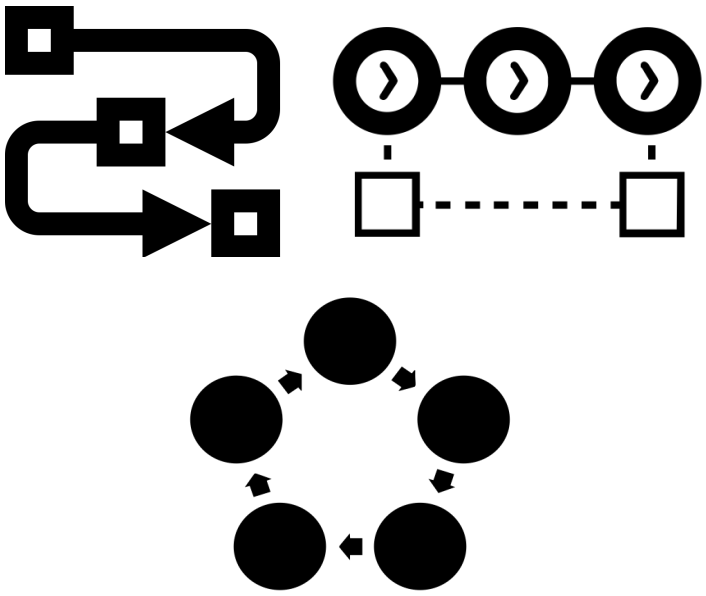

ENTREPRENEURIAL METHODS AS VEHICLES OF ENTREPRENEURIAL ACTION

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Division of Entrepreneurship and Strategy
Department of Technology Management and Economics
CHALMERS UNIVERSITY OF TECHNOLOGY
Göteborg, Sweden 2017

DISSERTATION FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

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ABSTRACT

ENTREPRENEURIAL METHODS AS VEHICLES OF ENTREPRENEURIAL ACTION

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Entrepreneurship in general and entrepreneurship education in particular are becoming more accredited and institutionalized. This is evidenced by a large number of entrepreneurship courses and programs offered in top-tier universities worldwide. However, with some notable exceptions such as effectuation and the lean startup methodology, this trend has not been matched by the formulation and dissemination of hands-on knowledge and actionable theories that aim to aid entrepreneurs, entrepreneurship students, startup coaches, and accelerator managers. Moreover, the existing theories have typically been developed in isolation and often without explicit consideration of issues that reflect their pragmatic validity. This has rendered them into separate silos of knowledge that neither interact with nor build on each other and resulted in their impracticality, betraying their core application. The purpose of this dissertation is, therefore, to examine the general *form* of such theories, reflect on the specific *content* of their prescriptions, gain insights into their *application* and explore issues in relation to their pragmatic value.

Through theoretical and empirical studies, this dissertation seeks to develop and advance the current understanding of entrepreneurial methods. As part of the theoretical efforts, a number of concepts and terms are introduced by way of reviewing nine entrepreneurial methods. Entrepreneurial method, as a broad unifying concept, refers to theories that package a coherent set of principles of thought and action that helps entrepreneurs to structure their venture development activities. Moreover, as an organizing framework for understanding the general form and content of entrepreneurial methods, a hierarchical three-tier framework composed of logic, model, and tactics is proposed. Furthermore, a careful and detailed review of the existing entrepreneurial methods provides deep insights into their constituting, prescriptive content. These contributions synthesize new avenues to compare, contrast and make sense of entrepreneurial methods and open up windows for improvements in their prescriptions and structure.

Empirical studies focus on the workings of a prevalent instance of entrepreneurial method, namely the lean startup methodology. They examine, in different ways, the impact of incorporating the lean startup methodology into the ongoing processes of two separate startup accelerators. These studies shine a light on how the lean startup methodology influences entrepreneurs by unpacking the learning mechanisms involved in incorporating the principles of the methodology into entrepreneurs' theory of action. Moreover, the findings show how following the methodology can fundamentally impact the form, content, and organization of entrepreneur-coach relationships in the context of prescriptive accelerators. Taken together, in addition to taking stock of the current trend toward explicit attempts to guide entrepreneurial action, such an examination can enable attempts to modify and further develop the existing entrepreneurial methods, and potentially guide the formulation of new entrepreneurial methods.

Keywords: Entrepreneurial methods, prescriptive theories of entrepreneurial action, actionable knowledge, organizing framework, startup accelerators.

LIST OF APPENDED PAPERS

This dissertation is partly based on the following papers, referred to by Roman numerals in the body of the document:

Paper I

Berglund, H., **Mansoori, Y.**, & Bousfiha, M. 2015. Entrepreneurship as Design: A Literature Review and Typology.
Presented at European Academy of Management (EURAM) Conference, 17-20 June 2015, Warsaw, Poland.

Paper II

Mansoori, Y. 2017. Enacting the Lean Startup Methodology: The Role of Vicarious and Experiential Learning Processes. ***International Journal of Entrepreneurial Behavior and Research***, 23(5): 812-838.

Paper III

Mansoori, Y., & Lackéus, M. 2017. Comparing Effectuation to Five Other Entrepreneurial Methods Along Nine Conceptual Dimensions.
Under third round of review at 'Small Business Economics'.

Paper IV

Mansoori, Y., Karlsson, T., & Lundqvist, M. 2017. Entrepreneurial Methods as Structuring Tools for Entrepreneur-coach Relationships: The Case of the Lean Startup Methodology in a University-based Accelerator.
Under first round of review at 'Technovation'.

PREFACE AND ACKNOWLEDGMENTS

The journey to complete this dissertation has felt a long five years. Similar to many other phases in life, this journey has followed a familiar trajectory; plenty of ups and plenty of downs. Let's say it was a roller coaster ride that scared me, excited me, despaired me, motivated me, uncovered my weakest sides, revealed to me strengths I was previously oblivious to, and most significantly, helped me to grow to become a person that I am less critical of and grumbling about. This journey, in profound ways, has challenged my worldview, nudged me to discover and take on new ideas, allowed me to see the world through unfamiliar lenses, pushed me to traverse intellectual territories distant to me, and all the more important, provided me with the possibility to relentlessly learn and even, let's be honest, become obsessed with learning. For this, I am immensely thankful to those who believed in me, put confidence in me and helped me to navigate many of the monumental challenges, or at least felt monumental to me, I faced as part of this journey. The list of those who deserve acknowledgement turned out to be longer than I imagined. Reflecting on my journey, I have come to realize that I have received more help and support than I have shown appreciation for; none mentioned, none forgotten.

First and foremost, I wish to express my gratitude to my advisor **Henrik Berglund** for enabling this journey and his continuous support throughout. Your guidance has been greatly formative both in the critical researcher I would like to believe I have become and in the outcome of my intellectual development. Without you **Henrik**, this dissertation would have undoubtedly taken a fundamentally different path. I am also very grateful to my dissertation committee, **Mats Lundqvist** and **Martin Lackéus**, for signing up to my journey, for their unconditional support and heartfelt encouragement, and for their insightful feedback on this dissertation. **Mats**, thank you for being a caring manager and a supportive and encouraging advisor. **Martin**, thank you for being an amazing colleague, for your kind and heartwarming words, for appreciating my work and for revealing to me that there are others who are pickier than me about tables and figures!

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A collective acknowledgment goes out to all at the department of Technology Management and Economics, especially to colleagues at my current division of Entrepreneurship and Strategy as well as my former division of Innovation Engineering and Management. I would also like to thank all the assistance that **Angelica**, **Yvonne** and **Violeta** have kindly offered me. A special mention goes to my joyful fellow doctoral students **Sara**, **Peter**, **Ingo**, **Lisa**, **Marouane**, **Anne**, **Oskar**, **Jane**, **Pamela**, and **Charlotta**. I feel privileged to have had you around and thank you for being present and taking part in my journey. Each of you, in distinct ways, gave texture to my academic life.

I would also like to give a heartfelt recognition to my flatmates **Stéphanie** and **Christian** for engaging with me in never-ending thought-provoking conversations, for being great tea companions, and for pretending that my wicked jokes were funny. This extends to **Camilla** for her constant and unconditional support, her sincere encouragements and her large ears for patiently listening to my frequent rants about my academic life. And, to **Behrooz**, for one of the most persistent and solid friendships I have had.

And last but by no means least, my dad **Sadegh**, my mom **Sorayya** and my two sisters, **Maryam** and **Tara**: it goes without saying that in the absence of your backing, this would have not been possible. I truly value your devoted support every moment of my waking life and would like to dedicate this dissertation to you.

Göteborg, December 2017

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INTRODUCTION

1. INTRODUCTION

> *"Entrepreneurship is not magic, it is not mysterious and it has nothing to do with genes. It is a discipline. And, like any discipline, it can be learned."*
>
> Peter Drucker (1985)

While entrepreneurs are bound to look forward due to the emergent process they engage in, scholars of entrepreneurship have historically studied this process by looking backwards (Berglund, 2007; Dimov, 2016, 2017). To encourage engagement in shaping the entrepreneurial process instead of only making sense of it, there have been several calls to develop systematic and strategic prescriptive theories to guide entrepreneurial action (Fiet, 2001, 2007; Neck & Greene, 2011; Neck, Greene, & Brush, 2014; Sarasvathy & Venkataraman, 2011). Existing prescriptive theories include but are not limited to business planning (Ansoff & Brandenburg, 1967), discovery-driven planning (McGrath & MacMillan, 2000), disciplined entrepreneurship (Sull, 2004), prescriptive entrepreneurship (Fiet, 2008), evidence-based management for entrepreneurial environments (Pfeffer, 2010), effectuation (Sarasvathy, 2001), entrepreneurial bricolage (Baker & Nelson, 2005), the lean startup methodology (Ries, 2011) and design thinking (Brown, 2008). These contributions are part of an emerging trend toward prescriptive entrepreneurship scholarship.

Moreover, there is increasing demand for such prescriptive theories (Bhidé, 2016). The appeal and practical relevance of these prescriptive contributions have led to their widespread adoption and application, both formally through entrepreneurship education and training programs, incubators and accelerators and informally by (aspiring) independent entrepreneurs (Blank, 2013; Christiansen, 2009). This demand is closely tied to the institutionalization and accreditation of entrepreneurship and entrepreneurship education (Chan et al., 2012; Trank & Rynes, 2003) and the need for rigorous and reliable practical and actionable knowledge to guide entrepreneurial action. While this demand has largely gone unsatisfied by entrepreneurship scholars, entrepreneurship practitioners

have been quick to fill this gap. An example is the widespread adoption and inclusion of the lean startup methodology and design thinking in many accelerators and entrepreneurship education and training programs without regard to empirical evidence of their validity and usefulness. This is partly due to the academics' aversion to engage with the claims made by popular management and business press (Fiet, 2008). By investing greater effort in systematic research that is prescriptive in nature and context-specific, the demand for prescriptive theories can be met. Additionally, by accounting for the complex nature of the entrepreneurial process, more pragmatically valid theories can bridge the persistent gap between theory and practice.

Research anchored in the production of prescriptive theories can respond to questions such as: 'Why do entrepreneurs do what they do?' (Argyris, 1996c; Argyris & Schön, 1974). When studying how prescriptive theories are enacted in real life situations, scholars can be better positioned to suggest amendments and modifications, and to specify the boundary conditions for their applicability. It is important to note that these prescriptive theories are by no means a replacement for descriptive entrepreneurial theories, but are instead informed by them and should aim to complement them. While the two type of theories have different validity criteria and knowledge claims (Gregor, 2006; Romme, 2003), the findings from descriptive research can be useful in formulating prescriptive theories (Bleichrodt, Pinto, & Wakker, 2001; Dimov, 2016). The recent developments in the field of entrepreneurship bring to the forefront a new role for entrepreneurship scholarship and the nature of what it should aspire to produce. The following section underscores some of the problems with the current prescriptive entrepreneurial theories.

1.1. PROBLEM STATEMENT

To grasp these issues in a better light, we first need to take into account the dominant knowledge produced within the field of entrepreneurship (i.e., theoretical knowledge). In order to be relevant and contribute to the entrepreneurship practice, such theoretical knowledge ought to enable its audiences to make informed decisions (Van de Ven & Johnson, 2006) by guiding, reducing or replacing entrepreneurial judgment in the face of structured and ill-structured aspects of the entrepreneurial problem-space. There is evidently a plethora of theoretical entrepreneurship knowledge in the form of descrip-

tive theories. As stated, the field would benefit from a broader scope of knowledge that is more inclusive of the practical and pragmatic aspects of the entrepreneurial phenomenon. Therefore, greater scholarly engagement in the development and dissemination of practical knowledge which offers, at its core, prescriptions that aspire to guide entrepreneurial action is necessary and indeed overdue.

While this dissertation considers prescriptive theories useful and timely, and relevant for pragmatic purposes, it takes issue with two important aspects of these theories. The issues are straightforward but nevertheless important. Some of the contributions as part of this prescriptive perspective are either *not* in the actual fact practical (e.g., effectuation, prescriptive entrepreneurship, and entrepreneurial bricolage[1]) or *not* grounded in rigorous research findings and instead rely on idiosyncratic, personal experiences (e.g., the lean startup methodology). Regarding the former issue, while these theories aspire to guide entrepreneurial action, they lack consideration of context as well as coherence and detail on concrete activities. This has rendered them irrelevant as effective vehicles for stimulating action. Supporting this claim is the absence of many of these theories from practically oriented entrepreneurship education and training programs, and from individual, independent entrepreneurs' imaginations (Arend, Sarooghi, & Burkemper, 2015). In respect to the latter issue, ideas as part of the practically-driven theories in entrepreneurship are eclectic and anecdotal and, therefore, hardly generalizable for a larger audience and to other contexts.

To produce theories in line with the theoretical trend in entrepreneurship toward prescriptive theories and the practical popularity of such theories, as a first step, there is an apparent need to better understand them. The next section spells out the overarching purpose that guides this dissertation.

1.2. RESEARCH PURPOSE

In light of the recent scattered prescriptive contributions to entrepreneurship research and the widespread use of practitioner-grounded methodologies such as the lean startup methodology (Blank & Dorf, 2012; Ries, 2011) and design thinking (Brown, 2008), scholars must seize the opportunity to actively engage in shaping the future of entrepreneurship theory and practice. Thus, scholars must develop a detailed understanding of the existing prescriptive theories of entrepreneurial action through a careful examination

of their form, content and application. Reflections of prominent prescriptive contributions could enable both the provision of organizing frameworks to make sense of them and the identification of critical qualities that increase the likelihood of their application. In other words, reflections provide insights into how to make the contributions more practical and actionable. These insights could then serve as a guide for entrepreneurship scholars in attempts to provide comprehensive prescriptions packaged as 'methods' that are applicable in specific contexts and are easily and effectively communicated. They could also serve to offer avenues for modifications and improvements or better ways to employ and implement the existing prescriptive theories of entrepreneurial action. This may require more scholarly engagement with entrepreneurs and practitioners and embracing unorthodox research traditions such as building on and expanding the recent contributions of design sciences so that they more effectively extend to entrepreneurship (Dimov, 2016; van Aken & Romme, 2012).

Taking the trend toward prescriptive theories as a point of departure, the overall purpose of this dissertation is to *advance our theoretical and practical understanding of prescriptive theories of entrepreneurial action.* Thus, this dissertation takes stock of and examines the theoretical and practical aspects of entrepreneurship theories that assume the notion of guided action[2] (cf. Dreyfus, 2004; Ericsson, Krampe, & Tesch-Römer, 1993) as their focal point. By proposing the notion of 'entrepreneurial method' (cf. Sarasvathy & Venkataraman, 2011)[3] as a unifying concept for referring to prescriptive theories of entrepreneurial action, the more specific ambition is to elaborate on how these theories are organized (i.e., their form), what they entail in relation to behaviors and the actions they prescribe (i.e., their content), and how they are followed and adhered to in practice (i.e., their application). The following section explains how this dissertation relates to existing, adjacent scholarly works.

1.3. DISPOSITION OF THE DISSERTATION

First, this dissertation connects to and overlaps with the ongoing discussions that consider entrepreneurship to be an activity of deliberate design (Dimov, 2016; Fletcher & Selden, 2017; Sarasvathy, 2003; Selden & Fletcher, 2015; van Aken & Romme, 2009; van Burg & Romme, 2014). This dissertation, in fact, ascertains that the prescriptive perspective discussed in the previous section is indeed needed to advance the discourse

of entrepreneurship as design. However, this discourse has largely focused on setting a research agenda that places the notion of 'design' (Romme, 2003; Simon, 1996) as the focal point and lays heavy stress on ideas on a higher philosophical and abstract level. The contributions of this dissertation, on the other hand, rest on a more practical level. They explore components of such perspective that help us to understand them in a pragmatic way and offer avenues for their improvement. Thus, in line with what is spelled out as the design mode (Simon, 1996), this dissertation sides with the idea that entrepreneurship relates to purposeful practices for creating the future (Dimov, 2016; van Burg & Romme, 2014) where entrepreneurs leverage methods, tools and strategies available to them to their benefit in order to develop their venture ideas. This lends significance to methods, tools and strategies that are being used in practice.

Second, the audience for this dissertation is not just entrepreneurs, but also entrepreneurship scholars and practitioners (educators, incubator and accelerator managers, and venture capitalists) who seek to contribute with practical and pragmatic knowledge that is clear and succinct and allows for effective communication and successful application. Future research could benefit from the contributions of this dissertation by devising design principles (Denyer & Tranfield, 2006) to systematically convert descriptive knowledge into 'practice-oriented action principles' (van Burg & Romme, 2014). These design principles will be useful to descriptive researchers who aspire to be more prescriptive in their scholarly works.

1.4. STRUCTURE OF THE DISSERTATION

This dissertation consists of this cover paper and four appended papers. The cover paper includes six chapters. Chapter 1 prepares the reader by providing the background to the research and making explicit the overarching research purpose. Chapter 2 brings together the theoretical foundations on which the contributions of this dissertation are grounded in. Chapter 3 provides a detailed description of how the four studies as part of the fieldwork were conducted as well as the methodological considerations and limitations. Chapter 4 summarizes the main findings and contributions of the appended papers. Chapter 5 synthesizes the findings in light of previous research and offers an overarching line of argument. Chapter 6 focuses on the overall contributions, their implications and avenues for future research and finally, chapter 7 provides concluding remarks.

PRIOR RESEARCH AND THEORETICAL OVERVIEW

2. PRIOR RESEARCH AND THEORETICAL OVERVIEW

Chapter 2 is structured as follows: First, the development of entrepreneurship as a field of research is presented. Second, definitions and concepts central to this dissertation are outlined. Third, an account of prescriptive theories of action and their relevance to the theory-practice gap is elaborated. Fourth, nine entrepreneurial methods are reviewed in a structured way and finally, a brief reflection concludes this chapter.

2.1. DEVELOPMENT OF ENTREPRENEURSHIP AS A FIELD OF RESEARCH

Entrepreneurship can be viewed from three perspectives: occupational, structural, and functional (Klein, 2008). Occupational perspective (included in labor economics and psychological literature) defines entrepreneurship as self-employment and focus on individuals who venture out to start their own businesses. The structural perspective treats entrepreneurs as members of the economic structure of society and defines entrepreneurship as the collection of activities around a new or small firm. The functional perspective (largely building on contributions from the likes of Schumpeter, Knight, Mises, and Kirzner) treats entrepreneurs as a function and entrepreneurship as an activity rather than an employment category or market structure (Klein, 2008). Many scholars of entrepreneurship have taken their starting point from Schumpeterian theories of who an entrepreneur is and what entrepreneurship entails.

By assuming a functional view of entrepreneurship and in order to lay the context and theoretical foundations for the relevance of this dissertation, a brief review of recent developments in the field can provide important and interesting insights[4]. Entrepreneurship, while struggling to establish a distinct field of scholarship, has undergone several important shifts in focus. Early entrepreneurship research has primarily focused on the individual traits of heroic entrepreneurs (Carsrud & Johnson, 1989; Hornaday & Aboud, 1971; Timmons, 1978; Woo, Cooper, & Dunkelberg, 1991). These studies sought to single out a set of distinguishing characteristics that could help to differentiate entrepreneurs from non-entrepreneurs (Frese & Gielnik, 2014). Among others, this literature

resulted in a number of major personality trait themes such as high risk-taking propensity (Shane, 2000), the need for achievement (McClelland, 1961), internal locus of control (Begley & Boyd, 1987), tolerance for ambiguity (Begley & Boyd, 1987), and self-efficacy (Baron, 2004). However, the validity of this strand of research has been heavily criticized as several studies highlighted mixed and inconclusive findings in the form of weak or non-existent ties between personality traits, patterns of new venture formation and venture success (Baron, 1998; Busenitz, 1999; Forlani & Mullins, 2000; Gartner, 1989).

In the midst of these studies, a group of scholars adopted a cognitive lens to systematically explain the role of the individual in the entrepreneurial process (Baron, 1998, 2007; Busenitz & Barney, 1997; Forbes, 1999; Gatewood, Shaver, & Gartner, 1995; Manimala, 1992; Mitchell & Busenitz, 2007; Shaver & Scott, 1991). These scholars, therefore, turned their attention to the cognitive processes entrepreneurs employ rather than the traits they possess. The diverse and wide set of cognitive presuppositions were found to exhibit minimal overlap among various studies (Eldman, Manolova, & Brush, 2006) indicating that it was time for another development in entrepreneurship scholarship. Although the findings and claims of the cognitive perspective remain relevant and useful, they have only provided partial accounts of the entrepreneurial process. Thus, other constructs, such as opportunities, were suggested as complements to the cognitive perspective.

At the turn of the century and following the seminal work by Venkataraman (1997), in an explicit attempt to demarcate the field, Shane and Venkataraman (2000) proposed the construct of entrepreneurial opportunities as 'the' central orienting construct within the field. The authors laid out their vision to broaden the attention on personal traits and cognition in order to include situational and environmental factors and introduced the notion of individual-opportunity nexus. They suggested viewing entrepreneurship as the nexus of entrepreneurs and opportunities would help to converge the scattered scholarly endeavors of the field. The opportunity construct was useful for researchers who wanted to contribute to the literature on the early stages of the venture creation process. However, more than a decade of extensive research programs on the nature of opportunities–objectively existing (Shane, 2000) or subjectively imagined (Alvarez & Barney, 2007; Berglund, 2007)–while important in creating an identity for

the field, had some scholars claiming that the elusiveness and vagueness of the opportunity construct may have, in fact, stymied fruitful entrepreneurship scholarship (Davidsson, 2015; Dimov, 2011). The contributions around the construct of opportunities spiraled into philosophical discussions and resulted in a large body of knowledge that is too abstract, theoretically problematic and far from practical for entrepreneurs. Therefore, scholars such as McMullen and Shepherd (2006) and Klein (2008) suggested that (entrepreneurial) action instead of opportunities should be the unit of analysis in entrepreneurship. In their argument, opportunities can only be understood ex post (Dimov, 2011). In parallel, other perspectives have begun to capture entrepreneurship scholars' attention, in part to remedy the over-theoretical and philosophical discussions around opportunities.

Gartner (1989) argued that 'Who is an entrepreneur?' is not the question requiring an answer and, instead, suggested light should be cast on what entrepreneurs actually do. Following this, a group of scholars instigated a move toward behavior and process-oriented understanding of the entrepreneurial phenomenon that could account for the process of pursuing and enacting venture ideas (Ardichvili, Cardozo, & Ray, 2003; Bhave, 1994; Bruyat & Julien, 2001; Gartner, 1985; Liao & Welsch, 2008). As part of the behavioral studies, scholars used datasets such as Panel Studies of Entrepreneurial Dynamics (PSED) (Carter, Gartner, Shaver, & Gatewood, 2003) and Comprehensive Australian Study of Entrepreneurial Emergence (CAUSEE) (Davidsson, Steffens, & Gordon, 2011) to deconstruct the entrepreneurial process by presenting it as a sequence of activities and events. However, these studies have often provided descriptive accounts and limited concrete prescriptive guidelines as they assume known inputs and known outputs (Neck & Greene, 2011). In his agenda-setting piece, Gartner (1990) proposed avenues for future research. He encouraged entrepreneurship scholars to strive to provide dynamic process models that, instead of accounting for single points in time, would paint a more detailed and comprehensive picture of the messy entrepreneurial process (McMullen & Dimov, 2013; McMullen & Shepherd, 2006; Sarasvathy, 2001).

The emergence of a business does not occur in a single step but rather results from an embedded web of activities that constitute the entrepreneurial process. The fact that entrepreneurship is the final outcome of the accumulation of various (linear as well as non-linear) activities over time brought about several calls to study entrepreneurship as

a process unfolding over time (McMullen & Dimov, 2013; McMullen & Shepherd, 2006; Sarasvathy, 2001). The entrepreneurial process can be grouped into four types and presented as a taxonomy including stage models (a priori stages of major phases), static frameworks (overall process without regard to the sequence and dynamics), process dynamics (temporal and change-oriented phases), and quantification sequences (historical sequence-based approach) (Moroz & Hindle, 2012). Moreover, there is also another division of new venture creation process models. One division sees the process as largely planned and linear (Bhave, 1994) and the other division is characterized by its emergent and iterative nature (Baker & Nelson, 2005; Sarasvathy, 2001). These process models are grounded in different premises that are embedded in their models.

Taken together, these developments, that could be seen as descriptive contributions, paved the way for a perspective that considers entrepreneurship a domain that is intentional, systematic, strategic, and guided. This perspective can be characterized as one which is prescriptive in nature and has commonalities with the design science (Simon, 1996). As designers use certain relevant guidelines, principles and methodologies to solve complex problems, entrepreneurs, too, can and should take a more systematic and calculated approach to realizing their ideas and aspirations in the process of 'world-making' (Sarasvathy, 2012). This is in line with the idea that entrepreneurship, like other business disciplines, is teachable. It is no longer a question of whether an individual can become an entrepreneur but how and by which means they can act more entrepreneurially and in effect become successful entrepreneurs.

However, there is an important dilemma. Entrepreneurship scholars shy away from prescribing action as they are perceived to be (partly) tasked with producing and testing empirically grounded findings. In spite of them being aware that the findings of their research should be applicable to the practice of entrepreneurship, to date, there have been limited efforts to translate their findings into practical prescriptions. Moreover, scholars seldom engage in debates regarding claims made by practitioners as they consider them anecdotal and unscientific and, therefore, not worthy of engagement (Fiet, 2008). Currently, there is no established and focused strand of literature within the domain of entrepreneurship that explicitly attempts to concentrate the dispersed attempts to guide entrepreneurial action. In the next section, definitions and central concepts are introduced.

2.2. DEFINITIONS AND CENTRAL CONCEPTS

2.2.1. ENTREPRENEUR AND ENTREPRENEURSHIP

Entrepreneurship has been defined by means of emphasizing certain central concepts such as alertness, opportunity and new organizations. During the last couple of decades, there has been a noticeable tendency to move away from entrepreneurship as the science of small business ownership to three main focus areas: organization creation (Gartner, 1989), opportunity discovery and creation (Alvarez & Barney, 2007; Shane & Venkataraman, 2000), and the creative process of organizing and venture creation (Baker & Nelson, 2005; Sarasvathy, 2001). This move was pioneered by the likes of Gartner (1989), who defined entrepreneurs as individuals who engage in the process of creating new organizations and, therefore, equated entrepreneurship with the creation of new organizations. Others, including Sarasvathy (2001) and Baker and Nelson (2005) by proposing mental models and heuristics that entrepreneurs follow in order to found entrepreneurial organizations, in effect, introduced new definitions of who an entrepreneur is and what entrepreneurship entails.

But perhaps the most popular and influential notion concerning entrepreneurship that has been critical to the development of entrepreneurial opportunities is what Israel Kirzner termed ‘alertness’ (Kirzner, 1979, 1997). Following the idea that entrepreneurs are individuals who have the ability to identify opportunities overlooked by others (Kirzner, 1979), many adopted the definition of entrepreneurship put forth in Shane and Venkataraman’s (2000:218) seminal paper: “We define the field of entrepreneurship as scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited”. Other scholars have resorted to the revised definition by York and Venkataraman (2010:451) that accounts for both the discovery and creation of opportunities: “We define the act of entrepreneurship as one of discovering and evaluating opportunity as well as creating new opportunities and possibilities”. The issue with these definitions is the centrality of opportunity and their reduction of the entrepreneurial process to the exploitation of endogenously created or exogenously discovered opportunities. Because of a lack of theoretical precision and practical relevance of the opportunity construct (Davidsson, 2015), there have been calls to move away from opportunity as a central construct of entrepreneurship (Dimov, 2011) to other more workable constructs such as the venture idea.

Inspired by recent trends and by adopting the functional perspective of entrepreneurship, this dissertation focuses on entrepreneurs who engage in a process of *strategic* and *systematic* creation of entrepreneurial organizations. Strategic and systematic are key terms in this dissertation. These terms underscore the presence of guided action[5] (cf. Ericsson et al., 1993) for the purpose of developing entrepreneurial judgment. As entrepreneurs engage in activities that exist at the intersection of the artificial and the contingent (cf. Selden & Fletcher, 2015), this focus is in line with research on 'strategic entrepreneurship' (Hitt, Ireland, Camp, & Sexton, 2001; Klein, Barney, & Foss, 2012) where creative entrepreneurial action, uncertainty[6] and decision-making by means of exercising judgment are fundamentals. This encompasses attempts to decrease and delimit the odds of failure by way of strategically containing ambiguity and uncertainty. By the same token, this dissertation turns to the entrepreneurship that can be best characterized as a guided process (involving all the functions, activities, and actions necessary to create an entrepreneurial organization (Bygrave & Hofer, 1991)) through which entrepreneurs seek to deliver economic, cultural and social value to themselves and to society (Steyaert & Katz, 2004). Entrepreneurship as a guided process denotes that the entrepreneurial process and all the associated activities do not follow a chaotic trajectory but, instead, are actively and consciously steered by means of systematic and strategic prescriptions that aim at reducing the inherent uncertainty of creating something novel. Such prescriptions ought to correspond to the inherent characteristics of entrepreneurial problem-space, otherwise they would fail to effectively guide entrepreneurial action.

2.2.2. THE NATURE OF ENTREPRENEURIAL PROBLEM-SPACE

Problems are constructed from situations that are inferably confusing and uncertain (Schön, 1984) and can be understood as either structured or ill-structured (Rittel & Webber, 1973). Structured or 'tame'[7] problems are common to natural sciences, can be clearly defined at the outset and there may be one optimal solution or a limited number of solutions to them. The assembly of an IKEA furniture is an example of such a problem. Although tame problems can be complex, they are often resolvable by adopting linear approaches and using straightforward, reductionist, repeatable and sequential techniques. These techniques are useful in solving structured problems as there is a limited degree of uncertainty rendering this type of problems manageable to perceive, de-

fine and solve (Grint, 2005).

Ill-structured or 'wicked'[8] problems, in contrast, lack these clearly defined characteristics. They often do not entail clear end-goals as they are either unknown or ambiguous. As means-end relationships are poorly understood, they cannot be solved employing prescriptions intended to solve structured problems. Public planning, policy formulation, and business strategy are examples of ill-structured problems. These problems have two main characteristics: 1) they are ill-defined and ill-formulated (the successful formulation is often achieved after a tentative solution is conceived), and 2) they have no clear rule for stopping to search for optimal solutions and, therefore, making the assessment of the solution as 'better or worse' rather than 'right or wrong'. Thus, ill-structured problems rely on elusive resolutions grounded in subjective judgment. While there is no enumerable set of potential solutions to these problems (Rittel & Webber, 1973), it is the subjective, residual judgment of individuals that facilitates the decision about which course of action ought to be pursued and implemented.

The relevance of this discussion to entrepreneurship is that entrepreneurship is composed of aspects analogous to structured and ill-structured problems (Dimov, 2017). As such, akin to domains such as design, entrepreneurship should be guided by rules, principles, heuristics and methods that are distinct and suitable for solving structured and ill-structured aspects. Treating entrepreneurship as either a structured or ill-structured problem can cripple entrepreneurship scholars who strive to provide prescriptions to guide entrepreneurial action.

2.2.3. ENTREPRENEURIAL JUDGMENT AND UNCERTAINTY

When confronted with different situations with clear objective(s), characteristics and available information, individuals may make decisions that can be qualitatively and quantitatively distinct (Foss & Klein, 2012). In other words, individuals see "the past and the present as other people do, but judge the future in different ways" (Mises, 1949:585). This emanates largely from the fact that individuals possess different sets of information, skills and capabilities, have different capacities and ways to interpret available information, make use of various shortcuts and heuristics and are prone to various biases (Casson & Wadeson, 2007). The cumulative impact of these factors culminates in how individuals exercise their subjective judgment when making decisions. Judgment is

"the (largely tacit) ability to make, *under conditions of structural uncertainty*, decisions that turn out to [not] be reasonable or successful ex post" (Langlois, 2007:1112, emphasis added). This definition accentuates the role of judgment in any uncertain situation where there is a lack of sound models, decision rules or reliable data (Hastie, 2001). Uncertainty, if not 'the' cornerstone, is one of the key conceptual building blocks of the majority of entrepreneurship theories (McKelvie, Haynie, & Gustavsson, 2011). In fact uncertainty is suggested to be what separates entrepreneurial action from other types of action (McMullen & Shepherd, 2006). This uncertainty is largely due to the intrinsic novelty in the entrepreneurial process related to creating something new (Gartner, 1990; McMullen & Shepherd, 2006). Effective decisions made in uncertain, entrepreneurial situations are the outcome of carefully chosen available means and can be achieved through the explicit exercise of a particular skill or a set of skills that are relevant to the situation at hand (Langlois, 2007; Uygur & Kim, 2016).

While neoclassical and evolutionary economists discount the role of judgment in entrepreneurship as they either ground their assumption in perfect decision-making processes or play down the role of entrepreneurs (Sarasvathy & Dew, 2013), others characterize entrepreneurial judgment as central to entrepreneurship (Casson, 2005). Entrepreneurship is unanimously agreed upon as a domain characterized by various types (Milliken, 1987) and degrees (McMullen & Shepherd, 2006) of uncertainty that makes the notion of judgment highly relevant to the field. Entrepreneurial judgment is, therefore, a crucial internal process that facilitates entrepreneurs' decision-making under uncertainty and manifests in nearly all actions of entrepreneurs (Foss, Foss, & Klein, 2007; McMullen, 2015). In fact, successful entrepreneurs are suggested to be individuals who have mastered and become experts in exercising judgment in the face of uncertainty (Casson & Wadeson, 2007). In other words, entrepreneurial judgment is believed to be the cognitive response of entrepreneurs in uncertain situations (Uygur & Kim, 2016). It is an inseparable element of any entrepreneurial behavior that is often not reflected sufficiently in models representing those behaviors (Phelps, 2009) while exercised by entrepreneurs in reality (Uygur & Kim, 2016). This lays a heavy stress on the idiosyncratic nature of any entrepreneurial situation and the need for a nuanced view that considers both context and judgment (McMullen, 2015). This dissertation is of the view that the exercise of judgment can indeed be guided by means of codified actionable knowledge.

2.2.4. METHOD AND ENTREPRENEURIAL METHOD

Entrepreneurial theories that attempt to guide the practice of entrepreneurship are communicated in various ways using different terms such as heuristics (Baker & Nelson, 2005; Sarasvathy, 2001), practice (Dean & Bowen, 1994), guidelines (Sull, 2004), approach and technique (McGrath & MacMillan, 2000), methodology (Brown, 2008; Ries, 2011), framework (Blank & Dorf, 2012), process and procedure (Ackoff, 1981), and model (Fiet, 2008). This dissertation consciously avoids semantic arguments over terms and instead uses the term 'method' broadly. This choice is motivated by the term's ubiquity in academic contexts and also because it has the connotation of systematically guiding individuals' thought and actions. In this regard, an introduction to existing definitions and conceptualizations of method is relevant.

Although the use of method is common both in everyday life and in scientific discourse, its varying definitions create confusion and hamper effective communication. This warrants the need for a clear and succinct definition of the term (D'Abate, Eddy, & Tannenbaum, 2003). March and Smith (1995) referred to method as a set of steps necessary to carry out a task. Vincenti (1990) described method as a design apparatus that entails various ways of thinking, judging and eventually doing. Dimov (2016:25) suggested that method can be "in the form of design propositions or principles on the basis of review and synthesis of prior research findings". Landa (1999:346) defined method as "a structured system of instructions and/or action for achieving some goal". Moreover, Neck et. al (2014:11) outlined method as "represent[ing] a body of skills or techniques that help entrepreneurs develop a set of practices that implore them to think and act more entrepreneurially … [method] is a way of thinking and acting built on a set of assumptions using a portfolio of practices to encourage creating".

Taken together, these definitions share certain essential elements: 1) methods consist of and include a set of instructions or prescriptions and subsequent actions to guide individuals' thought and actions (March & Smith, 1995; Vincenti, 1990). 2) These sets of instructions or prescriptions and actions are structured and provide logical inter-relations in certain ways. These interconnections can follow sequential or hierarchical organization. Additionally, 3) they are guided by implicit or explicit goals and, therefore, can be understood as goal-oriented vehicles to help individuals to achieve their intended goals (cf. Sarasvathy, 2001)[9]. As methods eventually become subjective entities condi-

tioned by individuals' certain psychological and cognitive dispositions, internalized methods may conflict with the original prescriptions of a method.

By synthesizing these definitions, method in this dissertation is '*a coherent set of related principles and guidelines of thought and action that structures theoretical and practical aspects of arriving at a set goal*'. Following this definition, entrepreneurial method is further defined as '*a coherent set of related principles and guidelines of thought and action that structures theoretical and practical aspects of the entrepreneurial process*' (cf. Neck & Greene, 2011; Sarasvathy & Venkataraman, 2011). An entrepreneurial method, in essence, helps entrepreneurs to become expert in exercising entrepreneurial judgment in the face of uncertainty that is inherent in entrepreneurial action. Viewing entrepreneurial methods in such a way can help entrepreneurs to "go beyond understanding, knowing and talking" (Neck et al., 2014:11) and help scholars to traverse into prescribing. This would present entrepreneurial methods as a tool applied to an unconstructed future (van Aken & Romme, 2012) and that in explicit attempts aspires to shape it.

2.3. PRESCRIPTIVE THEORIES OF ACTION

To better understand the nature of entrepreneurial methods, we must recognize the inherent qualities of the knowledge they bear and how they differ from the qualities of other types of knowledge. In this section, prescriptive knowledge (as the foundational building block of entrepreneurial methods) is juxtaposed with descriptive and normative knowledge. This is followed by an expansion on the notion of actionability which is discussed in relation to the persistent gap between theory and practice.

2.3.1. DESCRIPTIVE, NORMATIVE AND PRESCRIPTIVE THEORIES OF ACTION

A theory of action is a "theory of deliberate human behavior, which is for the agent a theory of control but which, when attributed to the agent, also serves to explain or predict behavior" (Argyris & Schön, 1974:6). Any theory of action can be divided into three distinct types: descriptive, normative and prescriptive (Bell, Raiffa, & Tversky, 1988; Hempel, 1966). Descriptive theories of action are "first-cut approximations of the description of behaviors" (Bell et al., 1988:15) of individuals. They are highly empirical

and describe how and why individuals think, behave and act in certain ways in different situations (Bell et al., 1988). Descriptive theories of action underscore the logical consequences of 'under condition C, following action A leads to outcome O' (Parsons, Shils, & Smelser, 1965). That is, they concern propositions for the probable outcomes of objects, phenomena and their characteristics, relationships between the objects involved and, more importantly, the conditions that need to be satisfied in order to guarantee the projected outcomes. Additionally, by providing propositions, descriptive theories allow for prediction of the outcome(s) of specific actions when certain conditions are in place. These theories are judged by their 'empirical validity', that is the extent to which they are consistent with observed behaviors and provide reasonable accounts of the behaviors (Bell et al., 1988; Tietz, 1992).

Normative theories of action posit "how idolized, rational, super-intelligent people should think and should act" (Bell et al., 1988:16). That is, if an individual has 'this and that' belief, s/he ought to act in 'this and that' way (Friedman, 1953). The common denominator of normative theories is coherence and rationality in the form of "axioms, basic principles and fundamental considerations" (Bell et al., 1988:17). These theories are motivated by assumptions on rational and intelligent behaviors and the capacity of every individual to act rationally and intelligently. In other words, normative theories of action characterize axioms without guaranteeing that the ideal circumstances can be met by individuals who seek to apply them (Brown & Vari, 1992). However, to both safely predict and explain behavior and influence and elicit outcomes, descriptive and normative theories of action are not directly useful (Brunsson, 1990). In this case, other sets of propositions are required to produce the desired outcomes and guide reflective behaviors: propositions that concern a fusion between normative and prescriptive theories of action. Keller (1989:485) discussed the need as follows: "There is a gap between the descriptive observation that people are sometimes intransitive and the normative principle that people ought to be transitive. Research with a prescriptive purpose is designed to bridge this gap by developing and testing methods for aiding people in conforming with desired normative principles".

These propositions are in the form of 'should' and 'ought' rather than 'is' (Pandza & Thorpe, 2010). Prescriptive theories of action are a mixture of logical consequences of normative theories and the empirical results from descriptive theories but are not lim-

ited to them (Bell et al., 1988). They include statements such as 'in order to arrive at outcome O under condition C, do action A' and attempt to enhance the quality of individuals' judgment and decisions (Worren, Moore, & Elliott, 2002). While descriptive theories come in the passive form of 'if … then' propositions, prescriptive theories come in the active form of 'in order to … do this'. These theories are judged by their 'pragmatic value', that is their value in providing individuals with the guidance to excel in practice (Bell et al., 1988; Tietz, 1992).

It is reasonable to assume that these three types can be effectively integrated, but in fact this may not always turn out to be the case (March & Smith, 1995). A salient feature of prescriptive theories is their aspiration to influence and change individuals' behaviors (Bell et al., 1988; March & Smith, 1995). This is not the primary goal of empiricists who describe and explain individuals' behaviors as they pertain to their natural setting (Bell et al., 1988; Keller, 1989). Prescriptive theories of action concern causal relations and link certain actions and resulting outcomes, unlike descriptive theories of action that mainly aim to link variables that are not often controlled by individuals (Gregor, 2006). In summary, descriptive theories attempt to describe, explain and also predict behavior in specific situations, normative theories focus on how ideal people act in specific situations, and prescriptive theories seek to advocate what should and should not be done in specific situations. As normative and prescriptive theories of action are taken to represent very similar perspectives and are treated as one in many contributions, Table 1 juxtaposes only descriptive and prescriptive theories of action.

Table 1

Dichotomy between descriptive and prescriptive theories (adapted from Tsang, 1997)

	Descriptive theories	**Prescriptive theories**
Key question	How does … ?	How should … ?
Target audience	Academics	Practitioners, policy makers
Philosophical assumptions	Realism and positivism	Pragmatism and design
Objective	Theory development-*empirically describe and predict behavior*	Pragmatic directives-*pragmatically advocate what should be done*

Validity criterion	The extent to which they are consistent with observed behaviors and provide reasonable accounts	The extent to which they are practically useful and helpful in guiding action

2.3.2. ACTIONABLE KNOWLEDGE

In the introduction to the theme of the Academy of Management conference in 2004, Thomas Cummings and Yolanda Jones touted the need for producing knowledge that is relevant to society and its institutions (Cummings & Jones, 2004). They asserted that for science-based knowledge to be and remain relevant, it must be 'actionable'. By actionable, Cummings and Jones (2004) meant that the produced knowledge must "transcend purely scientific concerns and enable organizational members to *make informed choices* about important practical problems and to *implement solutions* to them effectively" (emphasis added). In their view, the lack of actionable qualities in the knowledge created by the Academy members is tightly linked to the widely acknowledged gap between theory and practice. Cummings and Jones, in fact, alluded to the point that by standing on the academic side of the chasm, management scholars had failed to attract the attention of practitioners who could put the produced knowledge into action. Thus, they had rendered the produced knowledge un-actionable.

Actionable knowledge is broadly defined as the type of knowledge that provides explicit direction for immediate progress (Cross & Sproull, 2004). It embodies a view of knowledge application that is deeply pragmatic in nature (Carlile, 2002; Pitt, 2001) and has external validity, meaning that it is applicable and relevant to day-to-day practical situations (Argyris, 1996a)[10]. It is the actionable quality of knowledge that has the potential of engendering changes in practice in a way that is sustainable (Sexton & Lu, 2009). Contrary to other types of knowledge (descriptive and predictive knowledge), actionable knowledge does not have an equal standing in offering aid to understand, explain and predict individuals' behaviors (Argyris, 1996b). Actionability of generalizations in the form of prescriptions is contingent on the clear pronouncement of both the likely consequences under certain circumstances and a detailed roadmap for creating the actions necessary to arrive at those likely consequences (Argyris, 1996a; Argyris, Putnam, & Smith, 1985). As actionable knowledge is "not only relevant to the world of practice; it is the knowledge that people use to create that world" (Argyris, 1993:1),

failure in providing actionable knowledge dwarfs researchers' ability to influence and shape the domains in which they are invested.

Consider the following quote from Argyris (2005:424): "Actionable knowledge requires propositions that make explicit the causal processes required to produce action. Causality is the key in implementation". Argyris conceptualizes actionability of prescriptive knowledge in providing causality as 'if under circumstance C, action A is followed, the individual would arrive at expected outcome of O'. This outcome is a reduction of the realm of possibilities and, consequently, the uncertainty of action. Given that any prescription is knowledge and informs action (Argyris, 1996b), an actionable prescription provides relevant and sufficient information such as action strategies and governing variables (Argyris & Schön, 1974), particular setting and context of use (Sexton & Lu, 2009), or relevant dimensions of the problem-space (Cross & Sproull, 2004), which ultimately enables individuals to act. In summary, a prescription is 'actionable' if it provides a precise and clear course of action to be followed or it assists individuals in exercising their judgment in idiosyncratic circumstances by limiting the set of possible alternatives.

2.3.3. THE THEORY-PRACTICE GAP

Scholars have long bemoaned the gap between theory and practice (Rynes, Bartunek, & Daft, 2001). This gap is coupled with the failure of practitioners to solicit scholars to formulate practical strategies (Abrahamson, 1996). Practitioners either draw on insights found in more readable popular format or rely on their past experiences. As they primarily make decisions by turning to their tacit knowledge that is shaped and conditioned through years of experience (Worren et al., 2002), to be practically relevant, the output of scholarly endeavors must correspond to practitioners' way of acquiring knowledge and approaching problems. Because this correspondence is often lacking, many of the scholarly contributions fail to help practitioners to handle environmental constraints such as time pressures, situational complexities and problem-space uncertainty. Useful knowledge for practitioners not only should reflect what has happened or what is going to happen but also prescriptions for making desired outcomes happen (Argyris, 1996c). Otherwise, the knowledge produced is either divorced from practice or contributes little to the overall understanding of practice (Cummings & Jones, 2004).

The theory-practice gap is not specific to the domain of entrepreneurship or management but is prevalent across nearly all domains of social science (Reed, 2009). A number of issues contribute to the continued presence of this gap: 1) many research programs are being conducted in isolation away from organizations, 2) the findings of these research studies are written in a language attuned to scholars and, therefore, not easily understandable for practitioners, 3) the research questions pursued tend to be formulated in line with previous research and ongoing scholarly conversations, and 4) institution of universities reward publications in top-tier journals rather than the applicability of research findings in practice (Cummings & Jones, 2004).

These tensions are rooted in the foundational differences that each side of this gap exhibit in relation to their belief systems and methodological rationales (Reed, 2009). On the one hand, researchers seek abstract generalizations that are grounded in theory and are inferred from careful empirical investigations. On the other hand, practitioners seek knowledge applicable to specific contexts and problems that is largely the outcome of reflection and judgment on direct experiences (Vincenti, 1990). A direct consequence of the gap is that the knowledge produced by practitioners is either ignored or valued less highly than academic knowledge as it is not rigorously produced (e.g., the attitude of academics in relation to the practitioner-oriented theories such as the lean startup methodology and design thinking). Therefore, to develop a deeper understanding of complex problems, research should focus on both fundamental understanding and applied use as its dualistic objective (Hodgkinson, Herriot, & Anderson, 2001; Pettigrew, 2001).

The theory-practice gap is framed and discussed in three ways: the outcome of dysfunctional knowledge transfer, the outcome of foundational and philosophical divergences, and the outcome of failure to produce relevant knowledge and position the research findings (Van de Ven & Johnson, 2006). It is important to note that this does not imply that theory and practice oppose or are substitutes for one another. They, rather, are complementary and address weak points that arise from their foundational assumptions (Van de Ven & Johnson, 2006).

Framing the gap as the outcome of dysfunctional knowledge transfer reflects the various outlets and different forms through which (practical) research findings are disseminated. This dysfunction exists because research findings are produced and present-

ed in a form that is difficult to translate and apply to specific practical contexts. To overcome this, academics and practitioners should jointly engage in a sense-making of the findings of academically or practically produced knowledge (Argyris, 1996c). This suggests that academics should be assured that the knowledge they produce is accessible by practitioners, which increases their likelihood of being used in practice.

Framing the gap as the outcome of foundational and philosophical divergence points to the distinct philosophical roots of epistemological and ontological underpinnings on each side of the gap. Rather than regarding practical knowledge as a by-product of theoretical knowledge, practical knowledge is and should be understood as a distinct, nonetheless related, form of knowledge in and of itself (Kondrat, 1992). Stated briefly, theoretical knowledge is explicit, formal and largely propositional while practical knowledge is primarily implicit, informal and embedded in action (Nonaka, 1994). There is, of course, a continuum and both explicit and tacit knowledge are present in both knowledge types. It is needless to remark that both modes of knowledge can be relevant and important for certain contexts and purposes.

Framing the gap as the outcome of failure to produce relevant knowledge and position research findings implies a lack of understanding among academics of a succinct positioning strategy, which results in a lack of strategic mission and operational role (Reed, 2009). The problem also lies in the way and the form that research findings are disseminated, which is not amendable to the way that practitioners receive and consume knowledge. Moreover, the normative and traditional tendency of universities to view practical knowledge as the direct application of theoretical knowledge to practical problems exacerbates this issue (Schön, 1987). It is suggested that the introduction of a deep form of research whereby academics and practitioners produce knowledge that satisfies both rigor and relevance for a given domain of inquiry can be instrumental in bridging the gap (Pettigrew, 2001). This relationship would follow the regimen of a learning community that is fertilized by and progresses from the collaboration of academics and practitioners and generates timely and relevant practical knowledge.

To overcome the gap, close consideration of the ‘rigor and relevance’ discussion (Pettigrew, 2001), ‘design science’ (Dimov, 2016), ‘engaged scholarship’ (Van de Ven, 2007), and ‘reflective practicum’ (Schön, 1987) have been suggested. However, there is no consensus in this realm and the plurality in viewpoints dominates the conversation.

These responses may be effective for a brief period; but, as academics and practitioners are likened to 'oil and water' (Simon, 1967), there is a need for continuous initiatives.

By focusing on the gap as an outcome of dysfunctional knowledge transfer and failure in producing relevant, practical knowledge, this dissertation proposes *entrepreneurial methods* as a construct toward amending this gap. Entrepreneurial methods are, therefore, positioned as a conceptual construct and practical tool to bring together and combine the domain-specific knowledge produced, largely in isolation, by both academics and practitioners. More specifically, entrepreneurial methods can be seen as vehicles for the transfer of knowledge from academics to practitioners and vice versa. They would then contain the significant and appropriate principles and guidance that can concretize the abstract generalizations of empirical findings. In this way, instead of entrepreneurship scholars relying on the world of the entrepreneurship practice as their source of insights and, therefore, becoming the "out-of-date purveyor of almost current … practice" (Simon, 1967:12), they would be equipped to pro-actively shape the entrepreneurship practice.

This dissertation recognizes that there is efficiency and rationality in the division of labor and that different individuals engage in different aspects of the same problems. It, however, favors the counterforce to clear-cut division of labor to prevent scholarly research from decoupling from practice. This dissertation sides with the idea that having explicit pragmatic validity as an important criterion enhances the relevance of theoretical knowledge to practice (Worren et al., 2002).

2.4. EXISTING ENTREPRENEURIAL METHODS

Because there is no agreed category of entrepreneurial methods, it is not easy to identify relevant prescriptive theories of action by using the term 'entrepreneurial method'. In fact, few authors use the term 'entrepreneurial method', and those who do (Duening & Metzger, 2014; Sarasvathy & Venkataraman, 2011; Verreynne, Miles, & Harris, 2012), use it to describe something rather different than method as understood in this dissertation. This section gathers academic and practitioner contributions that fit the definition of entrepreneurial method in this dissertation and introduces them by the language used by the proponents of these methods. These are in ways related to entrepreneurship, either because they are developed and addressed by entrepreneurship scholars or used by

entrepreneurs and practitioners. It is worth mentioning that some of these methods are underdeveloped and, therefore, their review is grounded in a single paper or book[11]. In what is to follow, nine theories are reviewed. Each section is structured to include theoretical or philosophical assumptions, heuristics or algorithm-based models, and also tools and techniques (when applicable).

2.4.1. BUSINESS PLANNING

Business planning is broadly defined as the process of "ascertaining a series of potential courses to be taken by the firm, determining the firm's position as a result of each potential course, comparing and weighing this position for all actions and, on the basis of the evaluation, selecting the course of action to be followed" (Steinhoff, 1970:3). Traditionally, business plans, as a tool in the process of business planning, are constructed around a number of functions within the internal organization of the venture and some external factors that influence the operations of any venture (Ansoff & Brandenburg, 1967). Business plans are written documents that detail the current and desired future state of a venture (Honig, 2004). They are grounded in the idea that they should in aggregate offer solutions to a set of dependent and independent functional problems (Ackoff, 1981). A business plan typically deals with matters such as market objectives, customers, management team, risks, financial plans and milestone schedules (Boyd, 1991). It also includes strategies such as performance and sales maximization and cost minimization (Utterback & Abernathy, 1975), cost leadership, differentiation and focus (Porter, 1980). There are six main steps that are commonly associated with business planning processes: 1) define the business idea and develop its mission, 2) set goals and objectives, 3) craft a strategy to achieve the performance objectives, 4) identify the required resources and establish an acquisition and allocation plan, 5) implement and execute the strategy, and 6) evaluate performance, review the situation and initiate corrective adjustments (Draman, 1995; Steinhoff, 1970). Focus groups, SWOT analysis, financial prognosis and nominal ranking are among the tactics that assist entrepreneurs in the process.

Reducing the disbanding rate of ventures and accelerating business formation activities are two suggested benefits of business plans and business planning (Delmar & Shane, 2003) although there is no consensus on the benefits of writing business plans

(Karlsson & Honig, 2009). One of the disputed conditions for business planning to be relevant and logical is the existence of a market. This assumes that there is historical information about the market allowing for predictions inherent in business planning (Chwolka & Raith, 2012). However, since entrepreneurial environments are inherently uncertain and ambiguous, there is often little information available for entrepreneurs to predict the outcomes of the opportunities being pursued (Sarasvathy, 2001). This does not negate the usefulness of market analysis but, depending on the environmental conditions, suggests caution when basing decisions on the results of such analyses.

2.4.2. EFFECTUATION

Building on Marchian goal ambiguity (March, 1982, 1991), Knightian uncertainty (Knight, 1921), Mintzberg's efforts to gather evidence against planning strategies (Mintzberg, 1991, 1994), Weickian enactment (Weick, 1995) and the science of the artificial (Simon, 1996), effectuation gathers the concepts of ambiguity, uncertainty and enactment. Effectuation was initially posited as a set of heuristics used by expert entrepreneurs to develop new ventures. Heuristics are "strateg[ies] that ignore part of the information, with the goal of making decisions more quickly, frugally, and/or accurately than more complex methods" (Gigerenzer & Gaissmaier, 2011:454). The effectuation theory is inductively derived from a study of entrepreneurial expertise in new venture creation using the think-aloud protocol. It provides insights into certain heuristics used by expert entrepreneurs to make decisions. Effectuation claims to address a logic of "control, endogenous goal creation and a (partially) constructed environment" (Sarasvathy, 2001:256). Given intrinsic means, entrepreneurs first envisage the type of entrepreneurial activities in which they could potentially engage. The entrepreneur's job is not limited to making prior assumptions about some pre-existing opportunities waiting to be discovered but extends to their creation in a social process (Sarasvathy & Dew, 2005).

Committed stakeholders are essential to effectuation. It is through continuous interactions with them that goals are shaped, resources are combined and recombined, and artifacts are created. The expansion of the network of stakeholders progressively constrains goals, thus, promoting convergence on a specific artifact. Five heuristics form the backbone of effectual decision-making logic. These heuristics describe and guide

action throughout the outcome uncertain process of entrepreneurship. Sarasvathy (2001) proposes these heuristics as follows: 1) start the process by asking yourself who you are, what you know, and whom you know?, 2) limit risk by estimating how much you can afford to lose, 3) embrace the surprise factor and try to use it as potential leverage to your advantage, 4) reduce uncertainty by obtaining commitments from early partners, and 5) focus on activities that are within your control rather than attempting to predict the unknown future. In summary, entrepreneurs, by avoiding preconceived plans, should engage in transforming local means into new and often unexpected ends, investing only what they can afford to lose and leveraging contingencies to the best of their ability. To date, there is no published research that details or exemplifies how these heuristics can be put into practice.

2.4.3. ENTREPRENEURIAL BRICOLAGE

By borrowing the anthropological concept of bricolage (a problem-solving approach in which agents employ the resources available to them rather than seeking new ones) developed by Claude Lévi-Strauss (1966), Baker and Nelson (2005) proposed entrepreneurial bricolage to explain the process of making do by applying combinations of resources at hand to new problems. Three elements comprise entrepreneurial bricolage: 1) 'making do' refers to a bias toward action and active engagement, 2) the 'combination of resources for new purposes' implies the reuse of resources for applications that were not envisioned previously, and 3) 'resources at hand' emphasizes a reliance on pre-existing physical or intellectual resources that are available to entrepreneurs rather than new resources (Baker & Nelson, 2005).

Entrepreneurial bricolage as the development of an action-oriented or hands-on approach (Fisher, 2012) helps to mitigate the limitations of the resource environments by applying available resources in ways that were not originally intended, thus, reducing resource uncertainty (Milliken, 1987). As a strategy in environments with limited resources, it helps entrepreneurs to reduce resource uncertainty in the five domains of physical input, labor input, skill input, customers-market, and the institutional-regulatory environment. By tolerating the inherent ambiguity of penurious environments and exploiting extant resources and opportunities, entrepreneurial bricolage enables entrepreneurs to transform underestimated and seemingly useless resources into valuable

ones with novel applications (Senyard, Baker, Steffens, & Davidsson, 2014). This allows entrepreneurs to progress their venture creation endeavors in idiosyncratic resource-poor environments.

2.4.4. DISCOVERY-DRIVEN PLANNING

Rooted in real options reasoning (McGrath, 1999), discovery-driven planning was introduced as an approach to systematically make explicit the assumptions that are taken for granted and test them in a series of experiments before committing resources (McGrath & MacMillan, 1995, 2000). The central thesis of discovery-driven planning is that in situations of high uncertainty, conventional planning methods not only may be useless but also lead to disastrous outcomes (McGrath & MacMillan, 2000). Research suggests that in only 10 percent of cases, a grand plan with little knowledge of the uncertain environment is implemented successfully (Draman, 1995). Moreover, in the early stages of venture development, little is known and much is only assumed. Therefore, it is more sensible to employ experimentation techniques than rely on assumptions that take the environment as known (McGrath & MacMillan, 2000).

Discovery-driven planning offers an alternative avenue to planning by providing five principles: 1) framing of the desired business, 2) benchmarking of the parameters that promise a successful project, 3) strategic translation of operations by specification of organizational deliverables, 4) documenting, testing and revisiting assumptions, and 5) managing key milestones to learn and plan next milestones. Reverse income statement and targeted experiments are two useful tools for advancing the process as part of discovery-driven planning. A reverse income statement identifies the amount of resource that could be lost and the business would still continue to exist. Discovery-driven planning requires assumptions about the business to be detailed and testable. The actors in the market are benchmarked, key operational activities are defined, and critical assumptions are unearthed. These assumptions are tested at pre-defined checkpoints and the decision to stop, iterate or change course is made based on the results of each milestone (McGrath & MacMillan, 2000).

2.4.5. DISCIPLINED ENTREPRENEURSHIP

Disciplined entrepreneurship is centered around the premise that instead of ignoring,

avoiding or being influenced by uncertainty while resisting it, entrepreneurs should manage uncertainty through a disciplined approach. One of the critical tasks in entrepreneurship is finding ways to manage the inherent uncertainty of creating something novel. Sull (2004) introduced three main guidelines for reducing uncertainty and acknowledged that due to the messiness of the actual process, these stages are not to be taken for a specific order of happening, although, intuitively an order ought to exists. The three main guidelines are as follows: 1) formulate a working hypothesis and be ready to modify it, 2) assemble the required funds and resources to conduct experiments, and 3) design and run experiments in an attempt to make known the unknowns surrounding the idea.

A working hypothesis is a set of assumptions on different aspects of a business (e.g., technology, customer demands and the availability of resources). These assumptions are only to be regarded as guesses that may be proven wrong (Sull, 2004). Framing these hypotheses as subject to revision highlights their provisional nature. If managing a new venture is framed as conducting experiments, there is a systematic way of estimating how much capital needs to be raised. This, therefore, leads to postponement of key hires until a stable business model is achieved. Moreover, entrepreneurs use resources and the working hypothesis as the basis for running and designing experiments. There are two types of experiments: partial experiments (to deal with a single source of uncertainty) and holistic experiments (to gain information about multiple variables). Partial experiments are better suited to situations with known unknowns (what one knows one does not know) and holistic experiments are better suited to revealing the unknown unknowns (what one does not know one does not know).

2.4.6. EVIDENCE-BASED MANAGEMENT FOR ENTREPRENEURIAL ENVIRONMENTS

Having roots in evidence-based medicine, evidence-based management advocates the use of the best available data to inform and improve the quality of decisions. This is grounded in a mindset that relies on facts rather than on conventional wisdom and half-truths to make informed decisions (Pfeffer & Sutton, 2006b). Evidence-based management practices emphasize gathering the best available data and theory and updating the understanding of situations as new information becomes available (Pfeffer, 2010). It fur-

ther suggests that ventures should run trials, pilot studies, and small experiments and use the results to draw conclusions that could be used to inform action (Pfeffer & Sutton, 2006a). Adhering to evidence-based management principles eventually changes the power dynamics by substituting institution and authority with the best available data and reduces uncertainty (Pfeffer & Sutton, 2006b).

Evidence-based management in line with experimentation techniques advocates building prototypes to systematically collect information on customer preferences. The insights collected from carefully analyzing customer preferences can then be used as actionable inputs to venture creation activities and the design of future experiments. This further introduces an embedded design in learning from real situations (Pfeffer, 2010), which implies that learning through experimenting in real situations is inherent in this approach. Pfeffer and Sutton (2006b) proposed four principles of evidence-based management as follows: 1) treat the organization as an unfinished prototype and, therefore, commit to improving it, 2) rely on facts rather than gut feelings, 3) by adopting an outsider lens, make assessments of your organization in an objective way, and 4) use these principles in all facets of the business particularly for making important decisions.

2.4.7. PRESCRIPTIVE ENTREPRENEURSHIP

To assist aspiring entrepreneurs in the systematic search and discovery of opportunities with wealth-creating potential, Fiet (2002, 2007) proposed a prescriptive model based on Bayesian learning and what he terms ‘constrained systematic search’. In this context, ‘systematic’ refers to how entrepreneurs “predetermine, based on their specific knowledge, how to search” (Fiet, Norton, & Clouse, 2013:894). ‘Constrained’ refers to the benefits entrepreneurs obtain from limiting their search to only known information channels as opposed to unbounded scanning of the alertness perspective (Kirzner, 1997). This prescriptive model proposes that entrepreneurs should start with what they know (prior specific and general knowledge) to select information channels (sources of frequent and low-cost information on potential entrepreneurial discoveries). The most preferred channels would then form the ‘consideration set’ to which the search is voluntarily confined.

The goal of this model is to detect strong signals in the form of informational cues about existing opportunities. Feedback loops going back to the initial selection of in-

formation channels are part of the model and are moderated by socio-cognitive factors such as motivation, expectations and personal relationships (Fiet, 2007, 2008). In prescriptive entrepreneurship, uncertainty results from the level of reliability of the information channels and the informational cues used by entrepreneurs to discover potential opportunities. Rather than endlessly searching the entire world, entrepreneurs could focus their search only on sources of possible matches with which they have some level of familiarity (Fiet & Patel, 2008). Fiet (2007) described the stages as follows: 1) examine your specific knowledge, 2) select the relevant information channels, 3) specify a personal consideration set, 4) search for signals in the consideration set, and 5) interpret feedback based on socio-cognitive factors.

2.4.8. THE LEAN STARTUP METHODOLOGY

Inspired by the principles of lean manufacturing (avoiding waste and optimizing resource spending) and building on Blank (2007), the lean startup methodology was introduced as an approach to creating new ventures (Ries, 2011). The lean startup methodology offers an alternative to conventional planning by emulating the scientific method in the process of validating critical venture assumptions. The methodology is founded on close and constant interaction with real customers and the collection of feedback. It advised entrepreneurs to begin the process by breaking down their venture ideas into testable business model assumptions. By applying the concept of minimum viable product (MVP), these assumptions are tested. An MVP is a version of the product with the smallest set of features that is built to provide relevant information that helps entrepreneurs to validate or invalidate their assumptions (Ries, 2011). This is achieved through an objective analysis of the completed tests. This process reduces uncertainty in the venture creation process by accumulating fine-grained and detailed information on sources of uncertainty.

The guidelines of the method are outlined in the build-measure-learn loop and can be summarized as follows: 1) build a minimum viable product that allows information to be collected, 2) test it with customers and measure the results, 3) learn from the results and refine the next round of experiments. The methodology exploits a set of tools compiled from other theories such as the customer development framework (Blank & Dorf, 2012), rapid prototyping (Brown, 2008), and agile software development princi-

ples (Dybå & Dingsøyr, 2008). Central to the lean startup methodology is the validated learning through purposeful experimentation (Maurya, 2012; Ries, 2011), which is supported by data from real customers. A key concept in the lean startup methodology is the notion of 'product-market fit' which implies that the venture idea would solve a problem and create value (Blank & Dorf, 2012). Tactics such as targeted experiments, customer interviews, physical prototypes, concierge, A/B tests and fake door tests are among the set of tactics that are recommended by proponents of the lean startup methodology.

2.4.9. DESIGN THINKING

Design thinking is an iterative, non-linear approach that capitalizes on insights gathered through interactions with customers (Dorst, 2011). The results of these interactions inform developmental efforts to expand the idea by improving physical prototypes (Carlgren, Rauth, & Elmquist, 2016). New prototypes are later tested by users and the results are used as input for subsequent rounds of development (Johansson−Sköldberg, Woodilla, & Çetinkaya, 2013). The process initially begins by defining the problem that customers experience, understanding it in depth, creating and testing a possible solutions, and reflecting on the results of the process. Through these processes of creating, testing and consequently learning entrepreneurs can improve their initial ideas (Brown, 2008). Design thinking consists of five phases: 1) empathize with the problem(s) experienced by customers, 2) define the problem in detail, 3) ideate different ways to resolve the problem, 4) prototype a low resolution of the solution, and 5) test the solution with customers[12]. In order to go through these phases, tactics such as physical prototypes, customer interviews, innovation flowcharts, question ladders and design thinking mixtape are recommended by proponents of design thinking (Liedtka, 2015).

Empathize mode involves the process of understanding customers and their problems. During this process, information regarding how and why people behave the way they do is collected and compiled. In define mode, entrepreneurs make sense of the dispersed collected information and produce a problem statement. Define mode also provides entrepreneurs with a way to transform findings into insights. In ideate mode, entrepreneurs focus on generating the broadest possible range of ideas by combining imaginative insights on general solutions. The outcome of this mode feeds into the pro-

totype mode. The main goal of the prototyping process is to highlight the strength and weaknesses of the venture idea and identify new paths (Brown, 2008). Since prototype and test modes are closely intertwined, they are more relevant to discussion in combination rather than in isolation. Finally, test mode provides another opportunity to gain a better understanding by soliciting feedback from customers about prototypes. Put differently, testing is another opportunity to improve the solution by refining prototypes and increasing the obtained information on customers. Test mode is not the end of the process but part of an iterative process of following the modes, which eventually leads to a final solution (Brown, 2009).

2.5. A BRIEF REFLECTION

Chapter 2 provided a brief history of entrepreneurship research in an attempt to set the scene for the relevance of a prescriptive perspective on entrepreneurship, with purposeful and guided action as its focal point. The chapter gave a brief overview of the current understanding of entrepreneurs and entrepreneurship. As part of this, it painted entrepreneurship as a field that is composed of structured and ill-structured aspects where paying attention to both of these aspects is critical. Moreover, the chapter underscored entrepreneurial judgment and its relevance to uncertain environments such as entrepreneurial problem-spaces. Chapter 2, then, alluded to the promise of the prescriptive perspective as the culmination of actionable knowledge that can be instrumental in attempts to bridge the theory-practice gap. The chapter concluded with a review of nine prominent entrepreneurial methods as vehicles that could facilitate this prescriptive perspective.

The progression of topics and ideas in this chapter suggests that a perspective that is explicit and systematic in its aspiration to guide entrepreneurial action is needed. This is amid the fact that entrepreneurship is maturing its attempts to institutionalize entrepreneurship education while the theory-practice gap remains present and problematic. In spite of several other proposed solutions to bridge this gap, the idea of entrepreneurial methods as a pragmatic component of this prescriptive perspective is given prominence as a potential solution. There are benefits to take this stance. By design, entrepreneurial methods are pragmatic and actionable. They seek to provide entrepreneurs with governing principles and action strategies–to borrow from Argyris and Schön–which, in vari-

ous ways, are relevant to different aspects of the entrepreneurial process. If formulated and communicated clearly, these methods would be on a level less abstract than the academically-driven theoretical knowledge. In this way, they can be seen as simplified versions of complex and sophisticated research findings.

However, to date, there are no overarching or established axes or frameworks for understanding and conceptualizing entrepreneurial methods. There has been a fair amount of research papers that address prescriptive theories of action (Gregor, 2006; Romme, 2003; Tsang, 1997), but they typically stay on philosophical, methodological or abstract levels and focus less on the issues related to pragmatic values of prescriptive theories. This dissertation seeks to make the case that one way to show the relevance of prescriptive theories for the theory and practice of entrepreneurship is to advance the discourse of entrepreneurial methods. As a first step, there is a need to conceptualize the entrepreneurial methods and theorize on how they should be organized to ensure relevance to the entrepreneurship practice. To do this, their building blocks, the topics they cover and how they are practically used (their form, content, and application) should be examined. This would help to develop a better understanding of their validity criteria and how this is conditioned by fundamental assumptions they are grounded in. The outcome of this endeavor provides a foundation to relate the nature of entrepreneurial problem-space, the role of entrepreneurial judgment and the actionability of entrepreneurial prescriptions. To overshadow some of the insights, the exercise of conceptualizing entrepreneurial methods reveals that theoretical topics, such as view of uncertainty, current and future knowledge; representations through procedural models or heuristic-based principles; and specific tools and techniques are implicitly or explicitly addressed. Issues concerning higher levels of thought and cognition as well as lower levels of practice and action compose these entrepreneurial methods. Chapter 3 describes in detail the methodological choices made for the conduct of theoretical and empirical studies in this dissertation.

METHODOLOGY

3. METHODOLOGY

Chapter 3 describes and justifies the research design. The chapter presents the context and methodological choices that provide insights in relation to the purpose of this dissertation. First, the overall research process is described. Second, empirical studies by way of outlining data collection, data analysis, limitations and methodological considerations are presented. Third, a brief section describing the literature review process for the theoretical studies concludes the chapter.

3.1. RESEARCH PROCESS

The research journey that led to this dissertation with four appended papers did not follow a linear process. The entry point to studying entrepreneurial methods was a pilot study investigating how the lean startup methodology has been understood and followed by entrepreneurs who were self-selected to participate in a business incubator. I developed a semi-structured interview protocol and conducted four interviews during February 2013. The insights gathered paved the way for the first comprehensively designed empirical study as part of this dissertation during December 2013 and November 2014. This study's (Empirical Study I) context was a national accelerator program that ran for a period of six months. I followed two cohorts of the program and scheduled interviews with founders and participating entrepreneurs. This resulted in a total of 22 in-depth semi-structured interviews and contributed to the development of Paper II in this dissertation.

Parallel to the pilot study and Empirical Study I, I conducted a literature review of the most prominent research papers and practitioner-grounded popular papers and books to map the space where entrepreneurial methods are discussed and disseminated. The results contributed to the completion of Paper I and had a direct impact on the development of Paper III. Since Paper I and Paper III have a different focus, various aspects of the literature review were employed for each paper.

From February to August 2016, I engaged in an ethnography study (Empirical Study II) for which I followed an accelerator program that focused on the early stages of business development. The program lasted for a total of 15 weeks and I sought to be either physically present at all the sessions scheduled as part of the program, take notes

and observe them or to record the sessions, listen to the recordings and transcribe the important parts. This produced substantial empirical data. Additionally, I interviewed all the entrepreneurs who participated in the program as well as their coaches, which amounted to 16 in-depth interviews. The insights gathered after the analysis of all empirical data resulted in the formulation of Paper IV.

The overall research process can be effectively characterized as phenomenon-based[13]. The phenomenon under study as part of the empirical studies in this dissertation is the emergence of a new generation of startup accelerators that are explicitly guided by the prescriptions of the lean startup methodology. The phenomenon, as a component of the theoretical studies, is the emerging notion of entrepreneurial methods. As both the lean startup methodology (as an instance of entrepreneurial method) and its inclusion in accelerators are fairly novel and poorly understood, an exploratory qualitative research design was adopted. Two main methods of interviews and observations were employed. Empirical Study I relied largely on in-depth, semi-structured interviews and Empirical Study II was based on an ethnographic approach and was complemented by in-depth, semi-structured interviews.

3.2. EMPIRICAL STUDIES

3.2.1. STUDY I: BORN GLOBAL

Study I was conducted in the context of a Swedish startup accelerator program called Born Global. Funded by a government agency and run by academics at Chalmers University of Technology, the program aimed at helping startups find verified and scalable business models. Experienced entrepreneurs, venture capitalists and university professors were among the team that provided support to entrepreneurs. The program required CEOs and at least one founding entrepreneur from each startup to actively engage in the program. Each startup team was offered a dedicated coach during the program. The program consisted of nine modules in a workshop format with two to three-week intervals between the modules. The general orientation of the program was in explicit agreement with the prescriptions of the lean startup methodology, meaning that the majority of the activities within the program were structured in line with ideas that were defining of that methodology. During each module, different components of the business model canvas were introduced to help the entrepreneurs to formulate relevant testable hypothe-

ses for their business models. I was physically present during all the modules and accompanied the cohort on their Silicon Valley trip. Table 2 presents additional details of the content covered in each module as part of the accelerator program.

Table 2

Description of the modules, activities and their purpose

Module	Activities	Description
Module1 Introduction, business model and customer segmentation	Lectures and workshops	The business model as a concept and the business model canvas as a tool were introduced. Additionally, customer development as a process model for the lean startup methodology was presented and discussed in detail. This was followed by an exercise on the entrepreneurs' value propositions by matching the value(s) that their offerings provided to their target customer segments.
Module 2 Silicon Valley week	Inspirational seminars, lectures, visits to several startup HQs, public pitch event	The whole cohort traveled to Silicon Valley for a week. They met with knowledge leaders in the lean startup movement including Steve Blank, Laura Klein as well as founders and venture capitalists familiar with the lean startup methodology. The cohort also visited experts at Tesla, Andreessen Horowitz, Airbnb and Google and attended lectures on related topics. The visit concluded with entrepreneurs presenting their venture ideas at a public pitch event organized and moderated by the Swedish-American Chamber of Commerce for a panel of venture capitalists.
Module 3 Business review 1	Presentation of ideas using the business model canvas	During the business reviews, entrepreneurs received feedback on the current state of their venture ideas from external coaches, serial entrepreneurs and venture capitalists–all well-versed in the lean startup methodology.
Module 4 Revenue streams and customer relationships	Lectures and workshops	Different ways and logics through which startups can generate income were discussed by zooming into various aspects such as pricing and revenue models. Next, entrepreneurs engaged in a workshop that focused on how entrepreneurs could reach their customers and manage and sustain relationships with them.
Module 5 Distribution channels	Lectures and workshops	During this module, sales channels for products and services were introduced. The organizers helped entrepreneurs to formulate a clear understanding of their possibilities.
Module 6 Key resources, partnership, activities and cost structure	Lectures and workshops	This module concluded a thought-through and clearly defined business model by covering the required key resources, available partnerships, essential set of activities and also estimation and optimization of costs associated with keeping the startups running.

Module 7 Business review 2	Presentation of ideas using the business model canvas	During the business reviews, entrepreneurs received feedback on their ideas from external coaches, serial entrepreneurs and venture capitalists–all well-versed in the lean startup methodology.
Module 8 Financing and funding	Lectures and workshops	This module covered different ways of funding the continuation and growth of startup operations and a workshop to prepare entrepreneurs to pitch to venture capitalists.
Module 9 Demo day	Final presentation to serial entrepreneurs, public funding agencies and venture capitalists	The demo day: a setting that provided opportunities for potential funding was dedicated to the presentation of revised business models and entrepreneurs' final achievements completing the accelerator program. Entrepreneurs previewed their prototypes and final products (depending on their progress).

3.2.1.1. DATA COLLECTION

The primary source of data for Study I was a total of 22 semi-structured interviews conducted either face-to-face or via Skype and recorded and transcribed verbatim. All the entrepreneurs from the startups that participated in the program were invited to be interviewed, to have their statements corroborated and to obtain possible alternative points of views. The study initially included interviews with all the entrepreneurs in the accelerator program, but entrepreneurs from 11 out of 18 startups were successfully interviewed in two rounds. The initial round focused on capturing how the entrepreneurs, before being immersed into the lean startup methodology, conducted various activities and how they reasoned around those activities. The second round focused on exploring what they learned and how they learned it during the program. The interviews provided answers to questions such as what has changed, from where the changes originated and what the consequences of those changes were.

The first cohort in the program consisted of eight startups. Six interviews in the initial round and six interviews in the second round were conducted with the entrepreneurs on-site (at the accelerator) while each interview lasted on average approximately 60 to 70 minutes. Problems related to access and availability led to the decision to exclude some of the entrepreneurs from the study. The second cohort in the program included 10 startups. After discussions with the program organizers, half of the cohort was selected for interviews. The criteria guiding the selection were full participation in the

program, availability for interviews, and openness to sharing experiences.

The interview data was complemented by weekly surveys, materials from presentations in each module, my notes and observations during the program. Weekly surveys inquired about the activities conducted, the rationale behind them and the activities planned. This provided me with first-hand exposure to the phenomenon under study instead of my having to rely solely on the entrepreneurs' accounts. It is important to note that these three additional data sources were largely used to increase my familiarity with the entrepreneurs, to inform the interviews and to provide a better understanding of the entrepreneurs' progress. Table 3 provides additional information on startups in Study I.

Table 3

Description of entrepreneurs, their startups and data collection efforts

Interviewees	First interview	Second interview	Industry
Two co-founders	Over Skype	Over Skype	Collectibles trading
Three co-founders	Over Skype	Over Skype	Online book publishing
Two co-founders	Over Skype	In person	Idea management solution
Three co-founders	Over Skype	Over Skype	Interactive event management
Founder	In person	Over Skype	P2P physical items lending
CEO	In person	In person	Interactive visualization system
CEO and founder	In person	In person	Industrial measurement solution
Two co-founders	In person	In person	3D scanning technology
Two co-founders	In person	Over Skype	Personal styling app
Two co-founders	In person	In person	Physical interactive toys
Three co-founders	In person	In person	Home energy management

3.2.2. STUDY II: STARTUP CAMP

Similar to Study I, Study II was conducted in the context of an accelerator program with an important difference. While the Born Global program focused on fairly developed startups, Startup Camp recruited startups in their early stages. In its ninth cohort, the program aimed to help startups to find a fit between their ideas and a customer segment willing to pay for the offering. The program initially consisted of 17 entrepreneurial teams and 41 entrepreneurs. The teams were composed of at least two entrepreneurs and

were encouraged to participate in all the activities scheduled. There was a variety in age, gender, education and experience among the participating entrepreneurs. The accelerator program was included three phases, each of which lasted for five weeks. The first two phases focused largely on educational lectures and coaching activities. At the end of the second phase, the organizers and coaches qualified 10 teams to proceed to the third phase during an informal demo day. Close interactions between coaches and entrepreneurs continued throughout the last five weeks and the program concluded with a public demo day in front of a panel of potential investors. The winner of the camp who was voted by the coaches, investors and members of the public was offered an investment round and a sponsored trip to Silicon Valley. Startup Camp followed a similar set of content to the Born Global program.

3.2.2.1. DATA COLLECTION

The empirical evidence in Study II was collected through ethnographic field research during spring and summer 2016. This included non-participant observations, in-depth semi-structured interviews, weekly qualitative questionnaires, cohort's public Slack channel, and field notes taken from coaching sessions observations, lectures and inspirational seminars. During the fifteen weeks that the accelerator program ran, I was physically present at the accelerator and followed most of the activities. Nearly all the lectures, inspirational seminars and coaching sessions were recorded. For the sessions that I could not attend myself, a colleague recorded in my place. As there were three concurrent coaching sessions, I attended one and recorded the other two sessions, listened to them later and took detailed notes. 10 interviews with the lead entrepreneurs of the startup teams who proceeded to the third phase and six interviews with all the six coaches were conducted. Interviews lasted approximately 80 minutes, on average, and were recorded and transcribed verbatim. Three sets of qualitative questionnaires were sent on a weekly basis, one at the beginning of the week, one after the coaching sessions and one after the lectures and inspirational seminars. Entrepreneurs were asked about the activities they had undertaken, their learning, and their plans for the upcoming week. All the public interactions of the entrepreneurs with their coaches and other entrepreneurs documented on the program's Slack channel were monitored and gathered for further analysis. Table 4 provides additional detail on the data sources.

Table 4

Empirical data		
Data type	**Sources of data**	**Details**
Interviews	6 coaches	8 hours
	12 entrepreneurs	11 hours
Observations	12 group coaching sessions	12.6 hours
	7 lectures and 6 seminars	20 hours
	Discussions between coaches during pre-program selection meeting	2 hours
		3 hours
	Discussions between coaches during mid-program selection meeting	4 hours
		3 hours
	17 elevator pitches during demo day at the end of phase 2 10 15-minute pitches during final demo day	
Presentations	PowerPoint slides	27 slide decks
Messages and discussions	Slack channel communications	40 pages
Qualitative questionnaires	3 sets of weekly online questionnaires	471 data points
Researcher's notes	Non-participation observations in the program	65 pages
Recordings	27 group coaching sessions	20 hours

3.2.3. DATA ANALYSIS OF EMPIRICAL STUDIES

I followed a similar data analysis process for both Study I and Study II. All the recorded interviews and important sessions were transcribed. The transcriptions and other collected empirical material were then compiled as a project and imported into Atlas.ti, a qualitative data analysis software. This allowed a more effective coding process by way of tracking emerging labels and categories and linking concepts to respective statements. The analysis of data in this dissertation can be characterized as iterative as insights emerging from the data were held up against published research. In line with Alvesson and Sköldberg (2000), this provided a way to re-visit the data with categories and ideas inspired by theory. Through an open coding process (Strauss & Corbin, 1998), transcripts were broken down into meaning units. Meaning unit is the smallest, independent piece of text that conveys a distinct message to reader (Giorgi, 1985). In line with Gioia et al. (2012), each meaning unit was assigned a tentative label or a simple descriptive phrase as close as possible to the terms and language used by the interviewees. Based on common denominators in terms of the main message behind each label,

the labels were grouped under a large set of tentative categories.

When revisiting these tentative categories, some remained intact, those that were found to be similar in content were merged to form new larger categories and others were divided into more detailed categories. The decisions were made based on three simple rules and heuristics: if the category was inclusive in its content, that is, it included all the statements, the category stayed intact; if the category did not fully contain all the existing statements, the category branched out and formed a new category; and if two or more categories contained the same or very similar content, they were merged and created a new larger category.

3.2.4. LIMITATIONS AND METHODOLOGICAL CONSIDERATIONS

There are a number of limitations to the empirical studies in this dissertation. Due to the explorative nature of the studies, it would be somewhat of a stretch to make solid generalizations from these empirical studies. For Study I**,** the reliance on interviews at two points in time as the main source of data can be problematic. A longitudinal design would have provided more nuanced insights in relation to the influences of the lean startup methodology. Moreover, reliance on data from one Swedish accelerator posed limitations in terms of generalizability. The findings presented in Paper I, therefore, provide limited insights into how a novel, understudied phenomenon influences the process of venture creation. Thus, there is indeed a need for more research in contexts other than Sweden and in environments other than accelerators.

For Study II, while the ethnographic nature of the study helped to investigate the relationships between entrepreneurs and coaches under the influence of the lean startup methodology in a more detailed manner, it was not immune from interpretations. As a significant amount of data collected as part of this study is grounded in observation data, in-depth interviews were conducted in an attempt to corroborate my understanding of the encountered events with the lived experiences of the entrepreneurs (Berglund, 2015). The issue of generalizability in Paper III resembles that of Paper I. Similarly, additional research is required to explore the unique relationship between entrepreneurs and their coaches both in accelerators and outside such normative contexts.

Finally, this dissertation is by no means a proponent of any one specific en-

trepreneurial method. In relation to the choice of the lean startup methodology, the decision was warranted by the fact that it is a contemporary phenomenon and is largely understudied. This is amid its increasing popularity among entrepreneurs and accelerators. The unsubstantiated claims of its proponents (and the potential of harming instead of helping) and the sheer disinterestedness of entrepreneurship scholars in trying to understand the widespread use of the lean startup methodology encouraged this choice. However, it is important to study and understand the use of other entrepreneurial methods in the real world to allow for comparison and contrast, both for the theoretical dimensions and their pragmatic validity.

3.3. THEORETICAL STUDIES

To compile a list of papers that fit the notion of guided action, a total of 869 papers published in two main entrepreneurship journals—Journal of Business Venturing (JBV) and Entrepreneurship Theory and Practice (ETP)–Starting with Shane and Venkataraman's (2000) pivotal AMR paper, as it reflects new direction in entrepreneurship research, were indiscriminately selected. By setting a carefully formulated set of inclusion criteria, abstracts to all the papers were closely read. The inclusion criteria were grounded in Simon's view of design as taking place at the interfaces between inner and outer environments (Simon, 1996). For our purposes, this meant that the papers should, in one way or another, address the relationship between individual (e.g., founder or founders, investors and coaches), organization (e.g., ventures, firms, and teams), and the environment (e.g., markets, industries, and government institutions). Papers that solely focused on individuals, organizations, or environments were not included as the aim was to address the interfaces of individual-organization, organization-environment, and individual-environment. Moreover, only papers that discussed the nature of these interfaces rather than correlations between them were considered for review. This allowed a focus on papers that specified the underlying principles giving rise and forming these interfaces. In addition to the review, a selection of papers and books that were already known to me were added to the pool of papers.

EXTENDED SUMMARY OF APPENDED PAPERS

4. EXTENDED SUMMARY OF APPENDED PAPERS

This dissertation is partly grounded in four appended papers. This chapter presents each paper briefly while the full versions appear at the end of the Kappa. The summary presentation follows the chronological order of the conduct of the studies as part of this dissertation. Each section expands on the research purpose, major findings and contributions of each paper and offers general conclusions.

4.1. PAPER I

Entrepreneurship as Design:
A Literature Review and Typology

To facilitate attempts to–theoretically and practically–make sense of entrepreneurship as a complex and emergent process, Paper I makes an argument for complementing the process perspective with an explicit focus on entrepreneurship as design. By adopting Simon's (1996) definition of design, the paper undertakes a systematic review of the literature within the field of entrepreneurship–which takes the entrepreneurial phenomenon as a design problem–to identify central themes, constructs, and interesting issues. This allows to both identify a number of aspects (e.g., the role of planning or the relations with external stakeholders and the environment) and group up them to form two ideal types. These ideal types have the potential to both clarify the essential aspects of entrepreneurship as design in a parsimonious way and, at the same time, highlight the inherent complexities this perspective exhibits. These two ideal types are termed experimentation and transformation. The choice of these terms reflects the goal of capturing the essential gist of each strand of theory as part of the systematic review. Meta-theoretically, experimentation is closely related to realism. It assumes that the world exists independently of individual beliefs and that entrepreneurs can attain better and more accurate information through systematic methods of information gathering. Conversely, transformation resonates with ideas from social constructivism. New transformations are seen to emerge through actions and interactions whereby loosely knit coalitions of actors engage each other in ways that transform heterogeneous identities, resource-environments and aspirations into new products, organizations, and institutions. Theoretical-

ly, these ideal types highlight the fundamental differences between theories that are often lumped together.

Additionally, to develop these ideas further, Paper I proposes a typology. The typology is then used to compare and contrast the two ideal types. The comparison relies on six aspects: the nature of uncertainty (epistemological or ontological), the role of vision (essential or incidental), the relation to external stakeholders and the environment (transactional or generative), the purpose of behavioral principles (analysis or synthesis), the locus of control (centralized or distributed) and the character of individuals (visionary or docile). While entrepreneurs may, for pragmatic purposes, employ aspects of experimentation and transformation in their daily activities, this is no excuse for scholars to ignore the highlighted, important differences.

4.2. PAPER II

Enacting the Lean Startup Methodology:
The Role of Vicarious and Experiential Learning Processes

The phenomena of prescriptive accelerators and the lean startup methodology are spreading rapidly. Building on insights from Empirical Study I, Paper II explores how the prescriptions of the lean startup methodology are enacted in the pedagogical setting of a prescriptive accelerator program. The goal is to shine a light onto the mechanisms by which these prescriptions are acquired and then utilized by entrepreneurs, and to detail the implications of adhering to the lean startup methodology. Employing a phenomenological interview-based study design, data was collected at two points in time to allow for the capture and comparison of changes in entrepreneurs' ways of thinking and acting. The insights gathered suggest that through two distinct modes of vicarious and experiential learning, the prescriptions of the lean startup methodology are acquired, internalized and consequently practiced by entrepreneurs. The paper further highlights the modifications to entrepreneurs' governing variables and action strategies as well as the resulting consequences of these modifications. This provides insights into possible outcomes of following the lean startup methodology in the context of an accelerator that adheres to a systematic entrepreneurial method.

This paper contributes to our understanding of the under-studied and novel phenomena of the lean startup methodology and prescriptive accelerators. This paper com-

plements the prevailing understanding of entrepreneurial learning as being largely experiential by accounting for the vicarious learning processes that occur in pedagogical settings such as prescriptive accelerators. It, therefore, shows that prescriptive accelerators provide unique learning situations where the combination of vicarious and experiential learning impacts business development activities. Additionally, it provides a model for entrepreneurs' theory of action that is shaped through the interactions between the lean startup methodology and the two modes of vicarious and experiential learning.

4.3. PAPER III

Comparing Effectuation to Five Other Entrepreneurial Methods Along Nine Conceptual Dimensions

There has been recent interest among entrepreneurs and entrepreneurship students in contributions that aim to explicitly guide entrepreneurial action. Both scholars and practitioners have attempted to meet this demand by introducing several entrepreneurial methods. This has, however, led to an abundance of unrelated methods with varying degrees of rigor and relevance. In an attempt to organize and bring clarity, this paper conducts a detailed comparison of effectuation with five other entrepreneurial methods (discovery-driven planning, prescriptive entrepreneurship, business planning, lean startup methodology and design thinking) along nine conceptual dimensions (uncertainty management, resource management, knowledge expansion, redirection power, learning focus, iterative process, stakeholder interaction, team collaboration and value creation). By applying two conceptual frameworks, the core underpinnings and foundational constituting elements of each entrepreneurial method are highlighted. In addition to uncovering similarities and differences between the compared methods, some key implications for effectuation are identified. The strengths of effectuation on a theoretical level could be used to develop other entrepreneurial methods and the strengths of other entrepreneurial methods could be used to remedy two potential weaknesses in effectuation. These weaknesses are a lack of behavioral tactics and limited applicability in later stage venture development efforts. The findings from this paper have the potential to aid entrepreneurship scholars and practitioners to improve and amend their prescriptions and open up avenues for the development of new entrepreneurial methods that are both rigorous and relevant.

4.4. PAPER IV

Entrepreneurial Methods as Structuring Tools for Entrepreneur-coach Relationships: The Case of the Lean Startup Methodology in a University-based Accelerator

Accelerator programs have begun to move away from business planning approaches and adopt the lean startup methodology as their main organizing framework. Consequently, accelerators have had to adapt their services to cater to the new conditions. As part of this adaptation, the supportive and developmental role of coaches has to change–from the role of the coach as a mentor and vehicle of knowledge transfer in line with business planning, to coach as a facilitator of a hypothesis-testing practice. Despite wide recognition of the importance of coaching, there is a lack of knowledge about the role of coaches in accelerators under both cases of business planning and the lean startup methodology. Due to the novelty of the lean startup methodology, this lack of knowledge is arguably more pronounced for accelerators that are explicitly organized in line with the lean startup methodology and adhere to its prescriptions. Through an ethnographic study combined with interviews, The paper deconstructs the dynamics of coaching practices in the context of a university accelerator. The findings underscore that the lean startup methodology has a strong influence on how productive entrepreneur-coach relationships can evolve and how this can facilitate vicarious learning among entrepreneurs. In addition to this, the findings suggest that the prescriptions of the lean startup methodology impact coaching practices on three aspects of form, content and context.

Moreover, the findings show that the introduction of the lean startup methodology creates a conflict between the collected insights from customers and the (perceived) authority of the coaches. The challenges this may cause for the entrepreneurs' progress and entrepreneur-coach relationships are discussed. The paper contributes to the entrepreneurship literature by highlighting the importance of the role of coaches and the challenges of the design of accelerator programs in line with the lean startup methodology. While coaches' experience is a significant factor in the interactions guiding entrepreneur-coach relationships, the inclusion of the lean startup methodology poses important questions in relation to their role in guided and prescriptive environments. Paper IV offers possible avenues to accommodate such dilemmas and emphasizes the need for newly defined coaching assignments within these programs.

DISCUSSION

5. DISCUSSION

"In order to learn entrepreneurship,
one must do entrepreneurship."
Neck, Greene & Brush (2014)

Chapter 5 has three main thematic parts that outline and discuss the findings of papers in light of the research purpose and prior literature on a slightly higher level. In what is to follow, first, a short note provides an introduction and elaboration on the notion of entrepreneurial prescriptions. Second, the form of entrepreneurial methods is laid out and an organizing framework is introduced. Third, the content of entrepreneurial methods is presented along nine dimensions. Fourth, application of entrepreneurial methods and its consequences are discussed. Finally, a brief reflection on these parts concludes the discussion chapter.

5.1. ENTREPRENEURIAL METHODS

As successful entrepreneurs appear to spend more time on concrete action than planning activities (Johannisson, 2011), devising effective ways to guide entrepreneurial action is imperative. Scholars who engage in teaching entrepreneurship have probably experienced first-hand that many of their students are less than interested in learning the 'academic and theoretical' aspects of entrepreneurship and entrepreneurial action. Entrepreneurship students, instead, care more whether the knowledge they receive as part of their participation in entrepreneurship courses and programs can be put into practice. They ponder whether such knowledge can help them become successful entrepreneurs by developing entrepreneurial judgment (Neck et al., 2014). Treating this issue through systematically educating and training (aspiring) entrepreneurs could equip them with the relevant knowledge to better navigate uncertain entrepreneurial environments and is indeed a step forward in reducing the theory-practice gap in entrepreneurship. Entrepreneurs would, therefore, engage in entrepreneurial practices that are purposeful, guided and strategic (Klein et al., 2012).

While many business and management-related disciplines such as finance, organi-

zation sciences, marketing and accounting[14] have embraced and are partly defined by their prescriptive nature (Fiet, 2008), entrepreneurship scholars have not yet assumed the task of systematically providing practical knowledge to guide entrepreneurial action. It is, therefore, incumbent on entrepreneurship scholars to produce tested and testable actionable knowledge that seeks to help entrepreneurs and entrepreneurship students to become more entrepreneurial and to act more entrepreneurially (Venkataraman, Sarasvathy, Dew, & Forster, 2012).

Given recent trends in the field of entrepreneurship, it may be time to embrace the need for prescriptive knowledge in the form of entrepreneurial methods. Entrepreneurial methods could be seen as an effective means of empowering (aspiring) entrepreneurs and entrepreneurship students so that they can advance and excel in their entrepreneurial endeavors. This is achieved by addressing various aspects of entrepreneurship in a systematic and strategic way instead of relying on luck or trial and error. For these entrepreneurial methods to have real prescriptive value, their prescriptions should in all aspects be "theoretically-driven and empirically-tested" (Fiet, 2008:11).

However, before we can engage entrepreneurial methods with the potential to gather the isolated prescriptive contributions and help to bridge the theory-practice gap, we need to develop a deeper and more detailed understanding of those methods. We need to learn more about how they are organized and structured, what the behavioral content of their prescriptions are, and how they are applied in real life situations as well as what can be learned from their application. The efforts to conceptualize, structure and organize entrepreneurial methods resulted in an organizing framework (form), two ideal types and a taxonomy of dimensions covered (content), and also insights into how they are employed by entrepreneurs (application).

While entrepreneurial methods can be considered scripts for action, they can also be seen as pointers for and indicators of future events (cf. Argyris, 1996c). In other words, in the case of successful conduct of prescriptions as part of entrepreneurial methods, the projected outcomes of those specific sets of prescriptions can be used to trace the process or determine which specific prescriptions were indeed followed. This is by no means to imply that entrepreneurial prescriptions can be accountable for every action undertaken, but rather that they allow for identification of the trajectory of action. In the following, I elaborate briefly on what is meant when the notion of 'en-

trepreneurial prescriptions' is used in this dissertation.

5.1.1. ENTREPRENEURIAL PRESCRIPTIONS

In this dissertation, 'entrepreneurial prescription' is used to simply refer to the set of principles and instructions that aim to guide entrepreneurial action, while a collection of them forms an entrepreneurial method. It is a directive sense-giving and sense-making aid for entrepreneurs to understand the problem-space in which they operate and to provide order to attempts to engage in and act on venture ideas. Following entrepreneurial prescriptions leads to behavioral processes that demarcate the conditions and assumptions surrounding the venture idea at hand. Entrepreneurial prescriptions can, therefore, delimit the universe of possible alternatives and suppress unreasonable action in the face of uncertain situations. By doing so, such prescriptions allow entrepreneurs to effectively exercise their subjective judgment.

Entrepreneurial prescriptions are concerned with three main issues: 1) fit with both structured and ill-structured aspects of the entrepreneurial process, 2) the exercising of entrepreneurial judgment, and 3) the actionability that they provide. The fit with structured and ill-structured aspects of entrepreneurial action reflects the need for entrepreneurial prescriptions to help entrepreneurs to navigate the dual aspects of the problem-space for which they provide direction. Entrepreneurial judgment is a component of the decision-making process in uncertain entrepreneurial contexts (Foss & Klein, 2012; Langlois, 2007). And, actionability refers to the potential capacity of entrepreneurial prescriptions to provide direction for (immediate) progress and arrive at a projected outcome (Cross & Sproull, 2004).

Depending on the characteristics of the problem-space, entrepreneurial prescriptions could be helpful in three ways: they provide strategies to guide, replace, or delimit judgment and contain its prominence (an elaboration of this is found in section 5.3.1). As such, entrepreneurial prescriptions can be broad or specific, but nonetheless provide the necessary pointers to aid entrepreneurs in making subjective assessments of entrepreneurial situations, and to proceed with the behavior that these prescriptions intend to incite.

5.2. FORM OF ENTREPRENEURIAL METHODS

5.2.1. INTRODUCTION OF AN ORGANIZING FRAMEWORK

The careful review of nine entrepreneurial methods and their commonalities resulted in interesting findings on the form and structure of these methods and insights into how their prescriptions are organized[15]. These findings allowed for and aided the development of an organizing framework that highlights the building blocks of these entrepreneurial methods. To the best of my knowledge, this framework is the first attempt to clearly and succinctly capture the related theoretical and practical aspects of entrepreneurial methods. With the help of this framework, entrepreneurial methods can be usefully broken down into three hierarchical levels that represent both cognitive and pragmatic aspects involved in new venture creation processes. This proposed organizing framework consists of a trio of terms in the scheme of entrepreneurial methods: *logic, model,* and *tactics*. Figure 1 presents a schematic of this three-tier framework.

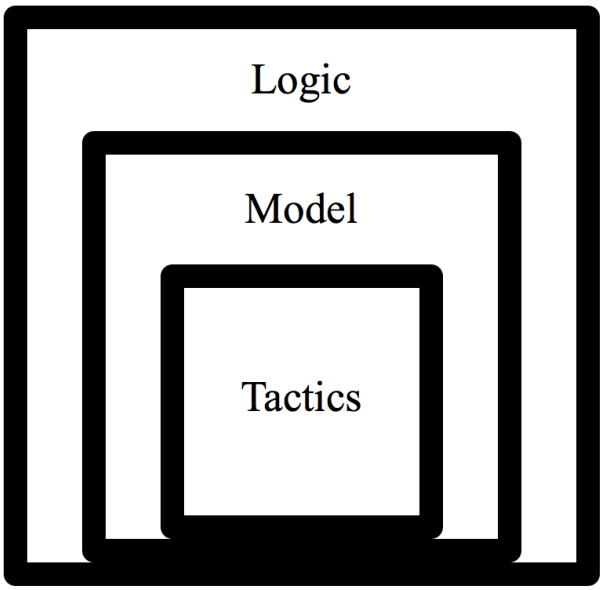

Figure 1 - The hierarchical three-tier framework

Logic is the overarching theoretical and cognitive rationale that orients venture creation activities. It highlights a general point of view or philosophy that is arguable but not necessarily provable. Logic is the level at which a set of overall axioms and rules are specified, and the general direction of the required activities is delineated. Among other

things, logic embodies theoretical and philosophical assumptions such as the notion of uncertainty (epistemological or ontological), the view of the future (predictable or completely unknowable), the nature of the entrepreneurial process (discovery or creation), epistemological discussions (realism or constructivism), and the view of current and future knowledge. It helps to outline entrepreneurial action and operates as a reference point for the theoretical foundations of entrepreneurial methods. Since it deals with fundamental aspects, a clear logic provided by entrepreneurial methods arguably helps entrepreneurs to relate cognitively to the entrepreneurial process. It further allows them to view an entrepreneurial method as a cognitive, orienting device for their activities throughout the entrepreneurial process.

Model consists of related courses of action for conducting the activities deemed necessary to implement logic. Model is the level at which either a series of related and consecutive steps or a number of high-level heuristics for applying theoretical aspects of the entrepreneurial process are provided. It acts as an overall plan for the orderly conduct of activities that is based on an overarching logic that it should not contradict. If procedural, the level of model contains an organized sequence of activities and interactions with a clear order for action that shapes and forms the entrepreneurial process. In comparison, if heuristics-based, model provides a general direction rather than specific activities. The level of model is bridge between high-level cognitive assumptions and low-level practical activities as part of the prescriptions of entrepreneurial methods. Findings from the review suggest that not providing prescriptions in the form of sequential steps in relation to certain aspects of the process can potentially render an entrepreneurial method less actionable and, therefore, more challenging to adhere to.

Tactics represent a collection of tools, techniques and/or practices aimed at advancing specific aspects of the entrepreneurial process, guided by model and in line with logic. They often cater to certain steps or heuristics of the model. Different entrepreneurial methods employ a range of different tactics; some offer large toolboxes of tactics and others focus on providing more abstract prescriptions. Different tactics provided may seem to be unrelated as they focus on different aspects while collectively contributing to the entrepreneurial process in its totality. Tools, techniques and practices as part of tactics are often detailed and specify the context of use and outcome(s) of action. They are implementational and are geared toward accomplishing immediate objec-

tives. As tactics link the abstract orientation dictated by logic to ensuing activities and give rise to entrepreneurial action, they are what is visible to outsiders and can be captured by observational studies. Many of the reviewed entrepreneurial methods provide a set of tactics related to their underlying logics and in line with their proposed models. Table 5 demonstrates how the reviewed entrepreneurial methods are mapped into these three hierarchical levels[16].

Table 5

A structured representation of entrepreneurial methods on the levels of logic, model and tactics

	Logic	**Model**	**Tactics**
Discovery-driven planning	Uncertainty can be reduced by systematically converting assumptions to knowledge and redirecting activities in the face of emerging understanding.	Six areas of discovery-driven planning realized through 10 steps	Reverse income statement, targeted experiments
Effectuation	As future outcomes that are driven by human beings are largely unpredictable, instead of prediction, control should be at the core of all the activities.	Five heuristics of effectuation, effectual cycle	N/A
Disciplined entrepreneurship	In pursuit of entrepreneurial opportunities, instead of perpetually fighting uncertainty, entrepreneurs should manage uncertainty through a disciplined approach.	A set of prescriptions accompanied by a number of heuristics in a loosely ordered manner	Targeted experiments
Evidence-based management	In situations characterized by high degrees of uncertainty, the quality of decisions could be increased by relying on data and feedback processes in line with an ‘attitude of wisdom’.	A set of heuristics with no specific order	N/A
Prescriptive entrepreneurship	Instead of searching the entire world as their search space, entrepreneurs should focus their search only on sources of possible matches with what they already know and their consideration set.	A punctuated process model with clear order and structure	Information channels, consideration sets
Entrepreneurial bricolage	Through recombination and reusing of idiosyncratic resources at hand, the (resource) uncertainty of the environment can be significantly reduced.	A set of heuristics with no specific order	N/A

Business planning	Future outcomes are largely unknown but predictable through careful examination of trends and available historical data.	Six steps of business planning	Focus groups, PEST model, SWOT analysis, 7S model, financial prognosis, nominal ranking
The lean startup methodology	Uncertainty is reducible by employing a systematic and scientific approach to formulating working guesses about the idea and testing their validity and feasibility.	Build-measure-learn loop, the lean startup flowchart	Targeted experiments, customer interviews, physical prototypes, concierge, A/B tests, fake door tests, business model canvas
Design thinking	The adoption of a systematic approach to problem formulation and validation increases the likelihood of novel and innovative solutions in line with the needs and wants of customers.	The five steps of design thinking	Physical prototypes, user interviews, innovation flowchart, question ladder, design thinking mixtape

The organizational key to the proposed hierarchical framework is that tactics are followed in ways to ensure that model is consistent with the rationale of logic. Logic concerns issues that need to be addressed at a higher level of thought and cognition while tactics refer to specific tools and techniques at a lower level of action and interaction. Model is at an intermediate level between thought and action. However, the idea is not to reduce these levels to either cognition or action and imply that cognitive aspects are only characteristic of logic and not the other two. Instead, it is to say that logic mainly concerns the cognitive aspects of the entrepreneurial process without underscoring specific courses of action. Similarly, the statement does not negate the role of thought at the level of tactics but, instead, highlights the more pronounced role of action at that level. Moreover, model acts as a bridge between high-level cognitive ideas and low-level practical activities, often but not necessarily through a sequential set of prescriptions that assume order. Figure 2 illustrates how these levels relate to each other and to thought and action.

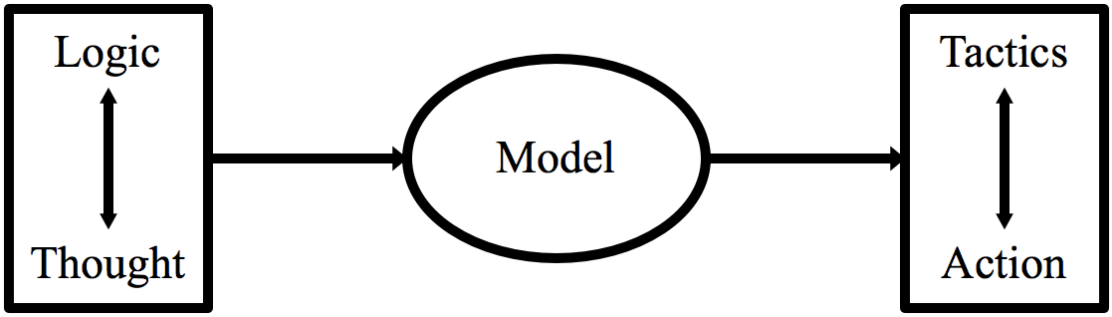

Figure 2 - The relationships between the three levels

Given the nature of the entrepreneurial process, smaller variations in the logics of entrepreneurial methods and larger variations in models and tactics are expected, as they are often the indicators of the context of use in practical terms. Logic can be more general and capable of providing a (sense of) holistic direction while tactics are rather detailed and context-specific. Figure 3 illustrates a continuum of these variations in terms of the level of abstraction, the immediate practicality and the general or domain-specific nature of entrepreneurial prescriptions corresponding to these three levels.

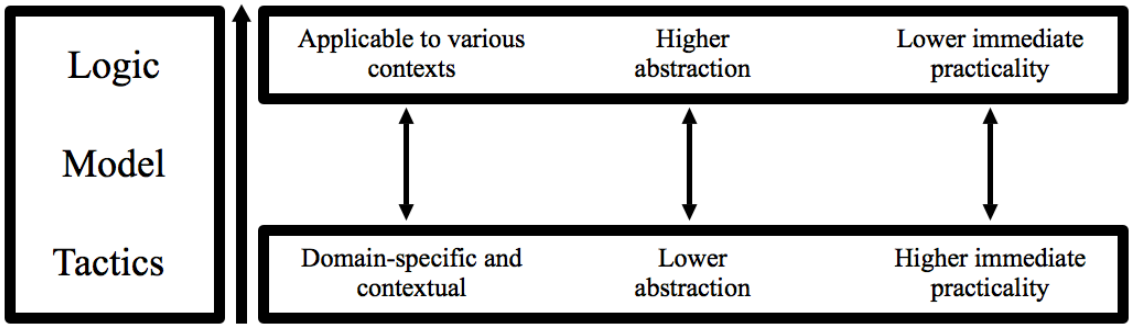

Figure 3 - Logic, model and tactics in relation to the level of abstraction, the immediate practicality and general or domain-specific nature of entrepreneurial prescriptions

5.2.2. A SHORT NOTE ON THE RELEVANCE OF THE ORGANIZING FRAMEWORK

Among others, the literatures on language teaching-learning (Anthony, 1963; Rodgers & Richards, 2001), firm strategy (Casadesus-Masanell & Ricart, 2010), business research (Bryman & Bell, 2011), total quality management (Dean & Bowen, 1994), and design

thinking (Carlgren et al., 2016) have benefited from conceptualizing their ideas using multiple-tier frameworks dealing with abstract and concrete aspects of their focus. For instance, the language teaching-learning literature splits the teaching-learning framework into the three components of approach, method and techniques (Anthony, 1963). Under this framework, following a hierarchical organization, approach includes method and techniques, and method includes techniques. Similarly, total quality management scholars characterize this approach by its principles, practices and techniques (Dean & Bowen, 1994). There is a similar hierarchical relationship in total quality management. Principles are applied through practices and practices are supported by a wide array of techniques. While these attempts were largely anchored to theoretically outline and clarify these theories, the proposed three-tier framework is both theoretically useful and practically relevant to data collection and analysis efforts.

As part of the ethnography study conducted (Empirical Study II), the three-tier framework was used to analyze the activities included in the accelerator program. It was instrumental in determining how the lean startup methodology was communicated to the entrepreneurs, and whether there were incoherencies and inconsistencies in relation to the transferred knowledge. The framework provided insights in respect to the suitability of designed learning situations and planned activities to the overarching logic of the lean startup methodology as reference point. Moreover, the framework allowed nuanced insights to be elicited during interviews and informal chats with the entrepreneurs and their coaches. The framework was shown to the entrepreneurs during those interactions and provided them with a vocabulary to verbalize their perceptions and lived experiences. By communicating these insights back to the accelerator manager, some of the activities and services offered to entrepreneurs were restructured. The following statements show how the framework was helpful in learning more about the application of the lean startup methodology in the studied accelerator. The framework helped to elicit statements that revealed coaches' and accelerator organizers' lack of focus on tactical and practical issues.

> Key quote: "**As I experienced it, the program was designed in a way that mainly includes logic, some model and almost no tactics**."

> "We wanted more hands-on and applicable knowledge in relation to what we should actually be doing."; "They [coaches] did not provide us with tools and I did not know of tools that could help me validate my idea."; "Should they not have given us more practical advice on how to validate problems instead of stuff that we were never going to use?"; "Coaches knew the lean startup methodology well but did not mindfully attempt to provide us with tools necessary to be able to go through the process they had prescribed."; "How do we validate the problem? We did not have any idea how and where to begin."; "We really did not know how to prepare an A/B test. It was very seldom that we got that kind of exact hands-on advice."; "They told us what we should do and why we should do it, but they did not tell us how to do it really."; "It was all about why we should and why we should not do this or that."; "In the beginning, we were maybe hoping to get more practical advice and practical guidance."

5.3. CONTENT OF ENTREPRENEURIAL METHODS

In pursuit of making sense of entrepreneurial methods, a close examination of what these methods offer as content is an obvious second step. Efforts (Paper I and III) to do so as part of organizing entrepreneurial methods led to a typology that clarifies and structures some of the common content of entrepreneurial methods. The typology is composed of nine dimensions: the view of uncertainty, the management of resources, the role of current and future knowledge, redirection power, learning from feedback, the iterative nature of the process, interactions with external stakeholders, the importance of multi-disciplinary teams and the emphasis on value creation. The dimensions illustrate important and critical aspects that entrepreneurial methods provide as part of their prescriptions. They reflect various theoretical underpinnings and conceptual foundations that influence how these entrepreneurial methods are formulated, to which aspects they give more prominence, and what the nature of prescribed directives are. These dimensions could be effectively mapped onto the levels presented in the previous section but are not necessarily exclusive to any one level.

Due to distinct foundational assumptions, reviewed entrepreneurial methods ex-

hibit differences among several of these dimensions, some stark and some quite subtle. By mapping entrepreneurial methods along these nine dimensions, two ideal archetypes termed emerge: 'transformation' and 'experimentation'. Transformation represents principles of thought and action that guide entrepreneurs as they collectively co-create products, organizations and markets through an emergent social construction process grounded in available means. Experimentation represents principles of thought and action that serve to provide guidance through the process of designing, running and evaluating experiments to test the entrepreneurs' vision and critical assumptions (a more elaborate presentation of these ideas can be found in Paper I).

By deconstructing methods into their components, this organization could suggest the relevance of each archetype to specific contexts where entrepreneurial methods match the characteristics of the venture ideas pursued and the inherent qualities of the environment. For instance, if uncertainty in the environment is perceived to be due to the unknowability of future outcomes, the transformational methods provide a more suitable and realistic approach to guiding entrepreneurial action. Additionally, experimentation methods regard uncertainty as lack of information and, therefore, reducible through systematic information gathering endeavors. This makes them more reliable for situations where information can be collected through interactions with others external to the venture.

Moreover, since transformation-based entrepreneurial methods are less constrained by defined goals at the outset, they may be better suited to guide entrepreneurial action in the early stages of the venture development process. On the other hand, experimentation-based entrepreneurial methods could be employed when entrepreneurs have reached some degree of certainty with particular aspects of the entrepreneurial process. This suggests that entrepreneurs could benefit from employing entrepreneurial methods from each archetype in different stages of the venture development process. Figure 4 illustrates the schematic of entrepreneurial form and content.

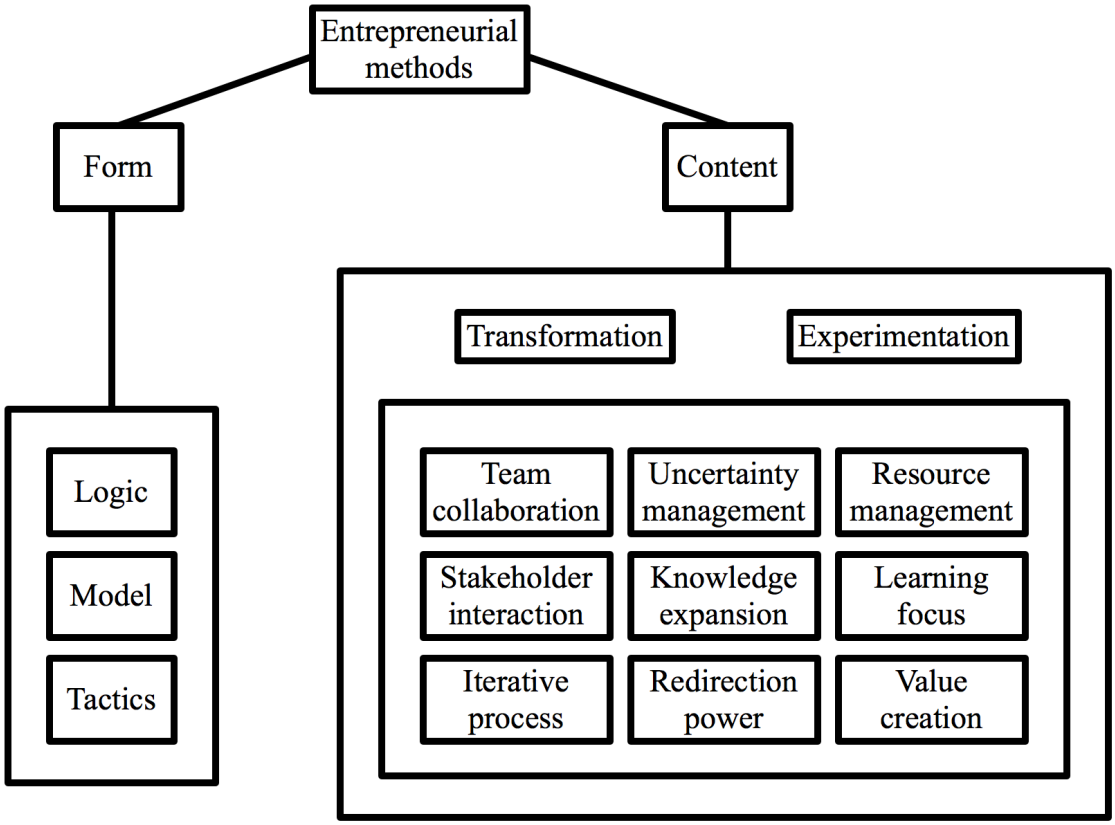

Figure 4 - A schematic of the form and content of entrepreneurial methods

5.3.1. ENTREPRENEURIAL PRESCRIPTIONS AND ENTREPRENEURIAL JUDGMENT

Judgment is the cognitive ability to make decisions in uncertain situations. Uncertainty, if not 'the' cornerstone, is a key conceptual building block of most entrepreneurship theories. This leads to the conclusion that entrepreneurial action–partially or completely–involves various degrees of subjective, entrepreneurial judgment that seeks to facilitate decision-making processes of entrepreneurs. Contingent on the context of action and the characteristics of problem-space, entrepreneurial prescriptions could interact with entrepreneurial judgment to various degrees in three distinct ways: 1) prescriptions to *guide* the exercise of entrepreneurial judgment, 2) prescriptions to *replace* the need for and prominence of entrepreneurial judgment, and 3) prescriptions to *delimit* the role of entrepreneurial judgment.

Transformation methods (e.g., effectuation and entrepreneurial bricolage) assume high degrees of uncertainty and inevitability of the exercise of entrepreneurial judgment (cf. Sarasvathy & Dew, 2013). They, therefore, provide prescriptions to *guide* this exercise. By analogy, experimentation methods (e.g., the lean startup methodology and design thinking) assume that contingent on access to relevant and context-specific information, entrepreneurs can effectively reduce the uncertainty of the problem-space. They, therefore, offer prescriptions that either *replace* the reliance of entrepreneurs on their subjective judgment by means of mechanistic, rule-based strategies, or *delimit* the role of judgment by codifying certain processes that reduce the need for the active exercise of judgment. Entrepreneurial judgment as the outcome of the discussed interplay between entrepreneurial prescriptions and judgment is contained, regulated and guided to various degrees.

Consistent with the above, there are two clear alternatives: 1) entrepreneurial prescriptions as tools to mechanistically guide entrepreneurs and the entrepreneurial process (in the case of experimentation methods) and 2) entrepreneurial prescriptions as tools in the gradual development of entrepreneurial judgment relevant to the entrepreneurial process (in the case of transformation methods). As entrepreneurial methods consist of a set of diverse but interconnected entrepreneurial prescriptions, it is logical to assume that, in various forms, they provide both broader judgmental pointers to advance the entrepreneurial process on a higher logical level (the level of logic in Figure 1) and mechanistic advice on mundane and routinized aspects of the process on a lower tactical level (the level of tactics in Figure 1). It is also possible to speculate that in the case of structured aspects of the problem-space, entrepreneurial prescriptions replace or delimit the exercise of judgment while, in the case of ill-structured aspects, they seek to guide it.

5.3.2. ENTREPRENEURIAL PRESCRIPTIONS GUIDING STRUCTURED AND ILL-STRUCTURED ASPECTS OF THE ENTREPRENEURIAL PROCESS

Take the lean startup methodology as an example. Aspirations and explicit efforts of its proponents have been channeled to portray it as the panacea for advancing many different types of entrepreneurial activities. What is more, its proponents have even con-

vinced others that ideas as part of this methodology are relevant and applicable to large, established firms and organizations as well as government agencies and departments such as the National Science Foundation and the Department of Health and Human Services in the United States. While the likes of Knight and Kirzner have imagined entrepreneurship as a unified black box dealing with and characterized by 'Knightian uncertainty' (Knight, 1921) or 'entrepreneurial alertness' (Kirzner, 1997), I argue that a more nuanced view of entrepreneurship and the unique nature of its problem-space can result in fruitful discussions. That is, depending on the qualities of the venture idea pursued (Davidsson, 2015), the timing of the inception of that venture idea (Lévesque, Minniti, & Shepherd, 2009), the past experience (Krueger, 1993) and prior knowledge (Shane, 2000; Shepherd & DeTienne, 2005) of the individual entrepreneur, the state of the markets and existing technologies (Santos & Eisenhardt, 2009), some aspects of the entrepreneurial process are more and some other aspects are less uncertain.

The entrepreneurial phenomenon, in my opinion, is not a task with a uniform and homogeneous nature, clear boundary conditions, definitely described problem-space or possible optimal solutions (cf. Sarasvathy, 2008 for her conceptualization of the entrepreneurial problem-space). It rather is a task that comprises aspects that are akin to characteristics of both 'structured' and 'ill-structured' problems (Rittel & Webber, 1973). This is to imply that there is a continuum where different aspects in the entrepreneurial process are more or less structured and could be solved by means of tools, techniques or strategies that are designed and employed to solve structured or ill-structured problems. I concord with Dimov's (2017) assertion that entrepreneurship is 'largely' a problem that can be usefully characterized as ill-structured or wicked. I, however, maintain that viewing entrepreneurship as a problem of both structured and ill-structured aspects could provide a more fine-grained understanding that aids the formulation of more useful and practical entrepreneurial prescriptions and entrepreneurial methods.

5.3.3. A NOTE ON THE GENERALITY OF ENTREPRENEURIAL PRESCRIPTIONS

Helping entrepreneurs to advance in their entrepreneurial journey requires prescriptions with different levels of simplicity, generality and accuracy (Weick, 1979) that take into account the characteristics of the problem-space at hand. This viewpoint divides the en-

trepreneurial process into a subset of smaller problems and adopting it would have implications for the residual judgment that any prescription would allow entrepreneurs to exercise. This emphasizes the need for both purely algorithmic prescriptions (such as rules and routines in the sense of Nelson and Winter's (1982) conceptualization of routines) and high-level, holistic heuristics to guide, replace or delimit the exercise of subjective judgment resulting in a sequence of events that constitutes the entrepreneurial process (McMullen & Dimov, 2013). In this vein, the three-tier framework can be beneficial in guiding efforts in providing entrepreneurial prescriptions.

The question worth asking is 'To what extent should subjective judgment be manipulated in entrepreneurial contexts, if at all?'. As entrepreneurial methods are often formulated to include general abstractions and, therefore, applicable to large swaths of situations (at least on the surface), they tend to exclude considerations of the context. I take a stance that favors a balanced and careful combination of both general and context-dependent prescriptions. I also acknowledge that the more prescriptions aspire to be general, the more they ought to strive to guide the successful exercise of entrepreneurial judgment. This necessitates that they be holistic and heuristic-based. The level of abstraction indicates the degree to which the exercise of judgment is left to entrepreneurs. Conversely, the less prescriptions are general and the more they are context-specific, the more they delimit and at times replace judgment. Given the uncertain nature of the entrepreneurial process, they would ought to be specific and algorithmic with clear expected outcomes. Thus, prescribers of entrepreneurial action ought to strike a balance between generality of their proposed prescriptions, the role and degree of judgment exercised by entrepreneurs and the context in which these prescriptions are relevant and applicable.

Figure 5 shows three graphs that visualize the interplay between entrepreneurial judgment and the type of entrepreneurial prescription (heuristic or algorithm-based), the aspect of problem-space (ill-structured or structured) and the level of abstraction of prescriptions (high or low). As an example, the first graph in Figure 5 shows that algorithm-based prescriptions provide room for lower levels of subjective judgment while heuristics-based prescriptions require higher levels of subjective judgment.

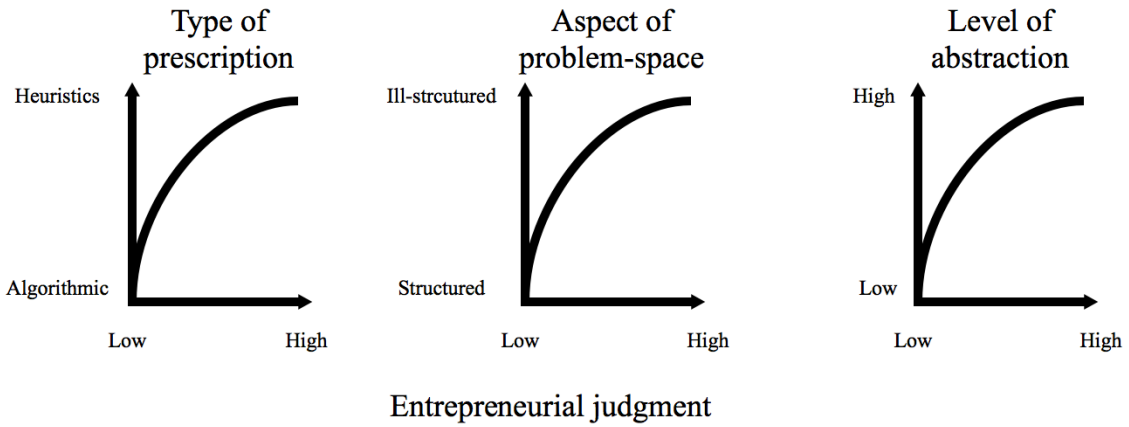

Figure 5 - The relationship between entrepreneurial judgment and the type of prescription, type of problem and level of abstraction

5.4. APPLICATION OF ENTREPRENEURIAL METHODS

After examining the form and content of entrepreneurial methods, a discussion of how and to what effect they are applied in real-life situations and what can be learned from their application is necessary. As the lean startup methodology is arguably the most practiced contemporary entrepreneurial method, informally by individual entrepreneurs and formally at entrepreneurship programs and accelerators (at least in the Swedish and American contexts), the focus of empirical studies was to better understand its application. For reasons that one can only speculate, the practice of other entrepreneurial methods is largely absent from contemporary entrepreneurship milieus in Sweden. Table 5 suggests that the entrepreneurial methods that provide extensive prescriptions at the level of tactics are those adopted and adhered to. Take for instance business planning, the lean startup methodology and design thinking that are prevalent in the entrepreneurship practice. They all provide a fairly comprehensive set of tools and techniques that directly aims to help entrepreneurs to tackle the practical aspects of the entrepreneurial process.

Results from the two empirical studies as part of this dissertation highlight the adoption of principles and prescriptions of the lean startup methodology through vicarious learning processes and experiential processes of single and double-loop learning.

These processes help to explain the modifications of entrepreneurs' theory of action to creating new ventures. Exposure to the prescriptions of the lean startup methodology coupled with the active application of these prescriptions impacted entrepreneurs and their attitudes toward the entrepreneurial process in profound ways. Entrepreneurs internalized many of the fundamental backbones of the lean startup methodology and, as a consequence, perceived the process to be less overwhelming and more manageable. An interesting insight gained from these two empirical studies was the dependence of the lean startup methodology on a formal educational environment. Many of the interviewed entrepreneurs stated that they would not have followed the methodology on their own initiative to develop their venture ideas in attempts to be more systematic. It became clear that the complexity of the lean startup methodology required the assisted transfer of knowledge in a formal environment where the acquisition of principles and prescriptions was the outcome of a collective sense-making effort.

Moreover, the need for this assisted transfer of knowledge impacted the entrepreneur-coach relationships in the context of the studied accelerators. By introducing new ways of thinking and doing, the lean startup methodology had implications on the content, form and context of the entrepreneur-coach dyad. Similarly, misperceptions about complex ideas and concepts as part of the lean startup methodology such as validated learning, pivot, and MVP (Ries, 2011), and failure to effectively transfer them to entrepreneurs was reflected in the empirical evidence. It is important to note that there are no defined and agreed upon guidelines or teaching notes as to how the lean startup methodology should be taught and evaluated. However, the empirical evidence showed that the difficulties that the inclusion of the methodology created in relation to the traditional role of coaches impacted entrepreneurs' subjective impression of the methodology and their perceptions of the guidance they received from their coaches.

5.4.1. ACTIONABLE ENTREPRENEURIAL PRESCRIPTIONS

As stated, prescriptions as part of the three levels of logic, model and tactics, to various degrees, are practical and actionable. Actionability of entrepreneurial prescriptions could depend on the fit they offer between the characteristics of the problem-space at hand, the type of entrepreneurial prescriptions and the degree to which they allow or necessitate entrepreneurs to exercise their subjective judgment. This relates to en-

trepreneurial prescriptions restricting the set of possibilities and assisting entrepreneurs in practicing judgment in the face of idiosyncratic uncertain situations and rendering the prescriptions applicable. Actionability of prescriptions in relation to structured and ill-structured aspects of entrepreneurial methods is contingent on the purpose of those prescriptions. I hold that the general aim of the collection of prescriptions packaged as entrepreneurial methods is to provide a framework or structure under which various degrees of judgment can be exercised and by that, the entrepreneurial process is advanced.

In regards to the structured aspects of the entrepreneurial process, as the desired outcome is defined at the outset, entrepreneurs can be directed toward the outcome through algorithmic and rule-based prescriptions that are akin to step-by-step problem-solving strategies. These prescriptions have the capacity to mechanistically guide entrepreneurs. In this case, the main focus of entrepreneurial prescriptions is to help entrepreneurs to complete an immediate action rather than how to think about the situation at hand. The linearity, detail and clarity of entrepreneurial prescriptions in relation to the context of use would lead to outcome homogeneity, implying that no or limited variation during the process and a uniform outcome can be expected. In relation to the ill-structured aspects of the entrepreneurial process, as neither the process nor the outcome can be detailed at the outset, entrepreneurs would benefit more from receiving holistic, heuristic-based prescriptions. These prescriptions help to develop entrepreneurial judgment so that entrepreneurs are better equipped to decide on optimal courses of action when facing uncertainty. In this case, the main focus of the prescriptions is to help entrepreneurs to develop how to think entrepreneurially rather than what activities to conduct (developing entrepreneurial judgment rather than completing entrepreneurial activities). I argue that prescriptions at the level of logic better fit the more ill-structured aspects of the entrepreneurial process while prescriptions at the level of tactics could be immediately relevant to the more structured aspects of the entrepreneurial process.

5.5. AFTERTHOUGHTS

Entrepreneurial prescriptions delimit the realm of possible solutions and courses of action and, consequently, reduce the overwhelming uncertainty that is inherent in entrepreneurial action. They also have the capacity to provide direction to more effectively make sense of ill-defined entrepreneurial situations by transforming them from largely

indeterminate to mildly determinate and, thus, more manageable and applicable.

An analogy to what Peters and Waterman (1982) termed 'loose-tight control' where imposed structures that seek to centralize certain activities and decentralize others can be instrumental in illustrating the relevance of rule and heuristics-based prescriptions to structured and ill-structured aspects of the entrepreneurial process. Structures that centralize certain activities often come in the form of exact rules, procedures and routines while those that decentralize activities result in the delegation of responsibilities to individuals by drawing on their subjective judgment. I argue that entrepreneurial methods as tools could function as structures of this nature. That is, entrepreneurial prescriptions ought to mechanistically guide entrepreneurs in aspects of the entrepreneurial process that are to a certain extent structured and, therefore, decrease the reliance on judgment. For ill-structured aspects, the prescriptions ought to train the effective exercise of entrepreneurs' subjective judgment. Entrepreneurial methods should not, therefore, be seen as a collection of either purely mechanistic, rule-based or purely subjective, case-by-case heuristics-based prescriptions. Instead, as they relate to human behavior, they should be viewed as an amalgamate of prescriptions that take the less or more uncertain aspects of entrepreneurship into account and include both rule and heuristics-based prescriptions (Bhidé, 2010).

The question worth exploring in the future is how entrepreneurial methods, based on their conceptual underpinnings and theoretical and practical assumptions, could provide a more balanced view of how to learn to think entrepreneurially as opposed to learning to act entrepreneurially. Thinking and acting entrepreneurially, undoubtedly, are attuned and interact with one another, but nonetheless, there is a need for conscious attempts to clearly frame and communicate relevant prescriptions for the thought and for the action of entrepreneurs. One speculation in this regard is that very specific prescriptions are relevant to novices and educational contexts while general prescriptions cater to the need of experts in training them to exercise their judgment more effectively. Moreover, research is needed to gain a better understanding of the interplay between algorithmic entrepreneurial prescriptions and heuristics-based entrepreneurial prescriptions and how they (particularly the former) help the development of entrepreneurial judgment.

Figure 6 summarizes the main discussion points in this chapter and divides the

entrepreneurial process into a problem that is composed of both structured and ill-structured aspects. Structured aspects of the entrepreneurial process can be approached by means of entrepreneurial prescriptions that are less dependent or even independent of the exercise of entrepreneurial judgment. They, therefore, can be addressed by adopting and adhering to rule-based, algorithmic prescriptions. By analogy, in relation to ill-structured aspects, entrepreneurial prescriptions ought to guide entrepreneurial action in (more) uncertain situations as the process and outcome are largely unknown or even unknowable. Provided that, prescriptions would have to capitalize on entrepreneurial judgment by being more general, more abstract and more holistic in the form of heuristics to help individual entrepreneurs to make decisions based on the unique circumstances and context at hand. Note that entrepreneurial methods often include *both* rule-based, algorithmic and heuristics-based, holistic prescriptions and the amalgamation of these two types constitutes entrepreneurial methods.

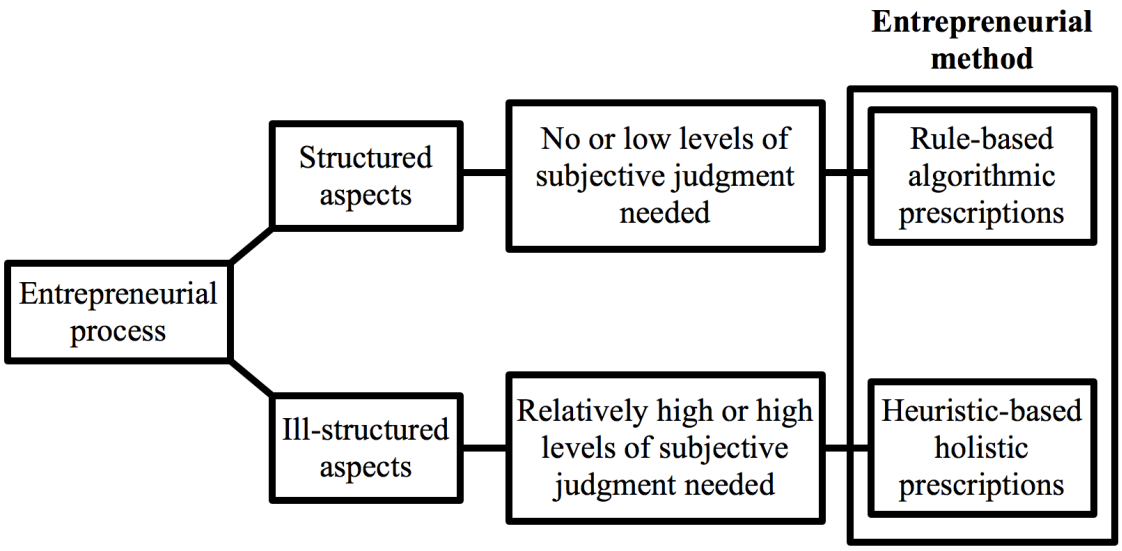

Figure 6 - Suitability of entrepreneurial prescriptions to structured and ill-structured aspects of the entrepreneurial process

CONTRIBUTIONS, IMPLICATIONS AND FUTURE RESEARCH

6. CONTRIBUTIONS, IMPLICATIONS AND FUTURE RESEARCH

In what follows, contributions, their implications and possible avenues for future research are outlined in relation to how entrepreneurial methods are organized, what comprises their prescriptions and insights gathered from their application.

6.1. FORM OF ENTREPRENEURIAL METHODS

One of the important contributions of this dissertation is the proposed three-tier framework. Gathering together the scattered and isolated prescriptive theories of entrepreneurial action and grouping them under the umbrella term of entrepreneurial method allowed for the building blocks of these contributions to come to light. Logic, model and tactics constitute this framework and, by definition, concern theoretical and practical aspects. They, therefore, have the potential to provide both theoretical and practical contributions. The framework highlights where the existing entrepreneurial methods lack required detail or generality suitable for specific conditions and certain contexts. By pointing them out, the framework could provide opportunities for improvements and amendments. As the first attempt to take a closer look into and analyze entrepreneurial methods, the framework offers ways to make sense of entrepreneurial methods and guide new method design efforts. Moreover, the framework is shown to be instrumental in relating and comparing the existing entrepreneurial methods that, despite their theoretical and conceptual overlaps, have been developed in isolation from each other (Arend et al., 2015; Wood & McKinley, 2010).

Additionally, the three-tier framework has practical bearings and could be helpful to the entrepreneurship practice and for practitioners. It could help practitioners to make sense of the advice and guidance they receive in the form of entrepreneurial methods or entrepreneurial prescriptions. This could introduce more clarity and give order to these prescriptions by providing an organizing mental framework so that entrepreneurs can capitalize on the pragmatic and actionable aspects of entrepreneurial methods more effectively. By providing such benefits, the framework could eventually lead to the development of effective training and educational content and be helpful to entrepreneurship education, business incubators and accelerators. The framework could even be instru-

mental in transferring practical knowledge in the form of prescriptive theories into general educational contexts.

Future research could examine the validity and usefulness of the three-tier framework and its proposed levels by testing it as a structuring and organizing aid in entrepreneurship courses and accelerators. Moreover, further research could focus on the importance of consistency among the levels, the (desired) degree of explicitness of entrepreneurial prescriptions at these levels and the order of content introduction related to each level. In other words, future research could pose questions such as 'Is there a need for explicit proclamation of these levels?' or 'Should there be any specific sequence for communicating entrepreneurial prescriptions (e.g., first, the practical and then the theoretical aspects)?'

6.2. CONTENT OF ENTREPRENEURIAL METHODS

Transformation and experimentation as two ideal types of entrepreneurial methods and the nine dimensions that characterize them compose the second set of major contributions of this dissertation. First, by conceptually differentiating between the existing entrepreneurial methods, these ideal types bring theoretical clarity and explicitly delineate two clear directions suggested by the proponents of the existing entrepreneurial methods. In doing so, the ideal types could advance the emerging discourse of entrepreneurship as a deliberate design activity. Second, in relation to the content of entrepreneurial methods, nine identified dimensions encompass what is commonly covered and emphasized across many of the methods. It is worth noting that depending on the origin of each entrepreneurial method (developed by academics or practitioners), more time is spent on outlining the theoretical or practical aspects. These dimensions are contained in the three levels of logic, model and tactics and address the different aspects of the entrepreneurial process.

Moreover, these dimensions shape our understanding of the aspects where these entrepreneurial methods tend to focus on; depending on philosophical, ontological and epistemological assumptions that are central to their theorizing and prescribing. Taken together, these dimensions provide a richer understanding of entrepreneurial behaviors on a theoretical level and promote the assumptions that are either covered in layers of theorization or are briefly touched on. The dimensions represent a pragmatic perspective

on how entrepreneurship can be defined and understood, and could lay the foundation for future articulation of entrepreneurial methods. Additionally, similar to contributions on the form of entrepreneurial methods, by pointing out the dimensions overlooked, insights into the content of entrepreneurial methods offer avenues for further development and the improvement of entrepreneurial methods.

By examining these dimensions, future research could provide insights and recommendations on the suitability of transformation and experimentation-based entrepreneurial methods for specific conditions and contexts. Questions to pose could include 'Are experimentation and transformation methods suitable for particular stages of the venture creation process?', 'What are the conditions in which transformation methods could fare better than experimentation methods and vice versa?', 'Is there a case to be made for mixing and matching transformation and experimentation methods for educational purposes or in real-life situations?', or 'How broad or narrow should the communication and transfer of entrepreneurial methods in educational contexts be? Would exposing students to a large set of theories and methods be beneficial or detrimental to their progress?'

6.3. APPLICATION OF ENTREPRENEURIAL METHODS

There are two main contributions in regards to the application of entrepreneurial methods. The first concerns some of the findings from the two empirical studies presented in Paper II and IV. These findings contribute to the entrepreneurship theory by providing insights into the impact that inclusion of the lean startup methodology has on both individual entrepreneurs and the entrepreneur-coach dyad in the context of two separate Swedish startup accelerators. More specifically, by drawing on experiential and vicarious learning processes, Paper II elucidates how entrepreneurs and their theories of action could be impacted by the introduction of the lean startup methodology to an accelerator program. It further shows that the enforcement of the prescriptions of the lean startup methodology can have a long-lasting impact on the way entrepreneurs think about and act in their entrepreneurial efforts.

Paper IV provides insights into the modified form, content and context of entrepreneur-coach relationships when attempts guided by the lean startup methodology

were made to structure interactions between coaches and entrepreneurs. These insights reveal that the traditional role of coaches in these circumstances may need to be revised to fit the demands and characteristics of the lean startup methodology. Additionally, these papers shine a light on the understudied and rapidly growing phenomenon of prescriptive accelerators[17].

Taken together, these insights raise both awareness of the various ways that the lean startup methodology, as an entrepreneurial method, can impact the entrepreneurial process and, thus, have implications on the design of prescriptive accelerators. They could provide a much-needed understanding of the impact of the lean startup methodology on entrepreneurship education, accelerators and incubators, and help the organizers to adapt their offerings while being mindful of the implicit and explicit impact of including and requiring the methodology to be followed. The findings also underscore the curious lack of research and the academics' interest in studying the lean startup methodology despite its practical popularity.

Future research could take a comparative research design and replicate the identified impact in other contexts and other countries. Future studies could also examine other aspects of entrepreneurship education or accelerators, which could be significantly impacted by the changes caused by the introduction of the lean startup methodology. These attempts could provide a more comprehensive picture that brings other aspects of the lean startup methodology to the forefront and minimize the structural barriers that could impede entrepreneurial action.

CONCLUSIONS

7. CONCLUSIONS

"The philosophers have only interpreted the world, in various ways; the point, however, is to change it."
Karl Marx, Eleven Theses on Feuerbach

Entrepreneurship is a practical field, but links to practice in scholarly works are sparse. This dissertation laid a heavy stress on the lack and underdevelopment of prescriptive contributions in the entrepreneurship field. It also focused on how the entrepreneurship theory and practice can benefit from a perspective that focuses on the production and dissemination of actionable knowledge. By pointing out the recent theoretical and practical trends in entrepreneurship, this dissertation develops and advances our current understanding of entrepreneurial methods as vehicles of actionable knowledge. Entrepreneurial methods help entrepreneurs to exercise entrepreneurial judgment and make better and more effective decisions in uncertain entrepreneurial environments. This leads entrepreneurial prescriptions, as important components of entrepreneurial methods, to interact with entrepreneurial judgment in three ways: entrepreneurial prescriptions that guide entrepreneurial judgement, entrepreneurial prescriptions that replace entrepreneurial judgement, and entrepreneurial prescriptions that delimit entrepreneurial judgement.

A careful review of the existing entrepreneurial methods revealed their building blocks and allowed detailed discussions on their general form, the prescriptive content they provide and insights regarding the application of their prescriptions in real life situations. The three building blocks of logic, model and tactics compose an organizing framework that has the potential to provide theoretical and practical value to the entrepreneurship field. This rests in the idea that entrepreneurial methods should, as one of their goals, aspire to equip entrepreneurs with the skills necessary to apply and, therefore, extend their repository of practical knowledge. Additionally, an examination into the content and application of these methods led to nine dimensions that cover the important subject matters that these nine entrepreneurial methods provide prescriptions for.

The findings suggest that there are disagreements concerning the content and application of entrepreneurial methods but not in relation to their form. These findings only scratch the surface of the emerging discourse of entrepreneurial methods.

Similar to many other scholarly works, this dissertation raised more questions than it answered. It contributed to the actionable knowledge that is explicit in serving the pragmatic purpose of guiding entrepreneurial action and included ideas that could facilitate the introduction of codified principles to formulate practically useful theories (Romme, 2003). This practical knowledge specifies the sequence of action to arrive at 'specified intended consequences' (Argyris, 1996c). The actionable quality of this knowledge and the ensuing entrepreneurial prescriptions result in them being employed in practice and prove their relevancy claims. The contributions in this dissertation are general enough to be used in attempts to consolidate the fragmented multi-paradigmatic nature of the entrepreneurship field, particularly in relation to prescriptive theories (van Burg & Romme, 2014). The ideas presented in this dissertation transcend the unresolved definitional disagreements among scholars of entrepreneurship and focus on the prescriptive, actionable knowledge that aims to guide entrepreneurial action. This dissertation, therefore, has clear implications for attempts to bridge the theory-practice gap. For instance, the three-tier framework proposed provides a structure for proponents of the entrepreneurial methods and other forms of guided action to make their prescriptions easier to understand and communicate, and more pragmatic in nature.

7.1. WHERE TO GO FROM HERE?

If we, as scholars, confine and limit our focus to describing the phenomenon of entrepreneurship rather than systematically attempting to theorize and prescribe action, the entrepreneurship field may risk losing members of its major audiences, namely entrepreneurship students and (aspiring) entrepreneurs. It is, therefore, reasonable to suggest that entrepreneurship education programs need to complement their curricula by teaching and exposing entrepreneurship students to actionable entrepreneurial prescriptions and cultivate environments that reward experiential and vicarious learning. Amid this, entrepreneurship scholars (with the exception of a handful of rudimentary decision-making theories such as effectuation and entrepreneurial bricolage) have largely been silent in advancing prescriptive research and formulating entrepreneurial methods.

While it is evidently a hard task to prescribe (entrepreneurial) action, the lack of prescriptions could be an outcome of limited entrepreneurial theorizing on how real entrepreneurs make decisions. Therefore, to enable the formulation and dissemination of entrepreneurial theories of action, systematic research programs for expansive theorization of the entrepreneurial phenomenon that prioritizes and makes central how and what entrepreneurs do in practice should be encouraged and promoted. By attempting to answer key questions as part of systematic research endeavors, scholars can ensure that 'separate silos' of knowledge do not accumulated, and, instead, actionable, prescriptive theories that aim to provide useful maps for the principal audiences of entrepreneurship are produced (Fiet, 2008).

Entrepreneurship scholars, therefore, ought to engage in scholarship that instead of mainly describing the entrepreneurial phenomenon, aspires to provide prescriptive solutions in the shape of guidelines, instructions, principles, heuristics and prescriptive process models. That is, instead of merely noting the twists and turns of the entrepreneurial process, scholars should engage more actively in discussions on how entrepreneurs 'ought to' manage the process (Lutz, 1982). Such scholarship could then break free from the backward-looking nature of the bulk of existing entrepreneurship research by providing a space for proactively guiding action. Moreover, such research could produce insights into what entrepreneurs should do rather than what successful entrepreneurs have done. The produced prescriptive knowledge as the outcome of such a shift in perspective offers novel opportunities in bridging theoretical and practical entrepreneurial knowledge. Through the provision of explicit prescriptive theories, scholars will have the chance to be important players in shaping entrepreneurial activities.

In additions to the specific future research directions spelled out in the previous chapter, there are some additional, general directions for future research. 'Entrepreneurial prescriptions' as components of entrepreneurial methods could benefit from a mindful process of design and formulation that takes context, circumstance and the audience into account. In other words, the principle of universal validity need not necessarily be a central governing principle guiding the formulation of prescriptions for messy and complex domains such as entrepreneurship. The formulation of more context-specific entrepreneurial prescriptions could result in more practical and relevant research in entrepreneurship (cf. ecological rationality (Gigerenzer, 2008))[18]. Future re-

search could, therefore, explore the possible trade-off between accuracy and generality of prescriptions, their specific purposes (initial performance or learning and transfer of learned knowledge to other situations), and the different forms that they can take (procedure, principle or example-based) (Eiriksdottir & Catrambone, 2011).

Moreover, as there is need for alternative combinations of knowledge components and strategies to communicate them to achieve better educational objectives (Merrill, 2001), future research can investigate how descriptive and propositional entrepreneurial knowledge could be effectively combined with prescriptive entrepreneurial knowledge. This could add and contribute to the existing theories that combine theory and practice to develop useful design principles (Argyris et al., 1985; Holloway, van Eijnatten, Romme, & Demerouti, 2016; Valikangas & Romme, 2013). The nature of communicated knowledge relates and directly contributes to the form of entrepreneurial learning situations. Insights as part of the empirical studies showed that entrepreneurial methods are more helpful and relevant when combined with formal educational contexts such as accelerators.

Finally, one cannot expect entrepreneurial prescriptions to be immune to the passage of time. The utility of such prescriptions is linked to their fit to the temporal circumstances influencing entrepreneurs and various situations at hand. Therefore, their utility may decay as temporal and contextual circumstances change (e.g., business planning) (Bhidé, 2016). Future research could explore possible needed modifications of existing entrepreneurial methods to adapt them to the current entrepreneurial landscape. Taken together, it is incumbent on the scholars of entrepreneurship to both follow a systematic program of research to devise new methods and investigate the validity and appropriateness of the existing ones. This could help to train, advise and assist entrepreneurs to excel in their developmental and entrepreneurial endeavors.

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APPENDIX

APPENDIX

EMPIRICAL STUDY I:

INTERVIEW GUIDE

1. *Approach (Method)*
   I) How would you describe your approach to developing your business? What are the key aspects of the method you use?
   II) How has your approach changed and evolved since the last time we talked (since the beginning of the program)? (Example)
   III) Can you please give us the reasons to this change? What convinced you that there is a need for change?

2. *Structure of activities (Process)*
   I) Could you describe what you spend your time on / or how do you spend your day? What is our work process like; more ad-hoc or planned and structured?
   II) Has this process changed since last time we talked (since the beginning of the program)?
   III) If yes, why?
   IV) Would you like work differently (form, content)? If so, what is stopping you? (Example)

3. *Focus*
   I) What are you currently focusing on (product, customer, technology and funding)?
   II) Has your focus changed recently (since last time, the beginning of the program)?
   III) If yes, why did you change your focus?
   IV) Do you think you currently focus on what needs the most attention?
   V) What stops you from focusing on the necessary matters?

4. *Decision-making*
   I) How do you prioritize the activities you do? How do you decide which of the

activities are more relevant than others? Would you say the decision process is more or less structured?

II) How has this process changed over time?

III) Why this change came to be?

IV) What are the main challenges in your decision-making process?

5. *Learning*

I) How do you evaluate the result of your activities like customer meetings (formally/ informally – Individually/ in team – structured/ unstructured)? Where do you typically learn the most? Where have you gotten your most important insights?

II) Has this process changed over time?

III) What are the reasons for the changes?

FICTITIOUS SCENARIO

We would like to understand how you like to deal with the challenges of entrepreneurship. Please use your imagination to put yourself in the context of the entrepreneur in this scenario:

During your 12-year tenure as an engineer at a major computer manufacturer, you work on your own time to invent a computer device that recognizes and responds to eye movements. You imagine it might make a great alternative to the computer mouse. You can make it rest on the user's head much like headphones and set it up so that point-and-click navigation is accomplished with even the most minor head and eye movements. You are convinced there is a huge potential for change in the way things are currently done. But when you attempt to interest your current company in licensing the idea from you, they are uninterested. There are no firms currently offering anything close to this and you possess all the technical skills to create the product effectively and efficiently. You quit your job to further develop this idea.

1. As you assemble information, you will:

Disagree-Neutral-Agree

1	2	3	4	5	Talk with people you know to enlist their support in making this become a reality.
1	2	3	4	5	Focus on specific information that could be used to evaluate the most critical aspects of your business idea.
1	2	3	4	5	Study expert predictions of where the market is heading.

2. As you develop a marketing approach you will:

Disagree-Neutral-Agree

1	2	3	4	5	Look for customers most likely to benefit from your product and focus on them.
1	2	3	4	5	Focus on customer segments you can reach through your existing relationships.
1	2	3	4	5	Forecast which segments you think will be most valuable and focus on them.

3. Predictions of trends and demand in this market are:

Disagree-Neutral-Agree

1	2	3	4	5	Misleading, as they do not incorporate the impact of your firm.
1	2	3	4	5	Maybe useful, but such general information is hard to act on.
1	2	3	4	5	Useful to create forecasts of what your business might accomplish.

4. As you learn about the expectations other people have for this industry, you:

Disagree-Neutral-Agree

1	2	3	4	5	Discount their projections, as they have not accounted for the impact of your venture.
1	2	3	4	5	Try to find out if more people share those expectations.
1	2	3	4	5	Form updated predictions of likely outcomes for the business.

5. As you approach new people (users, customers, suppliers), your relationships with them:

Disagree-Neutral-Agree

1	2	3	4	5	Focus mainly on getting resources needed to implement your idea.
1	2	3	4	5	Are open to having them join you in developing your idea.
1	2	3	4	5	Specifically seek information to assess your idea.

EMPIRICAL STUDY II:

INTERVIEW GUIDE (ENTREPRENEURS)

1. Tell me about the story of your venture idea? Which stage you were when joined the program? (Imagine it is before the program started)
   I) How did you come up with the idea?
   II) How did you find your teammates?
   III) How did you hear about the camp?
   IV) Why did you join the startup camp? What were your expectations?
   V) What do you think is the reason that you were accepted to the program in the first place and selected to proceed in the third phase?

2. How the startup camp setting differed from other courses and classes you've attended to?
   I) Did the methodology and the pedagogical setting of the startup camp have any specific impacts on you (did it help you get things done in a different way)? Was there a red thread?
   II) If so, what and who influenced your progress the most? Why is that?
   III) Tell me about your interactions with coaches? External coaches? Peers? Customers?
   IV) How influential they were in your development as a person, as a team and as a business? Examples.
   V) Did you use other resources in relation to the LSM?

3. How did you spend most of your time? What activities you did the most? Why?
4. What sums up your main and most important insights as part of the startup camp?
   I) Were they in line with what you expected?
   II) Have these learning been useful in guiding your actions?

5. Being part of the camp for 15 weeks, do you see any differences in yourself in comparison with the beginning of the camp [what about in relation to how you go about getting things done in your business]?
   I) Can you give me an example of your (perceived change) thought process before and after the camp in regard to developing your business? [This could be related to the individual characteristics of the entrepreneur (change in cognitive style change) or the way that they go about doing business?]
   II) What are your thought regarding your perceived success (confidence) in the beginning of the program and now?

6. What were you most interested in during interactions with customers, coaches and your peers in the program (customer reference or general advice)? What did you focus the most during your interactions? Which advice you value the most? The customers' or the coaches'?

7. Are you going to adhere to what you've learned in this program, to develop your current idea? What if you would start working on another idea?
   I) Does it make you pursue another business idea?
   II) Would you have gone about developing your business the same way by only reading the book and learning about the methodology, even if you haven't gone through the program?

8. Question about the logic, model, tactics framework.

INTERVIEW GUIDE (COACHES)

1. Background questions
   I) Education
   II) Business and entrepreneurial experience
   III) Coaching experience–Why did you **participate** in the program as a coach (who asked you to be a coach)? How important it was that you could invest in them, how important it was to be affiliated with Chalmers Ventures? Were you paid?

2. Coaching role and its functionality
   I) What are your thoughts about the **structure** of the camp (*five-week phases, lectures, two days per week, group coaching, external coaching and demo days*)? Do/did you follow any model incubator or accelerator? Why group coaching format instead of individual coaching (*for cross pollination and peer-learning or because of resources*)? Since when and why LSM is included in your program?
   II) Can you tell me a bit about your **role** and **responsibilities** during the startup camp were (explain and give **EXAMPLE**)?
   III) Can you talk how you **prepared** of the coaching sessions (**EXAMPLE**)? Was it **similar** to other coaches? What were the **main messages** you wanted communicated (*any red thread*)? (*What did you want the teams to leave the coaching sessions with*?) Did the teams have a clear **understanding** about your **expectations**? How much of your instructions, you'd guess, were **followed by the teams**?
      A. (You talked about your experience), what do you think about the **role of experience** in your coaching (**EXAMPLES**)? Any other influential elements (LSM)? If it did, why did you follow the LSM? What were your incentives to include LSM? Could it be the case that during the program it was more logical to follow coaches rather than customers?
      B. Tell me about the **interactions between the teams** mainly during the coaching sessions **(EXAMPLE)?**
   IV) How would/did you advise further if the **customers' opinions and your intuition/experience** diverged? (Where is the line drawn for recommending against

the customer insights? When is the customer not right? When do you step in?) (**Maybe take the example from Andres and see what they say)?**

3. Selection process (**Go through the teams they coached** and why they were positive or negative about them)–(*The perception of the teams/entrepreneurs that coaches had is important to the coaching that entrepreneurs received*).
   I) What were your **expectations** from the teams during the program? During the coaching sessions?
   II) What were your **criteria** for your recommendations to admit the teams to the third phase? Were they **similar** to other coaches (CASE BY CASE-get a better picture of their selection method)
   III) **Were the other coaches aware of your criteria**? What about the **teams**?

4. Startup camp in general
   I) In your own words what were the **main elements and goal** of the camp? What are your thoughts about the influence of the **competition** for winning the camp? (Positive and negative)? Do you think it may have influenced the way teams **interacted** with the coaches and each other (by highlighting some points and covering some others)?

5. LSM knowledge
   I) When did you learn about LSM? What **books** you have read related to LSM? To coaching? Did you **recommend additional sources** to the teams such as *books* and *services* to complement their understanding of the LSM?
   II) Can you tell me about how you define these concepts (**hypothesis, pivot, validated learning**)? Interactions as meaning making grounded in having similar understanding about the notions of interest.

6. Misc.
   I) Your thoughts on the **three-tier framework** (logic, model, tactics)? Do you think you as coach provided the entrepreneurs with guidance on all three levels? How did you prioritize on abstract vs. concrete levels?

FOOT NOTES

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[1] Although proponents of entrepreneurial bricolage do not present the theory as an actionable and explicit prescriptive theory of action, its formulation, the nature of the theory and its intertwinement with action and practice, and the contributions built on it, leads me to consider it a prescriptive theory on a par with effectuation and planning (see Fisher, 2012).

[2] In this dissertation, guided action is taken to encompass all the deliberate, conscious, and controlled activities of entrepreneurs in pursuit of developing ventures. This entails the strategic choice of methods, tools and heuristics being employed by them. Guided action, therefore, departs from the notion of 'deliberate practice' advanced by Ericsson and his colleagues and is, to some extent, akin to Dreyfus's skill acquisition model.

[3] There are overlaps and similarities to what Sarasvathy and Venkataraman (2011) termed entrepreneurial method. While the authors equate effectuation to 'the' entrepreneurial method, this dissertation considers effectuation 'an' entrepreneurial method.

[4] Note that this is not a chronological account of the development of the entrepreneurship field.

[5] Deliberate practices are activities designed to elevate the existing performance levels of individuals in completing various tasks at hand (Ericsson, Krampe, & Tesch-Römer, 1993). Deliberate practice is, to a large extent, context-dependent. Studies have shown that in work/professional contexts, such practice includes a broad range of various activities such as: experimenting with new strategies, feedback seeking, consulting domain-specific experts, or professional studying, to name but a few (Dunn & Shriner, 1999; Sonnentag & Kleine, 2000). In problem-spaces such as entrepreneurship that could be characterized as largely ill-structured, continuous engagement in activities with an explicit learning goal (which is an integral part of most entrepreneurial methods) is a crucial part of any deliberate practice and constitutes the bulk of the repetitive aspects inherent in deliberate practice (Unger, Keith, Hilling, Gielnik, & Frese, 2009).

[6] Uncertainty in this dissertation follows the conceptualization that Simon (1973) offers in terms of problem complexity and ill-structuredness.

[7] Tame as akin to benign.

[8] Wicked as akin to malignant, vicious or tricky (Rittel & Webber, 1973).

[9] Although effectuation is presented as a non-teleological theory, I view it as such in the sense that no *grand* vision or goal give rise to the necessary activities and complex interactions with the external environment. However, I regard effectuation as a theory that in reality is characterized and conditioned by a collection of smaller goals that bundle to form an effectual process.

[10] This is not to imply that actionable is synonymous to externally valid. External validity is largely understood as the relevance of the findings claimed and communicated by scholars and does not explain how relevance in itself is created.

[11] Improvisation (Crossan, 1998) and generative relationships (Lane & Maxfield, 1996) could have also been included in this review. However, as they are either too general or rarely appropriated to the field of entrepreneurship, a decision was made to exclude them from the review.

[12] Different proponents of design thinking highlight the order of these phases slightly differently.

[13] The desired outcome of phenomenon-based research is advancing the understanding of a phenomenon in becoming and is often a contribution to shaping the early phases of a scientific domain of inquiry.

[14] For instance, marketing is about informing decision-makers how to present their offerings to the market and accounting informs, to some extent, how income statements should be crafted.

[15] For a thorough discussion on the process that resulted in the proposed framework, refer to Mansoori (2015).

[16] In relation to tactical prescriptions of effectuation, some recent attempts have been made to formulate a tactic termed ‘ASK’. However, as it is part of a working paper and, therefore, under-developed at this point, the cell corresponding to the level of tactics for effectuation is populated as N/A (Cf. Dew, Ramesh, Reed, & Sarasvathy, 2017).

[17] Prescriptive accelerators are the startup accelerators that are explicitly organized by a systematic (entrepreneurial) method.

[18] Similar to the study of heuristics that is concerned with making sense of 1) the building blocks of heuristics, 2) the characteristics of the environment and problem-space (context), and 3) the design of heuristics (Gigerenzer, 2008), entrepreneurial methods are a collection of prescriptions that seek to guide action and should also be concerned with these three issues.