BACKGROUND: THE BEHAVIORAL FOUNDATION OF ORGANIZATION THEORY

“The study of change and development is one of the great themes in the social sciences.”
(Pettigrew, Woodman, & Cameron, 2001).

Over the past decades, the effort put by scholars in understanding organizational change, its antecedents, and consequences has undeniably favored the development of such organizational theories as organizational learning theory (Levitt & March, 1988), evolutionary economics (Nelson & Winter, 1982) and institutional theory (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). These research traditions, albeit differing in important respects, have been more or less explicitly influenced by Carnegie School’s bounded rationality view of decision making and organizational behavior (Cyert & March, 1963; March & Simon, 1958). The conceptualization of bounded rationality derives from a modification of the rational choice paradigm that underpins most economic theory. Specifically, in their influential work *A behavioral theory of the firm*, Cyert and March (1963) argued that limited information, attention and processing ability make decision makers unable to perform the maximization tasks assumed in many economic treatment of the firm. Instead of maximizing decision makers are likely to satisfice, which means that they set a goal that they try to meet and evaluate alternatives sequentially until one that satisfies the goal is found (Greve, 2003b). The theory is easy to summarize: the environment gives performance feedback on goals determined by the organization, boundedly rational and satisfying managers search for solutions when a goal is not met, and finally potential solutions are evaluated and translated into organizational changes (Cyert & March, 1963).

In addition to bounded rationality and satisficing behavior, key concepts and constructs discussed in *A behavioral theory of the firm* are the internal and local nature of goals, the dominant coalition, and a search for solutions that is initially focused on the specific problem indicated by an unmet goal, namely problemistic search. Cyert and March (1963) devoted one entire chapter of *A behavioral theory of the firm* to the problem of defining goals, assuming that multiple *goals* are active in the organization and seeing the choice of goals as an important theoretical question. According to Cyert and March (1963), goals are formed through a process of bargaining among the members of a *dominant coalition* of actors and groups of actors with an interest in the organization's operations and ability to influence it. Even if members of the dominant coalition have different individual goals that may lead to conflict, a quasi-resolution of conflict may be achieved and the participants in the dominant coalition may enforce the agreement of the entire organization around some goals, as well as establish an order of priority among such goals (Cyert & March, 1963, Greve, 2003b). *Aspiration levels* are then used to evaluate organizational performance along an established goal dimension. An aspiration level was defined as "a result of boundedly rational decision makers trying to simplify evaluation by transforming a continuous measure of performance into a discrete measure of success or failure" (Greve, 2003b: 39). Put differently, aspiration levels are levels of performance decision makers desire to achieve on relevant goal variables according to both their past performance and peers' performance levels (Cyert & March, 1963). Finally, *problemistic search* is the "search that is stimulated by a problem (usually a rather specific one) and is directed toward finding a solution to that problem" (Cyert & March, 1992:169). As such it is guided by performance aspiration discrepancy and initiated when performance falls below the aspiration levels. Cyert and March (1963)

described problemistic search as a motivated, initially simple-minded and biased. Motivated, as it is always the response to an organizational problem. Problemistic search is simple-minded because it initially follows proximity rules: it generally occurs in the proximity of the problem symptom, and in the proximity of current alternatives. This means that organizations will tend to search for solutions in the organizational unit that first reports a problem and will favor solutions that make minor changes to the current routines. However, when search for proximate solutions fails, the organization increases the complexity of search, generally starting from searching solutions in vulnerable areas. It is biased because it depends on the variation of training, experience and goals of the participants in the organization (Mazzelli, 2015).

Subsequent work based on this theory validated its foundational ideas: multiple goals are active in the organizations (e.g., Baum et al., 2005; Greve, 2008) and, for each of these goals, decision makers set levels of performance they desire to achieve (i.e., aspiration levels) according to both their past performance and peers' performance levels (e.g., Bromiley & Harris, 2014; Greve, 2002; Joseph & Gaba, 2014; Kim et al., 2015). The order in which such goals are attended reflects their relative importance according to the dominant coalition and generally follows a sequential rule: decision makers attend to one goal at a time and move on to the next goal when performance on the first is above the aspiration level (e.g., Greve, 2008; Joseph & Gaba, 2014; March & Shapira, 1992). Hence, decision makers resolve the ambiguity arising from conflicting outcomes on either the same or different goal variables by giving greater importance to those that fall below the aspiration level (Cyert & March, 1963; Greve, 1998; Joseph & Gaba, 2014; Lucas et al., 2015). Yet, there is also evidence that a self-enhancement bias can make individuals

give greater importance to goals that are above aspirations, to protect their self-image from negative evaluations (e.g., Audia & Brion, 2007; Jordan & Audia, 2012).

A consistent body of empirical work has supported the prediction that when performance falls below the aspiration levels, decision makers work to identify impediments to performance and to improve it, whereas when performance exceeds aspirations, decision makers become less likely to take actions oriented toward increasing performance (Jordan & Audia, 2012: 211). Specifically, decision makers have been found to increase their search behavior, oriented toward identifying alternatives to the current set of activities, when performance is below the aspiration level (Greve, 2003a), but also their inclination to implement risky changes (Greve, 1998; Kim et al., 2015) – including acquisitions (Iyer & Miller, 2008; Kim et al., 2015; Shimizu, 2007), strategic alliances with non-local partners (Baum et al., 2005), change in market position (Greve, 1998), and launch of product innovations (Greve, 2003a) – and allocate resources to uncertain and risky investments (Arrfelt et al., 2013) – including investments in R&D (Chen & Miller, 2007; Greve, 2003a, Vissa et al., 2010), investments in capacity expansion (Audia & Greve, 2006; Desai, 2008; Greve, 2003c), and in marketing and advertising (Vissa et al., 2010). Conversely, performance above aspirations has been linked to inaction, but also to reductions in investment growth (Greve, 2003c), underinvestment (Arrfelt et al., 2013), and strategic persistence (Greve, 1998; Lant, Milliken, & Batra, 1992; Miller & Chen, 1994).

Nevertheless, these advances have caused current research to differ in important respects from the original formulation. Current research has, in fact, increasingly moved towards the analysis of the relationship between broad goals, such as profitability (i.e., ROA, ROS, ROE) and organizational change, thereby neglecting the original focus of the

BTOF on goal choice and the local nature of goals. Some studies analyzing the effect of different types of goals on organizational outcomes yielded no interactions among goals (Greve, 1998). However, other work has indicated that decision makers may base inferences on associating the same event with multiple goals to decide on an appropriate response (George et al., 2006). This happens either when different goals are relevant to the decision at hand (Chrisman & Patel, 2012; Ross & Murphy, 1996) or when goals are causally linked in a hierarchical fashion, so that decision makers try to fulfill multiple goals simultaneously in service of an overall high-priority goal (Greve, 2008). The context of family firms can be particularly germane for understanding the effect of multiple goals on decision-making and relevant organizational outcomes. In fact, compared to non-family firms, family firms have been found to pursue a broader spectrum of goals, both economic and non-economic (Chrisman et al., 2012), in service of an overall high-priority goal: the preservation of the family's socioemotional wealth (SEW) (Gómez-Mejía et al., 2007). A different but still neglected topic of research with regard to the multiplicity of goals pursued by organizations, is the role of institutional environments and external constituents in providing organizational goals, such as status, legitimacy, and reputation (Greve & Teh, forthcoming). In this respect, neo-institutional theory has provided a strong line of research showing the importance of external influences on organizations. However, the extant research has remained relatively silent on whether, when and how institutional effects on organizations affect the adoption and pursuit of goals.

Furthermore, contrasting findings have emerged concerning decision makers' responses to poor performance— such as resistance to changing strategies even when failure is quite severe (e.g., Audia & Greve, 2006; Staw, Sandelands, & Dutton, 1981) –

which current literature does not fully explain. I assume here that these shortcomings depend on two main limitations in the extant literature: (1) How problemistic search unfolds and how it may potentially lead to heterogeneous behaviors and outcomes is not fully articulated by current theory (Greve 2003b; Shinkle 2012); (2) Current research views performance-aspiration discrepancy as the problem. However, reality is more complex than hitherto supposed: means-end relationships exist among goals and performance-aspiration discrepancies are often only the symptom of underlying (latent) problems. When goals are broad, such as profitability, related problems are generally complex, ill-structured, and do not have a specific organizational location. In such circumstances, decision makers' causal perceptions and interpretations of performance that deviates from aspiration levels have a crucial role in directing attention, constraining search and driving organizational responses. Hence, a deeper analysis of the processes of problem-sensing and interpretation could help explain the heterogeneity of organizational responses to performance aspiration discrepancies. To address these limitations, in this dissertation, I exploited the synergies between the BTOF and the other organizational theories sharing the bounded rationality view of decision making and organizational behavior, as reported in Table 2¹. Next, I provide an overview of each of these theories, emphasizing their relevance, differences, and commonalities. Also, I briefly describe how behavioral theory has been employed in the family business research literature.

¹ Evolutionary economics (Nelson & Winter, 1982), albeit sharing with BTOF the assumptions of bounded rationality in decision making, the local nature of goals and search, as well as assuming routines as a stabilizing factor in firm behavior and search processes as a source of change (Argote & Greve, 2006), it is not reported here. Although it is often cited throughout the thesis and its view of firms as routine-based agents that change incrementally through search is central to the first paper of this dissertation, it does not represent a core theoretical perspectives this thesis is intended to contribute to. Representative work is found in Gavetti and Levinthal (2000), Dosi and Marengo (2007), Dosi, Nelson, and Winter (2000).

Insert Table 2 about here

2.1. Organizational Learning Theory

The most direct descendent of the BTOF, together with evolutionary economics (Nelson & Winter, 1982) is organizational learning theory (Levitt & March, 1988). Organizational learning theory uses the concepts and mechanisms of the BTOF directly (Argote & Greve, 2006: 341): organizations learn from their own experience and/or from the experience of other organizations (Levitt & March, 1988). Although decisions makers cannot initially be certain of the outcomes of their actions, with repetition they gain experience and confidence. Such experience is encoded in organizational memory and translated into rules (March et al., 2000) or routines (Feldman, 2004). Initial success with a particular activity calls organizations for repeating it because they know increasingly well how to do (Baum et al., 2000; Ingram & Baum, 1997), by contrast, failure experience indicates to decision makers that they existing model of world are inadequate, motivating them to challenge old assumptions and innovate (Baum & Dahlin, 2007; Baum & Ingram, 1998; Haunschild & Sullivan, 2002; Khanna, Guler, & Nerkar, 2016). However, as experience accumulates, organizations tend to concentrate their search efforts in areas related to preexisting knowledge bases, and tend to produce new knowledge closely related to the old (Benner & Tushman, 2002; Martin & Mitchell, 1998; Stuart & Podolny, 1996). Excessive reliance on the organization's own prior knowledge and routines speeds problemistic search activities and outcomes, but also contributes to resistance to change, competency traps, and inadequate or inappropriate responses in changing environments (Ahuja & Lampert, 2001; Kelly & Amburgey, 1991; Levitt & March, 1988; March, 1991; Rosenkopf & Nektar, 2001; Soreson & Stuart,

2000). In this way, “the more experienced an organization's members become with a particular strategic activity or direction, the more likely they are to repeat the action or reinforce the direction in the future” (Baum, 2000: 769).

Although learning in organizations tends to focus on local search exploiting old routines, oftentimes decision makers have imperfect information on the possible range of response options and their respective consequences, raising search costs and the risk of exposure to unexpected detrimental effects. To economize on search costs and alleviate uncertainty, decision makers turn to the observation and imitation of other firms' actions whose traits are indicative of the action's value (Baum et al., 2000; Greve, 1998; Haunschild & Miner, 1997; Rhee, Kim, & Han, 2006; Srinivasan et al., 2007). Put differently, to learn in a cost-efficient manner and avoid the risks of experimentation, firms learn vicariously by absorbing knowledge produced by other firms' explorations (Levinthal & March, 1993; Levitt & March, 1988). As such, vicarious learning can be conceived as a special manifestation of problemistic search (Argote & Greve, 2006).

In sum, organizational learning theory integrates the behavioral theory of the firm in two main respects: (1) it adds to the processual and temporal prescriptions of the BTOF – suggesting that organizational responses to aspiration performance discrepancies becomes quickly routinized and subject to inertial pressures, exposing organizations to learning trapes and the risk of engaging in dysfunctional responses; (2) it highlights the importance of behaviors of others and mimetic influences in helping organizations to resolve uncertainty (e.g., Wezel & Saka-Helmhout, 2006)

2.2. Institutional Theory

Institutional theory explains how firms adapt to a symbolic environment of expectations and a regulatory environment of sanctions (DiMaggio & Powell, 1983;

Scott, 2001, 2008). Key borrowings from the BTOF are bounded rationality of decision makers, uncertainty avoidance, and decision-making under ambiguity (Argote & Greve, 2006). The basic premise of institutional theory is that organizations are evaluated by a wide of external actors, including regulators, investors, customers and suppliers. Such actors are not interested in organizational internal operations or exact outcomes, but rather focus on external displays of conformity to discern between legitimate and illegitimate entities (Mayer & Rowan, 1977). They consider legitimate those firms that exhibit compliance with categorical membership norms because “they fit squarely within their background cognitive expectations” (Durand & Paoella, 2013: 1103). According to this view, conformity is a source of legitimacy and is associated with similarity across organizations and within specific fields or institutional contexts (Deephouse, 1996, 1999). By making their organizations increasingly similar, decision makers legitimize their organizations’ actions, protect their organizations from negative evaluations, and enhance their firms’ likelihood of survival (DiMaggio & Powell, 1983; Durand & Kremp, 2016; Oliver, 1991). This process of homogenization is captured by the concept of isomorphism generally conceived as a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions – namely, power, uncertainty, and culture (Di Maggio & Powell, 1983).

However, contrary to the BTOF, institutional theory assumes that isomorphism involves managerial behaviors at the level of taken-for-granted assumptions rather than consciously strategic choices (DiMaggio & Powell, 1963: 149). Although DiMaggio and Powell (1963) explicitly stated that isomorphic change is often mediated by the desires of decision makers and their goals, institutional theory purposefully ignores decision

makers' and their organizations' motivations to engage in isomorphic change, preferring to focus on the adoption of practices that become seen as a legitimate way of operating.

Some recent work (e.g., George et al., 2006; Lieberman & Asaba, 2006; Ordanini et al., 2008) has started paving the way for a more goal-oriented and motivation-driven view of conformity and isomorphic change. For example, Ordanini et al. (2008) referred to mimetic isomorphism – the process whereby organizations model themselves on other organizations when the environment is uncertain (DiMaggio & Powell, 1963) – as intentional and goal-oriented. Barreto and Baden-Fuller (2006) showed that organizations use a legitimacy-driven framework when mimic, which is based on legitimacy providers. These providers simplify and categorize the complex environment, providing performance benchmarks (i.e., aspiration levels) for firms to follow. Also George et al. (2006) showed that issues of organizational legitimacy influence decision makers' perceptions of threats and opportunities and their resulting decision patterns, among which isomorphic change. As a result, the concept of mimetic isomorphism as a response to uncertainty has increasingly become consistent with the theory of interorganizational learning, and the concept of vicarious learning (Argote & Greve, 2006; Chuang & Baum 2003; Lieberman & Asaba, 2006; Rao et al. 2001). However, differently from vicarious learning that is motivated by the desire to economize on search costs and learn in a cost-efficient manner in uncertain environments, mimetic isomorphism is enacted to protect legitimacy even if imitation has no economic advantages (DiMaggio & Powell, 1983; Haveman, 1993; Westphal, Gulati, & Shortell, 1997). In this sense, legitimacy provides a basis for search and decision-making that differs from means-ends rationality (Zimmerman & Zeitz, 2002) and mimetic isomorphism may be regarded as a relatively

rigid response in view of being the most easily available solution to the problem of unmet aspirations for legitimacy (George et al., 2006).

A different branch of institutional theory has also addressed institutional effects that appear related to the goal selection of firms. For instance, a number of studies have noticed that organization often compete with the goal of gaining acceptance from status-creating entities (Negro, Hannan, & Fassiotto, 2015; Rao, Monin, & Durand, 2003) or reaping noneconomic utilities associated with either the enhancement of social gains or avoidance of social losses induced by conformity with normative prescriptions and social expectations of key constituents in the industry (Compagni, Mele, & Ravasi, 2015; Kennedy & Fiss, 2009; Sharkey & Bromley, 2015). Furthermore, recent research has shown that not all firms respond equally to external pressures (e.g., Berrone et al., 2010; Durand & Kremp, 2016; Greenwood & Hinings, 1996; Philippe & Durand, 2011). Firms exhibit different propensities to conform and varying ways to do so, depending on whether they are more likely to see conformity as a way to avoid the threat of social disapproval and delegitimation (Bermiss, Zajac, & King, 2014) or to pursue the opportunity to reap the social gains associated with quality recognition (Godfrey, Merrill, & Hansen, 2009; McDonnell & King, 2013). In this sense, not only motivational drivers for conformity exist, but also are likely to be largely affected by who owns and manages the company and dependent on decision makers' goals and preferences (Berrone et al., 2010; Compagni et al., 2015; Fiss & Zajac, 2004; Miller et al., 2013).

2.3. Threat-rigidity Theory

Researchers drawing on the threat-rigidity thesis (Staw et al., 1981) have corroboratively observed that threats narrow the number of alternatives managers are willing to consider and reduce the level of resources invested (e.g., Audia & Greve, 2006;

Chattopadhyay et al., 2001; Gilbert, 2005; Milliken & Lant, 1991; Ocasio, 1995; Ross & Staw, 1993). Staw, Sandelands, and Dutton (1981) noted that at the organizational level threat perception leads to restriction in information processing, constriction of control, and conservation of resources rather than change. Restriction in information results in “a narrowing in the field of attention, a simplification in information codes, or a reduction in the number of channels used” (Staw et al., 1981: 502). Constriction in control is caused by the organizational tendency to centralize authority and increase formalization. Conservation of resources is induced by the predominance of efficiency concerns under threat and the organizational emphasis on cost cutting and the tightening of available budgets. The combined effects of restriction in information, constriction in control and conservation of resources increase rigidity in organizations, augment inward-looking tendencies toward well-learned or dominant responses, and decrease change (Ocasio, 1995). Subsequent work by Dutton and Jackson (1987) showed that, as compared to threat perception, organizations are willing to screen their environments more openly, to consider more solution alternatives, and engage in more substantive outwardly oriented resource allocation behaviors under opportunity perception. This theoretical position seems to be in opposition to what is prescribed by the BTOF.

Some effort has been undertaken to establish the relative domains of application of the two theories and adjudicate between them (e.g., Audia & Greve, 2006; Greve, 1998; March & Shapira, 1987; Miller & Chen, 2004; Shimizu, 2007). In particular, building on sense-making research tradition (e.g., Dutton, Walton, & Abrahamson, 1989; Jackson & Dutton, 1988; Kiesler & Sproull, 1982; Thomas et al., 1993) researchers have differentiated between managerial interpretations of problem situations to highlight that managers not only use different dimensions (e.g., resources and control) for framing

problem situations but that the way in which problems are framed mobilizes action in a particular direction (Corner, Kinicki, & Keats, 1994; Dutton, Fahey, & Narayanan, 1983; Thomas et al., 1993). Specifically, while organizational change and the predictions of the BTOF have been theorized to be expected when managers perceive a problem as urgent and controllable, threat-rigidity has been theorized to occur when managers feel they are not in control of the problem and/or the problem is perceived as not urgent (e.g., Ford, 1985; Mone et al., 1998; McKinely et al., 2014), or when the problem is perceived to be an impairment to the firm and a threat to its survival (e.g., March & Shapira, 1987; Miller & Chen, 2004; Ocasio, 1995; Shimizu, 2007). Nevertheless, greater understanding of models that combine multiple problem attributes and investigate their interactions is still needed (Chattopadhyay et al., 2001).

2.4. BTOF in the Family Business Literature²

In family business organizations, a controlling family has an active role in shaping the strategic behavior of an organization (Chua, Chrisman, & Sharma, 1999). The family system influences the business system through different formal and informal mechanisms. Formal mechanisms include family ownership and family involvement in board activities, and/or management. Informal mechanisms comprise, for instance, language and narratives that become shared by organizational members over time, as well as idiosyncratic approaches to conflict resolution (König, Kammerlander, & Enders, 2013). These mechanisms promote the adoption of family-centered goals such as authority, identity, social status, and dynasty (Chrisman et al., 2012) that create socioemotional wealth (SEW) for the family (Gómez-Mejía et al., 2007). The presence of those family noneconomic goals causes more complex and heterogeneous strategic behaviors in family

² Adapted from Mazzelli (2015)

than in nonfamily firms where financial goals, such as profit maximization, rule organizations' decision-making and strategic behavior (Chrisman & Patel, 2012).

Studies applying BTOF in the family business context have tended to focus on determining the extent to which the family variable affects strategic behaviors and inclinations of family businesses with respect to nonfamily firms (Gomez-Mejia et al., 2007; Chrisman & Patel, 2012). Some of available studies have investigated the effects of the family element on firm's strategic behavior, devoting particular attention to research and development expenditures (Gomez-Mejia et al., 2010; Gomez-Mejia, Campbell, Martin, Hoskisson, Makri, & Sirmon, 2014; Kotlar, De Massis, Frattini, Bianchi, & Fang, 2013; Chrisman & Patel, 2012). Gomez-Mejia et al.'s (2007) ASQ article has been seminal in paving the way to the adoption of a behavioral lens for studying family firms' behavior. Applying BTOF and prospect theory (Kahneman & Tversky, 1979)³, the authors demonstrated how the risk aversion of family-owned firms is related to the loss of their socioemotional wealth (SEW), and how it differs depending on family involvement. Particularly family firms may be willing to incur a greater performance hazard to protect their socioemotional wealth but they are generally risk averse when the business decision increases the chance of unexpected outcomes, causing variance in performance. By extension, Gomez-Mejia and colleagues (2010) applied the same logic to study corporate diversification decisions, concluding that although diversification efforts reduce risk

³ Kahneman and Tversky's (1979) prospect theory arguments suggest that managers are more sensitive to losses than to commensurate gains. Specifically, they are risk-seeking when they interpret a situation as a loss, whereas they show risk-averse reactions in situations that they perceive as a gain. Albeit sharing the assumption that decision makers exhibit a higher propensity to make choices that entail greater risk when faced by losses, two relevant theoretical differences exist between prospect theory and the behavioral theory of the firm. First, prospect theory concerns prediction of individual behavior; the behavioral theory of the firm focuses on organizational behavior (Kacperczyk, Beckman, and Moliterno, 2015). Second, while prospect theory defines losses and gains in relation to future performance, the behavioral theory addresses losses and gains in relation to past performance which are often associated with incremental solutions and small variations from established routines (Cyert and March, 1963). (cf. Paper 2)

concentration, family firms are more likely to avoid it to the extent that these efforts are associated with a loss of SEW. Chrisman and Patel (2012), starting from the premise that family firms have a long term orientation, demonstrated that, coherently with behavioral theory, family firms tend to be risk averse when the business decision can potentially cause variance in performance, but the variability of these decisions is greater in family than in non-family firms owing to differences in the compatibility of long- and short-term family goals with the economic goals of a firm. Specifically, the authors showed that, when performance is below aspiration levels, economic and family goals tend to converge leading both to a greater increase of R&D investments and an higher decrease of the variability of those investments in family firms than in non-family firms (Mazzelli, 2015). Furthermore, recent research indicates that family-centered goals and SEW priorities of family firms make family firms particularly unconventional in the eyes of outside stakeholders, creating powerful pressures to conform (Bertrand & Schoar, 2006; Miller et al., 2013). For example, Miller et al. (2013) have showed that publicly traded family firms conform more assiduously than non-family firms along visible dimensions of strategy. Similarly, Berrone et al. (2010) showed that family firms respond in a more substantive manner to institutional pressures toward reducing pollution emissions.

A different stream of family business research has adopted BTOF to investigate the processes through which the dominant coalition influences goal setting, organizational behaviors and routines, with a particular focus on family as a very important coalition in family enterprises. For instance, Kotlar and De Massis (2013) identified goal diversity as a direct consequence of the overlap between the family, ownership, and business systems. In line with the assumptions in the BTOF that the problem of defining and selecting organizational goals is closely linked to that of defining coalitions, the authors found goal

diversity to be expressed more strongly in the proximity of generational transitions, triggering social interaction processes through which organizational members contrast their goals. In a similar vein, Classen et al. (2012) suggested that the involvement of a dominant family coalition in SMEs influences strategic innovation decisions and processes by impacting on the number of different external sources that firms rely upon to acquire resources for their innovative activities (search breadth). The authors adopted BTOF to posit that the cognitive diversity of family decision-makers, as well as their desire to preserve family SEW, lead dominant family coalitions to prefer a less diversified set of external partnership within the innovation process. Chrisman et al. (2012), by integrating theoretical arguments inferred from behavioral theory and stakeholder theory, posited that both family and nonfamily firms entertain multiple goals, but the goals adopted by family firms are more likely to include family-centered non-economic (FCNE) goals than those adopted by nonfamily firms. Additionally the urgency of FCNE goals is mediated by family essence, in terms of both transgenerational family control intentions and controlling family's commitment to the firm. Finally, Zellweger et al. (2012) applied behavioral and prospect theories to demonstrate that family businesses are heterogeneous and differences in firm control and particularly in intentions for transgenerational control impact on socioemotional wealth and consequently on the perceived acceptable price at which owners would be willing to sell firms to nonfamily buyers (Mazzelli, 2015).

In sum, research indicates that socio-cognitive factors that accompany the pursuit of a broad spectrum of goals lead to more complex cognitive frameworks among family owners and managers and causes variations between family and non-family firms in the way in which decision makers pay attention to goals, interpret information, and take

action. However, although there is substantial evidence in family business literature that family goals are generally oriented toward the preservation of socioemotional wealth, the influence of noneconomic performance dimensions on organizational change and strategic behavior between family and nonfamily firms has never been directly assessed. Therefore, the application of BTOF in family business literature should evolve by including noneconomic performance dimensions as drivers of organizational search and organizational change (Mazzelli, 2015). These research opportunities make family firms an effective study context on themes such as motivation, goals, sense-making, and decision-making, as well as an important research topic for both its applied value and its theoretical import.

3. METHODOLOGY

Organization research often emphasizes process and variance theories as alternative approaches to investigating organizational change. As a consequence, prevailing perspectives assume the process of changing either as a logic that explains the relationship between the amount of variation in the extent of organizational change and a set of independent variables or as a sequence of events that describes how things change over time. In this dissertation, I tried to reconcile these two approaches building on the epistemological assumption they share – the objectivity of social world.

As I mentioned earlier, I focused on analyzing organizational responses in organizations coping with performance above/below aspirations. In this context, many organizational scholars have turned to the notion of problemistic search as the activity through which organizations react to performance shortfalls, using the concept of problemistic search to explain change and development at the organization level of analysis, in a context of bounded rationality and limited organizational attention. To gain enhanced understanding of organizational change via problemistic search, a first step in this dissertation was to offer a contextually specific and clear conceptualization of problemistic search by spelling out the contextual contingencies under which it adheres. This allowed me to put the foundations for abstracting the empirical phenomenon of organizational change into a conceptual generalization embedded in the construct of problemistic search and, thus, for proceeding with a more fine-grained description and examination of the patterns of change that occur when organizations react to performance aspiration discrepancies.

Once that a definition of the problemistic search construct, its scope conditions, and its essential elements were stated in a clear and logically consistent manner, the adoption of a process approach enabled to explain how search occurs and develops over time and how it drives organizational change. I finally applied variance theory to infer causal relationships among variables in the model and investigate the contextual contingencies behind organizational responses to performance-aspiration discrepancies. Particularly, I focused on the role of problem framing and managerial attributions of causality in enabling and constraining organizational change. By doing so, I intended to offer a significant theoretical advancement in our understanding of organizational change from performance feedback.

3.1. Organizational Change in Organization and Management Research

Three basic aspects of the Carnegie School's line of thought have been central and particularly influential in the development of subsequent theory on organizational change. First, the adoption of a process-oriented model of the firm – that is viewing decisions of the firm and change as the result of well-defined sequence of behaviors in that firm. Second, the importance of linking these models as closely as possible to empirical observations by both constructing models based on observations of firms and testing those models against the actual behavior of organizations. Third, the importance of developing a theory with generality to understand the behavior of a variety of organizations in a variety of situations (Argote & Greve, 2006; Cyert & March, 1963). Consistently, many organizational scholars have tended to embrace a functionalist paradigm characterized by an objectivist view of the organizational world (Burrell & Morgan, 1979). Assuming that the nature of organizations is objective and “out there”

awaiting for exploration, discovery, and disclosure, researchers have adopted a deductive and incremental approach to theory building by examining regularities and relationships in the behavior of firms to produce generalizable results (Cunliffe, 2010; Gioia & Pitre, 1990). Scholars have stressed the “sameness” principle – that is, that despite certain changes are undertaken, organizations remain partially unchanged (Durand & Calori, 2006; Tsoukas & Chia, 2002), thereby treating variation and change as “unintended disturbances of the normal state-of-affairs” (Avital, 2000: 671). From such studies much was learned about the factors that foster and inhibit change in particular settings at particular points in time, but less was learned about the interactions and interconnections of contexts, content and process of change over time (Pettigrew et al., 2001). What is more, by merely using the notion of process as underlying logic to explain causal relationships, research has at least partially overlooked Cyert and March’s seminal commitment to adopting a process-oriented view of organizations (Pettigrew et al., 2001; Van de Ven, 1992). This thesis aims to highlight a viable approach able to abide by Cyert and March’s (1963) commitment to capture reality into flight and, at the same time, place emphasis on the adoption of a objective, reliable and valid methodology to the study of organizational behavior and change.

3.1.1. Incorporating time, history, process, and action in the study of organizational change

Assuming that “the world (or alternatively, reality or the universe) exists independently of our representations of it” (Searle, 1995: 150), two fundamental approaches to theorizing about organizational change are available in organizational literature. The first approach, namely variance theory, investigates variance and causal questions of “what causes what”. The second approach – that is, process theory –

provides explanations for how things develop and change over time (Mohr, 1982). Variance theory focuses on examining causal relationships among variables by using process logic to explain such relationships, whereas process theory is centered on understanding patterns in events and progressions of activities that an organization undergoes as it changes over time (Langley, 1999; Van de Ven, 1992; Van de Ven & Huber, 1990). While variance and process theories are commonly described as antagonistic and irreconcilable alternatives (Langley, 1999; Mohr, 1982), I argue here that, on the condition that their distinctiveness and integrity are preserved, not only it is possible to apply these two theories jointly, but their combination can also provide stronger and broader explanatory power. Particularly, the combination of variance and process theories can facilitate and enrich theorizing about both the processes that cause observed events to happen and the particular circumstances or contingencies behind these processes (Van de Ven, 1992; Van de Ven & Poole, 1995).

Specifically, the integration of variance and process theories can be achieved by drawing on the epistemological assumption that the two approaches share: the objectivity and observability of the external world. That is, organizational change can be investigated by either measuring the variables that cause it or describing the processes that generate it. Specifically, to the sake of epistemological coherence, contingent variables adopted in the variance theory has not to be attributes of the process itself, but instead should represent antecedent conditions.

Embracing this view, I focused first on the process question of how organizational change occurs and, once the pattern of events unfolding in an organization throughout the changing process was found to exist, I applied variance theory to investigate the conditions that foster either a particular pattern or the events within a pattern (Abbott,

1988; Van de Ven & Huber, 1990). By drawing on Langley's (1999) representation of variance and process approaches to the problem of explaining organizational change, Figure 2 illustrates this logic. Figure 2 shows the research stages to theorize about organizational change by combining process and variance theories. First, a process approach is adopted to explain how organizational changing develops over time in context. In a second stage hypotheses about the causes of organizational change are predicted and tested.

Insert Figure 2 about here

3.2. Process Approach

Different types of process theories and different strategies for theorizing from process data have been pointed out by the literature. Among these, teleological theory, besides underlying many organizational theories of change – among which decision making (March & Simon, 1958), adaptive learning (March & Olsen, 1976) and goal setting (Chakravarthy & Lorange, 1991) – sees organizational changing as the process through which an entity proceeds toward a goal or an end state (Van de Ven & Poole, 1995). Since organizational decision makers initiate search when a goal is not met and continue it until they identify one alternative to current behavior that is judged to satisfy some minimum performance criteria (Levinthal & March, 1981; Levinthal, 1997; March & Simon, 1958), teleological view of organizational changing will be particularly suitable for studying organizational responses in response to performance-aspiration discrepancies. In this thesis, I explored the connections between performance aspiration discrepancies and organizational change by using mathematical modeling and computer simulation. Simulations are based on formal models – that are precise formulations of the

processes through which the values of variables change over time, based on theoretical reasoning (Harrison, Lin, Carroll, & Carley, 2007). As a basis for developing the formal model of interest, I adopted metric space theory because of its ability to facilitate a holistic and dynamic analysis of changing (Pettigrew et al. 2001). In particular, in a metric space, any change consists of the movement of point objects and can be defined based on a distance function on pairs of objects or proposed solutions. By representing change in a simple but comprehensive way, metric space theory provides quantitative and qualitative analytical instruments suitable at multiple levels in the organization and across different timeframes to examine complex and dynamic organizational phenomena. Furthermore, the use of computer simulation enforces the internal consistency of an emerging theory via formal modeling and partially overcomes the empirical problem of data availability. What is more it permits to achieve generality and, being based on formal relationships among variables, it allows to generate integrated, and consistent hypotheses that can be tested by using variance theory. In Harrison and colleagues' words, "the entire simulation process constitutes a methodology for theory development, starting with assumptions and model construction and ending with predictions of the theory" (2007: 1233). Notwithstanding the methodological fit between simulation modeling and the research design herein presented, like other research methodologies, computer simulation has inherent flaws and limitations. Specifically, as Weick (1979) himself noted, simulation models are high in simplicity and generality but generally weak in terms of accuracy. Since a simulation produces its own "virtual" data, it can appear to be distant from real processes, especially compared to process strategies that construct theory from qualitative data collected in close contact with real contexts (Langley, 1999). To obviate the accuracy issue, after developing a clear and precise reconceptualization of the

problemistic search construct and applying process theory for explicitly modeling the process through which organizations respond to problems and change, I adopted a variance approach to examine correlation and causation between contextual contingencies and the nature (extent and variability) of organizational responses, with a special focus on R&D investment, capital investment and product innovation.

3.3. Variance Approach

Testing causality can be addressed by embracing a quantitative approach, with the term quantitative to be referred to as having many cases, applying formal measurements, and using statistical analyses (Davidsson, 2004). The empirical studies in this thesis use different samples depending on the phenomena under assessment and on data availability but all follow organizations over time. All samples are drawn from a population of Spanish manufacturing firms between 1998 and 2012. Longitudinal studies have a number of advantages over cross-sectional study designs, including greater ability to show the direction of causality, stronger controls for organizational differences, and better estimates of time-varying constructs among which historical aspirations (Blossfeld & Rohwer, 1995; Greve, 2003b; Tuma & Hannan, 1984). “The direction of causality problem is especially prominent when performance and strategic behavior are studied, as the relationship between these variables clearly can be causal in both direction. [...] With a longitudinal design, it is possible to sort out both directions of a bi-directional causal relation and control for third causes” (Greve, 2003b: 134). The longitudinal research design adopted in this dissertation should give secure attribution of the direction and strength of causality between the relevant constructs under investigation.

3.3.1. Data and Setting. For this dissertation, I relied on panel data coming from a representative sample of approximately 5’300 Spanish manufacturing over the period

from 1998 to 2012. Data were drawn from the database Encuesta Sobre Estrategias Empresariales (Survey on Business Strategies, ESEE), produced by a public institution financed by the Spanish Ministry of Industry. The ESEE was designed with the aim of ensuring the representativeness of Spanish manufacturing firms. For this purpose, all companies with more than 200 employees were surveyed (and approximately 70% completed the survey), and smaller companies with more than 10 employees were selected on the basis of a stratified sampling. The unbalanced feature of this data set implies that the firms can enter and exit from the survey in the same way the companies appear and disappear in the economy. For this reason this population is apt to observe organizational change as well as sufficient degrees of performance and business risk.

The Spanish manufacturing industry is a suitable context to investigate my research questions. The study period entailed challenging economic conditions, with the Spanish economy laid low first by the financial crisis of 2008, and subsequently by the collapse of the housing bubble. Manufacturing firms responded with a variety of strategic changes, including innovation, capital investments, cost reduction, and internationalization (Guillén & García-Canal, 2009). A recent report by Technology Review Inc., in partnership with the Spanish Trade Commission, indicates that Spain's manufacturing sectors have recently made dramatic advances in terms of innovation through R&D investments and investments in property, plant, and equipment. For instance, Spain's machine tool sector is the third largest in the EU and includes some of the world's leading companies. Some of the projects in this sector have resulted in ultraprecise, completely automated and synchronized machines with improved sustainability and energy-saving features. In the food production industry, innovations in technology have led firms to develop machines that dramatically shorten meat curing and

drying time. Other food sector firms have adopted advanced seeding and faster packing machinery. In the textile and clothing sector, Spain has produced companies of international stature, such as Inditex. In addition, a number of key factors in Spain, including the introduction of electronic identity cards, have fostered the flourishing of the ICT sector. Furthermore, because regional communities are particularly pronounced in Spain, with the Constitution recognizing 17 historic regions, territorial identification facilitates social influence and imitation among firms in the same industry (Greenwood et al., 2010; Lahiri, 2010). Particularly until the late 70s, the country pursued a nationalist-modernizing development strategy, with the growth of multiple firms based on connections with the State and the social influence of large business groups operating in their industries (Guillén, 2000). Indeed, the Spanish manufacturing industry has been used in previous studies as a relevant population for investigating organizational change and its underlying mechanisms, including interorganizational learning (e.g., Galende & de la Fuente, 2003; Greenwood et al., 2010).

Also, in addition to representing almost 45% of Western European firms (Faccio and Lang 2002), family firms are particularly noticeable in Spain, where the family institution is particularly strong and visible thanks to its links to the prevailing Catholic religion (Greenwood et al, 2010). It is not surprising then that the data set I adopted in this dissertation was also used in three previous studies in the family business literature (Greenwood, et al., 2010; Kotlar et al., 2013, 2014). Using a sample of Spanish family and nonfamily manufacturing firms between 1994 and 2000, Greenwood et al. (2010) showed that community pressures were not uniform in their effects on firms' downsizing decisions and that such effects were amplified in family-managed firms where community pressures are coupled with family logics. Using a sample of 1,540 private

Spanish manufacturing firms over the period 2000-2006, Kotlar et al. (2013) assessed differences in the intensity of external technology acquisition between family and non-family firms under positive or negative attainment discrepancies and contingent on the degree of technology protection. Kotlar et al. (2014) drew on a sample of 431 Spanish family and non-family firms between 2000 and 2006 and inferred that family firms used both profitability and control goals to make R&D investment decisions.

3.3.2. Measures and Analytical Approach. The majority of the variables of interest in the empirical studies included in this dissertation were at the firm-level. An exception was made for some industry-level control variables including *Industry growth*, to control for industry demand prospects, which could influence managers' decisions to engage in R&D and capital investments (Paper 2 and 3), *Industry average R&D intensity* in Paper 3 to control for external causes for changes in R&D intensity such as environmental shocks. In Paper 4, since neo-institutional theorists have highlighted that relatively high levels of environmental uncertainty can lead to greater use of imitation in decision-making processes (e.g. DiMaggio & Powell, 1983; Haunschild & Miner, 1997), and that the number of firms operating in a particular industry affects the process of organizational change at the firm-level (Haveman, 1993), we two time-varying industry-level variables, namely *Environmental uncertainty* and *Competition*, were included to capture the level of environmental uncertainty and competition, respectively.

The three empirical papers of this dissertation explore why, how, and to what extent organizations change their behaviors. BTOF and organization theory in general pose few limitations on what behaviors can change in response to performance-aspiration discrepancies. In this dissertation, I focused on changes in the rate of production asset growth (Paper 2), in R&D investment intensity and number of patents (Paper 3), new

product introduction and number of new products (Paper 4). All are strategic changes that cause long-term commitment of resources and have long-term effects on the competitiveness of the organization (Greve, 2003b: 76). However, these behaviors also differ in many respect, including the extent of uncertainty involved, the degree to which the decisions can be reversed, and other organizational and environmental characteristics. Such considerations entered the modeling stage when the explanatory variables were selected.

An even more basic concern was the choice of the statistical models linking the explanatory variables to the outcome (Greve, 2003b: 123). The choice was driven by the type of behavior under investigation. For example, the introduction of a new product either occurs in a given period or not, giving a binary outcome (Paper 4). Counting the number of patents or new products in a given year are outcomes that take the values of zero or positive integers (Paper 4, Paper 3). Investment intensity in R&D is a continuous variable that takes only positive values (Paper 3), growth in capital investment can instead takes both positive and negative values (Paper 2). Such differences resulted in different estimation frameworks, including panel multiplicative heteroscedasticity regression analysis (Mean and variance of production asset growth, Paper 2), panel system GMM approach (R&D intensity, Paper 3), negative binomial regression analysis (number of patents, Paper 3), multilevel random intercept logistic model (new product introduction, Paper 4), and generalized estimating equations (GEE) regression analysis (number of new products, Paper 4). Across these different estimation frameworks I tried to incorporate the effect of time by taking into account the role of past behavior in influencing the present and always including measures of past behaviors or commitments in the models.

4. MAIN FINDINGS AND CONTRIBUTIONS

The answers to the questions of what motivates firms to change, how and to what extent organizations change their behaviors and with what implications are complex and multifaceted. Different theoretical frameworks and empirical studies have implied different answers to these questions and researchers note repeatedly inconsistencies and paradoxes between these views (Greve & Teh, forthcoming; McKinley et al., 2014; Ocasio, 1995). On one hand, organizational learning theorists suggest that organizational change is fostered by a gap between performance and aspirations, which triggers search and adaptation based on the organization's own experience and/or the experience of other organizations (Baum et al., 2000; Baum & Dahlin, 2007; Madsen & Desai, 2010; Haunschild & Rhee, 2004; Haunschild & Sullivan, 2002). On the other, threat-rigidity theorists suggest that declining performance, and threats in general, inhibits cognitive processes, restricts decision making, and limits the number of options considered by managers, thereby reducing organizational change (Staw et al., 1981; Mone et al., 1998; Ocasio, 1995). In a different vein, institutional theorists suggest that organizations engage in isomorphic change, changing their behaviors by conforming with normative prescriptions, and thus becoming increasingly similar, as a precondition for organizational legitimacy (DiMaggio & Powell, 1983). This dissertation sought to bring some order to the literature on organizational change by shedding light on its underlying motivations and mechanisms and thus providing some points of integration from the disparate theoretical perspectives in organizational research. Indeed, the theoretical arguments and empirical evidence I provided here can partially explain the often inconsistent evidence offered by different research streams regarding the motivations for organizational change. The answer to the central question of this thesis is that organizations change when faced

by problems, which means when they perceive or determine a discrepancy between current reality and their expectations to be present (Cyert & March, 1963; Cowan, 1990), but how and to what extent they change and with what implications, it all depends.

The first paper of this thesis highlights that the way in which organizations initiate the process of search for solutions to problems imprints the entire search process and its outcomes. For instance, our simulation results indicated that initiating search in multiple domains accelerates the PS process, especially when search starts in the neighborhood of an organization's current state, in terms of knowledge base, time and space. Conversely, search conducted in remote areas of the PS space tends to be slower, especially when multiple strategic domains are explored simultaneously. Furthermore, engaging in distant PS at the beginning of the search process is conducive to superior performance compared to restricting search to the neighborhoods of an organization's knowledge base and problem locus. Yet, distant search increases the risk of failure. These findings suggest that problemistic search dynamics and outcomes vary substantially across organizations and highlight the importance of a contextualized analysis for understanding organizational responses to problems, and, more generally, to achieve theoretical validity and empirical generalizability in studying the behavior of organizations.

To this aim, in Paper 2 I started investigating the antecedents and the contingencies entailing variations in organizational responses to problems. Building on the BTOF's notions of bounded rationality, local and internal nature of goals, and local nature of search, I explored the variations in the relationship between performance-aspiration discrepancies for productivity and production asset growth induced by managers' attributions of causality. Specifically, I found that resource commitment to production capacity expansion varies significantly depending both upon the degree of

stability associated with a given productivity aspiration discrepancy and upon whether decision makers believe productivity aspiration discrepancies to be controllable or uncontrollable. For instance, my findings indicated that perceived stability increases, on average, make the resource investment patterns in response to aspiration discrepancies increasingly consistent with the predictions offered by the behavioral theory of the firm: productivity above aspirations constrains resource commitment, whereas productivity below aspirations fosters the allocation of resources to expand production assets. However, as the degree of stability associated with productivity aspiration discrepancy increases, organizations tend to engage in more variable and extreme responses – sometimes constraining and sometimes heightening resource investment in production asset growth – increasing the likelihood of incurring in threat-rigidity in response to productivity below the aspiration level. Also, contrary to what previous studies in the behavioral theory of the firm tradition have suggested (e.g., Greve, 1998, 2003b), I found that productivity above the aspiration level can reliably foster investment in production capacity expansion when accompanied by managers’ beliefs in their ability to effect a change, in a desired direction – which means, under controllable attributions. However, paradoxically, managers who are confronted by above-target productivity that persists over time and perceive to have the means and ability to invest in production assets to maintain such positive outcome, become increasingly reluctant to allocate resource towards capacity expansion and prefer to constrict their firm’s growth.

This paper contributes interdisciplinary insights at the intersection of the literature on organizational decision-making and sense-making by investigating how interpretations of problems can alter the intensity and variability of organizational responses. As such, it provides theory and evidence on the mechanisms behind the processes of sense-making

and decision-making underlying change in resource investments, and the links between them. It also shows that the failure to differentiate managerial causal attributions for aspiration discrepancies, and perceived problem characteristics in general, is an oversight of the literature that can lead to conflicting, even contradictory findings.

Taken together the insights provided by Paper 1 and Paper 2 offer significant future research opportunities. For instance, theoretical arguments could be advanced on how problem interpretation and framing might influence the likelihood of organizations selecting distinctive approaches to search and the effectiveness of such approaches. In doing so, researchers should try to develop a general and comprehensive model of problem-driven search approaches able to account for the relationship between problem characteristics, search approaches and problem-solving performance. Such a model, by providing a precise exploration of the problem-solving performance of diverse search approaches in coping with heterogeneous problems, would enrich the literature on problem framing, organizational change and adaptation.

Paper 3 tried to adjudicate between organizational learning and institutional theories' explanations of organizational change under uncertainty by examining their competing or complementary power in explaining imitative behavior, its drivers, underlying mechanisms and its implications. Interorganizational imitation was conceived as an organization's intended decision to model its own behavior on that of other organizations exhibiting distinctive traits in order to cope with both environmental and outcome uncertainty. We investigated these issues by examining when and why imitative behavior in R&D activity occurs. We argued that firms adapt their R&D investments based on how decision makers judge the misalignment between their firm's level of R&D intensity and the target level exhibited by a reference group of socially salient firms,

namely, R&D discrepancy. As R&D discrepancy increases, decision makers may feel increased or decreased cognitive pressures to invest in R&D, resulting in different curvilinear relationships between R&D discrepancy and R&D intensity depending on the goals they seek to achieve. Specifically, we constructed multiple hypotheses based on three alternative organizational attention rules to goals. The first and second assumed a sequential attention rule where learning and legitimacy are mutually exclusive and compete for attention. Accordingly, decision makers whose firms fail to reach aspiration levels for R&D intensity are urged to imitate the R&D investment behavior of other firms either to learn in a cost-efficient manner (first alternative), or to increase the probability of favorable judgments of others and secure their organization's legitimacy (second alternative). Conversely, the third alternative is a simultaneous attention rule. Under such conditions, decision makers will engage in interorganizational imitation to address learning and legitimacy goals in parallel, while minimizing inconsistencies between technical and social aspects. Our results were consistent with organizational learning theory and provided strong support for the predominance of learning goals over legitimacy goals and thus for vicarious learning as the underlying mechanism driving imitation. According to our findings, decision makers view R&D efforts below the level of other salient firms in the industry as a signal of inadequate technical knowledge and thus as a threat to the long-term wellbeing of the firm, whereas an above target R&D level is generally regarded more favorably. Failure to reach aspiration levels for R&D intensity increases the pressure to focus on the discovery and implementation of relevant procedures and develop strong competences to foster learning. Hence, to solve problems related to learning goals and avoid the risks of experimentation, decision makers turn to

observing and selectively imitating other firms' actions with traits that are indicative of the value of such actions.

By providing evidence of the conditions fostering imitative over non-imitative behavior, this paper provided a path towards a more inclusive theory of organizations interacting with their environment, highlighting the conditions and mechanisms leading firms to favor imitative over non-imitative behavior. This work also informed on the pattern of organizational attention to goals, indicating that most firms tend to adopt a sequential attention rule and to prioritize learning goals and internal technical aspects (learning) over external social aspects (legitimacy) in the attention sequence. Furthermore, by addressing the effect of imitation on strategic change, specifically R&D intensity, this paper identified the conditions that are most likely to foster new knowledge development and innovation in a firm. Our results suggested that the imitation of R&D investment decisions made by other salient firms in the industry enhances patenting activity, thereby pointing to the existence of a generative effect of imitation, with firms learning from others to learn themselves via direct experience. An additional and interesting finding concerned the heterogeneity in responses to R&D attainment-aspiration discrepancy across groups of firms with heterogeneous innovation strategies indicating that, although imitation is often seen to reduce variety, heterogeneity in behaviors may result from firms having different reference groups or aspirations.

The latter evidence was deeply investigated in Paper 4. As mentioned earlier, in this paper, I and my co-authors examined the propensity of family and non-family firms to adopt and introduce a product innovation, in order to reap the noneconomic utilities associated with abiding by normative prescriptions and social expectations of key constituents in the industry. Indeed, in line with what emerged from Paper 3, we observed

that firms conform selectively and the way in which firms modulate their propensities to conform depends on who owns and manages the company and on the dominant coalition's preferences and goals. Specifically, we found that family and non-family firms are driven by different motivations and follow different rationales for conforming. The avoidance of social losses orients family firms toward aligning with their closest peers, whereas the opportunity for social gains orients non-family firms toward conforming to a group of firms displaying attributes that depart from their closest peers. As such conforming behavior can be seen as stylized fact induced by external pressures (Helfat, 2007; Heugens & Lander, 2009), which underlies heterogeneous motivations and propensities that are driven by the firm's position in the social structure of a field or industry as well as the concerns of firm owners and managers for their own social position and the social position of the firm. Furthermore, the evidence that family firms respond in a more substantive manner to external pressures than non-family firms do supported the contention that organizational goals and motivations act as a cognitive filter to the interpretation of external and institutional pressures and, thus, inevitably affect subsequent responses to such pressures. Hence, this paper responded to recent calls to redirect the study of institutional and social accounts of adoption toward finer-grained mechanisms that spawn and are influenced by the heterogeneity of actors and activities that underlie apparent conformity (Lounsbury, 2007: 289-290), as well as to the question about variation in response to institutional pressures (Berrone et al., 2010; Martins, 2005). Furthermore, it contributed to family business literature by enriching the outstanding debate in family firm research of how family firms are able to achieve higher innovation output despite maintaining lower R&D investments.

In sum, organizations tend to change their behaviors in response to problems. Such problems may originate internally (e.g., Paper 2), but may also derive from the internalization of external pressures and expectations (e.g., Paper 3, Paper 4). Broadly speaking, problems are noticed when decision makers detect that a discrepancy exists between the current state of reality and their expectations, which are formed based on their own prior experience, the experience of others, and social expectations. However, the way in which organizations respond to such problems is contingent on decision makers' causal perceptions and interpretations of problems. Hence, the cognitive frameworks through which decision makers create perceptions of reality, make sense of incoming information and interpret issues have a crucial role in directing motivation and attention, as well as in constraining search and driving organizational change (Paper 2). However, such cognitive frameworks are affected by a series of socio-cognitive factors that reflect the preferences of members within and across organizational dominant coalitions (Paper 4) and orient organizations towards pursuing distinctive goals, engaging in different behaviors, and adopting diverse approaches to problemistic search, thereby at least partially explaining heterogeneity in organizational responses to similar problems (Paper 2).

4.1. Limitations

This dissertation has potential limitations. As repetitively stated throughout the manuscript, the first relates to the generalizability of the results given that the thesis focuses on strategic decisions concerning innovation strategy – in terms of R&D investments, number of new products and number of new patents – and capital investments of Spanish manufacturing firms. Although I used a large sample of firms and a considerable amount of information on them, future research should establish the extent to which the findings offered by this thesis reflect the particular characteristics of the

study context. For instance, my theoretical arguments might be less appropriate for industries where R&D investments, technology innovation, and production facilities are not as crucial to the viability of firms and their long-term performance. Another limitation concerns the fact that the problemistic search process may be context dependent. That is, the type of search - local vs. distant, sequential vs. simultaneous, single vs. multiple - may be valid for certain firms in certain industries and for certain problems. Also, in both Paper 1 and Paper 2 it is assumed that problems are somehow decomposable and decomposition permits organizations to manage complexity via reductionism and simplification. However, as a number of studies point out, this is not always the case (Levinthal & March, 1993). As the search process is highly intertwined with sense-making and interpretation processes it poses both knowledge-transfer and knowledge-formation hazards (Nickerson & Zenger, 2004). Managers' interpretations of problems are subject to a number of cognitive and perceptual distortions – among which illusory correlation and causation (Kiesler & Sproul, 1982), the tendency to overestimate organizational abilities but underestimate the difficulty of obstacles, and to make self-serving attributions by attending selectively to positive indicators and ignoring negative ones, or attributing poor performance to external causes and good performance to internal causes (Audia & Brion, 2007; Ford, 1985; Jordan & Audia, 2012). Such distortions may induce biases in performance interpretation and deviations from the relationships between the relevant variables predicted in this dissertation. Hence, I hope that this thesis will encourage future analysis of the situational and dispositional features that lead decision makers to form distorted causal attributions and interpretations of aspiration discrepancies and how such features, in turn, may breed altered search processes and behavioral responses (e.g., Jordan & Audia, 2012).

5. CONCLUSIONS

As organizations increasingly face unpredictable events and problems in progressively more turbulent environments, two related patterns emerge: first, organizations and their decision makers try to make sense of different situations, search for solutions to problems, and adapt. Imitation of other organizations displaying distinctive traits can constitute a common response to such problems when decision-making involves substantial uncertainty. Second, the pursuit of a broad spectrum of goals and differences in the order of priority associated with these goals across organizations cause variations in the way in which decision makers pay attention to goals, interpret information, and take action. The former pattern highlights the need to understand cognitive dynamics taking place at different levels in the organization and their interactions to understand change. In fact, while at the organizational-level critical events often fosters learning, change, and innovation, at the individual-level, direct or indirect exposure to such events can be associated with extremely negative psychological and emotional states, including depression, anxiety, and stress, which inhibit change. The latter pattern highlights new trends in theory of goal selection, attention, and action emphasizing the role that different organizational decision makers, such as family members, and institutions can play in imposing the pursuit of noneconomic and external goals, respectively, and how such particularistic goals may affect sense-making and decision-making processes.

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TABLES

TABLE 1

Dissertation's Papers: Main Research Question(s), Theoretical Perspectives and Constructs, Methodology, and Contributions

	<i>Paper 1</i>	<i>Paper 2</i>	<i>Paper 3</i>	<i>Paper 4</i>
Title	PROBLEMISTIC SEARCH REVISITED: A METRIC SPACE THEORETIC RECONCEPTUALIZATION AND AN ITERATIVE MODEL	WHAT'S THE PROBLEM? PERCEPTIONS OF STABILITY AND CONTROLLABILITY AND PROBLEM-DRIVEN INFLUENCES ON THE GROWTH OF PRODUCTION ASSETS	LEARN TO LEARN OR MIMIC TO IMPRESS? TRAIT-BASED IMITATION IN R&D	BLENDED IN WHILE STANDING OUT: SELECTIVE CONFORMITY AND NEW PRODUCT INTRODUCTIONS IN FAMILY FIRMS
Co-authors	Alfredo De Massis Josip Kotlar		Sascha Walter Alfredo De Massis	Josip Kotlar Alfredo De Massis
Main research question	How do organizations solve problems?	How and to what extent do decision makers' causal attributions and interpretations of performance that deviates from aspiration levels affect organizational responses?	When and why does trait-based imitation occur? Do organizations imitate socially salient organizations in their industries to solve problems related to learning goals, legitimacy goals, or both? Are vicarious learning and mimetic isomorphism mutually exclusive imitation mechanisms?	How do family and non-family firms differ in their interpretations and reactions to social (external) pressures?
Theoretical perspective/s	<ul style="list-style-type: none"> • Behavioral theory • Organizational learning theory 	<ul style="list-style-type: none"> • Behavioral theory • Threat-rigidity theory • Attribution theory 	<ul style="list-style-type: none"> • Behavioral theory • Organizational learning theory • Neo-institutional theory 	<ul style="list-style-type: none"> • Institutional theory • Behavioral theory
Theoretical constructs	<ul style="list-style-type: none"> • Problemistic search 	<ul style="list-style-type: none"> • Performance-aspiration discrepancy • Causal attributions – Perceived stability and perceived controllability • Failure-induced change • Threat-rigidity 	<ul style="list-style-type: none"> • Interorganizational imitation • Vicarious learning/learning • Mimetic isomorphism/legitimacy 	<ul style="list-style-type: none"> • SEW • Conformity/Distinctiveness
Approach	Process and variance theory	Variance theory	Variance theory	Variance theory
Methodology	Computer simulation	Statistical analysis	Statistical analysis	Statistical analysis
Evidence	Decision makers' risk-taking propensity and their approach to problemistic search jointly affect the process of problemistic search and its outcomes.	Decision makers' causal attributions are a cause of variation in the relationship between performance aspiration discrepancies and both the mean and variability of strategic investments.	Predominance of learning goals over legitimacy goals and of vicarious learning as the underlying mechanism driving trait-based imitation	Both family and non-family firms conform selectively but are driven by different motivations. The avoidance of social losses orients family firms toward aligning with their closest peers, whereas the opportunity for social gains orients non-family firms toward conforming

	<i>Paper 1</i>	<i>Paper 2</i>	<i>Paper 3</i>	<i>Paper 4</i>
				to a group of firms displaying attributes that depart from their closest peers. Moreover, propensities to conform translate into more substantive organizational responses in family firms.
Contributions	<ul style="list-style-type: none"> • It offers a fine-grained and comprehensive framework to characterize its process and outcomes as an integrated set of coexisting dimensions. • It proposes a new general way to describe and represent the problemistic search process as a pattern of choices in a metric space. • It provides a basis for a more refined understanding of organizational responses to negative performance feedback and helps us understand and predict how and why actions in the present can imprint and, at least partially, affect an organization's future state. • It illustrates and formalizes the components and mechanisms regulating the problemistic search process. • It sets the stage for a more sophisticated assessment of how and why heterogeneity in organizational responses to negative performance feedback can come about. • It shows that metric space theory can be a suitable and valuable approach to enrich theorizing on complex and dynamic organizational phenomena. 	<ul style="list-style-type: none"> • it enriches the literature on organizational responses to performance feedback and reconciles behavioral and the threat-rigidity theories of decision-making: decision makers' causal attributions for performance-aspiration discrepancies can help explain the inconsistencies between these two theoretical stances. • it provides a more complete and nuanced understanding of the association between performance aspirations and the capital allocation process recognizing managerial perceptions of problem situations as a cause of variation in the relationship between performance-aspiration discrepancies and both the mean and variability of strategic investments. 	<ul style="list-style-type: none"> • It brings together organizational learning and neo-institutional theories to explain why firms facing similar events at times respond with imitative behavior and at others with non-imitative behavior, thereby highlighting the conditions leading firms to favor one behavior over the other. • It addresses and situates competing explanations for why imitation of socially salient firms occurs as a response to the technical motivation to enhance learning and/or the social motivation to gain legitimacy. • In doing so, it develops theory of managerial attention to goals and interpretation of events as pertaining to internal technical aspects (learning), external social aspects (legitimacy), or both. • By addressing the consequences of trait-based imitation for R&D intensity, our research identifies the conditions and mechanisms through which imitation can trigger commitment to research, knowledge development and innovation in a firm. Specifically, our findings show that imitation can also have a generative effect, with firms learning from others to learn themselves via direct experience. 	<ul style="list-style-type: none"> • It advances current understanding of how family firms selectively navigate pressures for conformity, thereby reconciling the dialectic between the behavioral agency model and institutional theory about conformity and distinctiveness in family firms. • it addresses concerns that current institutional theories do not fully explain variations in responses to institutional pressures by testing two alternative rationales underlying conformity and showing that family and non-family firms display heterogeneous responses to external social pressures, despite experiencing similar propensities to conform. • it offers an explanation to why family firms are able to achieve higher innovation output despite maintaining lower R&D investments by suggesting that conformity pressures may help maximize innovation efficiency.
Status	<ul style="list-style-type: none"> • Presented at the AoM Annual Meeting (Vancouver, 2015) • Presented at Trans-Atlantic Doctoral Conference (London, 2015) • Submission to AMR, Feb 2017. 	<ul style="list-style-type: none"> • Submission to AMJ, Jan 2017. 	<ul style="list-style-type: none"> • Invited R&R at JOM. 	<ul style="list-style-type: none"> • Invited R&R at ETP.

TABLE 2
Theoretical Divergence and Integration among Organizational Theories of Change

	BTOF	Organizational learning theory	Neo-institutional theory	Threat-rigidity theory
	Process theory	Process theory	Outcome theory	Variance theory
Agency	<ul style="list-style-type: none"> - Limited, inwardly directed - At the level of the dominant coalition 	<ul style="list-style-type: none"> - Limited, inwardly directed - Multilevel 	<ul style="list-style-type: none"> - Limited; externally oriented - At the organizational level and in relation to the external environment 	<ul style="list-style-type: none"> - Limited, inwardly directed - Multilevel
Level	Organization	Multilevel: <ul style="list-style-type: none"> - Intra-organizational - Organizational - Inter-organizational 	Organizational field ⁴	Multilevel: <ul style="list-style-type: none"> - Individual - Team - Organizational
Organizational responses	Organizations increase search when performance is below the aspiration level, but also their inclination to implement risky changes, and allocate resources to uncertain and risky investments	Experience shapes organizational responses. However, excessive reliance on the organization's own prior knowledge and routines may contribute to resistance to change, competency traps, and sub-optimal or even inadequate responses in changing environments	Organizational actions result from isomorphic pressures	Threat perception leads to restriction in information processing, constriction of control, and conservation of resources rather than change
Motivation	Performance-aspiration discrepancies	Success/Failure Accumulated experience	External pressures	Perception of threat

⁴ Defined as “Those organizations that, in the aggregate, constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products” (DiMaggio & Powell, 1983: 148)

FIGURES

FIGURE 1
Theoretical Framework

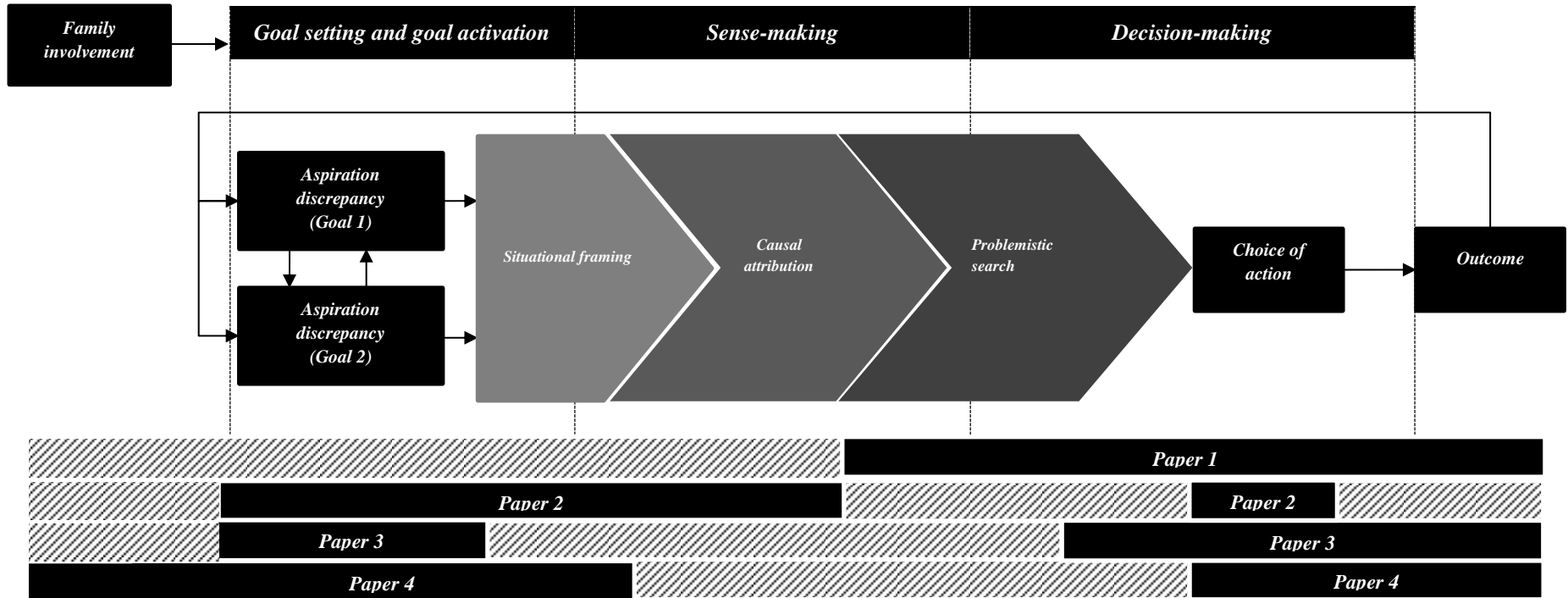
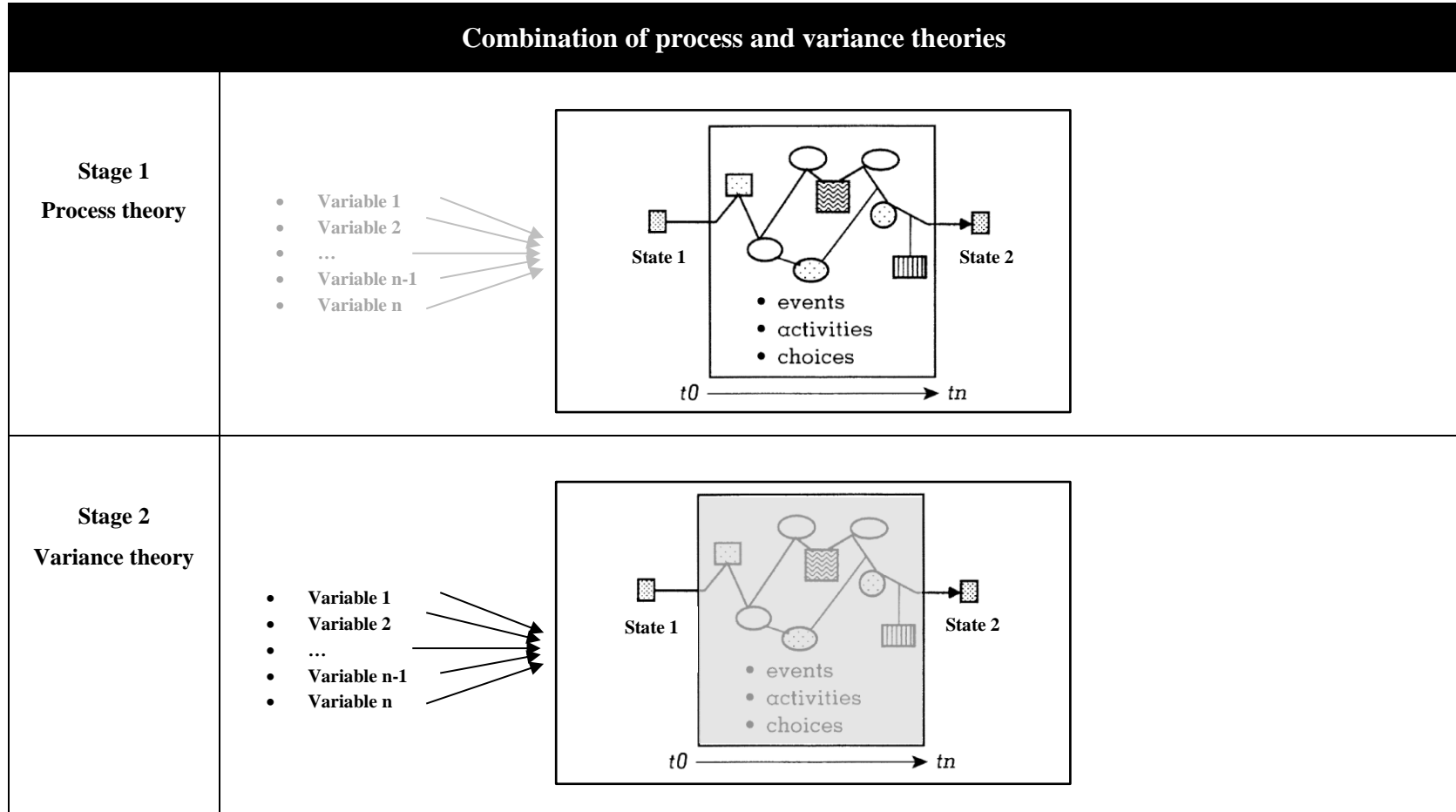


FIGURE 2

A Reconciliation of Variance and Process Approaches to Explaining Organizational Change⁵



⁵ Adapted from Langley (1999)