Learning to carry out multiple acquisitions

Natalia Vuori

Learning to carry out multiple acquisitions

Natalia Vuori

Aalto University
School of Science
Department of Industrial Engineering and Management
Institute of Strategy

Supervisor
Professor Tomi Laamanen

Preliminary examiners
Professor Christopher B. Bingham, the University of North Carolina
at Chapel Hill, the U.S.

Professor Taco Reus, Rotterdam School of Management (RSM),
Erasmus University Rotterdam, the Netherlands

Opponent
Professor Maurizio Zollo, Department of Management and Innovation,
Bocconi University, Italy

NORDIC ECOLABEL
441   697
Printed matter

Author
Natalia Vuori

Name of the doctoral dissertation
Learning to carry out multiple acquisitions

Abstract

The ability to carry out multiple acquisitions is an important source of competitive advantage for firms. However, developing this ability is challenging due to the complexity of learning processes. Although prior research has devoted a considerable amount of attention to the topic, significant gaps remain. We still know little about (1) which kinds of multiple acquisitions strategies firms employ (2) how firms can ensure learning from earlier acquisition experience, and (3) how firms can learn faster than their competitors. This dissertation aims to fill these gaps through three essays.

The first essay addresses the first gap. Earlier studies have reported that different companies are prone to selecting similar acquisition strategies when entering a certain country/industry. The same environmental conditions are assumed to cause convergence of acquisition behavior. In contrast, I found that the studied companies used different acquisition strategies in the same country and the same industry. Their strategies differed among four dimensions. Central for success is the ability to design an acquisition strategy that fits both the current conditions in the environment and the firm's acquisition capabilities and resources.

The second essay addresses how individuals and firms learn to modify their acquisition strategy so that it is in accord with the new conditions of the focal acquisition. There were three main findings. First, when an acquisition is carried out under new conditions, such as with a different kind of target or different country culture, outcomes tend to improve only if managers have constructed causal mental models that explain why and how elements in the focal system influence one another instead of only mere instructions that simply describe action steps in prescribed order (strip mental models). Second, deep-reflection, characterized by a focus on micro-level causal chains, contextualization, and a multi-agent perspective, leads to the development of causal models while surface reflection results in strip models. Third, even if an individual has reflected on experience in a deep way, he or she may store and communicate non causal knowledge. Communication and storing of non causal knowledge hinders performance acquisitions in new contexts. These findings were inductively developed from 65 interviews, 3,300 pages of archival material, and meeting observations in five serial acquirers.

In the third essay, I further deepen our understanding of learning processes. I argue that as long as there are no changes in environment, the use of non-causal decision rules (strip mental models and some types of heuristics) allows more rapid improvement in performance than the use of causal decision rules (causal mental models and causal knowledge). As time goes on and environmental changes eventually occur, only causal knowledge provides the basis for success

Tiivistelmä

Kyvykkyys toteuttaa useita yritysostoja on tärkeä kilpailukyvyn lähde yrityksille, mutta sen kehittäminen on haastavaa oppimisprosessien monimutkaisuuden vuoksi. Vaikka aihetta on tutkittu paljon, vielä ei tiedetä (1) minkälaisia strategioita yritykset käyttävät tehdessään useita yritysostoja, (2) miten yritykset oppivat aikaisemmasta yritysosto-kokemuksestaan ja (3) miten yritykset voisivat oppia kilpailijoitaan nopeammin. Tämä väitöskirja pyrkii täyttämään nämä nykytietämyksen aukot kolmen esseen avulla.

Ensimmäinen essee pyrkii vastaamaan ensimmäiseen nykytietämyksessä tunnistettuun puutteeseen. Aikaisemmin on havaittu, että yritykset valitsevat samanlaisenyritysostostrategian toimiessaan tietyssä maassa tai tietyllä toimialalla. Niinpä tutkijat ovat olettaneet, että samanlaiset olosuhteet markkinoilla saavat yritykset tekemään yhdenmukaisia valintoja. Empiirinen analyysini johtaa päinvastaisiin tuloksiin. Samassa maassa samalla toimialalla toimineet yritykset erosivat toisistaan seuraavilla ulottuvuuksilla: (1) tarvittava yritysostojen määrä, (2) toimenpiteiden laatu, (3) paikallisten johtajien palkkaus ja (4) kumppanin luonne. Onnistumisen kannalta on keskeistä, että strategia on yhteensopiva paikallisten olosuhteiden ja yrityksen kyvykkyyksien kanssa.

Toinen essee käsittelee, miten yksilöt ja yritykset oppivat muokkaamaan yritysostostrategiaansa niin, että se sopii uusimpaan yritysostoon. Esseessä käsitellään kolmea löytöä. (1) Kausaaliset mentaalimallit ovat onnistumisen kannalta keskeisiä kun yritysosto tehdään uusissa olosuhteissa. Toisin kuin yksinkertaiset ohjeet, kausaaliset mentaalimallit kuvaavat miksi ja miten systeemin osat vaikuttavat toisiinsa. (2) Ainoastaan syvällinen kokemusten pohdinta (syy-seuraus-ketjujen ymmärtäminen, kontekstualisointi ja monen toimijan näkökulma) johtaa kausaalisten mentaalimallien kehittymiseen. (3) Yksilöt saattavat kommunikoida pinnallisia ohjeita kausaalisten mentaalimallien kehittämisestä huolimatta, mikä heikentää yritysten suoritusta uusissa ympäristöissä. Toisen esseen aineisto (mm. 65 haastattelua) on kerätty viidestä useita yritysostoja tehneestä yrityksestä.

Kolmannessa esseessä syvennän oppimisprosesseihin liittyvää ymmärrystä. Argumentoin, että yksinkertaiset ohjeet mahdollistavat tulosten parantamisen nopeammin kuin kausaaliset mentaalimallit, mutta ainoastaan ympäristön ollessa vakaa. Toisaalta kausaaliset mentaalimallit johtavat parempiin tuloksiin ajan kuluessa ja kun ympäristössä lopulta tapahtuu muutoksia. Lisäksi ne mahdollistavat uusien, tehokkaampien strategioiden suunnittelun

Acknowledgements

It was an exciting and enjoyable period in my life; a time of learning and development, obstacles and 'Eurekas!', cruel setbacks and sweets moments of triumph. Just two years ago, 'the ready thesis' was an ultimate goal, a final destination but now I know that it is just a beginning. The beginning of, I believe, an even more fascinating journey with new challenges and new opportunities.

There are no words in any language to fully express how grateful I am to everyone who made this thesis possible. First of all, I would especially like to thank my supervisor, Professor Tomi Laamanen. Thank you for challenging me with a broad range of ideas and directions. Most importantly, thank you for giving me the freedom to explore, to follow the research topics that most interested me. I know you went through great pains to review my text. Thank you for always had time to provide the comments. I highly appreciate your advice and help.

My wholehearted appreciation belongs to Professor Hannele Wallenius. This thesis would not exist without your support, help, and encouragement. You provided the resources that enabled me to work on my dissertation. You also provided the feelings of certainty that helped me move forward. Thank you for believing in me and being such a caring supervisor.

I also owe a special thank you to Dr. Timo Vuori for acting as my instructor. Your deep knowledge of cognition and strategic management literature, timely advices on literature to review, and our insightful discussions ensured successful completion of this thesis. Thank you for your effort and patience in commenting on tens of versions of my papers. I have learned so much by working with you.

I would like to thank Professor Maurizio Zollo from Bocconi University for acting as my opponent. I am grateful to Professor Christopher B. Bingham from the University of North Carolina and Professor Taco Reus from the Erasmus University. Thank you for your time and making the effort to thoroughly examine my dissertation. The constructive comments you provided allowed me to move the papers to the next level.

I would like to thank Dr. Daniella Laureiro Martinez from the Swiss Federal Institute of Technology. Your help and support was really important to me. We also had a lot of fun while practicing the presentations and discussing many important topics.

I am grateful to Professor Henri Schildt, Dr. Satu Teerikangas, and Megan Jonson for their help. I would like to express my gratitude to Professor Markku Maula, Professor Juha-Antti Lamberg, Professor Thomas Keil, and Professor Jukka Lipponen.

Many thanks go to my colleagues at Institute of Strategy and at Aalto University, Pasi Kuusila, Juha Uotila, Joosef Valli, Jens Schmidt, Mikko Jääskiläinen, Hanna Timonen, Mirva Peltoniemi, Merja Fischer, and Ruth Kaila. My special thanks to Maria Tikka and Nina Henriksson also of Aalto. I truly appreciate your help with all practicalities. Your professionalism, kindness, and readiness to help made this process much easier.

I would like to thank Juhani Strömberg, Pavlos Ylinen, Saara Malm, Henrik V. L. Therman, Christian Junnelius, Petri Saavalainen, Tatu Koistinen, and Kirsi Paakkari for helping me with my research. I truly appreciate your time and effort. This thesis would not have been possible without you.

I would like to thank my ex-bosses, the former CEO of JSC Electrotsentronaladka (Moscow), Nikolay Elatnikov, and the former vice

Table of contents

INTRODUCTION TO THE THESIS

1 BACKGROUND

The development of capabilities has been recognized as one potential source of competitive advantage for firms (Helfat, 2000; Helfat & Winter, 2011). Particularly, firms' abilities to acquire other firms can be considered among the most crucial and valuable organizational competences, because such capabilities allow, for example, to redeploy resources, roll-up geographically, quickly obtain market positions in emerging industries, decrease competition within the industry, and expand product lines (Barkema & Vermeulen, 1998; Bower, 2001; Capron, Dussauge, & Mitchell, 1998; Hitt, Hoskisson, Ireland, & Harrison, 1991; Zollo & Singh, 2004).

Practical evidence shows that, in fact, firms frequently need to execute more than one acquisition to reach the above-mentioned strategic objects. In the strategic management literature, scholars use the concepts of serial acquisitions or an acquisition program when they refer to a stream of acquisitions of one particular firm (Chatterjee, 2009; Fuller, Netter, & Stegemoller, 2002; Hayward, 2002; Kusewitt, 1985; Laamanen & Keil, 2008). Some researchers have found that serial acquisitions may create a strategic momentum that continues for some period of time and leads to higher performance of a multiple acquirer (Amburgey & Miner, 1992; Loderer & Martin, 1990; Rovit & Lemire, 2003). For instance, in their study, Rovit, Harding, & Lemire (2003) demonstrate how the acquisition program of Clear Channel Communications Inc. has resulted in the increase of the company revenues by 46% annually over a 15-year period, and generated 36% average annual stock return. Other researchers, however, have found an insignificant or negative effect of multiple acquisitions on firms' performance and called for us to be more careful with the assumption that an execution of multiple acquisitions may create sustainable value for multiple acquirers' shareholders (Ismail, 2008; Loughran & Anand, 1997). Thus, the development of the ability to carry out multiple acquisitions is among the most important but, at the same time, most difficult tasks faced by firms.

There are three main potential sources of heterogeneity in firms' acquisition capabilities and performance that have received relatively little attention in the strategic management literature. First, some firms can overperform their competitors because they might be more careful in planning, and more creative in designing their acquisition approaches (Hayward, 2002; Meyer & Thu Tran, 2006; Vermeulen & Barkema, 2002). Thus, it might be that there are some differences among different acquisition approaches that influence firms'

performance. The extant literature, however, has considered a limited amount of potential differences (Laamanen & Keil, 2008; Shi & Prescott, 2010).

Second, some firms might be better in developing competencies to meet new challenges of a focal acquisition than others (Bingham, Eisenhardt, & Furr, 2007b; Zollo & Winter, 2002). More precisely, it might be that firms are not equal in their ability to learn from their previous experience and adequately utilize learned lessons in a focal acquisition that is different (Haleblian & Finkelstein, 1999; Zollo & Singh, 2004). However, we have little understanding of why some firms learn while others never do (Bingham & Eisenhardt, 2011; Bingham & Haleblian, in press).

Finally, some firms might be faster in the development of a certain level of capability that enables them to initiate acquisition activity, and, for example, obtain a leading market position, while slower competitors spend time in attempts to form suitable acquisition strategies (Barkema, Baum, & Mannix, 2002). However, we lack an understanding of how speeding up the process of capability development can be achieved (Eisenhardt & Tabrizi, 1995; Zahra & George, 2002; Zander & Kogut, 1995).

This dissertation is dedicated to fill these gaps in the extant literature. The overarching research interest that combines three essays of this dissertation is to investigate the main factors influencing the success of multiple acquisitions. The first goal is to understand what types of acquisition approaches exist and what the performance consequences of using special acquisition strategies are. There is consensus among the scholars that heterogeneity in performance of multiple acquirers may be caused by the differences in the different types of programs (Laamanen & Keil, 2008; Vermeulen & Barkema, 2002). For example, it is broadly acknowledged that the frequency of transactions within an acquisition program, the level of relatedness between targets in an acquisition program, and the periods of time between deals have a significant influence on firms' performance (Haleblian & Finkelstein, 1999; Hayward, 2002; Kusewitt, 1985). However, earlier research has not yet been focused on other potential differences of acquisition programs (Meyer, Estrin, Bhaumik, & Peng, 2009; Shi & Prescott, 2010).

The second goal of this dissertation is to provide an understanding of how managers and firms can learn to improve acquisition capabilities over time, and how a process of capabilities development can be accelerated. Researchers tend to agree that learning is the main vehicle of capability development (e.g., Eisenhardt & Martin, 2000; Zollo & Winter, 2002). Unlike, however, manufacturing settings, where individuals develop competences through the

repetition of the same action over and over (Argote, 1999; Thorndike, 1898), learning in acquisition settings is difficult due to the heterogeneous nature of acquisitions, the relative rareness of acquisitions in comparison with other organizational processes, and the ambiguity of the causal relationship between the acquirer's actions and the outcome of the acquisition (Haleblian, Kim, & Rajagopalan, 2006; Hayward, 2002; Lee & Caves, 1998; Zollo & Singh, 2004). Researchers have found that acquisition learning requires that managers actively reflect on experience in each transaction (Kale & Singh, 2007; Simonin, 1997; Zollo & Singh, 2004). During reflection individuals make sense of past experience, and form some sort of understanding about why the actions taken led to certain outcomes (Kolb, 1984). This understanding leads to creation of decision rules that allow to improve performance in the future. However, the nature of the forming understanding(s) or decision rules is still unclear. For example, while some recent research points toward heuristics (Bingham et al., 2007b; Davis, Eisenhardt, & Bingham, 2009; Rindova, Ferrier, & Wiltbank, 2010), some scholars argue that more complex forms of causal understanding is needed (Gary & Wood, 2011).

Furthermore, the more psychological literature in the background also seems to contain contradictions: For example Kahneman (2011; 1974) warns about the harm that heuristics can cause, whereas Gigerenzer (2010) argues that heuristics lead to better decisions than more complex approaches. In addition, management researchers have not paid much attention to the existence of different types of mental models and their implications for decision making (Cossette & Audet, 1992; Fiol & Huff, 1992; Tolman, 1948). We also lack an understanding of how different types of mental models influence the speed of capability development (Eisenhardt & Tabrizi, 1995).

These two goals are reached through the three essays. The first essay (Appendix 1) puts the main focus on recognizing the types of acquisition approaches used by multiple acquirers. In the two other essays (Appendix 2 and Appendix 3), the main emphasis is on learning to carry out multiple acquisitions. This combination allows me to develop knowledge of (i) how firms differ in their acquisition strategies in the context of multiple acquisitions, (ii) how individuals in firms learn to modify their acquisition approaches to sustain high performance in varying contexts, and (iii) how individuals can speed up the process of firm-level learning.

The introduction of the dissertation is structured as follows. In the next section, I set the scene by specifying the research questions addressed by the individual studies and by positioning them in the extant literature. I also

illustrate the link between the studies' specific research questions. In section 2, I review some of the extant literature on multiple acquisitions, acquisition learning, and the literature on heuristics and mental models. In section 3, I summarize the key results and contributions of each individual study, and highlight their theoretical and practical implications. In the final sections, I discuss the limitations and suggest avenues for further research.

2 RESEARCH QUESTIONS

To achieve the goals discussed above, I ask the following research questions. Essay one provides answer to the research question 1, essay two answers the research questions 2.1 and 2.2 and essay three answers the research question 3.

Research question 1: What are the main design parameters of acquisition approaches and what are the performance consequences of the different types of acquisition approaches?

The first research question is motivated by the recent call of strategic management scholars to reduce scarcity of knowledge on different acquisition approaches (Chatterjee, 2009; Shi & Prescott, 2010; Vermeulen & Barkema, 2002), and to provide nuanced understanding of the applicability of individual acquisition approaches in different contexts (Laamanen & Keil, 2008).

  So far, researchers have recognized only a limited number of systematic differences among acquisition strategies (Haleblian, Devers, McNamara, Carpenter, & Davison, 2009). For example, it is now known that the fast pace, the irregular rhythm, and the broad scope of an acquisition program have a negative effect on the performance of multiple acquirers (Hayward, 2002; Nadolska & Barkema, 2007; Rovit & Lemire, 2003). However, research has not yet focused on other potential characteristics of acquisition strategies. The wider range of acquisition approaches design parameters and an understanding of their implications for performance may finally offer an answer to why so many acquisition programs fail to create value for the shareholders of multiple acquirers (Brauer & Schimmer, 2010; Laamanen & Keil, 2008). Moreover, all extant research on acquisition approaches has been conducted in the context of developed economies, and therefore, has not taken into consideration the fact that different institutional and cultural contexts may require a different design

of acquisition programs (Meyer et al., 2009). In other words, in emerging and developing economies, other characteristics than pace, rhythm and scope can influence the performance of acquirers (Meyer & Estrin, 2001).

The first essay investigates the acquisition activities of the four multiple acquirers who aimed to enter and expand into one of the fastest growing economy, Russia. The paper aims to contribute to the strategic management field with new insights into different acquisition approaches, their consequences for performance, and the antecedents of the choice of a certain acquisition strategy.

Research question 2.1: How do different types of mental models formed during reflection influence learning?

The research question 2.1 is motivated by the fact that although management scholars tend to agree that individuals learn by constructing mental models (some representation of reality in the head of individuals that helps them to allocate attention and make decisions) (Barr, Stimpert, & Huff, 1992; Bingham & Haleblian, 2008), the extant management literature has not yet paid enough attention to the existence of two types of mental models and their implications for decision making in the novel situation that has been discussed in the psychological literature (e.g., Tolman, 1948).

Researchers have recognized two types of cognitive models: strip and causal mental models (Cossette & Audet, 1992; Tolman, 1948; Weick, 2001). Strip maps contain a sequence of specific instructions. They provide an individual with strict instructions for actions, however, do not allow to adapt the behavior in a new situation (Fiol & Huff, 1992). Conversely, causal cognitive models describe a set of elements in a system, relationships between the elements, and relevant contextual factors (Ackermann & Eden, 2010; Gary & Wood, 2011). They, therefore, enable actors to adjust and modify their behavior to changing environments (Fiol & Huff, 1992; Gary & Wood, 2011)

Due to the existence of two types of mental models, the traditional notion of learning and capability development as a simple process of adding, deleting and/or reconfiguring the elements in mental models is insufficient. We need more sophisticated and subtle understanding of how mental models produced during reflection influence one's ability to improve the effectiveness of actions in the future. The second essay aims to fill this gap in the literature.

In addition, to provide a deeper understanding of how the knowledge from managers' heads becomes firm-level decision rules and contributes to learning at the organizational level, the second essay also aims to answer the following question:

Research question 2.2: How do different types of decision rules communicated and stored in organizations influence learning?

The research question 2.2 is motivated by the notion that collective learning in organizations is much based on the communication that occurs between people (e.g., March, Sproull, & Tamuz, 2003; Zollo & Winter, 2002). Individuals learn by constructing mental models inside their heads; however, they share the learned lessons by speaking with one another, which means that they reconstruct their mental models in explicit forms (e.g., Weick, 1995; see also Bingham & Haleblian, in press).

There can be different ways of reconstructing the mental models and these differing ways might influence collective learning differently. Examples of how individuals might communicate their understandings include text written in documents (Zollo & Singh, 2004), informally shared heuristics (Bingham & Eisenhardt, 2011; Bingham et al., 2007b), causal maps (Ackermann & Eden, 2010), and templates (Jensen & Szulanski, 2007; Kale & Singh, 2007). While all authors have argued that the form of sharing knowledge that they have studied has had a positive effect on learning, it is still unclear if and how the type of knowledge shared influences the learning process and outcomes. In addition, some authors in decision making research have pointed out the negative consequences of heuristics (e.g., Hodgkinson, Maule, Bown, Pearman, & Glaister, 2002; Kahneman, 2011; Tversky & Kahneman, 1974).

Research question 3: How do different types of decision rules (causal vs. non-causal) influence the speed of learning?

The third research question is motivated by the need to improve our understanding of how the speeding up of learning can be achieved to provide firms with competitive advantage due to the ability to develop some capabilities faster than competitors (Barkema et al., 2002).

Some of the earlier research has doubted the possibility of the speeding up of capabilities development or has found that such acceleration can have negative consequences for firm performance (Cohen & Levinthal, 1990; Dierickx & Cool, 1989; Perlow, Okhuysen, & Nelson, 2002). For example, Dierickx & Cool (1989: 1507) discuss that MBA students in a 1-year program will not accumulate the same stock of knowledge as students in a 2-year program, even if the amount of given information is equal for both groups. They argue that any attempts to increase the speed of the process of asset accumulation may lead to diminishing its outcomes. Dierickx & Cool use the concept of time compression diseconomies for this phenomenon.

More recently, however, management scholars have found that actually there are ways to accelerate processes of learning and capability development (Brown & Eisenhardt, 1997; Eisenhardt & Tabrizi, 1995; Katila & Ahuja, 2002; Rindova & Kotha, 2001). For example, Bingham *et al.* (2007) have reported that successful firms developed heuristics, or rules-of- thumb, that significantly sped up the process of decision making by providing a short cut in thinking (Bingham & Eisenhardt, 2011; Davis et al., 2009).

If one compares the knowledge structure of heuristics presented by, for example by Gigerenzer & Gaissmaier (2010: 467), s/he will find that it is identical to the knowledge structure of a strip mental model presented by Tolman (1948) or Cossette & Audet (1992). Both concepts refer to decision rules that contain a list of actions in predetermined order that simply decision making. Hence, one could assume that strip mental models might have a positive effect on the speed of competence development at the individual level. However, this assumption has not been addressed in the extant literature. Moreover, we know little of how causal decision rules (causal mental models) influence the speed of learning.

By answering these four research questions, the three essays of this dissertation together provide insights into the learning processes through which individuals in firms improve their abilities to execute multiple acquisitions. Figure 1 summarizes the research questions of the dissertation and shows the interdependence of the three essays.
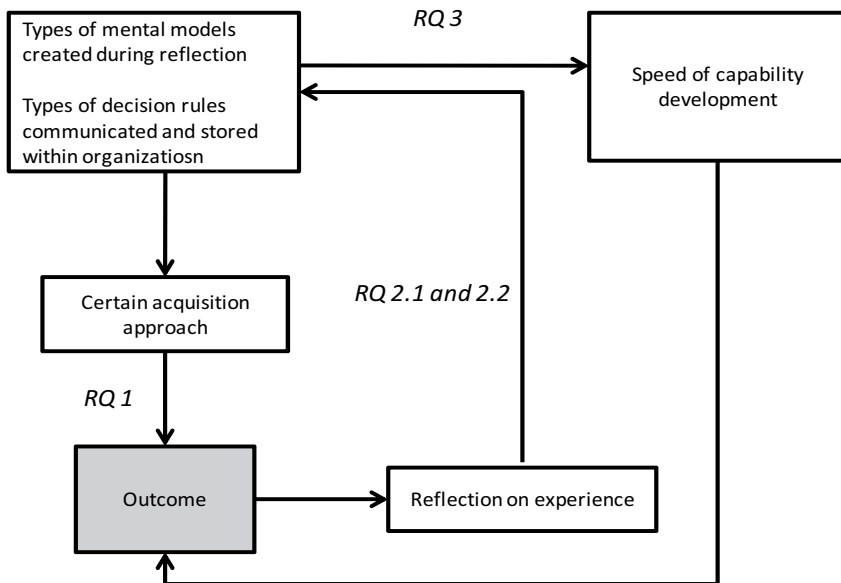
Figure 1 Research questions of the dissertation

3 THEORETICAL BACKGROUND

As each individual study reported in this thesis includes a review of the relevant literature, I focus here on the most central and relevant theoretical perspectives. In section 3.1, I review the literature on serial acquisitions, describe its limitations, and restate the above-mentioned research questions. In section 3.2, I review the acquisition learning literature, explain the existing gaps, and reaffirm my research questions. In section 3.3, I review the literature on different types of heuristics and mental models. I will first explain how the

heuristics of Kahneman, Gigerenzer, and Bingham are different and/or similar among a few dimensions. I then will explain how these differences influence their implication for decision making. Finally, I will explain how heuristics are in many ways similar to strip mental models.

3.1   The literature on serial acquisitions

The literature on serial acquisitions dates back to the 1980s, when management scholars Schipper & Thompson recognized that the acquisitions of one particular firm "are frequently part of acquisitions programs rather than isolated events" (Schipper & Thompson, 1983: 86), and that in such acquisition programs each acquisition influences not only the outcome of the other acquisitions but also the performance of the whole acquisition program (Kusewitt, 1985). Since then, research on serial acquisitions has introduced the concepts of acquisition program, identified a number of characteristics of acquisition programs, tested how these characteristics influence the performance of multiple acquirers, and, finally, concluded which acquisitions program capabilities firms need to develop. Table 1 summarizes some extant research.

An acquisition program is a set of interrelated acquisitions aimed at specific strategic targets (e.g., Chatterjee, 2009). The extant literature has distinguished five such strategic targets (Bower, 2001). A company can execute an acquisition: (i) to buy competitors to consolidate the industry, (ii) to roll-up geographically (iii) to buy R&D to quickly build up the firm's capabilities, (iv) to buy related product or service areas and extend the company's product line, and (v) to buy converging assets and contribute to the industry's convergence.

Table 1 Research on acquisition programs

	Strategic context and sampling	Theoretical perspective	Recognized types of acquisition programs	Characteristics of acquisition program	Key contributions to the multiple acquisition literature
(Kusewitt, 1985)	138 active acquiring firms which had accomplished some 3500 acquisitions during 1967-1976	Phenomenon-driven analysis of how seven factors of an acquisition strategy (e.g. relative size, acquisition rate, industry commonality, timing) influence the long run financial performance	-	Scope Rhythm	Period between two acquisitions: min 1 year and max 4 years Target must be from related business Sizes of acquirers and targets
(Haleblian & Finkelstein, 1999)	449 large completed majority acquisitions over the period 1980 to 1992.	Behavioral learning	-	Scope: dissimilarity of acquisitions	A U-shaped relationship between organization acquisition experience and acquisition performance
(Hayward, 2002)	214 acquisitions made by 120 firms in 6 industries between 1990 and 1995.	Organizational Learning	-	Rhythm Scope: dissimilarity of transactions	Firm's focal acquisition performance positively relates to prior acquisitions that are not highly similar or dissimilar to the focal acquisition associated with small losses and not too temporally close to or distant from the focal acquisition
(Vermeulen & Barkema, 2002)	22 firms that expanded abroad over a period 1967–1992	Time compression diseconomies and absorptive capacity	-	Pace Rhythm Scope	The speed of internationalization, the spread of the geographical and product markets entered, and the irregularity of the expansion pattern have a negative effect on the firm's increase in profitability
(Rovit & Lemire, 2003)	7,475 acquisitions of 724 US companies between 1986 and 2001	Organizational learning	Constant buyers Recession buyers Growth buyers Doldrums buyers	Rhythm	Frequents acquirers are more successful because they start with small deals to create a feedback system and set up a learning process

Table 1 Continue

(Meyer & Thu Tran, 2006)	The entry and growth of Carlsberg Breweries in four emerging economies	Phenomenon-driven analysis of how different types of acquisition strategies influence performance	Foothold acquisition strategies (partial/stage acquisition, JVs) Aggressive acquisition strategies (multiple acquisitions, brownfield acquisitions)	-	Acquisition strategies for penetrations of emerging markets
(Laamanen & Keil, 2008)	5,518 acquisitions of 611 U.S. acquirers over the period 1990 to 1999	Organizational learning	Set of acquisitions	Pace Rhythm Scope	High pace, broad scope and irregular rhythm have a negative effect on firm performance. However, the acquirer's size and experience moderate the negative effect
(Chatterjee, 2009)	30 multiple acquirers	Phenomenon-driven analysis of how a clear articulated business logic behind the acquisition program improves the quality of, for example, negotiation and target assessment	-	Well-articulated business logic behind acquisition program	Types of acquisitions programs Clarity of business logic behind of acquisition program allows the acquiring firm to think through the processes needed to successfully carry out the program and, therefore, reduce the probability of failure
(Shi & Prescott, 2010)	A set of acquisitions and alliances in the history of the company	Organizational learning Real options	Alliance (acquisition) over acquisition (alliance) with rhythm Alliance vs. acquisition without rhythm Simultaneous use of acquisition and alliance and rhythm Only acquisition and rhythm Only alliance and rhythm	Rhythm Combination of acquisitions and alliances	Predictable rhythm has positive effect on performance Positive effect of combination of alliance and acquisition stronger in mature firms than in emerging ones

The understanding of strategic target of an acquisition is crucial because each type of acquisition offers certain obstacles and, therefore requires specific behavior. For example, if a company buys its competitor to reduce industry overcapacity, it most likely must be ready to deal with the integration of many overlapping functions in its own company and the acquired target (Bower, 2001). Or, for example, if a big company aims to acquire a small R&D company, it most probably should not fully integrate the target to presume its creativity (Puranam, Singh, & Chaudhuri, 2009; Puranam, Singh, & Zollo, 2006). Continuing this logic, Chatterjee (2009) has explained why the understanding of the core business logic that drives an acquisition program is so important. He argues that when the business logic behind an acquisition program is clearly articulated, executives are better able to understand how each acquisition will create value. The better understanding helps managers improve the quality of processes such as target selection, negotiation and post-acquisition integration.

In addition to a well-articulated business logic, researchers have recognized three other crucial characteristics of acquisition programs and their implications for the performance of multiple acquirers. The first characteristic is the pace or the speed of an acquisition program. The pace of an acquisition program is the total number of acquisitions executed by a company in its history or in a given period of time (e.g., Vermeulen & Barkema, 2002). There is strong empirical evidence that too high or too slow a pace of transactions within acquisition programs has a negative effect on firm performance (Hayward, 2002; Laamanen & Keil, 2008; Nadolska & Barkema, 2007).

The second characteristic of an acquisition program is rhythm. The rhythm corresponds to the distribution of transactions over time (e.g., Laamanen & Keil, 2008). Researchers have found the negative relationship between an irregular rhythm and firm performance (Rovit & Lemire, 2003; Shi & Prescott, 2010; Vermeulen & Barkema, 2002). An irregular rhythm destroys the learning effect. For example, in the case where the period between two acquisitions is too long, the acquirer can simply forget learned lessons (Huber, 1991). If the interval is too short, then the managers just do not have enough time to reflect on experience to extract lessons because they are overloaded with the new acquisition process (Hayward, 2002). According to Kusewitt (1985), optimal minimal and maximal periods between two transactions are one year and four years, respectively.

The third characteristic of acquisition programs is scope. Researchers use this concept when they refer to the extent of relatedness between the acquirer and its targets, as well as the extent of relatedness among targets in an acquisition program respectively (e.g. Haleblian & Finkelstein, 1999; see also, Vermeulen & Barkema, 2002). There is quite a variety of criteria that have been used to measure the degree of similarity between two companies. For example, researchers have investigated how differences in companies' SIC codes, sizes, and geographic locations influence acquirers' performance (e.g. Bjorkman, Stahl, & Vaara, 2007; Stahl & Voigt, 2008). Most of the studies have reported a declining of performance when the scope of the acquisition program is too broad (Kusewitt, 1985; Laamanen & Keil, 2008; Rovit & Lemire, 2003; Vermeulen & Barkema, 2002).

Despite more than three decades of strategic research on acquisitions programs, crucial issues remain. Although researchers tend to agree that different patterns of acquisition behaviors may result in performance differences between firms, we still lack an understanding of why some multiple acquirers failed to create substantial value for their shareholders (Ismail, 2008). A more fine-grinded distinguishing between the different types of acquisition programs could potentially shed light on this problem (Chatterjee, 2009; Laamanen & Keil, 2008). Indeed, the existing research has only considered a limited number of acquisition program characteristics such as pace, rhythm, scope and business logic, from the vast pool of potential differences that might influence their outcomes. However, there are other systematic differences between acquisition approaches that may explain asymmetry in multiple acquirers' performance. For example, Shi and Prescott (2010) have found that firms using combinations of acquisitions and alliances tend to overperform competitors who use only acquisitions. Therefore, it is important to investigate which other combinations of transactions exist and how they influence firm performance.

Moreover, all of the previous research was performed in a Western context, with an insignificant variety in the institutional environment. Hence, it has neglected to consider which programs should be used in which contexts (Meyer & Estrin, 2001). One of very few exceptions is the work of Meyer & Thu Tran (2006) where they investigated the entry and growth strategies of Carlsberg Breweries in four emerging markets (Poland, Lithuania, Vietnam, and China). Meyer and Thu Tran have reported that successful acquirers tailored their expansion strategies to the market features of each country of expansion. Therefore, a deeper understanding of which kind of acquisition

programs should be utilized outside developed economies will significantly increase our knowledge of how to successfully engage in multiple acquisitions activity in different contexts. Finally, researchers have not yet paid enough attention to investigating the factors that determine the different behaviors of multiple acquirers. In other words, we still know little of why and how companies make the decision to use a certain acquisition strategy.

3.2 The literature on acquisition learning

When reviewing the literature on acquisition learning, I recognized the four main phases of its evolving (Figure 2). Earlier research has focused on examining the direct link between the firm's previous acquisition experience and its performance in the focal acquisition (for a review see Argote, 1999). Some researchers found a positive relationship between acquisition experience accumulation and performance (Barkema, Bell, & Pennings, 1996; Bruton, Oviatt, & White, 1994; Fowler & Schmidt, 1989). They built their argumentation on the behavior learning theory (Cyert & March, 1963) and the early psychology literature. More precisely, two reasons were commonly used to explain the relationship between past acquisition experience and firm performance. First, repeating the same action decreases the time that an individual needs to perform this action and the number of mistakes that the individual makes (see also, Thurstone, 1919). Second, positive outcomes tend to reinforce behavior that led to good results, whereas bad outcomes tend to diminish and weaken prior behavior (Thorndike, 1898).

Despite the compelling logic of the two arguments mentioned above, the empirical results have appeared to be mixed: researchers also found negative (Kusewitt, 1985), U-shape (Hayward, 2002), and non-significant (Kroll, Wright, Toombs, & Leavell, 1997; Wright, Kroll, Lado, & Ness, 2002; Zollo & Singh, 2004) relationships between the number of previous acquisitions and performance. An attempt to solve the mystery of why the learning curve does not work in acquisition settings has shifted researchers' attention from the investigation of the relationship between a total number of acquisitions and performance to examining how the nature of the acquisition experience influences learning.

The second wave in the acquisition learning literature has emphasized the role of the heterogeneity of the acquisition experience in successful learning. In particular, scholars were interested in understanding whether learning differs among geographic regions, countries, industries, and firms. These studies were triggered by a hypothesis that while previous experience in a

particular context might have a positive effect on the focal acquisition performance in the exactly same context, it, however, might be useless in a new context. Some scholars have empirically confirmed this hypothesis. For example, Barkema et al. (1996) have found that the general international acquisition experience of firms had no effect on the probability of the survival of their following international acquisitions. Instead, only experience obtained in the same host country or in the same cultural region positively influences the longevity of newly acquired targets. The same pattern has been found at the industry level (Li, 1995) and firm level (Zollo, Reuer, & Singh, 2002).

Taken together, the above-mentioned studies recognized that each experience tends to be somewhat specific (e.g., partner specific, industry specific, country specific) (Hébert, Very, & Beamish, 2005; Li, 1995; Zollo et al., 2002). This fact makes it possible that firms can overgeneralize the lessons learned in one context, and employ them wrongly in other contexts (Haleblian & Finkelstein, 1999). This negative experience transfer often occurs when the members of firms have only made a small number of acquisitions and did not develop the expertise required to see dissimilarities across acquisitions (Haleblian & Finkelstein, 1999). Haleblian and Finkelstein have reported that firms become able to utilize prior experience properly only after they have conducted eight to nine acquisitions. In addition, researchers have reported other features of experience that influence firms' ability to learn. For example, Hayward (2002) has found that firms cannot learn from two acquisitions that are too close or too distant from each other in time. Hayward has also found that usually firms find it easier to learn from small losses than from an acquisition that turned out to be a major failure or a large success Hayward (2002).

Although the second wave of acquisition learning literature has significantly improved our understanding regarding the non-straightforward link between experience and performance, the learning mechanisms that would underline how experience becomes knowledge remained unclear.

The third stream in the acquisition learning literature has aimed to fill this gap. Researchers have found that although the accumulation of experience is a necessary foundation for learning, it is not sufficient (Simonin, 1997). Instead, the deliberate learning mechanisms are needed to infer knowledge from experience and transfer this knowledge to where it needs to be within the firm (Kale & Singh, 2007; Reuer, Park, & Zollo, 2002; Zollo & Singh, 2004). This research stream has started from Simonin's (1997) influential

work on how firms develop collaborative capabilities in alliances. Simonin has discovered that if companies wish to learn, they must extract lessons from negative or positive past experiences, and internalize them in the form of organizational know-how. Thus, Simonin has proposed two learning mechanisms: knowledge inference and knowledge internalizing.

However, Simonin did not take into account some obstacles of inferential learning. In particular, usually knowledge is fragmented in the organization (Lewis, Lange, & Gillis, 2005; March et al., 2003). This occurs because often different managers are responsible for different phases of the same acquisition process (e.g., negotiation, due diligence, post-acquisition integration) or for acquisitions in two different markets (Heimeriks & Schijven, 2011). Therefore, to learn, managers need to explicate individually held knowledge. Zollo and Winter (2002) proposed knowledge articulation as a crucial learning mechanism that allows to increase the learning effect of inference. In addition, Zollo and Winter argue that the role of knowledge articulation is more complex than just proving information sharing between members in organizations. Knowledge articulation increases the number of inputs or amount of facts about the past events. Therefore, managers have a better chance to understand the causal link between their actions and outcomes. Moreover, Zollo and Winter argue that because of employee turnover, the lack of direct communication between individuals and units in organizations, and knowledge diffusion, companies can benefit if they also codify their knowledge. Knowledge codification is a process of the creation of manuals and documents that contain rules and description routines (Zollo & Winter, 2002). Furthermore, Zollo and Winter claim that when one must create such a manual or document s/he must go way deeper in thinking and building logical explanations of how the environment works. Thus, knowledge codification further enhances learning by increasing the chance to understand what has been done right or wrong.

To summarize, the third stream of the acquisition learning literature proposes the four learning mechanisms: knowledge inference, knowledge articulation, knowledge codification, and knowledge internalizing (Kale & Singh, 2007; Simonin, 1997; Zollo & Winter, 2002). All these mechanisms transfer implicit individually embedded knowledge into a form of explicit common shared knowledge. Later, this idea has also been tested empirically via an analysis of a sample of 228 acquisitions in the U.S. banking industry (Zollo & Singh, 2004). They have found that knowledge codification has a strong positive effect on acquisition performance, whereas experience

accumulation alone does not. The positive effect of knowledge articulation, codification, and internalizing on organizational learning has also been found in alliance settings (Heimeriks, Duysters, & Vanhaverbeke, 2007; Kale & Singh, 2007).

In conclusion, the learning literature has reached the consensus that individuals construct some sort of an understanding by reflecting their previous experience and that this understanding then helps them improve decisions in the future. However, where the scholars still have not reached consensus is the nature of the understanding that is formed through reflection. For example, Zollo & Winter (2002) emphasize that thorough understanding is formed by explicating ideas in writing or codified knowledge. Kale & Singh (2007) propose detailed manuals that describe what a manager should do and in which order. Winter & Szulanski (2001) argue that organizations establish the templates that help replicate business strategy, whereas Bingham & Eisenhardt (Bingham & Eisenhardt, 2011; Bingham et al., 2007b) and others (Davis et al., 2009) argue that the main outcome of learning are heuristics that are developed through discussion (see also, Bingham & Haleblian, in press). To complicate things more, it should also be noted that some authors in decision making research have pointed out the negative consequences of heuristics (e.g., Kahneman, 2011; Tversky & Kahneman, 1974), while others (e.g., Gigerenzer & Gaissmaier, 2010) support their use. In addition, the organizational research on mental models has not been fully integrated with the current acquisition learning theories (Bingham & Haleblian, 2008).

To make sense of this confusion surrounding of what exactly is the understanding that individuals develop in the acquisition context when they learn, I will next review research on heuristics (Bingham & Eisenhardt, 2011; Bingham et al., 2007b; Gigerenzer, 2008; Gigerenzer & Gaissmaier, 2010; Kahneman, 2011; Tversky & Kahneman, 1974) and different types of mental models (Ackermann & Eden, 2010; Cossette & Audet, 1992; Fiol & Huff, 1992; Gary & Wood, 2011; Tolman, 1948). This review provides the necessary analytical starting points for my subsequent empirical and conceptual analyses.

Figure 2 summarizes the evolution of the acquisition learning literature and shows my target for contributions.

First wave of research
Barkema et al. (1996); Bruton, Oviatt, & White (1994); Fowler & Schmidt (1989); Kroll, Wright, Toombs, & Leavell (1997); Wright, Kroll, Lado, & Ness (2002)

Experience → Focal acquisition performance

Second wave of research
Li (1995), Hebert *et al.* (2005) Zollo, Reuer, & Singh (2002), Haleblian & Finkelstein (1999), Hayward (2002), Lee & Caves (1998)

Experience → Focal acquisition performance

• Country specific experience
• Industry specific experience
• Firm specific experience
• Experience that is too close or too far away in time
• Experience from too big loses or from too big success
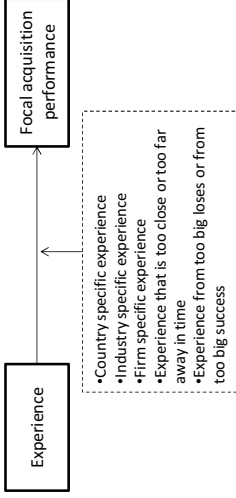
Third wave of research
Kale & Singh (2007); Simonin (1997); Zollo & Singh,(2004); Zollo & Winter (2002), (Bingham *et al.* (2007)

Experience → Reflection → Some sort of knowledge Bingham *et al.* (2007) (heuristics) → Focal acquisition performance
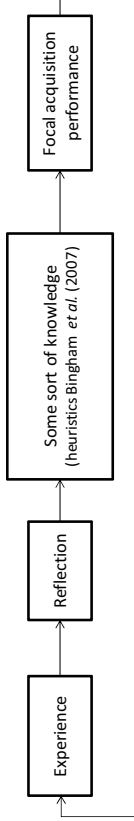
Research interest of this dissertation

Experience → Reflection → **What kind of knowledge?**
• What kind mental models (individual level)?
• What kind of decision rules (organization level)? → **?** → Focal acquisition performance

Figure 2 The extant literature and position of research questions of this thesis

20

3.3 Heuristics and Mental Models

Existing research on learning has recognized that managers reflect on their experience and develop an understanding of how things function and/or what they should do (Bingham & Eisenhardt, 2011; Bingham et al., 2007b; Zollo & Winter, 2002). The research on heuristics and mental models can provide more insight into the nature of these understandings and give hints on which forms of understanding might be the most beneficial (Fiol & Huff, 1992; Gigerenzer & Gaissmaier, 2010; Kahnemann & Klein, 2009; Newell & Shanks, 2003; Tversky & Kahneman, 1974).

In this section, I will first show that the heuristics literature has, in fact, recognized three types of heuristics that differ from one another in various dimensions, and that the implications of heuristics for decision making vary depending on which type of heuristics are meant. Then I will show that the the cognitive models literature recognized two different types of mental maps: "strips maps" and "causal maps". Then I will discuss how the concept of "strip maps" is in many ways similar to heuristics but also differs from them in some ways. This analysis further deepens the understanding of how different kinds of decision rules may improve or hinder decisions. Finally, I will analyze how strip maps and heuristics differ from causal knowledge. This analysis provides a conceptual starting point for my essays 2 and 3 that discuss the implications of the differences between decision rules that do not contain explicit causality (heuristics and strip maps), and decision rules that contain explicit causality (causal maps and causal knowledge) for learning.

3.3.1 Heuristics

At a very abstract level, heuristics are short-cuts in thinking (Gigerenzer, 2000; Gigerenzer & Goldstein, 1996 ; Tversky & Kahneman, 1974). Although scholars from different disciplines tend to agree that the main goal of heuristics is to simplify difficult decisions, the literature on heuristics does not speak in one voice. While some researchers argue that heuristics allow to make good quality decisions fast (Bingham et al., 2007b; Gigerenzer & Gaissmaier, 2010; Taylor, Bennell, & Snook, 2009), others demonstrate how heuristics often violate statistics rules and lead to incorrect answers on difficult questions (Hodgkinson et al., 2002; Kahneman, 2011; Schwenk, 1984; Tversky & Kahneman, 1974).

My analysis shows that the potential source of contradictions between the different views on heuristics has resulted from fundamental differences in how heuristics are understood. I argue that even though Bingham, Kahneman, and Gigerenzer all define heuristics roughly as simple rules that allow making shortcuts in decision making (e.g., Gigerenzer & Gaissmaier, 2010: 454), the empirical entities that they have studied differ along three key dimensions: the way the heuristics are developed, the phenomena they concern, and how they are used. To cover all these differences and their implications for decision making, one needs to understand how Kahneman, Gigerenzer, and Bingham see heuristics.

Kahneman argues that in heuristic decision making, individuals intuitively choose an answer that first comes to mind and seems pleasurable or adequate (Kahneman, 2011). The heuristic ideas simply emerge occasionally in people's consciousness, and they act on them without careful deliberation. In other words, Kahneman's heuristics are used accidentally and unintentionally in organizations. Intuitive associations are partly formed from lifelong experience and partly wired from the birth (Kahneman, 2011). However, often intuitive associations provide the wrong answers and bias decision making.

In contrast to Kahneman who views heuristics as automatic responses that bias decision making, both Gigerenzer and Bingham see that individuals use heuristics intentionally to improve decision making. Gigerenzer explicitly states that ignoring part of the information can lead to better decisions (Gigerenzer & Gaissmaier, 2010: 454). However, there are also differences among how Gigerenzer and Bingham see heuristics. Gigerenzer's heuristics are specific step-by-step instructions for actions and their precise order that has been created through rigorous analysis of the focal phenomenon in homogeneous samples (Gigerenzer, 2000; Gigerenzer & Gaissmaier, 2010). Conversely, Bingham's heuristics are rules-of-thumb that are not intended to be specific action instructions and leave room for improvisation (Bingham et al., 2007b). Managers create such heuristics by discussing their previous experiences; when they reach an agreement of the causes of certain outcomes, they may explicate that understanding as a heuristic for the future use (Bingham & Haleblian, in press). The differences between the three different types of heuristics (Kahneman, Gigerenzer, and Bingham) and the implications of these differences are elaborated below. Table 2 summarizes the comparison.

Table 2 Similarity and differences between heuristics by Gigerenzer, Bingham, and Kahneman

	Kahneman	Gigerenzer	Bingham
Definition	Heuristic is a simple procedure that helps find an adequate, though often imperfect answer to a difficult question	Heuristic is a strategy that ignores part of the information, with the goal of making decisions more quickly, frugally, and/or accurately than more complex methods	Heuristic is a rule-of-thumb that provides cognitive short-cuts in decision making
Examples	If a product is expensive, it must be good. If a person has graduated from Stanford, he is smart (hard question: how smart? Easy question: where did he study?)	If a customer has not purchased within a certain number of months (the hiatus), the customer is classified as inactive; otherwise, the customer is classified as active	Use greenfield entry mode. Use indirect sales that relies on the partners. Enter the U.S. market and then use U.S. reference account to enter Japan and the rest of Asia
Nature of heuristic	Usually unconscious intuitive associations	Conscious and explicated strategies, algorithms, or formulas	Conscious and explicated rules-of-thumb
Argued effect on decision quality	Negative	Positive	Positive
Way created	Automatic, non-conscious processes	Statistical analyses	Discussion and consensus building
A number of samples for creation of heuristics	A large number	A large number	Few
Homogeneity among samples that have been used for heuristic creation	Low	Low	High
Stability in the phenomenon related to heuristics	Low	High	Low
Specificity in prescribing actions	Varies	High	Low
Use in organizations	Accidental	Intentional	Intentional

Kahneman (2011) defines heuristics with the help of the dual-systems theories of cognition (e.g., Smith & DeCoster, 2000; Strack & Deutsch, 2004). According to these theories, humans have two cognitive systems to process information. System 1, the impulsive system, learns regularities in the environment over time and stores them as unconscious and conscious associations in the long term memory (Smith, 1998). These associations then influence what ideas rapidly and automatically come to people's minds in any situations (Strack & Deutsch, 2004). Conversely, System 2, the reflective system, operates in the working memory and relies on conscious, logical reasoning (Evans, 2008). This form of reasoning is better able to recognize novel features in any situations but also takes more time and requires cognitive capacity and effort (Kahneman, 2011). Hence, in new situations, people often first get associations from System 1 that might be applicable in somewhat similar situations but not in the focal one; and only if they have sufficient time, motivation, and capacity to process the situation in their System 2 they understand that it requires different kinds of actions.

The underlying mechanism of how the two systems work together is out of the scope of this thesis. What is important here is the understanding that according to Kahneman, heuristic decision making is decision making where the impulsive system plays the leading role (and the reflective system remains passive).

Most importantly, although Kahneman agrees that heuristics help simplify decision making, he warns about the imperfect nature of heuristics as decision rules (Kahneman, 2011; Tversky & Kahneman, 1974). Here is one puzzle that Kahneman uses to illustrate his point. Do not try to solve this puzzle but give an answer based on your intuition.

A bat and a ball cost $1.10.
The bat costs one dollar more than the ball.
How much does the ball cost?

A number that most probably came to your mind is 10 cents. The goal of this exercise is to illustrate that this puzzle evokes the answer that "is intuitive, appealing, and wrong" (Kahneman, 2011: 44). If you do the math, you will figure out that the ball cost 5 cents. The time that one needs to give an answer by listening only to intuition is shorter than the time one needs to do the math. However, when impulsive systems are leading decision making,

individuals intuitively pick up the answer that comes to the mind first and seams pleasurable and/or adequate. These easier and pleasurable answers are however not always valid.

Another way how Kahneman (2011) defines heuristics is that instead of answering an original difficult question, people answer a related, easier question. System 1 typically replaces the more difficult question with an easier question without making the person aware that it has done so.

To illustrate, Kahneman describes Slovic's experiment (Slovic, 1987). Assume that one needs to answer the question *What are more frequent killers: tornadoes or asthma?* There are two options to answer this question. First, one is to collect longitudinal data on how many people have died from tornados and from asthma over the last hundred years. Then, compare the numbers, and make a conclusion. This approach would mainly rely on System 2 and answer the original question.

The second option is to answer immediately relying on intuition. What would be your intuitive answer? In Slovic's experiments, tornadoes were seen as more frequent killers than asthma, even though asthma actually causes 20 times more death (see also, Kahneman, 2011: 138). The media tends to publish stories about the consequences of tornados much more frequently than stories about deaths from asthma. Because System 1 has built its understanding from vivid, emotional stories rather than statistical facts, it is likely that one ends up answering 'tornadoes'. In other words, one substitutes the original question with an easier one, "how many deaths caused by tornado vs. asthma do I remember?'

Another good example of heuristic decision making in the management context is an example of the irrational behavior of customers when they relied on heuristics while making the decision to buy or not buy the turquoise jewellery (Cialdini, 1995). Cialdini describe how the owner of a touristic store could not sell the turquoise jewellery when it was relatively cheap. But when the price was double, all items were sold out fast. Cialdini explains that usually the average tourist has no knowledge of how to assess the value of the turquoise jewellery. So when it was cheap, tourists had no decision rule that would help them to make a decision. When the price was doubled, the intuitive association 'expensive = good' learned from long life experience became a simple decision rule that lead to the decision to buy (Cialdini, 1995).

Thus, Kahneman's heuristics are created automatically as the outcome of either implicit learning or biological tendencies (Tversky & Kahneman, 1974).

Implicitly learned intuitive associations are created during life when the link between two events forms in the associative memory. Usually the individual is not even aware of having such beliefs (Smith & DeCoster, 2000). But any time the individual heard or read news about, for example, the consequences of a tornado, the link tornado-death became stronger in the associative memory (Kahneman, 2011). Some heuristics are embedded in people from birth as a result of evolution. People are born prepared "to orient attention, avoid losses, and fear of spiders" (Kahneman, 2011: 21).

In contrast to Kahneman, both Gigerenzer and Bingham argue that heuristics can improve decisions rather than produce bias.

3.3.1.2 Gigerenzer's heuristic

Gigerenzer defines a heuristic as "a strategy that ignores part of the information, with the goal of making decisions more quickly, frugally, and/or accurately than more complex methods" (Gigerenzer & Gaissmaier, 2010: 454). Figure 3 provides an example of such a strategy. This particular decision tree has been developed to help emergency physicians detect ischemic heart disease by only asking three yes/no questions (Gigerenzer & Gaissmaier, 2010: 467; Green & Mehr, 1997):

Does the patient's electrocardiogram show a certain anomaly?

Is chest pain the patient's primary complaint?
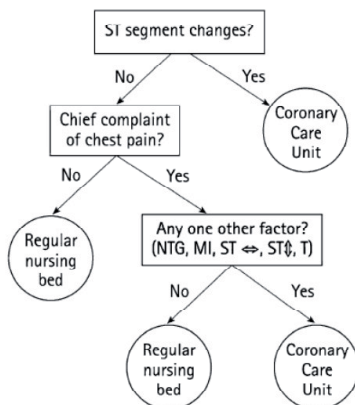
Are there any other factors?

Figure 3 Fast-and-frugal trees for medical decisions. Adopted from Gigerenzer 2010:467

The strategy of three questions allows to detect the disease more quickly than running tens of different medical tests, and with fewer mistakes. The use of this heuristic in practice helped reduce the overload of coronary care units, increase the quality of care, and decrease the costs (Gigerenzer & Gaissmaier, 2010; Green & Mehr, 1997).

Thus, Gigerenzer's heuristics are similar to Kahneman's heuristics in the sense that both authors see that heuristics simplify decision making by focusing attention to a limited number of cues. Gigerenzer's heuristics differ, however, from Kahneman's heuristics in crucial ways.

First, whereas Kahneman emphasizes that heuristics often produce bias in decision making, Gigerenzer emphasizes that heuristics often improve decisions, as the above example of coronary units illustrated. The implication of this difference for the desirability of the use of heuristics in decision making is obvious.

The second difference between Kahneman and Gigerenzer types of heuristics is the way how the heuristics are developed. While Kahneman views heuristics as non-conscious processes that occur automatically as the outcome of either implicit learning or biological tendencies, Gigerenzer emphasizes the deliberate effort that is put into building the heuristics. According to Gigerenzer, heuristics are formulas, algorithms, decision trees or other decision rules that have been created as a result of rigorous analysis of homogeneous samples.

Presented in Figure 3 decision tree is the result of the study of the diagnosis of 292 patients with symptoms of heart diseases (Green & Mehr, 1997). The study has revealed that three facts are sufficient for making accurate decisions: does the patient's electrocardiogram show a certain anomaly, whether chest pain is the patient's primary complaint, and whether there are any other factors. Any extra medical tests or information add little value for the detection of an ischemic disease. Because the rigorous analysis of large and homogenous samples exposed the list of cues that are enough for the diagnosis, the consideration of any additional information will simply take more time. In addition, the consideration of extra irrelevant cues can mislead emergency physicians (Gigerenzer, 2007). One might argue that this more effortful and reflective approach for building Gigerenzer-type of heuristics may be one of the main reasons for the implications of the different heuristics on decision quality.

The third difference between Gigerenzer's and Kahneman's heuristics relates to the sample of experience used to construct the heuristics.

Gigerenzer's heuristics are developed from well controlled samples that contain a high level of homogeneity. All patients are humans, and have a similar structure of the heart. Ischemia is usually caused by problems with blood vessels, with resultant damage or dysfunction of tissue. The damage or dysfunction of tissue causes problems with blood vessels, and therefore an anomaly in electrocardiogram, chest pain, or other well known factors. The study of diagnosis shows that any other variations such as the patient's age, high height or gender do not have a significant effect on the symptoms of an ischemic heart disease. (Gigerenzer & Gaissmaier, 2010; Green & Mehr, 1997) Conversely, Kahneman's heuristics that are learned (instead of being biologically hardwired) are the outcome of associations built from a random set of a wide variety of life experience.

The differences in sample homogeneity between Gigerenzer and Kahneman-type heuristics are important for understanding why the former might improve decisions while the latter might harm them. Gigerenzer's heuristics improve decisions because when the sample has been homogeneous and the heuristic is only used in similar future situations, the likelihood that things will continue in a similar way is high. Conversely, Kahneman-type heuristics can be harmful because when a variety of random associations leads to other associations in a novel situation, the likelihood of dissimilar dynamics is higher and, hence, the predictive validity of the heuristic becomes significantly lower. Despite the similarity in some surface features that bring up the associations, there is no regularity in the underlying mechanisms and parameters that would justify jumping to conclusions.

Finally, whereas Kahneman's heuristics interfere with decision making accidentally, automatically, and in unintended ways, organizations intentionally develop and use Gigerenzer-type of heuristics. Gigerenzer's heuristics exist in organizations in the form of explicated, informally shared or formally codified decision rules: formulas, decision trees, algorithms, as the coronary unit example illustrated (Gigerenzer & Gaissmaier, 2010). These decision rules contain accurate instructions on what to do and in which order to do it. In other words, heuristics provide decision makers with a set of actions in a predetermined order that allow them to make decisions faster and with the same accuracy than more complex methods by allocating attention to the relevant cues (Gigerenzer & Gaissmaier, 2010; Gigerenzer & Goldstein, 1996). In fact, these intentional heuristics that focus attention to cues that are known to be relevant can actually work against the Kahneman-

type of heuristics by preventing the impulsive system from jumping to conclusions based on vivid but irrelevant cues (see also, Kahneman, 2011: Chapter 21).

3.3.1.3   *Bingham's heuristic*

In line with Kahneman and Gigerenzer, Bingham sees that heuristics simplify decision making by focusing attention. In contrast to Kahneman and consistently with Gigerenzer, Bingham sees that heuristics generally improve decision making. An example of Bingham's heuristics that companies use and that improves their decisions is: "Enter the U.S. market then use U.S. reference accounts to enter Japan and the rest of Asia", "Enter countries that have ODMs and OEMs[1]", "Use greenfield entry mode", (Bingham & Haleblian, in press: 31). In organizations, such rules-of-thumb usually exist in the form of articulated but informally shared decision rules (Bingham et al., 2007b).

Heuristics as defined by Bingham fall in the midpoint along a continuum between Kahneman's and Gigerenzer's heuristics in terms of how they are developed. Kahneman's heuristics are an extreme example of automatically, unintentionally developed heuristics as they emerge in the associative memory or cognitive system 1; and Gigerenzer's heuristics are the other extreme, as they are developed through deliberate thinking processes and rigorous data analysis. Bingham's heuristics are located between these extremes because their development contains both intuitive sampling of experience and deliberate thinking and discussions.

In a group of managers, each manager has his own experience and own related intuitive inferences. For example, one manager might remember a particularly evoking fact and infer that this fact is the main cause of the outcome, whereas another manger might remember a different fact and attribute the outcome to this fact. Here, their intuitions influence what experience they bring up and what not in discussions for more deliberate processing.

A good example of the heuristics developing process is the most recent study of Bingham & Haleblian (Bingham & Haleblian, in press). After one of the studied companies, Jia, entered the Japanese market, it faced reluctance from the Japanese firms to accept their technology. Jia's managers started to

---

[1] Original design manufacturers and original equipment manufacturer

reflect on this problem. Different managers had different assumptions regarding the cause of such behavior of Japanese firms. One manager believed that "Japanese bias against Asian firms' products" (p. 12). Another manager argued that "it was hard to sell...because they didn't think that the technology was up to scratch" (p.12). (As can be seen, these inferences are most likely based on their idiosyncratic experiences and background beliefs.) At the end of the sensemaking, the assumptions of the different managers converged. As a result of such convergence, the managers formed a new heuristic: "Enter the U.S. market then use U.S. reference accounts to enter Japan and the rest of Asia" (p. 13).

The implication of the degree of deliberation in the process is that biases are more likely to enter the process of developing Bingham-type of heuristics than the process of Gigerenzer-type of heuristics, while Bingham-type of heuristics are likely to be more plausible than Kahneman-type of heuristics.

Bingham's heuristics also position themselves somewhere between Kahneman's and Gigerenzer's heuristics in terms of the variety of experience used in constructing them. While Kahneman's heuristics are the outcome of any life events, Bingham's heuristics are built mainly based on organizational experiences in a small number of contexts. At the other extreme, Gigerenzer's heuristics come from similar clinical cases and hence contain more homogeneity than the experience and data behind Bingham's heuristics. This difference again indicates that while Bingham's heuristics are more likely to predict the future better than Kahneman's heuristics, they are not likely to reach the same level of accuracy as Gigerenzer's heuristics. For example, the probability that the structure of the heart or tissues of blood vessels will change are low (area for Gigerenzer's heuristics). In contrast, a Japanese firm can change their negative attitude towards Asian technologies or positive attitude toward American technologies (application area for Bingham's heuristics). In case this change occurs, employing earlier created heuristic "Enter the U.S. market then use U.S. reference accounts to enter Japan and the rest of Asia" can lead to wasting time and resources to enter U.S. market first.

Fourth, unlike Kahneman's heuristics and like Gigerenzer's heuristics, Bingham's heuristics are used intentionally in organizations. There is a difference, however, on how Bingham's and Gigerenzer's heuristics are used in organizations. Whereas Gigerenzer's heuristics provide specific instructions on which actions to take and what to decide, Bingham's heuristics provide more generic instructions that allow actors to improvise

around the important lines of action. For example, Bingham described the following heuristic: "Create a business case before entering a new country." Such instructions leave some more room for individual and group choices of how to carry out the heuristically chosen task than the heuristics described by Gigerenzer do (e.g., specific steps and their predetermined order in diagnosing ischemic heart disease is more specified than in business case creation).

3.3.2   Mental models

There are a number of definitions of mental models (Eden, Ackermann, & Cropper, 1992). At the most generic level, mental models are some content in the head of individuals that helps them to allocate attention and make choices by describing the environment or some activities (e.g., Walsh, 1995). Therefore, the discussion of mental models is relevant in the context of heuristics because both mental models and heuristics help in allocating attention to relevant cues when making decisions.

Scholars have found that mental models can differ in a number of dimensions such as, for example, the complexity of mental models (Calori, Johnson, & Sarnin, 1994) or the accuracy of mental models (Hedberg, 1981). In this thesis, I only focus on the prescriptive versus descriptive nature of mental models as a crucial difference between mental models that influence decision making. The focus on this certain difference provides a means for seeing the limitations in the use of heuristics versus more descriptive forms of understanding. Strip maps are mental models of the prescriptive kind and causal models are mental models of the descriptive kind. While strip mental maps provide fast decision making in a stable environment, they usually fail to provide the understanding of how to adapt behavior in a novel situation (Fiol & Huff, 1992; Tolman, 1948). As the following analysis indicates, heuristics are more similar to strip maps than to causal maps.

3.3.2.1   *Strip Maps*

"Strip maps" is a concept that was originally defined by Tolman (1948) who studied how rats learned to navigate in mazes. His work has been later much used by management scholars and psychologists. Tolman concluded from his various experiments that individuals learn from experience by "building up nervous system sets which function like cognitive maps" (Tolman, 1948: 191). He defined strip maps to indicate simple action steps in a prescribed order

such as 'to get food, first walk straight, and then turn left'. Fiol and Huff (1992) noted that many managerial models resemble strip maps. For example, some companies have specific action step lists for carrying out various activities (Kale & Singh, 2007). Therefore, strip maps are relevant to this dissertation.

Strip maps are similar to heuristics as defined by Kahneman, Gigerenzer, and Bingham in the sense that they simplify decisions by turning a complex choice into a simpler one. Strip maps give direct action instructions, as do the automatic impulses that form Kahneman's heuristics, the algorithms that are Gigerenzer's heuristics, and the rules-of-thumb, such as "Enter countries that have ODMs and OEMs" that are Bingham's heuristics. Each type of heuristics and strip maps thus limits the number of alternatives and cues considered in decision making. A hungry rat will not consider to dig a hole to find food and an ambitious manager will ignore countries that have no ODMs.

Another way of putting the idea of simplifying decisions is that heuristics and strip maps contain a limited number of choice points, indicated by if-then statements. Kahneman's heuristics typically implicitly contain one if statement, for example, if some product is expensive, it must be good. Gigerenzer's heuristics may contain a few choice points, as illustrated by the three questions in the coronary unit example. Strip maps, for example, like the one used by the rats in the above example, contain implicitly only one choice point: "if you are hungry, then…" Likewise, Bingham's heuristics only contain one implicit choice point: "if you want to internationalize, then…"

There are also differences between strip maps and the different types of heuristics. First, strip maps, especially those that can be found in organizations, can contain a substantially larger number of steps than heuristics. For example, HP has developed a 450-page rule book for managing alliances (see also, Kale & Singh, 2007; Winter & Szulanski, 2001) that contained many more steps than the simple, explicated heuristics described by Gigerenzer and Bingham. Gigerenzer emphasizes, for example, that a good, specific medical decision about the type of treatment can be made by answering three concrete yes/no questions. Bingham also mentions the idea that a lesser number of cues is often enough but also emphasizes that heuristics allow improvisation which leads to better decisions than pre-defined rules (Bingham & Eisenhardt, 2011; Bingham et al., 2007b).

Strip maps may have been learned in various ways and, hence, can resemble each type of heuristics. Some strip maps may be learned unintentionally through experience, as, for example, the rat that learns to navigate the maze

without any conscious thoughts (Tolman, 1948). On the other hand, much deliberation and rigorous analysis is likely to be behind in some organizational strip maps, such as the rule book of HP mentioned above. Likewise, the sample used for developing strip maps can vary from well controlled and homogenous to random and heterogeneous.

Strip maps can be used both intentionally and unintentionally in organizations. Some managers might have implicitly learned action steps that they repeat without conscious reflection or tacit knowledge (Grant, 1996; Spender, 1996). At the same time, some organizations intentionally produce process decision rules that should be intentionally followed (Kale & Singh, 2007).

In addition to strip maps and heuristics, people in organizations have other forms of understanding both inside their heads and explicated in various forms (Cossette & Audet, 1992; Fiol & Huff, 1992; Gary & Wood, 2011; Tolman, 1948). The most central of these other forms is another type of mental models, causal maps.

3.3.2.2   *Causal maps*

Causal maps are more complex than heuristics and strip maps (Fiol & Huff, 1992; Gary & Wood, 2011). They do not contain rules-of-thumb or action instructions but instead describe various elements in a focal system and causal and other types of relationships between these elements (Walsh, 1995; Weick, 1995). While heuristics and strip maps are linear in the sense that they include a starting point and then clear progression to the next choice point(s), causal maps do not contain such a clear order but are more circular (e.g.,Gary & Wood, 2011). Many elements in a system can influence other elements and there can be feedback loops that make defining a starting point an arbitrary question (e.g., Bougon, Weick, & Binkhorst, 1977).

The description of how things work and why and how different elements influence one another still provides clues of where one should focus attention, though (Gary & Wood, 2011). And in this way causal maps are similar to strip maps. For example, if a causal map shows that "available cash" has direct implications for many decisions, it urges managers to check the current cash levels before major decisions.

Causal maps can be created in similar ways as strip maps and heuristics: either through implicit learning or deliberate analyses or both (Weick, 1995). People can develop deep, causal understandings if there is sufficient

regularity, repetition, and immediate feedback (e.g., Klein, 2003). On the other hand, deliberate reflection and explication of ideas can likewise lead to accurate causal understanding (Zollo & Winter, 2002). The main difference in the process of learning is that while causal knowledge remains descriptive, strip maps and heuristics are often derived from this understanding in the form of parsimonious conclusion.

A central difference between causal maps and strip maps and heuristics is that while using causal maps leads to understanding of the system, the decision maker then has to use this understanding to make his or her choice, instead of mechanically following the heuristic instruction or rule-of-thumb. For example, a causal understanding of the prejudgement of Japanese on Asian technologies might make a manager of a Singaporean company conclude that the chances of success are higher if they have U.S. account references because Japanese firms trust American technologies. From this, the manager might conclude that in the focal decision the right choice is to enter the U.S market first. Conversely, using the heuristic "Enter the U.S. market then use U.S. reference accounts to enter Japan and the rest of Asia" would not require managerial discretion to make the choice of which countries to enter first or what to use as the main sales argument, i.e. the U.S. reference (even though the heuristic leaves, as Bingham argues, room for improvisation in terms of how to enter the chosen countries).

The above example can also be used to forward signal the argument that I make in my second essay. While both causal knowledge and heuristics lead to the same, successful choice in the above choice situation, only causal maps would allow reacting to changes in the context. For example, if the attitudes of the Japanese towards Asian technologies changed, for example due to the success of HTC and other South Korean companies, the primary reason for starting from U.S. would become less important. Consequently, the best choice might turn out to be a country closer to the Singaporean Headquarters and factories, say, due to logistics and culture management costs that were worth paying when getting the U.S. reference was a highly influential factor. The heuristic, as it does not explicitly contain *why* something should be done, cannot respond to these kinds of changes in the context of the decision.

The above illustrated differences can also be described in terms of causality contained in the heuristics, strip maps, and causal maps. As my review of heuristics showed, rigorous analysis and reflection of causality may have been carried out to develop heuristics. For example, medical researchers thoroughly analyzed large amount of data and developed a causal

34

understanding of ischemic heart disease to develop the three-step heuristic for making medical decisions for chest pain patients (Green & Mehr, 1997). Likewise, the managers described by Bingham spent some time discussing how and why some choices led to failure, to develop their heuristics to be used in future. However, unlike causal maps that always contain causal relations between elements, heuristics and strip maps themselves do not explicitly contain this causal understanding behind their creation (Cossette & Audet, 1992; Fiol & Huff, 1992). An emergency physician who does the three tests to the chest pain patient needs to understand nothing about heart biology and statistics to make the right choice. Likewise, the heuristic "Enter the U.S. market then use U.S. reference accounts to enter Japan and the rest of Asia" does not contain the word "because" and a person who did not participate in the discussions where the heuristic was created will, therefore, receive no causal understanding of the choice situation.

The implications of the differences between causal maps and strip maps in the context of multiple acquisitions are the focus of investigation in essays 2 and 3.

4 KEY CONTRIBUTIONS

In this section, I summarize the key results of the studies addressed in the dissertation, discuss how they contribute to the literature, identify their implications for practice and explicate my contributions within the essays. The contributions of the dissertation are targeted both at the literature on serial acquisitions and at the literature on learning. If described very briefly, the findings of the dissertation contribute to the acquisitions programs literature by providing a fine-grinded classification of acquisition approaches and their applicability in different contexts. Also, the results extend the existing research on learning by providing improved understanding of how individuals in firms learn, and how individuals can speed up the learning processes.

Table 3 provides an overview of the specific research questions of the three essays, their research designs, highlighting the datasets, the key results, and the contributions.

Table 3 Overview of dissertation: Summary of research questions, design, results, and literature of contributions

	Essay 1	Essay 2	Essay 3
Title	Performance implications of different types of geographic roll-up acquisition programs	Mind the way you reflect: the role of causal knowledge in organizational learning	Toward a cognitive explanation of heterogeneity in the speed of capability development
Key questions	How to succeed in multiple acquisitions?	Do firms learn differently, and if so, how and why?	Do firms learn differently, and if so, how and why?
Specific research question	What are the main design parameters of the acquisition programs? What are the performance consequences of the different types of acquisition programs?	How do types of mental models formed during reflection influence the outcome of a focal acquisition? How do types of decision rules communicated and stored within an organization influence the outcome of a focal acquisition?	How do types of mental models influence the speed of learning?
Level of analysis	Firm Industry Market	Individuals Firms	Individuals
Research design	Case study	Case study	Theoretical paper
Data source	14 in-depth interviews, 1,700 pages of internal and external archival data	65 in-depth interviews, 3,300 pages of internal and external archival data Observation of 3 meetings	Conceptual analysis
Key results and insights	Four types of acquisition programs and their detailed descriptions Applicability of four acquisition programs in different contexts The main antecedents of the choice of a certain acquisition program	Causal knowledge is the preliminary basis for acquisition capability development Individuals can reflect on experience in two different ways: deep and superficial reflections Two reflection types lead to the formation of different types of mental models Three practices to reflect in a deep way Communication of non-causal decision rules have a negative effect on acquisition capability development	Strip mental models (heuristic decision rules) help initiate a task almost immediately, but they significantly slow down the speed of capability development in the long term Causal mental models (causal decision rules) require more time to initiate tasks, but they accelerate the speed of capability development in the long term
Contributions to the extant literature on	Multiple acquisitions	Learning Acquisition learning	Learning Acquisition learning

4.1   Contributions to literature

4.1.1   Contributions to the literature on multiple acquisitions

The first essay (Appendix 1) makes an empirical contribution to the literature by investigating the acquisitions strategies of four multiple acquirers with the purpose to answer two research questions (i) what are the main design parameters of their acquisition programs, (ii) and what are the performance consequences of and reasons for different acquisition program designs. To do so, I conducted an in-depth multiple-case study of four firms that entered and expanded into the Russian beer market during 1991-2008. The studied companies are Baltic Beverages Holding, AB InBev, Heineken, Efes, and SABMiller. To develop an understanding of the systematic differences among the studied firms' acquisition strategies, I performed an extensive archival data analysis of the companies (approximately 1,700 pages altogether) to track their acquisition histories. I then conducted 14 interviews with the managers and industry experts to understand how they had designed the acquisition strategies and what had affected the strategies.

Two main findings emerge from the analysis. First, in contrast to earlier research that has found that companies are prone to choose similar acquisition strategies with one another when entering a certain country/industry, I found that the studied companies employed four different acquisition approaches. Their strategies differed in the following dimensions: (1) the total number of transactions needed to reach a certain strategic goal, (2) the types of transactions (e.g. full or partial acquisitions, greenfield, or joint venture), (3) a policy regarding top management replacement (retaining vs. replacing local managers), (4) the nature of a partner in a joint venture (large local company or local authority).

Second, the first essay illustrates that the ability to design an acquisition strategy that fits both the current conditions in the environment and the firm's acquisition capabilities and resources is central for the success of multiple acquirers. To make this conclusion, I analyzed the antecedents and the consequences of the four acquisition approaches used by the studied companies for their performance. This analysis shows that the most successful acquirers have tailored their acquisition strategies to the current stage of institutional development of the host country and industry conditions. More importantly, the data show that not only external characteristics of the host country influenced the acquisition program design.

I find that the studied firms' previous acquisition experiences, their sizes, organizational structures, and managerial perception of the firm's acquisition capabilities had a strong effect on the company's ability to execute a certain acquisition program. Therefore, I argue that to succeed in their acquisition programs acquirers need to design an acquisition program in a way that there is a match between the acquirer's acquisition capabilities and the acquisition strategy needed in the current stage of the host country and industry development.

These findings contribute to the literature on acquisition literature in two main ways. First, I contribute to the previous research by illustrating that firms use widely different acquisition approaches in the same settings. The earlier studies have found that companies tend to use a certain acquisition strategy in a certain country/industry because of particular characteristic features of this country/industry (Barkema et al., 1996; Barkema, Shenkar, Vermeulen, & Bell, 1997; Peng, 2003; Peng & Heath, 1996; Puranam et al., 2006). In contrast, I find that the studied companies used four different acquisition strategies in the same context.

The first essay contributes to the literature by providing a more fine-grained classification of acquisition approaches and their performance implications. So far, researchers have discovered only three parameters of acquisition programs that influence the outcomes of serial acquirers. More precisely, it has been found that too high a speed of transactions within an acquisition program, an irregular rhythm and too broad a scope have a negative effect on the performance of multiple acquirers (Laamanen & Keil, 2008; Vermeulen & Barkema, 2002). I extend the list of parameters by illustrating how a unique combination of the types of transactions (e.g. full or partial acquisitions, greenfield, or joint venture), a policy regarding top management replacement (retaining vs. replacing local managers), the nature of a partner in a joint venture (a large local company or the local authority) can improve the likelihood of multiple acquirers' success by moderating the negative effect of the high speed of the acquisitions and by compensating for the lack of experience and small size of the acquirer.

The first essay contributes to the understanding of the antecedents of the choice of different acquisition programs. In particular, it brings out the agency role of acquirers' executives in designing an acquisition approach, instead of being followers of given circumstances. For example, Meyer and Thu Tran (2006) suggest that often acquirers have to employ a certain type of transaction because of some obstacles in the host countries. In particular,

they argue that in emerging economies, acquirers often have to expand through partial acquisitions, and, therefore, share control and take the risk of conflicts with the managers of the acquired targets. "Partial acquisitions are potentially subject to conflicts that require compromises. In contrast to JVs, partial acquisitions normally do not draft a contract with clearly articulated common objectives, making conflicts more likely. Why do investors in emerging economies accept to share control? Often, the decision is a matter of limited opportunities, as the owner may be unwilling to sell outright" (Meyer & Thu Tran, 2006: 185). As my data illustrate, the executives of BBH intentionally put a lot of effort to build close, family-type relationships with the top managers of partially acquired targets. This tactic enables BBH to create a much stronger desire to follow common objectives than any written JV contract could create.

While the first essay recognizes that some firms perform better because they are more cautious in planning and designing their acquisition approaches, the second and third essay make a number of important contributions to the acquisition literature by providing knowledge of how firms and individuals learn to adapt their acquisition strategies to fit the new context of the focal acquisition (Appendix 2), and how individuals can speed up capabilities development if it is needed (Appendix 3). Because I discuss the contributions of the second and third essay in the next section, I will not elaborate their theoretical implications here. Table 4 illustrates how the three essays of the dissertation contribute to the extant literature.

Table 4 Contributions of the dissertation to the acquisition program literature

	What is known	Gaps	Contributions of the dissertation
Types of acquisition programs (Bower, 2001; Chatterjee, 2009; Shi & Prescott, 2010)	Classification of acquisition programs based on business logic behind a group of acquisitions, e.g. internationalization of chocolate and confectionary industry (Nestle) building of dominant position in technology platform (Cisco System) Classification of acquisition programs based on strategic goals behind a group of acquisitions, e.g. To reduce overcapacity in industry To roll-up geographically	What other ways to classify acquisition programs apart from business logic and strategic goal exist?	Essay 1: Four types of acquisition programs: (i) the cautious approach, (ii) the investment-intensive approach, (iii) the hybrid approach, and (iv) the political approach Detailed characteristics of the four approaches Advantages and disadvantages of the four approaches
Design parameters of acquisition programs (Hayward, 2002; Laamanen & Keil, 2008; Vermeulen & Barkema, 2002)	Pace Rhythm Scope Business logic behind an acquisition program	What other characteristics of acquisitions programs which influence their performance exist?	Essay 1: Composition of acquisition program as a new characteristic that influences performance of multiple acquirer
Applicability of different acquisition programs in different institutional contexts (Meyer & Estrin, 2001; Meyer & Thu Tran, 2006)	In different economies, potential acquirers need to tailor their approaches to the local context	What is the applicability of different acquisition programs in other institutional contexts?	Essay 1: Performance implications of four acquisition program approaches in different stages of country and industry development
Antecedents of choice of acquisition program (Laamanen & Keil, 2008; Meyer & Thu Tran, 2006)	Local context in host country Size of acquirer Acquisition experience	What are the key antecedents of the choice of an acquisition program?	Essay 1: A list of external and internal factors that dictate the choice of a certain acquisition program
Acquisition program-level capabilities (Haleblian & Finkelstein, 1999; Hayward, 2002; Laamanen & Keil, 2008; Vermeulen & Barkema, 2002; Zollo & Singh, 2004)	Ability to time transactions within acquisition program Ability to optimize the scope of acquisition program Ability to tailor acquisition approach to local environment in the host country Ability to learn from each previous acquisition	What other acquisition program- level capabilities do firms need to develop? How do firms and individuals actually learn acquisition capabilities?	Essay 1: Ability to choose right composition of acquisitions program Ability to choose right style of governance of target Ability to match own acquisitions competence and local context while designing acquisition program Essay 2 and Essay 3: Learning mechanisms Speed of learning

4.1.2 Contribution to the learning literature

The second essay (Appendix 2) makes an empirical contribution to the literature on learning in general and on acquisition learning in particular. In this study, I focus on examining how individuals in firms learn to modify their acquisition approach to match it to the new conditions of the focal acquisition. I build my arguments based on the results of a multiple-case study of five multiple acquirers. The data from 65 interviews, 3,300 pages of archival material, and meeting observations show that individuals can reflect on experience in two different ways: through superficial and deep reflection. I find that deep reflection enables the construction of complex causal cognitive models that describe how different elements in a system influence each other, whereas superficial reflection results in strip models that lay out a simple set of action steps. In line with statements of Tolman (1948) and Fiol & Huff (1992), I find that only causal mental models enable adopting an acquisition approach in a focal acquisition that was different from the previous one. On the contrary, strip mental models led to inertial behavior that led to failure in new circumstances.

The most important contribution of the second essay is that I recognize three characteristics that differentiate deep reflection from surface reflection. Thus, I find the three practices that an individual can use to ensure that s/he reflects in a deep way and to infer lessons that can be used for future decisions.

Moreover, I find that even if an individual has reflected on experience in a deep way, s/he may store and communicate the learned lessons in the form of surface manifestations instead of deep structured knowledge. By illustrating how the communication of non-causal decision rules led to the failure of the following acquisition of the studied company, I argue that successful acquisition capability development requires both deep reflection and the storing and communication of causal knowledge.

My findings contribute to the literature on acquisition learning in three main ways. First, I emphasize the central role of causal mental models and causal types of decision rules for successful learning and acquisition capability development. Earlier research has found that because acquisition learning is context specific, simple accumulation of experience per se does not lead to improved performance (Heimeriks & Schijven, 2011; Zollo & Singh, 2004). Instead, active reflection on experience is needed to extract the explanation of the success or failure of company actions (Simonin, 1997; Zollo, 2009; Zollo & Winter, 2002). The main purpose of reflection is

creating decision rules such as heuristics (Bingham et al., 2007b), best practices (Winter & Szulanski, 2001), or templates (Jensen & Szulanski, 2007; Kale & Singh, 2007) that managers can utilize in the future for making better and faster decisions. I extend this stream of research by showing how the type of knowledge structures that have been created during reflection influences organizational learning. In particular, I show that managers who extract strip models from their individual experience are likely to learn lessons with questionable applicability for the next acquisition. In contrast, managers who infer causal models are more likely to learn lessons that enable acting successfully in new contexts. Simply put, although reflection allows transforming earlier experience into learning, the quality of reflection should also be taken into account. I argue that in acquisition settings, deep reflection and causal knowledge are more effective than surface reflection and strip models.

I also extend the learning literature by providing a deeper understanding of the role of heuristics as decision rules in the development of acquisition capability. There is some level of agreement among researchers that while codified knowledge and routine are sources of competitive advantage in the stable environment, they likely cause inertial behavior in the dynamic environment (Nelson & Winter, 1982; Zollo & Winter, 2002). In the turbulent environment, using heuristics (i.e., informal rules of thumb) is associated with higher performance (e.g, Bingham & Eisenhardt, 2011; Davis et al., 2009). For example, Bingham et al. (2007b) argue "heuristics are at the heart of high performing organizational processes, and so are central to firm capabilities" (Bingham et al., 2007b: 40). My findings further develop the role of heuristics for capability development by indicating the essential basis for the skilled use of heuristic decision rules. In particular, the results of my analysis show that causal knowledge is needed for the successful utilization of heuristics. I argue that only when managers had complex causal models about how things in the environment work, they were able to understand which heuristics can be used in a certain situation and which should not be used.

Finally, the findings of the second essay contribute to the acquisition literature and the learning literature by deepening knowledge of reflective learning. In their empirical study, Bingham & Haleblian (2008) have found that the failure to learn can be explained by the tendency to attribute a negative market reaction to external rather than internal factors. More precisely, managers tend to explain the poor outcomes of their actions by

blaming some exogenous factors. Conversely, I find that even if managers attribute negative feedback internally, they likely fail to learn if they then only incorporate simplified surface decision rules instead of causal ones into their mental models. Thus, I argue that the shift in the managerial mental models does not guarantee success in the future if it is induced by updating mental models with strip-type, non-causal knowledge. In such cases, managers will form a strategy by relying on learned lessons which might not be useful in a new situation.

The third essay contributes to the literature by theorizing how causal and strip mental models influence the speed of capability development. Drawing on a contemporary distinguishment between two types of mental models and their weaknesses and strengths as decision rules, I theorize the consequences of the speed of capability development in cases where (i) individuals act by relying on a strip mental model and (ii) individuals act by relying on a causal mental model. The third essay demonstrates that although a strip mental model can significantly speed up capability development and help individuals initiate a task almost immediately, it fails to provide insight into how to change one's behavior in a new situation. Conversely, a causal mental model requires more time to help individuals initiate tasks, but it enables to adapt behavior in a novel situation.

In general, the theoretical arguments of the third essay contribute to the existing knowledge of how to speed up the process of capability development (Barkema et al., 2002; Eisenhardt & Tabrizi, 1995). I also contribute to the on-going debates on the goodness of heuristics decision rules (Bingham & Eisenhardt, 2011; Bingham, Eisenhardt, & Davis, 2007a; Bingham et al., 2007b; Gigerenzer & Gaissmaier, 2010) versus the harm of heuristics (Hodgkinson et al., 2002; Kahneman, 2011; Schwenk, 1984; Tversky & Kahneman, 1974). In particular, the third essay shows how managers who are responsible for strategy formulation more likely to succeed if they possess causal knowledge (see also, Heimeriks & Schijven, 2011). At the same time, these managers can make a deliberate choice to facilitate the development of strip type of mental models (provide heuristic decision rules) among managers who are responsible for strategy execution. This approach (the speeding up of abilities to act fast among strategy executors by providing prescribed step by step actions) can provide companies with an opportunity to develop capability faster than competitors.

4.2 Practical relevance

The studies reported in the dissertation provide several important implications for practitioners, and specifically to managers who are involved in multiple acquisitions.

The first essay provides an effective tool which enables to choose the most appropriate acquisition program with respect to the local context in the country of expansion. I believe that my detailed description of how the characteristics of a certain acquisition program helped to overcome the obstacles of different stages in the country and industry development allows managers to make an optimal decision while designing acquisition strategies. Also, my empirical evidence that different acquisition programs require different acquisition capabilities and resources can help managers to avoid the choice of an acquisition approach that they would not be able to execute in reality. However, it is known that sometimes managers can develop overconfidence about their acquisition capability without actually having competences. Managers who were involved in many acquisitions are at risk especially. My results on the obligation to have certain acquisition capabilities for each acquisition program one more time remind managers how it is important to have realistic perceptions of their competences, and be able to critically evaluate the available firm resources.

The second and third essay provide strong evidence for the needs of the creation of such an environment in the firm that enables successful learning and facilitates acquisition capabilities development. Both essays call managers responsible for learning to ensure that employees have enough time to reflect on obtained experience, have a safe environment to discuss their success, mistakes and failures openly, and finally, have the best software solutions and information systems for encouraging deep reflection and communication of causal knowledge.

The second essay also provides a tool that potentially may help managers increase the effectiveness of reflection. This tool includes three practices (i) the explicit focus on identifying causal mechanisms linking actions and outcomes, (ii) the contextualization of experience, (iii) considering obtained experience from a multi-agent perspective. In organizational settings, employing these practices increase the chance to infer causal knowledge that, in turn, enables repeated and reliable performance of actions in a new situation (Gary & Wood, 2011). Moreover, I believe that my three practices of deep reflection can help managers avoid some well-known biases during

reflection. For example, management and psychology researchers have found that the process of reflection is fraught with the potential mistakes in sensemaking that result from the cognitive biases (Miller & Ross, 1975; Tetlock, 2000; Tversky & Kahneman, 1974). One of such cognitive biases is the self-serving bias (Miller & Ross, 1975). Miller and Ross (1975) have found that managers tend to blame some external factors in cases of failure, and attribute success to their own actions. As a result, managers likely misspecify the causal link between actions and outcomes that will lead to superstitious learning and failure (Levitt & March, 1988; March et al., 2003; Zollo, 2009). Researchers also agree that often managers just cannot help being trapped by their own biases (Kahneman, Lovallo, & Sibony, 2011). My three practices of deep reflection can reduce the risk of the misinterpretation of the causal mechanism linking actions and outcomes. Therefore, this dissertation presents a powerful managerial tool that helps improve the quality of decision making and lead to performance.

The theoretical argument of the third essay has also important practical implications for the managers responsible for the tutoring of new employees. More precisely, managers can intentionally choose which types of mental models they should construct among new employees at first. If the market requires quick actions, then the construction of strip mental models can speed up the launching of a process. It should be noted, however, that it is assumed that top managers have causal knowledge and form a strategy, while the new employees are simply executing the chosen strategy. If the market situation does not require immediate actions and the new employees will be responsible for strategy formation in the future, then managers might want to facilitate the construction of causal mental models among the new employees from the beginning.

4.3   Explication of contribution

Accordance to university guidelines, I need to explicate my contribution within the essays.

In the study reported in Appendix 1, I developed the research question after preliminary analysis of a database with information from about 3500 acquisitions and an extensive literature review on the topic.

I arranged and conducted 13 face-to-face interviews and one telephone interview with industry experts and managers in the companies that were

studied. I also collected extensive external and internal archival data including the companies' press releases and annual reports.

I analyzed the data, and after theorizing with the help of my supervising professor, I wrote the initial draft of the paper. The paper has undergone few rounds of edition by me and my co-author. The final version is a result of my extensive revision after comments from one external reviewer who is a well-published professor on the topic.

The earlier version of the paper (Appendix 2) there is I am a single author was recognized as Winner of the Best Conference PhD Paper Prize at the 2010 Strategic Management Society Conference in Rome, September 12-15, 2010.

I conducted 60 out of 65 interviews reported in the current version of the paper and collected all archival data. I have done analysis of the data. The original idea of the earlier version of the paper was developed further with the co-author.

5 LIMITATIONS AND FUTURE RESEARCH

As all studies, the studies addressed in this dissertation have a number of limitations.

5.1 External validity

One limitation of the first essay is the issue of the external validity of the findings. I build my arguments based on the results from the analysis of the acquisition strategies of the four multiple acquirers in the Russian beer industry. To ensure the external validity of my findings, I also investigated the acquisitions strategies of the foreign acquirers in the Russian ice cream and chocolate industries. I find that the studied companies used quite a similar logic to design their acquisitions programs. Nevertheless, the three above-mentioned industries belong to the food and beverage industry. I admit that, for example, oil or bank industries likely represent very different contexts due to a different level of government regulation, legislation, and industry structure. Hence, potential acquirers might need to utilize some other acquisition strategies. Therefore, further research might be interested in the replication of my research approach in other industries to figure out

which other acquisitions approaches exist and when companies need to use them.

5.2 Sampling

In the second essay, I selected companies from different industries and different countries. On the one hand, this fact can be considered a methodological strength of the second essay because it might increase the external validity of my findings (Eisenhardt & Graebner, 2007). On the other hand, I do not know how industry differences might affect my results. In contrast to some early research that argues that heuristics work in a dynamic environment, I did not find that same effect. In particular, the company from a higher-velocity telecom industry benefited if their managers had complex causal understanding of how the environment works as well as the company from a stable trade and service industry. Therefore, researchers might be interested in comparing how the differences among the industries affect the role of causal knowledge in learning.

5.3 Measuring mental models

In the second essay, I measured managerial mental models to assess their types. I used a cognitive mapping technique to analyze the relationships between the elements in the mental models (Hodgkinson, Maule, & Bown, 2004; Huff & Jenkins, 2002). I used in-depth interviews to build managerial mental models. One might argue that interviews are not good for the investigation of managerial mental models because how can I be sure that managers do not have deep causal knowledge even if they communicate only superficial manifestation. I recognized this challenge. First of all, I tried to make sure that the managers wanted to share all their knowledge with us, and that they have opportunities to do so. When I was arranging the interviews, I was giving them many time slots to choose from, and was explicitly asking to book at least two hours for the interview. In most cases, I contacted the managers two or three days before the interviews to remind them about the meeting and to be sure that the managers do not want to reschedule the interview because of some unexpected work-related tasks. I inconspicuously notified that there is nothing wrong with rescheduling the interview, instead of having a quick discussion between two other meetings. In a few cases, the managers admitted that they would not be as mindful as they would like to be due to some on-going complications at work, and they were very happy to

rearrange the meetings. I also promised not to release any personal information about the interviewees. I hoped that this pushed the managers to be more open and speak the truth. When I saw some fear or hesitation to speak about failures or mistakes made by either the interviewees themselves or their colleagues, or to disclose some facts because of the security of the acquisition activity, I reminded them that my goal is not to identify the causers of troubles, and that this information is not to be used against the company. Usually after that, the managers felt more relaxed and spoke very openly. Sometimes, the managers asked to switch off the recorder. In this case, I made detailed, almost word-by-word notes of their statements. Thus, I was doing everything to guarantee that I will not lose any information because the managers were in a hurry or afraid.

The second possible source of limitation in using interviews for the study of mental models is the fact that sometimes individuals have a "power to know more than we can tell" (Polanyi, 1976). As it is broadly acknowledged, part of individually held knowledge can be stored in a form of tacit knowledge (Lam, 2000; Polanyi, 1962; Spender & Grant, 1996). The main characteristics of tacit knowledge is that it is difficult to articulate or write down (Nonaka, 1994). Thus, individuals who possess tacit knowledge are likely not able to formulate the decision rules that they use for decision making. I agree that in some cases, for example, testing wine, diagnosing in medicine, bicycle riding, it is difficult to explicate the decision rules. But acquisition settings represent a slightly different context. In particular, to obtain some tacit knowledge individuals need to repeat the same actions many times and under different circumstances. Research reporting how tacit knowledge helps nurses diagnose the conditions of patients studies nurses with years of experience. Therefore, one would need to execute way more acquisitions than each of the studied companies did to develop tacit knowledge. However, acquisitions are relatively rare events even for multiple acquirers (Zollo, 2009). Hence, it might be that the inability of interviews to capture tacit knowledge does not influence my findings in any significant way. However, future research is needed to confirm or disclaim this statement.

6 CONCLUSION

To conclude, the dissertation research was motivated by the need to offer deeper understanding of the potential sources of heterogeneity in firms' acquisitions program capabilities and performance. Specifically, I aimed to contribute to the existing literature by investigating (i) how and why companies are different in their ability to design acquisitions programs ex-ante, (ii) how and why some firms learn from previous acquisitions while others never do, (iii) and how firms can speed up processes of learning and capability development. To do so, the dissertation research utilized qualitative methods. The results have provided new insights into the acquisition literature. I find that the ability to design an acquisition program with respect to the firm resources and current conditions in the host country is among the most crucial acquisition capabilities. Customized acquisitions programs help companies overcome local obstacles in the country of expansion and compensate for the lack of required expansion resources (Appendix 1). I also find that there are differences in the way how companies learn to modify their acquisition behaviors when executing more and more acquisitions (Appendix 2). Only deep reflection enables to construct causal mental models that allow making successful decisions in a focal acquisition that has different features than the previous one. Moreover, companies must make sure that they facilitate the transfer of the causal type of decision rules while trying to learn from the experience of other business units or individuals within the company. Finally, I theorize about the implication of causal and strip-type decision rules for the speed of capability development (Appendix 3).

The findings of the dissertation make important contributions to the literature on acquisitions programs (Laamanen & Keil, 2008; Meyer & Thu Tran, 2006; Rovit & Lemire, 2003; Shi & Prescott, 2010; Vermeulen & Barkema, 2002), and to the literature on acquisition learning (Bingham et al., 2007b; Haleblian & Finkelstein, 1999; Haleblian et al., 2006; Hayward, 2002; Vermeulen & Barkema, 2001; Zollo & Singh, 2004). The dissertation offers a number of practical implications for practitioners. It also proposes further research opportunities that can focus on overcoming the limitations of the studies reported here, or focus on testing the findings in laboratory and organizational settings.

7 REFERENCES

Ackermann, F., & Eden, C. 2010. Negotiation in Strategy Making Teams: Group Support Systems and the Process of Cognitive Change. *Group Decision and Negotiation*: 1-22.

Amburgey, T. L., & Miner, A. S. 1992. Strategic Momentum: The Effects of Repetitive, Positional, and Contextual Momentum on Merger Activity. *Strategic Management Journal*, 13(5): 335-348.

Argote, L. 1999. *Organizational Learning: Creating, Retaining, and Transferring Knowledge*. Boston: MA.

Barkema, H. G., Baum, J. A. C., & Mannix, E. A. 2002. Management Challenges in a New Time. *The Academy of Management Journal*, 45(5): 916-930.

Barkema, H. G., Bell, J. H. J., & Pennings, J. M. 1996. Foreign entry, cultural barriers, and learning. *Strategic Management Journal*, 17(2): 151-166.

Barkema, H. G., Shenkar, O., Vermeulen, F., & Bell, J. H. J. 1997. Working Abroad, Working with Others: How Firms Learn to Operate International Joint Ventures. *The Academy of Management Journal*, 40(2): 426-442.

Barkema, H. G., & Vermeulen, F. 1998. International Expansion through Start up or Acquisition: A Learning Perspective. *The Academy of Management Journal*, 41(1): 7-26.

Barr, P. S., Stimpert, J. L., & Huff, A. S. 1992. Cognitive Change, Strategic Action, and Organizational Renewal. *Strategic Management Journal*, 13: 15-36.

Bingham, C. B., & Eisenhardt, K. M. 2011. Rational heuristics: the 'simple rules' that strategists learn from process experience. *Strategic Management Journal*, 32(13): 1437-1464.

Bingham, C. B., Eisenhardt, K. M., & Davis, J. P. 2007a. Opening the black box of organizational expertise: understanding what fi rms learn from their process experience and how that learning unfolds over time. . *University of Maryland. Working paper*.

Bingham, C. B., Eisenhardt, K. M., & Furr, N. R. 2007b. What makes a process a capability? Heuristics, strategy, and effective capture of opportunities. *Strategic Entrepreneurship Journal*, 1(1-2): 27-47.

Bingham, C. B., & Haleblian, J. 2008. How Do Organizations Learn (Or Not) from Experience? A Construal Based View. *Academy of Management Annual Meeting. Anaheim, CA: Academy of Management*.

Bingham, C. B., & Haleblian, J. in press. How firms learn heuristics: uncovering missing components of organizational learning. *Strategic Entrepreneurship Journal*.

Bjorkman, I., Stahl, G. K., & Vaara, E. 2007. Cultural differences and capability transfer in cross-border acquisitions: the mediating roles of capability complementarity, absorptive capacity, and social integration. *Journal of International Business Studies*, 38(4): 658-672.

Bougon, M., Weick, K., & Binkhorst, D. 1977. Cognition in Organizations: An Analysis of the Utrecht Jazz Orchestra. *Administrative Science Quarterly*, 22(4): 606-639.

Bower, J. L. 2001. Not All M&As Are Alike--and That Matters. *Harvard Business Review*, 79(3): 92-101.

Brauer, M., & Schimmer, M. 2010. Performance effects of corporate divestiture programs. *Journal of Strategy and Management*, 3(2): 84 - 109.

Brown, S. L., & Eisenhardt, K. M. 1997. The Art of Continuous Change: Linking Complexity Theory and Time-Paced Evolution in Relentlessly Shifting Organizations. *Administrative Science Quarterly*, 42(1): 1-34.

Bruton, G. D., Oviatt, B. M., & White, M. A. 1994. Performance of Acquisitions of Distressed Firms. *The Academy of Management Journal*, 37(4): 972-989.

Calori, R., Johnson, G., & Sarnin, P. 1994. Ceos Cognitive Maps And The Scope Of The Organization. *Strategic Management Journal*, 15(6): 437-457.

Capron, L., Dussauge, P., & Mitchell, W. 1998. Resource Redeployment Following Horizontal Acquisitions in Europe and North America, 1988-1992. *Strategic Management Journal*, 19(7): 631-661.

Chatterjee, S. 2009. The Keys to Successful Acquisition Programmes. *Long Range Planning*, 42(2): 137-163.

Cialdini, R. B. 1995. *Influence: The psychology of persuasion*. New York Quill.

Cohen, W. M., & Levinthal, D. A. 1990. Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, 35(1): 128-152.

Cossette, P., & Audet, M. 1992. Mapping Of An Idiosyncratic Schema. *Journal of Management Studies*, 29(3): 325-347.

Cyert, R. M., & March, J. G. 1963. *A Behavioral Theory of the Firm*. NJ: Prentice-Hall.

Davis, J. P., Eisenhardt, K. M., & Bingham, C. B. 2009. Optimal Structure, Market Dynamism, and the Strategy of Simple Rules. *Administrative Science Quarterly*, 54(3): 413-452.

Dierickx, I., & Cool, K. 1989. Asset Stock Accumulation and Sustainability of Competitive Advantage. *Management Science*, 35(12): 1504-1511.

Eden, C., Ackermann, F., & Cropper, S. 1992. The Analysis Of Cause Maps. *Journal of Management Studies*, 29(3): 309-324.

Eisenhardt, K. M., & Graebner, M. E. 2007. Theory building from cases: Opportunities and challenges. *Academy of Management Journal*, 50(1): 25-32.

Eisenhardt, K. M., & Martin, J. A. 2000. Dynamic Capabilities: What Are They? *Strategic Management Journal*, 21(10/11): 1105-1121.

Eisenhardt, K. M., & Tabrizi, B. N. 1995. Accelerating Adaptive Processes: Product Innovation in the Global Computer Industry. *Administrative Science Quarterly*, 40(1): 84-110.

Evans, J. S. B. T. 2008. Dual-processing accounts of reasoning, judgment, and social cognition. *Annual Review of Psychology*, 59: 255–278.

Fiol, C. M., & Huff, A. S. 1992. Maps for managers: where are we? Where do we go from here? *Journal of Management Studies*, 29(3): 267-285.

Fowler, K. L., & Schmidt, D. R. 1989. Determinants of Tender Offer Post-Acquisition Financial Performance. *Strategic Management Journal*, 10(4): 339-350.

Fuller, K., Netter, J., & Stegemoller, M. 2002. What Do Returns to Acquiring Firms Tell Us? Evidence from Firms That Make Many Acquisitions. *The Journal of Finance*, 57(4): 1763-1793.

Gary, M. S., & Wood, R. E. 2011. Mental models, decision rules, and performance heterogeneity. *Strategic Management Journal*, 32(6): 569-594.

Gigerenzer, G. 2000. *Adaptive Thinking: Rationality in the Real World*. New York: Oxford Univ. Press.

Gigerenzer, G. 2007. *Gut Feelings: The Intelligence of the Unconscious*. New York: Viking.

Gigerenzer, G. 2008. Why heuristics work. *Perspectives on Psychological Science* 3(1): 20–29.

Gigerenzer, G., & Gaissmaier, W. 2010. Heuristic Decision Making. *Annual Review of Psychology*, 62(1): 451-482.

Gigerenzer, G., & Goldstein, D. G. 1996 Reasoning the fast and frugal way: models of bounded rationality. *Psychological Review* 104: 650–669.

Grant, R. M. 1996. Toward a Knowledge-Based Theory of the Firm. *Strategic Management Journal*, 17: 109-122.

Green, L., & Mehr, D. R. 1997. What alters physicians' decisions to admit to the coronary care unit? . *Journal of family practice*, 45: 219–226.

Haleblian, J., Devers, C. E., McNamara, G., Carpenter, M. A., & Davison, R. B. 2009. Taking Stock of What We Know About Mergers and Acquisitions: A Review and Research Agenda. *Journal of Management*, 35(3): 469-502.

Haleblian, J., & Finkelstein, S. 1999. The Influence of Organizational Acquisition Experience on Acquisition Performance: A Behavioral Learning Perspective. *Administrative Science Quarterly*, 44(1): 29-56.

Haleblian, J. J., Kim, J. Y. J., & Rajagopalan, N. 2006. The influence of acquisition experience and performance on acquisition behavior: Evidence from the US commercial banking industry. *Academy of Management Journal*, 49(2): 357-370.

Hayward, M. L. A. 2002. When do firms learn from their acquisition experience? Evidence from 1990-1995. *Strategic Management Journal*, 23(1): 21-39.

Hébert, L., Very, P., & Beamish, P. W. 2005. Expatriation as a Bridge Over Troubled Water: A Knowledge-Based Perspective Applied to Cross-Border Acquisitions. *Organization Studies*, 26(10): 1455-1476.

Hedberg, B. 1981. How organizations learn and unlearn? In P. C. Nystrom, & W. H. Starbuck (Eds.), *Handbook of organizational design*: 8-27. London: Oxford University Press.

Heimeriks, K. H., Duysters, G., & Vanhaverbeke, W. 2007. Learning mechanisms and differential performance in alliance portfolios. *Strategic Organization*, 5(4): 373-408.

Heimeriks, K. H., & Schijven, M. 2011. Manifestations of higher-order routines: the underlying mechanisms of deliberate learning in the context of post-acquisition integration *Forthcoming in the Academy of Management Journal*.

Helfat, C. E. 2000. Guest Editor's Introduction to the Special Issue: The Evolution of Firm Capabilities. *Strategic Management Journal*, 21(10/11): 955-959.

Helfat, C. E., & Winter, S. G. 2011. Untangling Dynamic and Operational Capabilities: Strategy for the (N)ever-Changing World. *Strategic Management Journal*, 32(11): 1243-1250.

Hitt, M. A., Hoskisson, R. E., Ireland, R. D., & Harrison, J. S. 1991. Effects of Acquisitions on R&D Inputs and Outputs. *The Academy of Management Journal*, 34(3): 693-706.

Hodgkinson, G. P., Maule, A. J., & Bown, N. J. 2004. Causal Cognitive Mapping in the Organizational Strategy Field: A Comparison of Alternative Elicitation Procedures, Vol. 7: 3-26.

Hodgkinson, G. P., Maule, A. J., Bown, N. J., Pearman, A. D., & Glaister, K. W. 2002. Further reflections on the elimination of framing bias in strategic decision making. *Strategic Management Journal*, 23(11): 1069-1076.

Huber, G. P. 1991. Organizational Learning: The Contributing Processes and the Literatures. *Organization Science*, 2(1): 88-115.

Huff, A. S., & Jenkins, M. 2002. *Mapping Strategic Knowledge*: Sage.

Ismail, A. 2008. Which acquirers gain more, single or multiple? Recent evidence from the USA market. *Global Finance Journal*, 19(1): 72-84.

Jensen, R. J., & Szulanski, G. 2007. Template Use and the Effectiveness of Knowledge Transfer. *Management Science*, 53(11): 1716-1730.

Kahneman, D. 2011. *Thinking, fast and slow*. New York Farrar, Straus and Giroux.

Kahneman, D., Lovallo, D., & Sibony, O. 2011. Before You Make That Big Decision. *Harvard Business Review*, 89(6): 50-60.

Kahnemann, D., & Klein, G. 2009. Conditions for intuitive expertise: A failure to disagree *American Psychologist*, 64: 515-526.

Kale, P., & Singh, H. 2007. Building firm capabilities through learning: the role of the alliance learning process in alliance capability and firm-level alliance success. *Strategic Management Journal*, 28(10): 981-1000.

Katila, R., & Ahuja, G. 2002. Something Old, Something New: A Longitudinal Study of Search Behavior and New Product Introduction. *The Academy of Management Journal*, 45(6): 1183-1194.

Klein, G. 2003. Intuition at work: Why developing your gut instincts will make you better at what you do. . New York: Doubleday.

Kolb, D. A. 1984. *Experiential learning: Experience as the source of learning and development*. New Jersey: Prentice-Hall.

Kroll, M., Wright, P., Toombs, L., & Leavell, H. 1997. Form of Control: A Critical Determinant of Acquisition Performance and CEO Rewards. *Strategic Management Journal*, 18(2): 85-96.

Kusewitt, J. B., Jr. 1985. An Exploratory Study of Strategic Acquisition Factors Relating to Performance. *Strategic Management Journal*, 6(2): 151-169.

Laamanen, T., & Keil, T. 2008. Performance of serial acquirers: Toward an acquisition program perspective. *Strategic Management Journal*, 29(6): 663-672.

Lam, A. 2000. Tacit Knowledge, Organizational Learning and Societal Institutions: An Integrated Framework. *Organization Studies (Walter de Gruyter GmbH & Co. KG.)*, 21(3): 487.

Lee, T.-J., & Caves, R. E. 1998. Uncertain Outcomes of Foreign Investment: Determinants of the Dispersion of Profits after Large Acquisitions. *Journal of International Business Studies*, 29(3): 563-581.

Levitt, B., & March, J. G. 1988. Organizational Learning. *Annual Review of Sociology*, 14: 319-340.

Lewis, K., Lange, D., & Gillis, L. 2005. Transactive Memory Systems, Learning, and Learning Transfer. *Organization Science*, 16(6): 581-598.

Li, J. 1995. Foreign Entry and Survival: Effects of Strategic Choices on Performance in International Markets. *Strategic Management Journal*, 16(5): 333-351.

Loderer, C., & Martin, K. 1990. Corporate Acquisitions By Listed Firms - The Experience Of A Comprehensive Sample. *Financial Management*, 19(4): 17-33.

Loughran, T., & Anand, M. V. 1997. Do Long-Term Shareholders Benefit From Corporate Acquisitions? *The Journal of Finance*, 52(5): 1765-1790.

March, J. G., Sproull, L. S., & Tamuz, M. 2003. Learning from samples of one or fewer, Vol. 12: 465-471.

Meyer, K. E., & Estrin, S. 2001. Brownfield Entry in Emerging Markets. *Journal of International Business Studies*, 32(3): 575-584.

Meyer, K. E., Estrin, S., Bhaumik, S. K., & Peng, M. W. 2009. Institutions, Resources, and Entry Strategies in Emerging Economies. *Strategic Management Journal*, 30(1): 61-80.

Meyer, K. E., & Thu Tran, Y. T. 2006. Market Penetration and Acquisition Strategies for Emerging Economies. *Long Range Planning*, 39(2): 177-197.

Miller, D. T., & Ross, M. 1975. Self-serving biases in the attribution of causality: Fact or fiction? *Psychological Bulletin* 82(2): 213-225.

Nadolska, A., & Barkema, H. G. 2007. Learning to Internationalise: The Pace and Success of Foreign Acquisitions. *Journal of International Business Studies*, 38(7): 1170-1186.

Nelson, R. R., & Winter, S. G. 1982. An Evolutionary Theory of Economic Change. *Harvard University Press*.

Newell, B. R., & Shanks, D. R. 2003. Take the Best or Look at the Rest? Factors Influencing 'One-Reason' Decision Making. *Journal of Experimental Psychology. Learning, Memory & Cognition*, 29(1): 53-65.

Nonaka, I. 1994. A Dynamic Theory of Organizational Knowledge Creation. *Organization Science*, 5(1): 14-37.

Peng, M. W. 2003. Institutional Transitions and Strategic Choices. *The Academy of Management Review*, 28(2): 275-296.

Peng, M. W., & Heath, P. S. 1996. The Growth of the Firm in Planned Economies in Transition: Institutions, Organizations, and Strategic Choice. *The Academy of Management Review*, 21(2): 492-528.

Perlow, L. A., Okhuysen, G. A., & Nelson, P. R. 2002. The Speed Trap: Exploring the Relationship between Decision Making and Temporal Context. *The Academy of Management Journal*, 45(5): 931-955.

Polanyi, M. 1962. Personal Knowledge: Towards a Post-critical Philosophy. . *University of Chicago Press, Chicago, IL*.

Polanyi, M. 1976. Tacit knowing. In M. H. Marx, & F. E. Goodson (Eds.), *Theories in Contemporary Psychology*, 2nd ed.: 330–344. New York: Macmillan.

Puranam, P., Singh, H., & Chaudhuri, S. 2009. Integrating Acquired Capabilities: When Structural Integration Is (Un)necessary. *Organization Science*, 20(2): 313-328.

Puranam, P., Singh, H., & Zollo, M. 2006. Organizing for innovation: managing the coordination-autonomy dilemma in technology acquisitions. *Academy of Management Journal*, 49(2): 263-280.

Reuer, J. K., Park, K. M., & Zollo, M. 2002. Experiential learning in international joint ventures: the role of venture novelty and experience heterogeneity *Cooperative Strategies and Alliances" by F. Contractor and P. Lorange (eds.)*: Elsevier Science.

Rindova, V., Ferrier, W. J., & Wiltbank, R. 2010. Value from gestalt: how sequences of competitive actions create advantage for firms in nascent markets. *Strategic Management Journal*, 31(13): 1474-1497.

Rindova, V. P., & Kotha, S. 2001. Continuous "Morphing": Competing through Dynamic Capabilities, Form, and Function. *The Academy of Management Journal*, 44(6): 1263-1280.

Rovit, S., Harding, D., & Lemire, C. 2003. Turning deal smarts into M&A payoffs: Frequent buyers usually score the best deals, provided that they add skills in each transaction. *Mergers & Acquisitions: The Dealmakers Journal*.

Rovit, S., & Lemire, C. 2003. Your best M&A strategy. *Harvard Business Review*, 81(3): 16-+.

Schipper, K., & Thompson, R. 1983. Evidence on the capitalized value of merger activity for acquiring firms.

Schwenk, C. R. 1984. Cognitive simplification processes in strategic decision-making. *Strategic Management Journal*, 5(2): 111-128.

Shi, W., & Prescott, J. E. 2010. Sequence Patterns of Firms' Acquisition and Alliance Behaviour and their Performance Implications. *Journal of Management Studies*: no-no.

Simonin, B. L. 1997. The Importance of Collaborative Know-How: An Empirical Test of the Learning Organization. *The Academy of Management Journal*, 40(5): 1150-1174.

Slovic, P. 1987. Perception of risk. *Science*, 236(4799): 280-285.

Smith, E. R. 1998. Mental representation and memory. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology*, Vol. 1 and 2: 391-445. New York, N.Y., US: McGraw-Hill.

Smith, E. R., & DeCoster, J. 2000. Dual-Process Models in Social and Cognitive Psychology: Conceptual Integration and Links to Underlying Memory Systems, Vol. 4: 108-131.

Spender, J. C. 1996. Making Knowledge the Basis of a Dynamic Theory of the Firm. *Strategic Management Journal*, 17(ArticleType: research-article / Issue Title: Special Issue: Knowledge and the Firm / Full publication date: Winter, 1996 / Copyright © 1996 John Wiley & Sons): 45-62.

Spender, J. C., & Grant, R. M. 1996. Knowledge and the Firm: Overview. *Strategic Management Journal*, 17: 5-9.

Stahl, G. K., & Voigt, A. 2008. Do cultural differences matter in mergers and acquisitions? A tentative model and examination. *Organization Science*, 19(1): 160-176.

Strack, F., & Deutsch, R. 2004. Reflective and Impulsive Determinants of Social Behavior. *Personality & Social Psychology Review (Lawrence Erlbaum Associates)*, 8(3): 220-247.

Taylor, P., Bennell, C., & Snook, B. 2009. The bounds of cognitive heuristic performance on the geographic profiling task. *Applied Cognitive Psychology*, 23: 410-430.

Tetlock, P. E. 2000. Cognitive Biases and Organizational Correctives: Do Both Disease and Cure Depend on the Politics of the Beholder? *Administrative Science Quarterly*, 45(2): 293-326.

Thorndike, E. L. 1898. Animal Intelligence. *Science*, 8(198): 520.
    Thurstone, L. L. 1919. The learning curve equation. *Psychological Monographs* **26**: 1–51.

Tolman, E. C. 1948. Cognitive maps in rats and men. *Psychological review company*, 55(4): 189-208.

Tversky, A., & Kahneman, D. 1974. Judgment under Uncertainty: Heuristics and Biases. *Science*, 185(4157): 1124-1131.

Vermeulen, F., & Barkema, H. 2001. Learning through Acquisitions. *The Academy of Management Journal*, 44(3): 457-476.

Vermeulen, F., & Barkema, H. 2002. Pace, Rhythm, and Scope: Process Dependence in Building a Profitable Multinational Corporation. *Strategic Management Journal*, 23(7): 637-653.

Walsh, J. P. 1995. Managerial and Organizational Cognition: Notes from a Trip Down Memory Lane. *Organization Science*, 6(3): 280-321.

Weick, K. E. 1995. *Sensemaking in Organizations*. CA: Sage, Thousand Oaks

Weick, K. E. 2001. *Making sense of the organization*. Oxford: Blackwell.

Winter, S. G., & Szulanski, G. 2001. Replication as Strategy. *Organization Science*, 12(6): 730-743.

Wright, P., Kroll, M., Lado, A., & Ness, B. v. 2002. The Structure of Ownership and Corporate Acquisition Strategies. *Strategic Management Journal*, 23(1): 41-53.

Zahra, S. A., & George, G. 2002. Absorptive Capacity: A Review, Reconceptualization, and Extension. *The Academy of Management Review*, 27(2): 185-203.

Zander, U., & Kogut, B. 1995. Knowledge and the Speed of the Transfer and Imitation of Organizational Capabilities: An Empirical Test. *Organization Science*, 6(1): 76-92.

Zollo, M. 2009. Superstitious Learning with Rare Strategic Decisions: Theory and Evidence from Corporate Acquisitions. *Organization Science*, 20(5): 894-908.

Zollo, M., Reuer, J. J., & Singh, H. 2002. Interorganizational Routines and Performance in Strategic Alliances. *Organization Science*, 13(6): 701-713.

Zollo, M., & Singh, H. 2004. Deliberate learning in corporate acquisitions: post-acquisition strategies and integration capability in U.S. bank mergers. *Strategic Management Journal*, 25(13): 1233-1256.

Zollo, M., & Winter, S. G. 2002. Deliberate learning and the evolution of dynamic capabilities. *Organization Science*, 13(3): 339-351.

BUSINESS +
ECONOMY

ART +
DESIGN +
ARCHITECTURE

SCIENCE +
TECHNOLOGY

CROSSOVER

DOCTORAL
DISSERTATIONS