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Entrepreneurial Methods

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ABSTRACT

The interest in approaches for creating new ventures has been amplified by a recent surge in practitioner-driven entrepreneurial methods. Entrepreneurship education programs in prestigious institutions as well as prominent incubators and accelerators have started adopting these methods. However, there are only few insights into how these methods relate to the practice of entrepreneurship and the implications for entrepreneurs and their organizations adhering to the various principles of these methods. A useful discussion of the interplay between entrepreneurial methods and the practice of entrepreneurship requires a better understanding of these methods and their constituents. Although the notion of entrepreneurial methods exists in different forms in the entrepreneurship literature, there is no common understanding of the notion. This thesis seeks to present a better understanding of the entrepreneurial methods that guide entrepreneurial behavior. It reviews nine entrepreneurial methods and contributes by developing a conceptual framework to explain, organize and improve entrepreneurial methods. The proposed framework is based on a scheme that includes a trio of terms: logic, model, and tactics. *Logic* is the overarching rationale orienting the conduct of all venture creation activities. *Model* consists of related courses of action for conducting the activities deemed necessary to implement the logic. *Tactics* refer to a collection of practices aimed at progressing specific aspects of the process, which are guided by the model and are in line with the logic. The proposed framework will allow scholars as well as practitioners to rework and refine their prescriptive guidelines, and suggest directions for future entrepreneurial methods. Further, an interview-based case study provides insights into the relation between entrepreneurial methods and entrepreneurial practice.

Keywords: method perspective, entrepreneurial methods, theory and practice, uncertainty, learning

LIST OF APPENDED PAPERS

Paper I: **Transformation and Experimentation: Two Ideal Types of Entrepreneurship as Method**

Mansoori, Yashar; Berglund, Henrik; Bousfiha, Marouane (2015)
Version 1: Presented at AOM PhD Consortium, Philadelphia, US, August 2014
Presented at ESU conference, Lund, Sweden, August 2014
Version 2: Presented at EURAM conference, Warsaw, Poland, June 2015

Paper II: **How the Lean Startup Methodology Affects Entrepreneurs and Their Organizations: The Case of a Swedish Startup Accelerator**

Mansoori, Yashar (2015)
Accepted at ESU conference, Southhampton, UK, August 2015
Submitted to Babson conference, Bodø, Norway, June 2016

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TABLE OF CONTENTS

1. Introduction 1
1.1. Outline of the thesis 2
2. Literature review 3
2.1. An account of the development of entrepreneurship field 3
2.2. Towards an entrepreneurial method perspective 5
2.3. Entrepreneurial methods 6
2.3.1. Business planning 6
2.3.2. Effectuation 7
2.3.3. Entrepreneurial bricolage 8
2.3.4. Discovery-Driven Planning 8
2.3.5. Disciplined entrepreneurship 9
2.3.6. Evidence-based management for entrepreneurial environments 9
2.3.7. Prescriptive Entrepreneurship 10
2.3.8. The Lean Startup Methodology 10
2.3.9. Design thinking 11
2.4. Synthesis and justification of research questions 11
3. Research Methods 13
3.1. Paper I 13
3.2. Paper II 13
3.2.1. Research design and data collection methods 13
3.2.2. Empirical settings 13
3.2.3. Data collection process and analysis of the results 14
3.2.4. Limitations 14
4. Summary of appended papers 16
4.1. Paper I 16
4.2. Paper II 17
5. Discussion 18
5.1. A discussion of the methods reviewed 18
5.1.1. Role of uncertainty 19
5.1.2. Nature of rules and principles 20
5.1.3. Provided tools and techniques 20
5.2. Conceptualization of a framework for entrepreneurial methods 22
5.2.1. Logic 23
5.2.2. Model 24
5.2.3. Tactics 25
5.3. Entrepreneurial Methods: a definition 26
5.4. Transformation and Experimentation 27
5.5. From method to practice 28
6. Conclusions 30
7. The way forward 31
8. References 32

TABLES

Table 1 - Summary of the reviewed methods
Table 2 - Revisiting the reviewed methods in light of the proposed three-tier framework

FIGURES

Figure 1 - Heuristic-based guidelines of effectuation (left, adapted from Effectuation.org) juxtaposed with algorithm-based guidelines of the lean startup (right, adapted from Eisenmann et al., 2012)
Figure 2 - The three-tier framework for conceptualizing methods
Figure 3 - Method in practice through single and double-loop learning

1. Introduction

Entrepreneurship research has gradually shifted focus away from individual entrepreneur to theoretical (Davidsson and Tonally, 2013; McMullen and Dimov, 2013) and empirical (Gartner, Shaver, Carter, and Reynolds, 2004; Samuelsson and Davidsson, 2008; Van de Ven and Engleman, 2004) attempts to understand entrepreneurship as a dynamic process that unfolds over time. An entrepreneurial process is described as a journey which includes a series of events starting with the initial business idea and concluding with a successful or failed business (Davidsson, 2005; McMullen and Dimov, 2013). As a part of the empirical attempts, researchers by using datasets such as PSED (Carter, Gartner, Shaver, and Gatewood, 2003; Davidsson, 2003; Liao and Welsch, 2008) and CAUSEE (Davidsson, Steffens and Gordon, 2011) have tried to unpack the entrepreneurial process by presenting them as lists of activities. However, process studies often provide only descriptive accounts of the process but no concrete prescriptive guidelines as process studies assume known inputs and known outputs (Neck and Green, 2011). This has led to calls for studying the micro-foundations and the mechanisms at the level of cognition and action which give rise to these processes, to complement the process perspective to entrepreneurship research (Shepherd, 2015; Selden and Fletcher, 2013; Neck and Greene, 2011). Without an understanding of the mechanisms of entrepreneurial action, the perceived entrepreneurial process is ”linear, coarse grained and detached from everyday life” (Shepherd, 2015:494). One way to achieve a better understanding of these micro-foundations and mechanisms is to adopt a perspective on entrepreneurship that focuses on the prescriptive methods which promote action.

In line with recent developments in the field of entrepreneurship, there has been a growing interest in developing approaches to guide venture creation activities which demonstrates the *theoretical* and *practical* relevance of a method perspective. In general terms, a method can be described as "a way of thinking and acting, built on a set of assumptions using a portfolio of techniques to create” (Neck and Green, 2011:55), and most importantly includes guidance for action. Some scholars suggest that teaching entrepreneurship involves teaching a method, and suggest entrepreneurship as a ”method” to replace the existing perspectives such as traits, process and cognition (Neck and Greene, 2011) and some others have proposed methods to guide entrepreneurial action and interaction (Sarasvathy and Venkataraman, 2011; McGrath and Macmillan, 1999; Fiet, 2007; Ries, 2011; Sull, 2004). Although these academic and practitioner-driven methods are similar, they appear to be scattered, unrelated and have been developed in isolation. One way to bridge these efforts and therefore advance this trend theoretically is to provide a coherent framework for understanding these relevant methods. Moreover, since entrepreneurs are not born with specific innate psychological and socio-demographic characteristics which lead to success (Hatten, 1997), it is important to enable educators to teach individuals how to start new ventures by providing relevant means and methods to guide their behavior.

A method perspective to entrepreneurship would bridge between theory and action by providing guidelines that constitute the mechanisms underlying entrepreneurial action, and hence help scholars explore the interplay between method and practice, and by extension, method and process. The development of a perspective focused on prescriptive approaches would stimulate research and practice. It would be a motivation for more empirical studies and increase research productivity by offering a theoretical base for researchers to extend existing methods and develop new ones. Despite the increasing interest among academics and practitioners in methods to guide entrepreneurial behavior, there is still little insight into how these methods relate to practice, how entrepreneurs internalize the guidelines, and how these guidelines influence entrepreneurs and their

organizations. This thesis claims that a common understanding of these methods and their assumptions and components would motivate more research on their impact. Although the notion of entrepreneurial methods is not new, to the best of my knowledge there have been no attempts to define it as a theoretical construct and therefore there exists no conceptualizations of it. By reviewing and discussing existing entrepreneurial methods, this thesis seeks to discuss and advance our understanding of them. So, the purpose of this thesis is to achieve a better understanding of the prescriptive approaches to entrepreneurship to guide entrepreneurial action. To accomplish this, this thesis proposes a three-tier framework for organizing and understanding entrepreneurial methods, and in addition offers some insights into the relation between entrepreneurial methods' guidelines and the practice of entrepreneurship. It therefore contributes to the entrepreneurship field by proposing a coherent conceptual framework for understanding, organizing and extending existing entrepreneurial methods, and provides insights into the relationship between method and practice.

1.1. Outline of the thesis

The rest of the thesis is organized as follows. First, an account of the development of the entrepreneurship field is outlined to motivate the method prescriptive discussed in this thesis. In addition, a brief review prominent existing entrepreneurial methods based on a general definition of methods as inclusion criterion is provided. Chapter 3 outlines the research method and methodological considerations, and chapter 4 presents a summary of the appended papers by laying out their main claims and contributions. Chapter 5 discusses the reviewed methods and proposes a framework for the organization and conceptualization of entrepreneurial methods. Finally, chapter 6 offers some concluding remarks and chapter 7 provides suggestions for future research.

2. Literature review

This chapter is divided into three sections. First, I present a brief review of the development of entrepreneurship field and motivate why a method perspective not only is needed as natural development of the field but also helps progress the field both theoretically and pragmatically. Then, I discuss the notion of method and the other terms used to reflect what is meant by method as inclusion criterion for the reviewed entrepreneurial methods in the next section. And, finally the extant entrepreneurial methods that fit my understanding of the notion of method are reviewed.

2.1. An account of the development of entrepreneurship field

This section presents an account of the development of entrepreneurship field which builds up to motivate why a method perspective is becoming more and more interesting. This account includes discussion of the psychology of the entrepreneur, entrepreneurial cognition, entrepreneurial opportunities and the entrepreneurial process.

Psychology of the entrepreneur: early entrepreneurship research focuses largely on the individual entrepreneur's innate personality traits as the unit of analysis (Pickle, 1964; Hornaday and Aboud, 1971; Timmons, 1978; Brockhaus, 1980; Dunkelberg and Cooper, 1982; Brockhaus and Horwitz, 1986; Carsrud and Johnson, 1989). The result of this stream of research can be summarized in a few major themes: need for achievement (McClelland, 1961), risk-taking propensity (Brockhaus and Horwitz, 1986; Shane, 2000), tolerance for ambiguity (Begley and Boyd, 1988), self-efficacy (Baron, 2004), internal locus of control (Begley and Boyd, 1988), and type A behavior (Begley and Boyd, 1988). These were the personality traits that researchers associated with success and claimed that successful entrepreneurs possess them in one form or another. However, the validity of this stream of research has been heavily criticized as several studies point to weak ties between personality traits, new venture formation and venture success. For instance, nowadays it is becoming more common to consider expert entrepreneurs as agents who seek to minimize risk as opposed to being avid risk takers (Busenitz, 1999; Forlani and Mullins, 2000). Therefore, Gartner (1988) suggests "who is an entrepreneur?" is the wrong question to ask and argues that changing the unit of analysis from the individual to the functional (i.e., the agent for creating economic growth) would consequently lead to more fruitful research. Moreover, Baron (1998) reports that entrepreneurs and non-entrepreneurs do not differ notably with respect to personality traits. The small predictive power of personality trait studies has resulted in a shift in focus from "who entrepreneurs are" to "why entrepreneurs do what they do". This was the key promoter to the emergence of entrepreneurial cognition as a prominent stream in the entrepreneurship research.

Entrepreneurial cognition: entrepreneurial cognitions are simplifying mental models used by entrepreneurs operating in complex and ambiguous settings (Manimala, 1992; Gatewood, Shaver, and Gartner, 1995; Baron, 1998; Mitchell and Busenitz, 2002; Baron, 2004; Baron, 2007; Bingham and Eisenhardt, 2011). Since entrepreneurial environments are characterized by uncertainty, information overload, high ambiguity, high dynamism, unpredictability and high time pressure (Baron, 1998; Mitchell and Busenitz, 2007), cognition has been suggested as a relevant perspective to study some aspects of the entrepreneurial process (Forbes, 1999). Although the results and the claims of the cognitive perspective related to the cognitive perspective remain relevant and useful, they do not provide a complete picture of the phenomenon of entrepreneurship and therefore no longer the focal point of entrepreneurship research. Moreover, a group of scholars led by Shane and Venkataraman, has proposed that researchers not only should focus on individual characteristics of entrepreneurs and their behaviors but also the situational factors such as opportunities to better

understand the phenomenon of entrepreneurship.

Entrepreneurial opportunities: following Venkataraman (1997), Shane and Venkataraman (2000) propose opportunities as the main unit of analysis for the field to broaden the attention on the individual and individual behavior to include situation and environment and by that introduce the notion of individual-opportunity nexus. Their contribution spurred debates on the nature of opportunities. Opportunities can be regarded as objective or subjective based on whether they are constructed by exogenous shocks to market or by a process of subjective enactment through entrepreneurs' actions. A group of scholars refer to opportunities as abstract realities waiting to be discovered by alert entrepreneurs (Shane and Venkataraman, 2000; Shane, 2000) whereas others regard opportunities as created by entrepreneurs and their stakeholders as a result of the interplay between entrepreneurs' prior knowledge and their social capital (Alvarez and Barney, 2007; Sarasvathy, Dew, Velamuri, and Venkataraman, 2010). Meanwhile, scholars started to study opportunity discovery and creation as processes that unfold over time, in line with the emerging process perspective. Ardichvili et al. (2003:106) propose a process model for opportunity identification and development and noted that "while elements of opportunities may be 'recognized', opportunities are made, not found". Others assert that the way the nature of opportunities is imagined, systematically influences entrepreneurial objectives, and therefore researchers should take a stance on opportunities, as discovered or as created (Berglund, 2007; Klein, 2008). Instead of the elusive concept of opportunities, the notion of "New Venture Idea" has been recently suggested as a subjective construct which is not dependent on external factors (Davidsson, 2015). Alongside this line of research, scholars have also labored to understand the cognitive and behavioral steps that constitute the non-linear process of venture creation.

Entrepreneurship as process: businesses do not emerge in a single step and the fact that entrepreneurship is the accumulation of different linear and non-linear activities over time calls for a process perspective for understanding entrepreneurship (Davidsson, 2005; McMullen and Shepherd, 2006; McMullen and Dimov, 2013). Scholars have proposed similar definitions for entrepreneurial processes: "the related chain of activities that leads to the emergence of an organization based on an initial perception of opportunity" (Bygrave, 1997:3), "all the cognitive and behavioral steps from initial inception of a rough business idea, or first behavior towards the realization of a new business activity, until the process is either terminated or has led to an up and running business venture with regular sales" (Davidsson, 2005:5), and "the sequential encounter and institution of information–through action and interaction–that becomes embedded in the final product" (Dimov and McMullen, 2013:13). Some scholars conceptualize the process perspective as two sub-processes of discovery and exploitation (Alvarez and Barney, 2007), an idea that has spurred much research output and scholarly discussion. Put simply, discovery concerns the conceptual side of business development while exploitation refers to the action side. Both sub-processes may or may not result in success and contrary to the idea of linearity in the sequences of these two sub-processes, in the actual fact they are closely related and continuously feed back into each other. Several organizing activities constitute each of these processes and research such as PSED has shown all these activities can happen at any time and in different sequences (cf. Honig, 2001 for discovery processes and Liao et al., 2005 for exploitation processes).

Hindle and Moroz (2012) reviewed the extant models of entrepreneurial process and presented a taxonomy of these process models. Their taxonomy includes 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), and quantification sequences (historical sequence based

approach). Moreover, there is also another division of new venture creation process models. One division sees the process as rather planned and linear (e.g., Bhave's process model) and the other is characterized by its emergent and iterative nature (e.g., effectuation and bricolage). These process models are clearly based on different premises embedded in their models. The first type focuses on distinct stages and the linearity of the process. For instance Bhave's model consists of certain stages, namely: decision to start based on an initial idea, opportunity recognition, opportunity selection, idea refinement and creation of the artifact. On the contrary, effectuation describers the venture creation process as the result of an emergent process. The set of heuristics that guide the activities in any order–simultaneously and repeatedly–constitute and explain the process.

Entrepreneurship is and should indeed be seen as a complex and emergent process. It is acknowledged that to make sense of the entrepreneurial processes, it is instructive to complement the process perspective with an explicitly prescriptive perspective that focuses on the micro-foundations, i.e. mechanisms (Selden and Fletcher 2015; Neck and Green 2011). The difference between a descriptive (process) and prescriptive (method) approach is the crucial point. A prescriptive theory (the 'ought') contrasts with descriptive theory (the 'is') in its general ambition to guide action. To state it differently, methods commit to provide detailed and explicit guidelines (some more and some less detailed) to help entrepreneurs deal with matters critical to the development of new ventures. These guidelines are often either derived from descriptive theories or based on the experience of their proponents and can be seen as beneficial tools to aid learning. In other words, the prescriptive guidelines can be channeled to guide specific courses of action that lead to knowledge development through action rather than simple reflection. Descriptive theories often make statements about how events happen and propose process models (Bell, Raiffa and Tversky, 1988) which can be used to explain outcomes rather than drawing normative implications (it must be noted that it is indeed possible and customary to draw prescriptive recommendations from descriptive theories, although the ambition of descriptive theories is not to do so).

2.2. Towards an entrepreneurial method perspective

In reviewing the literature on methods and process, it is clear that there is not an explicit common understanding of the distinction between process and method. For instance, is bricolage only a descriptive representation of the process of making-do with available resources (Baker and Nelson, 2005) or is it a set of vaguely actionable guidelines? Is effectuation a theory which describes the heuristics used by expert entrepreneurs (Sarasvathy, 2001) or is it a set of heuristics-based guidelines for guiding entrepreneurial action? (Dew et al., 2006). The growing interest in entrepreneurship education and academic and practitioner-developed methods suggests the relevance of adoption of an entrepreneurial method perspective alongside the existing entrepreneurial process perspective. This section discusses current understanding of the general notion of method and how this can assist us in proposing a foundation for conceptualizing the notion of entrepreneurial methods.

Searching on Google Scholar, Scopus, Web of Science and Proquest indexing libraries using various combination of keywords reveals that terms such as 'a set of heuristics', 'a set of guidelines', 'a set of principles', 'approach', 'framework', 'scientific method', 'practice', 'procedure', 'model' and 'research method' have been commonly employed to refer to the notion of 'method'. As a general definition of 'method', the Oxford dictionary defines method as "a particular procedure for accomplishing or approaching something, especially a systematic or established one". Similarly, Merriam Webster dictionary's definition of method is "a systematic procedure, technique,

or mode of inquiry employed by or proper to a particular discipline or art". These definitions have some common elements. A method is a procedure that is systematic and is employed to achieve a specific goal by following a certain direction. Method is used differently in different contexts to refer to prescriptive procedures, with various degrees of normativity and detail. In simple terms an entrepreneurial method can be understood as a set of ideas that structures theoretical and practical aspects of venture creation activities.

In the context of entrepreneurship, the fact that different terminologies are used to express the same notion raises the question of what is the most appropriate way to describe prescriptive guidelines for developing new ventures, its assumptions and components. There is a clear benefit in defining this notion and using a common terminology to refer to the same concept and that is to avoid confusion. Moreover, the clarification will highlight differences in terms such as method, approach, heuristics, etc. which often are used interchangeably in the literature. In this thesis, the term 'method' is the preferred term as it succinctly captures prescriptive approaches to entrepreneurship.

2.3. Entrepreneurial methods

Although several scholars have claimed that there is a need to complement process with mechanisms (Selden and Fletcher, 2014) in order to understand the micro-foundations of the venture creation processes, there have been surprisingly few attempts to theorize entrepreneurial methods. Since there is no agreed category of entrepreneurial methods, it was not easy to identify relevant theories by using the label of 'entrepreneurial methods'. In fact, very few authors refer to the term 'entrepreneurial method' and those who do, use it to describe something rather different than method as understood in this thesis (a prescriptive set of guidelines). Therefore, I had to search for prescriptive theories that are related to entrepreneurship, either because they have been developed and addressed by entrepreneurship scholars or are used by entrepreneurs and practitioners. This section gathers the academic and practitioner contributions that fit a general definition of method by reviewing them according to the way their proponents introduced them. The following definition is used as the inclusion criterion for the review of the theories that are identified as entrepreneurial methods: a method is "a way of thinking and acting, built on a set of assumptions using a portfolio of techniques to create" (Neck and Green, 2011:55) and most importantly includes guidance for action.

2.3.1. Business planning

Business planning is defined broadly "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 in the internal organization as well as some external factors that influence the operations of any venture. Business plans are constructed based on the idea that the final business plan should in aggregate offer solutions to "a set of dependent and independent functional problems" (Ackoff, 1981:52). A business plan typically deals with matters such as market objectives, customers, management team, risks, financial plans and milestone schedules (Draman, 1995). It also includes strategies such as performance and sales maximization and cost minimization (Utterback and Abernathy, 1975), cost leadership, differentiation and focus (Porter, 1980). It is suggested that these strategies, if implemented successfully, will result in "contraction, stabilization, or expansion of organization's performance" (Draman, 1995:28). There are six main steps that commonly are associated with the

business planning process. The steps are as follows: 1) define the business 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 (Steinhoff, 1970; Draman, 1995). Focus groups, SWOT analysis, financial prognosis and nominal ranking are amongst the tactics that assist entrepreneurs in the process.

Reducing the disbanding of ventures as well as speeding up the business formation activities are two suggested benefits of business plans and business planning (Delmar and Shane, 2003), although there is no consensus on the benefits of writing business plans for entrepreneurs (Karlson and Honig, 2009). One of the disputed conditions for business planning to be relevant and logical is the existence of a market that provides historical information about that market which allows predictions that is inherent in business planning. 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, in essence, does not negate the usefulness of market analyses but warns about the reliability of their results as bases for action, depending on the environmental conditions.

2.3.2. Effectuation

Building on Marchian goal ambiguity (March, 1976; 1991), Knightian uncertainty (Knight, 1921), Mintzberg's efforts to gather evidence against planning strategies (Mintzberg, 1991; 1994), Weickian enactment (Weick and Kiesler, 1979; Weick, 1995) and the science of the artificial (Simon, 1996), effectuation gathers the concepts of ambiguity, uncertainty and enactment. Effectuation is posited as a set of heuristics used by expert entrepreneurs to develop new ventures. The theory is inductively derived from a study of entrepreneurial expertise in new venture creation using the think aloud protocol (Sarasvathy, 1998). The outcome of the study provides insights into the certain heuristics used by expert entrepreneurs in making decisions. Effectuation claims to address "a logic of control, endogenous goal creation and a (partially) constructed environment" (Sarasvathy, 2001:256). Given the intrinsic means, entrepreneurs start by imagining the kind of possible entrepreneurial activities they could engage in. The entrepreneur's job is not limited to making prior assumptions about some pre-existing opportunities which are waiting to be discovered but involves their creation in a social process (Sarasvathy and 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. Four heuristics form the backbone of the effectual decision making logic. They are meant to describe and guide action throughout the "outcome uncertain" process of entrepreneurship. Sarasvathy (2001) proposes introduces these heuristics as follows: 1) start the process by asking yourself who you are? What you know?, and who you know?, 2) limit risk by understanding how much you can afford to lose, 3) embrace the surprise factor and try to use it as potential leverage, 4) reduce uncertainty by obtaining commitments from early partners, and 5) focus on activities that are within your control rather than predicting the unknown future (Sarasvathy, 2001). In sum, expert entrepreneurs by avoiding preconceived plans, engage in transforming the 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.

2.3.3. Entrepreneurial bricolage

Baker and Nelson (2005:334)–by borrowing the anthropological concept of bricolage (a problem-solving approach in which agents employ the resources available to them rather than seeking for new ones) developed by Lévi-Strauss (1966)–proposed entrepreneurial bricolage to explain the process of ”making do by applying combinations of resources at hand to new problems and opportunities”. Three elements comprises entrepreneurial bricolage: 1) ”making do” refers to a ”bias towards action and active engagement”, 2) ”combination of resources for new purposes” implies the reuse of resources for applications that were not envisioned previously, and 3) ”the resources at hand” emphasized as the pre-existing physical or intellectual resources that are available to the entrepreneur rather than acquired new resources (Baker and Nelson, 2005:334).

Bricolage as the development of an action-oriented or hands-on approach (Fisher, 2012) mitigates the limitations of the resource environment by using available resources in ways that were not originally intended and therefore reduces resource uncertainty. Bricolage as a strategy in environments with limited resources helps entrepreneurs enact its principles in five domains of physical input, labor input, skill input, customers-market, and institutional-regulatory environment. By tolerating the inherent ambiguity of the penurious environment and making use of extant resources and opportunities, entrepreneurs can transform underestimated and seemingly useless resources into valuable ones with novel applications (Senyard et al,. 2014) and by that means progress the process of venture creation in idiosyncratic resource-poor environments.

2.3.4. Discovery-Driven Planning

Rooted in real option theory, discovery-driven planning is an approach to systematically make assumptions–which are taken for granted–explicit and test them in a series of experiments before committing resources (McGrath and MacMillan, 1995, 1999). 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 and MacMillan, 1995). Research suggests that in only ten percent of cases a grand plan with little knowledge about the uncertain environment is implemented successfully (David, 1993 in 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 relying on assumptions that take the environment as known (McGrath and MacMillan, 1999).

Discovery-driven planning offers an alternative avenue to planning by providing five principles of 1) framing the desired business, 2) benchmarking 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 the next milestones. Reverse income statement and targeted experiments are two useful tools for furthering the process while following discovery-driven planning. Discovery-driven planning requires assumptions about the business to be detailed and testable. This method therefore necessitates a reverse income statement which states how much money can be lost and the business still would continue to exist. 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 the course of the process is made based on the results of each milestone (McGrath and MacMillan, 1999).

2.3.5. Disciplined entrepreneurship

Sull (2004) notes that instead of ignoring, avoiding or getting affected by uncertainty while trying to fight it, entrepreneurs should manage it by taking a disciplined approach. The critical task in entrepreneurship is finding ways to manage the inherent uncertainty of creating something novel. Disciplined entrepreneurship offers guidelines for reducing the uncertainty of the venture creation process. Sull (2004) introduces three main guidelines and acknowledges that due to the messiness of the actual process these stages are not to be taken for a specific order of happening although it might sound intuitive that an order 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 for conducting experiments, and 3) design and run experiments in an attempt to make the unknowns about the idea known.

A working hypothesis is a set of assumptions about different aspects of a business, e.g., technology, customer demands, availability of resources, etc. These assumptions are just some guesses may prove to be wrong (Sull, 2004). Framing these hypotheses as subject to revision highlights their provisional nature of them. If managing a new venture is framed as conducting experiments, this allows a new systematic way of thinking about how much capital needs to be raised, which should be not too much and not too little since too much either way disturb the process. This, therefore, points to postponement of key hires until a stable business model is achieved. And, finally entrepreneurs use resources and the working hypothesis as the basis for running and designing experiments. There are two types of experiments, namely partial (to deal with a single source of uncertainty) and holistic (to gain information about multiple variables). Partial experiments serve best to learn more about the known unknowns (what one knows one does not know) and holistic experiments work well with revealing the unknown unknowns (what one does not knows one does not know).

2.3.6. Evidence-based management for entrepreneurial environments

Having roots in evidence-based medicine, evidence-based management advocates the use of the best available evidence to inform and improve the quality of decisions. This is rooted in a mindset which seeks commitment to facts that allow informed decisions as opposed to reliance on conventional wisdom and half-truths (Pfeffer and Sutton, 2006). Evidence-based management practices emphasize gathering the best available data and theory and updating the understanding of theory as new information becomes available (Pfeffer, 2010) and suggests ventures should run trials, pilot studies, and small experiments and use the results to draw conclusions that feed action (Pfeffer and Sutton, 2006). Adhering to evidence-based management principles can eventually change the power dynamics by substituting institution and authority for the best available data and therefore can help reduce the uncertainty in the environment (Pfeffer and Sutton, 2006b).

Evidence-based management in line with experimentation practices advocates building prototypes to systematically collect systematic information on how customers respond to the prototypes and experiments and using the results as actionable inputs for venture as well as future experiments. It further introduces an ”embedded design in learning from real situations” (Pfeffer, 2010:9) which implies that learning through experimenting in real situations is inherent to the design of this approach. Pfeffer and Sutton (2006) propose 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) as outsiders, make more objective assessments than insiders, try to see your organization as an outsider, and 4) use these principles in all facets of the

business not only executive decision making.

2.3.7. Prescriptive Entrepreneurship

Aimed at assisting aspiring entrepreneurs in systematic search and discovery for opportunities with wealth-creating potential, Fiet (2002, 2007) proposed a prescriptive model based on Bayesian learning and what he termed "constrained systematic search". In this context, 'systematic' refers to how entrepreneurs "predetermine, based on their specific knowledge, how to search*"* (Fiet et al., 2013:894) and 'constrained' refresh to the fact that entrepreneurs can benefit more from limiting their search to only known information channels as opposed to unbounded scanning of alertness perspective (Kirzner, 1997). Fiet's prescriptive model proposes that entrepreneurs should start from what they know (prior specific and general knowledge) to select information channels (sources of frequent and low-cost information about potential entrepreneurial discoveries). The most preferred channels would then form the "consideration set" to which the search is voluntarily confined.

The goal is to detect valuable signals in the form of informational cues about an opportunity that could be discovered. Feedback loops going back to the initial selection of information channels are part of the model and are moderated by socio-cognitive factors such as motivation, expectations and personal relationships (Fiet, 2007, 2013). In this model, uncertainty comes from the level of reliability of the information channels and the informational cues used by entrepreneurs to discover potential opportunities. Rather than searching the entire world, entrepreneurs are able to focus their search only on sources of possible matches with what they already know (Fiet et al., 2013). Fiet (2007) describes 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.

2.3.8. The Lean Startup Methodology

Inspired by the principles of lean manufacturing (avoiding waste and optimizing resource spending) and building on Blank (2005), the lean startup methodology was introduced as an approach to the creating of 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 (Ries, 2011). The methodology is founded on close and constant interaction with real customers and collection of feedback. In the first step entrepreneurs map their business ideas into testable business model assumptions. Then through a tool termed as minimum viable products (MVPs) these assumptions will be tested. An MVP is a version of the product with smallest set of features that is built to provide relevant information to validate or invalidate assumptions (Ries, 2011). Through the objective analysis of the completed tests, the assumptions are validated or invalidated. This process is aimed at reducing the extreme uncertainty in venture creation processes through the accumulation of fine-grained and detailed information about the sources of uncertainty.

The methodology exploits a set of tools compiled from other theories such as the customer development framework (Blank and Dorf, 2012), rapid prototyping (Brown, 2008) and also agile software development principles. Core to the lean startup methodology is the validated learning through purposeful experimentation (Maurya, 2012; Ries, 2011). Validated learning is learning that is supported by data from real customers (Ries, 2011). A key concept in the lean startup methodology is the notion of "product-market fit" which implies that the product idea has a market and therefore customers (Blank and Dorf, 2012). The guidelines of the method are presented

through a loop (build-measure-learn loop) and can be summarized as follows: 1) build a minimum viable product that allows you to collect information, 2) test it with customers and measure the results, 3) learn from the results and refine the next round of experiments. Tactics such as targeted experiments, customer interviews, physical prototypes, concierge, A/B tests and fake door tests are amongst the tactics that are relevant to the lean startup methodology.

2.3.9. Design thinking

Design thinking is an iterative, non-linear approach based on user research. The results of user research inform the development team to expand its ideas by improvements to physical prototypes. New prototypes are later tested by users and the results are used as inputs for the next round of development (Johansson-Sköldberg et al. 2013). The process initially sets out to define the problem that users experience, understand it in depth, create a possible solution and test it, and reflect on the results. It is through the process of creating, testing and consequently learning that entrepreneurs can improve their initial ideas (Brown, 2008). Design thinking consists of five phases: 1) empathize with the experienced problem, 2) define the problem in detail, 3) ideate different ways in which the problem might be solved, 4) prototyping a low resolution of the solution, and 5) test the solution with customers. Various proponents of this method, however, highlight these phases differently. In order to go through these phases, tactics such as physical prototypes, customer interviews, innovation flowchart, question ladder and design thinking mixtape are offered by the proponents of design thinking.

Empathize mode involves the process of understanding customers and their problems. During this process, information regarding how and why people do things 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 their findings into insights. In ideate mode, entrepreneurs focus on generating the broadest possible range of ideas by combining imaginative insights about general solutions. The outcome of this mode feeds into the process of building prototypes. The main goal of the process of prototyping is to highlight the strength and weaknesses of an idea and identify new paths (Brown, 2008). Prototype and test modes are closely intertwined making it more relevant to talk about them in combination rather than in transition. Finally, test mode provides another opportunity to gain more understanding through soliciting feedback about prototypes. Put differently, testing is another occasion for making the solution better through refining prototypes and increased learning about customers. Test mode is not the end of the process but is part of an iterative process of following the modes which eventually lead to a final solution.

2.4. Synthesis and justification of research questions

This chapter began with a brief account of the development of entrepreneurship field to provide context to the study of prescriptive guidelines for entrepreneurial behavior. It offered a general definition of the notion of method as inclusion criterion for reviewing nine entrepreneurial methods. This review of entrepreneurial methods suggests a number of discussion points which will be the basis for the contributions of this thesis. Firstly, although the reviewed entrepreneurial methods might appear to be a heterogeneous set of theories, the review suggests that they are very similar and deal with similar issues. All the methods (implicitly or explicitly) deal with the notion of uncertainty, provide a set of guidelines aimed at reducing uncertainty in the venture creation processes, and offer tools, techniques and guidelines. Secondly, although they deal with similar issues, their fundamental assumptions vary. The notion of uncertainty is viewed in different ways

and therefore is addressed differently. It can be considered the unknowability of future outcomes or lack of information. Academically derived entrepreneurial methods often discuss uncertainty explicitly and relate it to the philosophy underpinning the proposed guidelines. However–as expected–practitioner-driven entrepreneurial methods focus primarily on specific tools and techniques which help reduce uncertainty rather than discussing high-level ontological implications of how uncertainty is viewed. Either by applying a set of heuristics or a set of step-by-step practices, the proposed guidelines reduce uncertainty. This leads me to the first research question of the thesis:

> **RQ1:** What are the theoretically relevant and practically useful dimensions for organizing and conceptualizing entrepreneurial methods?

Thirdly, there is scarce discussion of how these methods relate to practice, how they are enacted and internalized by entrepreneurs, and what happens to the entrepreneurs and their organizations when these methods are applied. The reviewed entrepreneurial methods focus mainly on what should be done without explicitly outlining what the method guidelines might lead to in terms of expected and unexpected impacts at the individual (knowledge, competences, learning, changes in attitude, etc.) and venture (performance, success, learning, routines, etc.) levels. Therefore, it is necessary for entrepreneurship scholars to explore and understand the direct and indirect consequences of adhering to the guidelines of these methods and how the methods guidelines are internalized by entrepreneurs. This leads me to the second research question that this thesis seeks to address:

> **RQ2:** How do entrepreneurial methods relate to entrepreneurial practice?

Fourthly, the reviewed methods pay no attention to a learning model in order to account for the cumulative effect of their guidelines. In an entrepreneurial context, knowledge results from the transformation of experience through a learning process (Kolb et al., 2000) and leads to a reduction in uncertainty. Therefore, addressing how these methods could facilitate entrepreneurial learning indicates and explains the process by which uncertainty could be gradually reduced and contribute by showing ways to bridge the literature on entrepreneurial methods and entrepreneurial learning and. I discuss this further in the final chapter about the future research directions.

3. Research Methods

This chapter addresses the research process in Paper I, and the methodological choices made to address the research questions in Paper II.

3.1. Paper I

Paper I is a theoretical paper, therefore there is no empirical data pointing at the presented insights. However, I briefly explain how the insights were arrived at and informed Paper II. The initial idea was to investigate the differences between two groups of entrepreneurial methods: one rooted in a hypothetico-deductive (the proposed description of scientific method) approach and the other in a constructivist approach to creating new ventures. The lean startup methodology is studied as representative of hypothetico-deductive approaches and effectuation as representative of the constructivist approach. Comparison of these two positions led to a theoretical paper where a definition of what an entrepreneurial method is as well as a five-dimensional framework for organizing the literature on methods and mapping out their guidelines were developed. The dimensions proposed are based on a review of a number of entrepreneurial methods.

Initially ten theories identified as entrepreneurial methods were reviewed and the main points highlighted. These points constituted 11 dimensions. Through an iterative process, these dimensions were merged or split to produce five main dimensions. Their identification was motivated by our reading of relevant literature, what the theories emphasized, the importance of the notions for the entrepreneurial process, and our definition of entrepreneurial methods. We reviewed five papers in depth which could illustrate the extreme cases of two distinct camps of entrepreneurial methods. We reviewed the five methods identified along five dimensions, compared and contrasted them, and introduced the notions of ’transformation’ and ’experimentation’.

3.2. Paper II

3.2.1. Research design and data collection methods

This section explains the basic design choices related to study II and RQ2 by exploring the impacts of the lean startup methodology and its guidelines for entrepreneurs and entrepreneurial organizations, using an exploratory interview-based approach. Both retrospective and real-time data collection methods were used: 1) semi-structured interviews with CEOs and founders, 2) startups weekly presentations in the beginning of each workshop during the program, and 3) A ten-week online survey. The primary source of data leading to the insights in Paper II was semi-structured interviews. There was another additional research method involving an app-based data collection which did not allow for a smooth process of data collection and was therefore abandoned. Instead, a manual Excel based weekly questionnaire was administered and followed up using Google Forms. Note that the insights from the second and third sources were used only to inform the researcher about the ongoing processes in each startup but were not sufficiently substantive to be used in conjunction with the interviews to help the analysis of the insights obtained.

3.2.2. Empirical settings

The empirical context is based on a Swedish accelerator program (BornGlobal) which includes self-selected entrepreneurial teams. Since explicit hypothesis-testing approaches are practiced mainly by early stage startups suggests the inclusion of early stage startups in the study. Interviewees were selected based on discussions with program managers, review of their weekly presentations and also talks with participants. Study II involved interviews with six out of ten participating teams from cohort III, and five out of ten participating teams from cohort IV. There were several reasons why

not all the participating teams were included in the study: 1) some participants showed more persistent and commitment to the method guidelines, therefore allowing better study of the impact of the method on their processes, 2) some participants were more interested and more available for participating in interviews, and, 3) some participants were more willing to share their experiences with regard to their internal processes and how they and their organizations had changed. While, six of the startups in this study had already launched their offering at the time of the empirical data collection, the other five were experimenting with their ideas. Also, it was cohorts III and IV that were ongoing while the paper was taking shape which allowed for real-time data collection.

3.2.3. Data collection process and analysis of the results

As briefly explained, 11 participating teams were selected from two BornGlobal cohorts (6 from cohort III and 5 from cohort IV). Two rounds of interviews were conducted with teams from cohort III. The first round consisted of face-to-face interviews during the early stages of the program and the second round was conducted towards the end of the program via Skype calls during winter 2014. The interviews were semi-structured, dialogical and focused on the entrepreneurs' mindsets, startup activities and the process that led to higher-level learning. In the case of cohort IV, the same process repeated with the five remaining teams, however this time with a subtle difference, namely the first round of interviews was conducted before the program started. It consisted of a fictitious business scenario designed to capture participants' way of thinking about the process of new venture creation and followed by an unstructured part concerning the processes and their routines at that specific point in time. The second round of interviews was also semi-structured and designed to capture changes to processes, activities and mindsets (similar in form and logic to the second round interviews in cohort III). The second round interviews were drawn on most heavily for Paper II and revolved around four main high-level matters: 1) description of the startup idea, 2) changes in process, entrepreneurs' mindsets and the set of activities undertaken, 3) changes to elements of the startup idea, and 4) problems related to following the method. Questions such as: "Have the ways you do things changed since the beginning of the program?", "Do you recognize changes to the way you view the process of developing your idea?", and "What are the major changes in the way you progress your developmental efforts?" were posed.

The interviews were recorded and transcribed verbatim. To facilitate the analysis process, the interview transcripts were imported into Atlass.tii, a qualitative research software. The individual interview transcripts were analyzed line-by-line and broken down into independent chunks of text (i.e. meaningful units). The focus was on making the meaning units as detailed and precise as possible. Tentative categories were created from each independent meaning unit. Later, the meaning units were reread and re-categorized into similar categories or a newly created one. This process generated 18 categories. During this process categories found to be very similar were merged and others split. This process continued until I was sure that all the meaning units in each of the categories carried the message expressed by the interviewees. The resulting categories identified the four main factors that demonstrated the changes made through adherence to the method guidelines.

3.2.4. Limitations

A limitation of Paper II is that the empirical investigation is limited to 11 startups and the results are based on a specific business accelerator program in Sweden. Therefore in regards to generalizability Paper II cannot offer a comprehensive set of insights in answering RQ 2. Since the study in Paper II is explorative and investigates the interplay between entrepreneurial methods and entrepreneurial

practice, this limitation becomes less important. The results in Paper II can be used to inform future research.

4. Summary of appended papers

This chapter provides a brief summary of the appended papers.

4.1. Paper I

Title: *Transformation and Experimentation: Two Ideal Types of Entrepreneurship as Method*

Paper I has two objectives: to discuss how entrepreneurship can be conceptualized as a systematic method and to advance the entrepreneurial methods discourse. The paper proposes a comprehensive framework for discerning the differences between existing entrepreneurial methods, allowing them to be grouped into *transformation* or *experimentation*. The five-dimensional framework is then used to organize the literature on entrepreneurial methods according to view of uncertainty, role of vision, nature of rules and principles, view of individuals, and purpose of method. The choice of these dimensions is based on the definition we proposed for entrepreneurial method as well as the points that different methods focus to elaborate on. In this paper, an entrepreneurial method is defined as "a coherent set of principles of thought and action that guide entrepreneurial action and interaction in the process of venture development in conditions of extreme uncertainty". Transformation is grounded in viewing the future as socially constructed and therefore unknowable to the entrepreneur. Hence, a transformation method revolves mainly around prescriptive heuristics to guide the emergent processes of collective creation of products, organizations, and markets without regard to predictive strategies. The best representation of a transformation archetype is effectuation. Experimentation regards the future as knowable in principle but poorly understood and consequently prescribes a systematic method for designing and running experiments and evaluating their results.

After elaborating on the nature of these two perspectives, Paper I continues by presenting some theoretical and meta-theoretical implications for future research. Among the theoretical implications, Paper I argues that there is confusion in some of the well-read contributions to the entrepreneurship field between experimentation and effectuation since authors mistake them and use them interchangeably. Paper I maintains that regardless of the fact that entrepreneurs in real life may simultaneously mix and match bits of transformation strategies with bits of experimentation strategies, scholars should not ignore the differences among these methods. Moreover, with respect to meta-theoretical implications, Paper I suggests that transformation and experimentation can usefully be related to the distinction between the logic of discovery and the logic of justification. Transformation stems from the transformative approach which can lead to novel discoveries through the provision of a set of heuristics to guide entrepreneurs' proactive actions and interactions. Experimentation focuses more on ways to justify and validate the core vision guiding entrepreneurial action, and therefore is in line with the logic of justification.

4.2. Paper II

Title: *How the Lean Startup Methodology Affects Entrepreneurs and their Organizations: The Case of a Swedish Startup Accelerator*

Paper II explores the interplay between a systematic hypothesis testing method (the lean startup methodology) and the changes it induces in entrepreneurs, their organizations, and the venture creation process. Paper II discusses the explicit and implicit impacts as well as the changes experienced by participating startups in an accelerator program with regards to their mental models, their activities, their interactions with existing as well as prospective customers, and the internal dynamics shaping their organizations. By employing the method-in-use model, Paper II offers an explanation for the underlying mechanisms which allow and foster the identified changes. Previous research suggests that majority of the changes take place as the result of a learning process. Research suggests also that much of the entrepreneurial learning is experiential learning. Therefore, experiential learning provides a logical account of the mechanisms underlying changes in the process. Paper II employs single and double-loop learning models to explain the transition from formal method guidelines to informal process activities.

Paper II identifies changes to customer interactions and activities as components of a single-loop learning process and discusses the effects of these changes on the action strategies employed by entrepreneurs. The changes to customer interactions include closer contacts with customers and stakeholders, better understanding of their needs and using customers' feedback as input to the decision-making process. The changes related to activities include a process of setting priorities, informed decision-making and improved internal and external communication. Similar to the discussion about single-loop learning process, changes to entrepreneurs' and teams' mindsets are matched with a process of double-loop learning.

The second set of changes occurs mainly at the level of the governing variables in the method-in-use model. This includes changes such as becoming more open to frequent changes, becoming more customer-oriented as opposed to technology-oriented, and more focused on learning from customers as important contributors to the development process. An unintended influence and an unaccounted for consequences that are not addressed in the method include: improved internal and external communication and difficulties related to assimilation of the method within the organization. The unintended influence of following the method was that it eventually led to easier communication with employees and external stakeholders as a result of having similar reference points such as experimental results and inputs from customers. The unaccounted for consequence of the method was the difficulty of assimilating the method in the teams' ongoing processes. This has been largely ignored in the method and evidently was problematic on different levels for the participating teams. The paper contributes also by offering a schematic, combining single and double-loop learning process to demonstrate how entrepreneurs by following the method guidelines internalized and personalized the method to their specific conditions.

5. Discussion

Informed by the reflections at the end of theory review chapter, this chapter begins with a discussion of the methods reviewed based on the role of uncertainty, the nature of rules and principles, and the tools and techniques they provide. In light of this discussion I propose a way by which we could extend works on and advance the discourse of entrepreneurial methods. This entails a three-tier framework and the introduction of the notion of entrepreneurial methods followed by a discussion of the findings in the appended papers.

5.1. A discussion of the methods reviewed

The review of several methods on the basis of a definition of methods as inclusion criterion, and identifying their similarities and differences, revealed several interesting points. The notion of uncertainty is critical and proponents of the reviewed methods address uncertainty either explicitly at length or implicitly in brief. The methods reviewed are employed by individuals and teams because they offer guidance aimed at reducing the inherent uncertainty of the activities in which they engage. Therefore, the underlying assumptions related to the nature of uncertainty are both important and defining for the reviewed methods. Uncertainty is understood differently depending on the fundamental assumptions about the process and the environment. Some regard uncertainty as ontologically real and knowable in principle, and therefore view it as lack of information. Others view the world as socially constructed and believe that uncertainty is a matter of unknowable nature of future outcomes and therefore unknowable in principle.

Moreover, these methods work either on rules of thumb (heuristics) or algorithmic guidelines. Some of these methods provide entrepreneurs with a set of principles related to the specific issues that need to be addressed during venture creation processes. These are often high-level principles which lack the required levels of normativity. This means that they do not state how the proposed principles should or could be translated into action but rather remain as principles of thought. Therefore, by leaving action ambiguous they might lead entrepreneurs to processes of trial and error. Those methods that have distinct and explicit guidelines in the form of sequential steps indicate how entrepreneurs should begin the process, the steps in the process, how they should be completed, the possible loops if the conditions for proceeding are not fulfilled, and the culmination to the process. These methods have a higher chance of resulting in clear action and a higher potential of helping to avoid random actions.

Further, these explicit methods often include embedded tools and techniques that facilitate adherence to their guidelines. Some of the methods reviewed provide large sets of tools and techniques which help entrepreneurs follow the suggested steps. These tools and techniques include those dedicated to specific steps and those that apply to several steps in the process. Some others are weak in offering relevant tools and techniques and therefore somehow detached from action. In the case of methods that include few tools and guidelines for action, entrepreneurs need to experiment with ways and tools to help their activities. Methods often discuss uncertainty at a high theoretical level and provide tools and ways to reduce it at the level of action; as intermediaries between the abstract high level discussions and practical action-oriented tools they also provide various kinds of models. In what follows, I discuss the role of uncertainty, the nature of rules and principles, and the tools and techniques provided. The analysis is summarized in Table 1.

5.1.1. Role of uncertainty

Uncertainty, if not 'the' cornerstone, is one of the main conceptual building blocs of the majority of entrepreneurship theories. The future is largely unpredictable and unknowable, therefore the outcomes of action are largely uncertain. This inherent uncertainty is amplified by the intrinsic novelty in the entrepreneurial processes in regard to creating something new (McMullen and Shepherd, 2006). For any theory of action (e.g., an entrepreneurial method), the uncertainty attributed to situations demonstrates what the theory should address: the way entrepreneurs regard their current context, the possibilities for changing and adapting their contexts to desired ones, and the courses of action available to them (Lane and Maxfield, 2005). Therefore, it is necessary to investigate how uncertainty is viewed by methods and therefore influences their guidelines, how explicit the notion is discussed, and how they attempt to provide ways to reduce it. Table 1 shows how the reviewed contributions accommodate and deal with the notion of uncertainty in their fundamental assumptions. The main difference between entrepreneurial methods and other methods (e.g., managerial methods) is the level of uncertainty that they need to help reduce. Often the knowns in entrepreneurial situations are far less than the unknowns while in managerial environments the balance may be weighted more to the knowns. Since the notion of uncertainty is central, these methods must explicitly or implicitly address it and offer ways to reduce it in entrepreneurial activities.

Uncertainty is viewed in two distinct ways (although not all of the methods address their views on uncertainty explicitly): 1) *Epistemological uncertainty*: the world is seen as ontologically real and in principle knowable. Entrepreneurs are uncertain that their assumptions about the future are in fact valid statements about future consequences (Lane and Maxfield, 2005). Uncertainty is therefore a matter of epistemology and lack of knowledge and information. In this context, uncertainty can be reduced through various systematic regimes of information gathering by applying an array of different tactics such as hypothesis-testing through rigorous experiments. Discovery-driven planning, the lean startup methodology, design thinking and business planning among others view uncertainty in this light although they address it differently (explicitly or implicitly). 2) *Ontological uncertainty*: the world is seen as socially constructed and dependent on individuals for its constitution. Entrepreneurs cannot formulate assumptions about the future since the relations and entities that contribute to the foundation of these assumptions are not known to entrepreneurs at the time they are formulated (Lane and Maxfield, 2005). Uncertainty is therefore a matter of ontology and the unknowable nature of outcomes but can be reduced through tactics such as stakeholder commitment or reallocation of existing resources. Effectuation and bricolage view uncertainty as ontological.

As presented in Table 1, uncertainty is addressed in two ways: 1) *explicit*: uncertainty is discussed explicitly in relation to the methods guidelines. In this case uncertainty is a central notion that constitutes the backbone of the proposed guidelines. 2) *implicit*: uncertainty is implied and inferred. In this case uncertainty is taken for granted but not dealt with as the aim of the method. For instance, effectuation discusses its principles in light of the notion of uncertainty and provides an explicit set of heuristics to reduce it. In contrast, discovery-driven planning does not discuss the notion of uncertainty explicitly. However, uncertainty is understood as lack of information and therefore discovery-driven planning provides guidelines for gathering relevant information to reduce uncertainty.

5.1.2. Nature of rules and principles

The methods reviewed can be categorized as heuristic-based and algorithm-based guidelines. Heuristics are ”simple procedures that help find adequate, though often imperfect, answer to difficult questions” (Kahneman, 2011:98). In other words, heuristics are information simplification processes which generally are exploited when rational decision-making is not possible (Kahneman et al., 1982). Algorithms consist of ”a set of rules that precisely defines a sequence of operations” (Stone, 1973:4). Put differently, an algorithm is a specific set of guidelines for completing a procedure or solving a problem, often with an embedded termination point. Specific algorithms are described as methods, procedures, or techniques in different contexts. Methods such as effectuation, entrepreneurial bricolage, evidence-based management and disciplined entrepreneurship can be grouped as heuristic-based while business planning, discovery-driven planning, prescriptive entrepreneurship, the lean startup methodology and design thinking are algorithmic. For instance, effectuation relies on five main principles advocating certain heuristics that can be employed according to a specific order (Wiltbank et al., 2006) and methods such as the lean startup methodology and design thinking offer algorithmic guidelines entailing clear stages, one leading to the other (Eisenmann et al., 2012). Figure 1 juxtaposes the heuristic-based guidelines of effectuation with the algorithm-based guidelines of the lean startup methodology. One thing to note here is that since algorithm-based methods prescribe a rigid sequence of steps, they allow little room for creativity while the heuristic-based methods due to the lack of normativity can result in a more creative process.

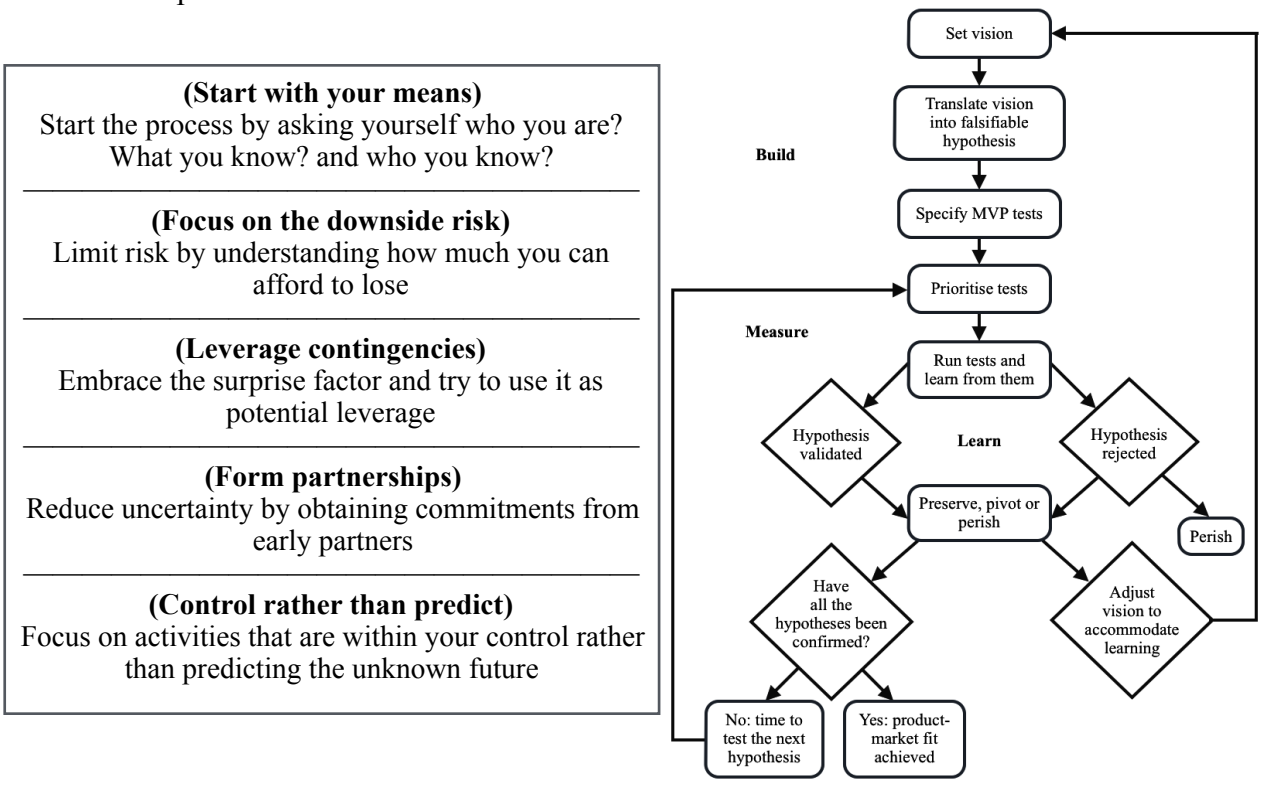

Figure 1 - Heuristic-based guidelines of effectuation (left, adapted from Effectuation.org) juxtaposed with algorithm-based guidelines of the lean startup (right, adapted from Eisenmann et al., 2012)

5.1.3. Provided tools and techniques

These methods often include packages of preferred and embedded tools and techniques which help entrepreneurs adhere to the step-by-step guidelines or enact heuristics in a more effective and systematic way. However, the number and variety of tools and techniques provided vary. Some

provide several tools and leave less room for ambiguity in adhering to their prescriptive guidelines. These tools and techniques may be relevant to specific stages of the process or may be applied throughout. Business planning, the lean startup methodology and design thinking belong to the first group and include a large set of tools and techniques developed and presented by proponents of these methods. Some others are weak in offering relevant tools and techniques and therefore somehow detached from effectively guiding entrepreneurial action. Thus, entrepreneurs need to find relevant tools that enable them to carry out the necessary activities. Effectuation, evidence-based management and disciplined entrepreneurship belong to the second group. Table 1 shows the extent of the tools and techniques provided by the reviewed methods to guide action.

Table 1 - Summary of the reviewed methods

	View of uncertainty	**Nature of rules and principles**	**Tools and techniques provided**
Business planning	*(Implicit–epistemological)* Uncertainty is due to lack of information and can be reduced through speculation and planning of future outcomes	A set of step-by-step guidelines	Several tools and techniques
Effectuation	*(Explicit–ontological)* Uncertainty is the unknowability of the future outcomes and can be reduced through engagement of stakeholders	A set of heuristics with a specific order	No tools and techniques
Entrepreneurial bricolage	*(Implicit–ontological)* Uncertainty is the unknowability of the future outcomes and can be reduced through reallocation of existing resources	A set of heuristics with no specific order	A few tools and techniques
Discovery-driven planning	*(Explicit–epistemological)* Uncertainty is the lack of information and can be reduced through calculating future outcomes	A set of step-by-step guidelines	A couple of tools and techniques
Disciplined entrepreneurship	*(Explicit–epistemological)* Uncertainty is the lack of information and can be reduced through formulating hypotheses and validating them	A set of heuristics with no specific order	A couple of tools and techniques
Evidence-based management	*(Implicit–epistemological)* Uncertainty is the lack of information and can be reduced through applying the best current data and theory	A set of heuristics with no specific order	No tools and techniques
Prescriptive entrepreneurship	*(Implicit–epistemological)* Uncertainty is the lack of information and can be reduced through continuous evaluation of ’information channels’	A set of step-by-step guidelines	A couple of tools and techniques

	View of uncertainty	Nature of rules and principles	Tools and techniques provided
The lean startup Methodology	*(Explicit–epistemological)* Uncertainty is the lack of information and can be reduced through systematic collection of data from customers and rigorous hypothesis testing	A mix of heuristics and step-by-step guidelines	Several tools and techniques
Design thinking	*(Implicit–epistemological)* Uncertainty is the lack of information and can be reduced through close interactions with customers and testing prototypes	A set of step-by-step guidelines	Several tools and techniques

5.2. Conceptualization of a framework for entrepreneurial methods

The literatures on language teaching and learning (Anthony, 1963; Rodgers and Richards, 2001), firm strategy (Cascades-Masanell and Ricart, 2010), business research (Bryman and Bell, 2011), and total quality management (Dean and Bowen, 1994) among others, benefit from analysis of their implementation using three-tier frameworks dealing with abstract and concrete aspects of their theories. For instance, the language teaching-learning literature splits the components of teaching-learning into approach, method and techniques (Anthony, 1963). In this model, approach includes method and techniques, and method includes techniques. Similarly, scholars of total quality management characterize its philosophy by principles, practices and techniques (Dean and Bowen, 1994). The same hierarchical relationship is applied to total quality management: principles are implemented through practices and practices are supported by a wide array of techniques. In my view, it is theoretically and practically useful to employ a similar logic to conceptualize entrepreneurial methods.

To address RQ1 and after reviewing the entrepreneurial methods and in light of the commonalities, I am positioned to develop a framework which clearly and succinctly captures the related theoretical and practical dimensions of entrepreneurial methods. These methods can be usefully broken down into three levels that represent the cognitive and practical aspects involved in new venture creation. I propose an organizing framework consisting of a trio of terms in the scheme of entrepreneurial methods: *logic, model,* and *tactics.* This framework provides a common ground for discussing the notion of uncertainty, the nature of rules and principles, and the tools and techniques provided by the reviewed methods. Uncertainty corresponds (but does not amount) to logic, nature of rules and principles to model, and the tools and techniques to tactics.

In this framework, *logic* is the overarching theoretical and cognitive rationale which orients all venture creation activities. It highlights a general point of view or philosophy which is arguable but not necessarily provable. Issues such as uncertainty show that the reviewed methods deal with concepts that are not directly prescriptive but have major influences on the methods' underlying assumptions and therefore important impacts on how they guide action. *Model* consists of related courses of action for conducting the activities deemed necessary to implement the logic. Issues such as the nature of rules and principles indicate how the methods guidelines are presented to deal with uncertainty, how normative they are, and how much room they leave for creative action. *Tactics* are a collection of practices aimed at progressing specific aspects of the process, guided by the model and in line with the logic. Different methods employ different tactics, some offer a large toolbox of

tactics and others focus less on tactics. Different tactics provided may seem to be unrelated to each other as they focus on different aspects of the process and generally are detailed and specific. Figure 2 presents a schematic of the proposed three-tier framework and shows how these levels relate to each other.

This trio of terms constitutes a hierarchical framework with logic mapping on to the macro level, model to the meso level and tactics to the micro level in relation to their influence on cognition or action. The organizational key is that tactics are used to ensure model's guidelines which are consistent with the rationale of logic. Logic concerns issues which need to be dealt at a higher level of thought and cognition, tactics refer to specific step-by-step tools at a lower-level of action and interaction. Model is at an intermediate level between thought and action. However, this is not to imply that thought is specific only to the level of logic and not the level of tactics. Instead, it indicates that logic mainly concerns the cognitive aspects of entrepreneurial behavior without implying a specific course 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. Furthermore, model acts as a bridge between high-level cognitive ideas and low-level practical activities, often through a sequential set of guidelines that assumes order. In the following, I elaborate on each of these terms and provide examples from the reviewed methods.

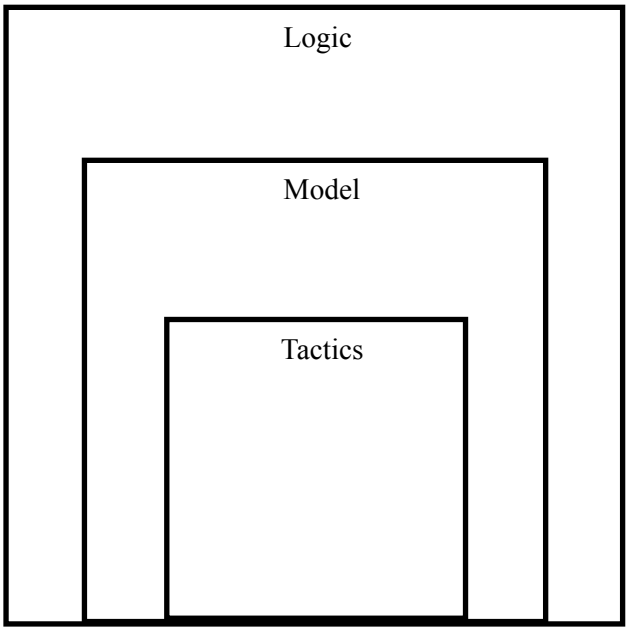

Figure 2 - The three-tier framework for conceptualizing methods

5.2.1. Logic

Logic is the level at which critical assumptions about the nature of the venture creation process are specified and the general orientation is encompassed. Logic embodies theoretical and philosophical axioms such as the notion of uncertainty (epistemological or ontological), view of the future (predictable or completely unknown), nature of the process (discovery or creation), epistemological discussions (realism or constructivism), and relation to external stakeholders (transactional or generative) among other things. It governs entrepreneurial action and operates as a reference point for the theoretical foundation of methods. Logic provides direction and sets the general rules and principles. All the reviewed methods explicitly or implicitly address the logic of their proposed prescriptions. Therefore, the theoretical and philosophical axioms can be either directly understood or indirectly inferred. The notion of uncertainty is central to the logic of several of the reviewed methods which are aimed at reducing or eliminating uncertainty. For instance, effectuation,

disciplined entrepreneurship and the lean startup methodology deal explicitly with resolving issues related to the uncertainty of the environment and therefore their prescribed guidelines are targeted specifically at reducing the uncertainty in creating something novel. The notion of time is discussed in relation to the concepts of future and prediction. For instance, business planning is founded on the premise that although the future outcomes of actions are unknown, they are still predictable. Therefore, by predicting possible future outcomes, entrepreneurs predispose themselves to different scenarios which prepares them to face future challenges. In contrast, effectuation maintains that the future is uncertain and therefore unpredictable (especially in the context of creating something novel). Therefore, instead of planning for future outcomes it offers a set of heuristics for controlling the present conditions and creating the future outcomes together with stakeholders who are willing to commit resources. Information and evidence is another notion central to the logic in almost all of these methods. It is through the process of information gathering that entrepreneurs engage in a process of learning by interacting with the external world as a way to reduce uncertainty. The collected information and evidence is used by entrepreneurs to make sense of the environment, assess the threats and opportunities, and make better decisions. For instance, evidence-based management claims that better decisions are only possible if based on the best and most recent information. Similarly, discovery-driven planning underlines that a powerful way to deal with uncertainty is to gather information on different aspects of venture creation and advance the process according to facts rather than half-truths. Moreover, the notion of external sources applies mainly to information and evidence collection. Several of these methods highlight the role of external stakeholders throughout the process as important for performance. For instance, the lean startup methodology claims that the evidence relevant for decision-making lies mainly outside of the boundary of the organization, therefore entrepreneurs need to interact frequently with external stakeholders such as customers, partners, suppliers, and investors. Similarly, design thinking details tactics for collecting user feedback to improve the quality of ideas, and refine them according to the feedback received. Since logic deals with fundamental issues, I argue that a succinct logic helps entrepreneurs relate to the aim of the method and allows them to view it as an orienting or anchoring point for their activities throughout the process.

5.2.2. Model

Model is the level at which a series of related and progressive courses of action for putting theory into practice is provided. It generally acts as an overall plan for orderly conduct which is based on an overarching logic and does not contradict it. Model is often procedural and contains an organized sequence of operations and interactions for guiding entrepreneurial action. In light of the discussion on the nature of rules and principles, models can be understood as a set of heuristics or as algorithms with a clear order of action. Bricolage, disciplined entrepreneurship, and discovery-driven planning only offer a set of loosely connected heuristics for guiding action. They provide no clear order as to how and when the entrepreneurs should act by enacting those heuristics, fall short of being normative, and therefore introduce variation and ambiguity to action. Due to the lack of guidance, entrepreneurs can fall into a process of trial and error. For instance, bricolage provides three heuristics for making do through a bias towards action, focusing on the existing resources, and repurposing them for new applications. These heuristics are clear in their aspiration but do not provide entrepreneurs with actionable measures for how to carry out action according to them. In contrast, prescriptive entrepreneurship, the lean startup methodology, and design thinking present explicit models that highlight steps for how to proceed. For instance, the lean startup methodology advocates the build-measure-learn loop in which interacting with external stakeholders and refining initial ideas allow entrepreneurs to build the first version of their product (i.e., the MVP). This can

then be tested with users and customers to collect feedback. The feedback after being analyzed will be incorporated into the next version of the product. I argue that not providing guidelines in the form of sequential steps makes a proposed prescriptive theory harder to grasp and the model more difficult to adhere to.

5.2.3. Tactics

Tactics include activities, exercises or practices that are in line with the underlying logic and the prescribed model. They are often detailed and specify the context of use and the outcome of the action. They are implementational and are geared towards accomplishing an immediate objective. As tactics tightly tie the abstract orientation that is dictated by logic to practice, they are what is visible to outsiders and can be captured by observational studies since they are closest to the levels of action and practice. Most of the reviewed methods provide a set of tactics related to their underlying logics. For instance, the lean startup methodology includes tactics such as concierge, A/B and fake door tests for collecting information from external sources, making an early MVP, and recording responses from users. Similarly, design thinking offers prototyping, customer interviews, innovation flowchart, question ladder, and design thinking mixtape as tactics to help entrepreneurs navigate through the five phases of design thinking in line with its logic.

Table 2 maps the reviewed methods on the three levels of logic, model and tactics and demonstrates how proponents of these methods address these levels. Since not all of the methods explicitly address logic, model and tactics, some are inferred based on my reading of multiple sources to allow for a more fruitful discussion of the results of the table.

Table 2 - Revisiting the reviewed methods in light of the proposed three-tier framework

	Logic	**Model**	**Tactics**
Business planning	Future outcomes are unknown but predictable through long-term planning of the desired outcomes	Six steps of business planning	Customer identification through focus groups, SWOT analysis, Financial prognosis, Nominal ranking
Effectuation	Future outcomes are uncertain and therefore need not be predicted since they can be constructed and controlled through a collaborative process	Four heuristics of effectuation	N/A
Entrepreneurial bricolage	Resource scarcity can often be addressed through recombination of existing and unused resources	Three general heuristics	Exploiting unused resources, Re-designing of the existing resources
Discovery-driven planning	Uncertainty can be reduced through systematic information gathering	Five steps of discovery-driven planning	Reverse income statement, Targeted experiments

	Logic	Model	Tactics
Disciplined entrepreneurship	Uncertainty of the process can be mitigated through formulating working guesses about the idea and testing the validity of them	Three steps of disciplined entrepreneurship	Targeted experiments
Evidence-based management	Better decisions can be made if they are based on the best available evidence rather than conventional wisdom	Six steps of evidence-based management	N/A
Prescriptive entrepreneurship	Opportunities are found more successfully if they are looked for through a limited domain of entrepreneurs' prior experience	Procedural diagram of prescriptive entrepreneurship	Employment of information channels, Clarification of consideration sets
The lean startup Methodology	Uncertainty is reducible by employing a systematic and scientific approach to formulating working guesses about the idea and testing the validity of them	Build-measure-learn loop, The lean startup flowchart	Targeted experiments, Customer interviews, Physical prototypes, Concierge, A/B tests, Fake door tests
Design thinking	Ideas can significantly improve through the involvement of users in different phases of the development	The five phases of design thinking	Physical prototypes, Customer interviews, Innovation flowchart, Question ladder, Design thinking mixtape

5.3. Entrepreneurial Methods: a definition

After proposing an organizing framework for dissecting and discussing entrepreneurial methods, this section provides a comprehensive definition for *"entrepreneurial methods*". Since there is no common understanding of how entrepreneurial methods are defined and what they entail, I claim that doing so can advance the discourse on entrepreneurial methods by helping converge the rather heterogeneous literature on methods. This is achieved by using a common language to refer to methods that allows a better understanding of them which is in line with scholarly calls and contributions that go beyond opportunity and process (Davidsson, 2015). Inspired by Sarasvathy and Venkataraman (2011), Paper I defines entrepreneurial methods as "a coherent set of principles of thought and action that guide entrepreneurial action and interaction in the process of venture development in conditions of extreme uncertainty" (Mansoori et al., 2015). This definition entails elements that not only reflect and fulfill the general definition of methods (see section 2.23) but also the specifics of a desired entrepreneurial prescriptive theory, namely: principles to guide entrepreneurial cognition and practice, dynamic nature of entrepreneurial action, and the presence of uncertainty in entrepreneurial action. Here, I propose a more comprehensive definition of entrepreneurial methods which captures the aspects of methods more precisely.

I further develop the notion of entrepreneurial method as ”*a coherent set of related principles and guidelines of thought and action for systematically guiding entrepreneurial action in reducing uncertainty stemming from different cognitive and pragmatic dimensions of the venture creation process*”. This definition emphasizes coherency of guidelines and principles (*model* and *tactics*) with the overall philosophy (*logic*) of the entrepreneurial method. An entrepreneurial method should include relevant tools and techniques to guide entrepreneurial *action* as well as entrepreneurs' *thinking*. It suggests that a method should be *systematic* in its aspiration to reduce *uncertainty*. This definition as an overarching definition seeks to include all the different ways that can assist entrepreneurial behavior through the different stages of the new venture creation process. To avoid confusion, I note that Sarasvathy and Venkataraman (2011) discuss the concept of ”entrepreneurship as method” and ”entrepreneurial method” in a slightly different way. By proposing effectuation as an instance of ”the” entrepreneurial method they introduce entrepreneurship as method. They argue that entrepreneurship is not specific to venture creation but rather can be used to unearth the human potential to come up with new ends as well as the means to achieve them (Sarasvathy and Venkataraman, 2011). Duening and Stock (2013) and Connor et al. (2014) discuss effectuation as the new paradigm for entrepreneurship education.

5.4. Transformation and Experimentation

The idea of organizing entrepreneurial methods led to a framework consisting of the five dimensions of view of uncertainty, role of vision, nature of rules and principles, view of the individual, and purpose of process. Due to different foundational assumptions, methods exhibit differences on several dimensions, some stark and some quite subtle. By mapping methods along the five dimensions, two ideal archetypes emerge: 'Transformation' and 'Experimentation'. Transformation describes ”principles of thought and action that guide individuals as they collectively co-create products, organizations and markets through an emergent social construction process grounded in available means” (Mansoori et.al, 2015:9). Similarly, experimentation describes ”principles of thought and action that serve to provide guidance through the process of designing, running and evaluating experiments to test the vision and the critical assumptions on which it is based” (Mansoori et.al, 2015:11).

By breaking down methods into their constituents, this organization suggests the relevance of each archetype to specific conditions where the method matches the characteristics of the ideas pursued. For instance, if the uncertainty in the environment is due to the unknowability of future outcomes, the transformational methods provide a more suitable and realistic approach to guide entrepreneurial behavior. Transformational methods regard uncertainty as the unknowability of outcomes, due either to the creative character of emergent entrepreneurial processes or severe lack of resources. At the core of transformational methods is the notion of creation, i.e. by taking a subjective view of reality and embracing an unpredictable future rather than predicting future outcomes, by adhering to different guidelines, the future can be constructed. Furthermore, experimentation methods regard uncertainty as lack of information and therefore reducible by obtaining relevant information. At the core of experimentation methods is the notion of prediction through systematic information collection, i.e. the world is seen as ontologically real and in principle knowable. Uncertainty is therefore taken to mean lack of knowledge about the external environment.

5.5. From method to practice

Entrepreneurial methods often do not discuss the transformation from formal to informal, in other words the transformation of often abstract guidelines into concrete activities that build up to entrepreneurial processes. Transformation has both expected and unexpected consequences, and concerns both the practice through its effect on activities and also individual entrepreneurs through its influence on mental models and the dynamics of their teams. It is true that most of these methods address learning implicitly or explicitly at the level of tactics, but there is a need for explicit discussion of an overarching learning mechanism which is able to explain and predict the expected and unexpected consequences of these methods. This is important due to the potential for methods to act as vehicles to simulate and advance learning. The learning mechanism should account for knowledge accumulation and the relation of learning to the three levels of logic, model and tactics. It thus should address how methods deal with issues related to uncertainty reduction through such processes as skills acquisition and skills development. Figure 3 depicts a learning mechanism based on the step-by-step guidelines in an entrepreneurial method. The empirical data from Paper II demonstrate that employing an entrepreneurial method such as the lean startup methodology which explicitly addresses logic, model and tactics, affects cognitive as well as practical aspects of venture creation processes. These influences are explainable through capturing the transition from method guidelines to the activities undertaken.

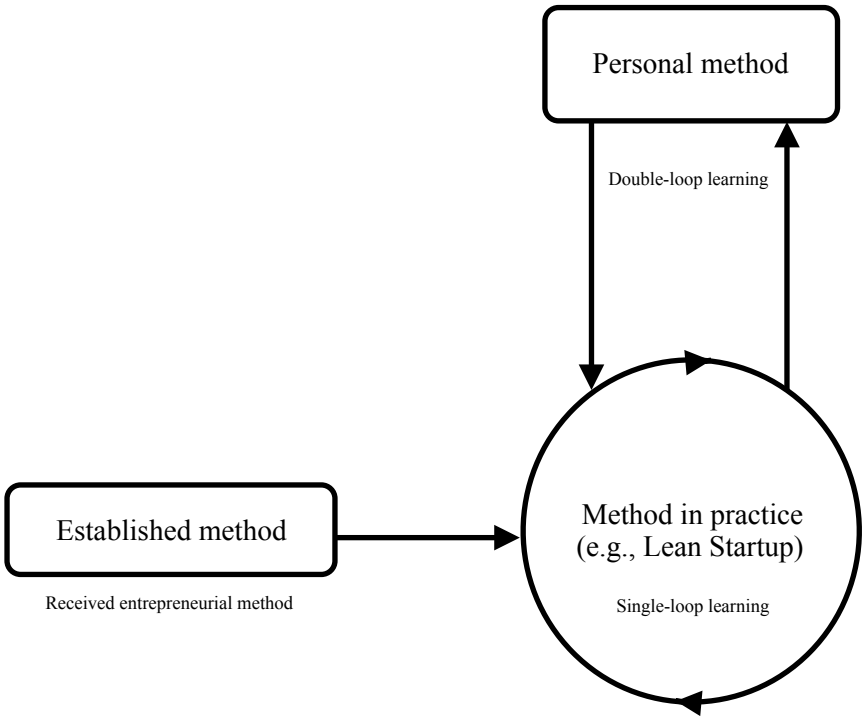

Figure 3 - Method in practice through single and double-loop learning processes

One way to capture the transition from method to practice, is to study the changes that employing methods have on the mindsets and actions of entrepreneurs. The results from Paper II suggest that entrepreneurial learning is a useful theory for capturing these changes. Entrepreneurial learning is similar to level II (double-loop) learning which is important in terms of the fundamental changes to learners (Connor et al., 2014). Level II learning stimulates individuals to reflect on their actions, and questions how they work and also the underlying logics and values that govern those behaviors. It is this level of learning which enables entrepreneurial thinking and as the desired effect of any entrepreneurial methods is to stimulate entrepreneurial thinking (Connor et al., 2014), methods should offer mechanisms to enable higher-level learning. Paper II suggests that the methods which

unleash entrepreneurial thinking through learning will help entrepreneurs conduct the required activities more effectively. This can be explained through the overall changes in mindset about a particular new routine and its implications for how lower-level activities are undertaken. Figure 3 shows how a learning perspective and Argyris and Schön's (1974) theory of action help explain the changes to practices (activities) and personal methods (mindset). It also shows ways in which guidelines are internalized and improved by entrepreneurs. It can be seen in the figure that entrepreneurs practice the guidelines recommended by the entrepreneurial method guidelines and in so doing add new action strategies (to use Argyris and Schön's theory of action terms) and modify existing ones, and therefore experience single-loop learning (level I). However, if the prescribed guidelines result in higher-level changes e.g. changes to mindset and lead to a revised personal method, double-loop learning takes place (level II). The resulting new personal method is in line with but not the same as the received method. Figure 3 demonstrates also how entrepreneurs internalize the method guidelines through the iterative single-loop and double-loop learning processes, and form personal methods which then inform their actions.

6. Conclusions

The aim of this thesis was to achieve a better understanding of prescriptive approaches to entrepreneurship to guide entrepreneurial behavior. This thesis contributes to the field of entrepreneurship in three ways: 1) by elaborating on entrepreneurial methods, this thesis proposes the notion of entrepreneurial methods and presents a comprehensive definition for them, 2) by proposing a conceptual framework for understanding, organizing and improving the entrepreneurial methods which are not believed to belong under the same rubric, this thesis suggests a way for expanding the current entrepreneurial methods as well as developing new prescriptive ones, and 3) by exploring the interplay between entrepreneurial methods and the practices that follow, this thesis provides insights into the underlying mechanisms of how their guidelines are applied by entrepreneurs and what happens to entrepreneurs and their organizations through this interaction with methods.

This thesis identifies four main issues regarding the entrepreneurial methods in the literature that are grouped as entrepreneurial methods in this theses: 1) many methods include most of the components in the proposed framework but there is no specific organization in addressing logic, model and tactics. I suggest that a structure which distinguishes these levels would be useful for pedagogical purposes, and would promote the development of new as well as existing methods; 2) the notion of uncertainty is handled in two ways: explicitly addressed or implicitly implied. I suggest that explicit discussions of the overarching logic and specifically crucial notions such as uncertainty, would contribute to a better conceptualization of methods and their guidelines, 3) research on how method and practice are related, how methods are enacted and what happens when individuals try to apply and internalize them is scarce. The results of Paper II open a discussion on the importance of the relationship between method and practice, and continuous knowledge development as the main tool to reduce uncertainty. Given the growing interest in systematic ways to guide entrepreneurial behavior, the proposed framework is the first step towards achieving a common understanding that allows investigation of these methods and comparison of their impacts in different situations, and 4) with the exception of the lean startup methodology in which validated learning is a main pillar (although not discussed specifically in relation to learning theories) most entrepreneurial methods do not discuss learning. Since experiential learning through knowledge accumulation is crucial to entrepreneurial processes, more research is needed on how these methods interact with learning theories. As the next step, I believe studying the reviewed entrepreneurial methods and learning theories in relation to each other contributes to the discourse of entrepreneurial methods.

Finally, unleashing higher-level learning through knowledge accumulation requires theoretically based entrepreneurial methods which tie together their fundamental theoretical levels (i.e. logic, model and tactics). The proposed framework in this thesis allows the identification of missing components and the weaknesses in different methods, and ways to improve them. I argue that from the perspective of the proposed framework, the entrepreneurial methods should be explainable, discernible and easily understood through coherent and logically connected theoretical levels. More coherent and logically connected guidelines would allow easier internalization by entrepreneurs and more rigorous application of the prescribed tactics which leads to reducing uncertainty by enabling an effective learning process.

7. The way forward

As already discussed, several of the reviewed methods do not address uncertainty at the three levels of logic, model and tactics, and focus instead on tools to reduce uncertainty at the level of tactics. While Paper I focuses on the levels of logic and model, and Paper II focuses on the level of tactics, future research could explore ways to address and reduce the uncertainty in venture creation processes by proposing a comprehensive learning model. This model should account for individual as well as venture level learning. It will require a clear conceptualization of entrepreneurial methods according to the proposed three-tier framework. Further succinct discussions of these levels would help explain learning and accumulation of knowledge (by employing entrepreneurial methods) as a way to reduce uncertainty by enabling the transition between the levels in the framework. Researchers stress that methods require continuous practice so the focus should be on doing and learning (Neck and Greene, 2011). Future research could explore how the three levels of logic, model and tactics can be effectively related to learning theories.

It would be interesting also to explore how learning by doing through adherence to systematic entrepreneurial methods influences entrepreneurs and their organizations. Some tentative research questions for post-licentiate level might be: ”How do the results of activities at the level of tactics accumulate to produce transferable learning outcomes, and promote action as well as thought?” and ”How does this learning mechanism help entrepreneurs internalize the principles of the methods which lack elements of the proposed framework?” Addressing these questions would help educators to be more organized at teaching entrepreneurial methods in entrepreneurship programs, incubators and accelerators. The research method could consist of interviews conducted with entrepreneurs, coaches, and investors, and case studies of ventures supported by internal documentation. The results could suggest that greater commitment to methods’ principles and guidelines would result in more successful startups through a more effective learning process.

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