-- CHAPTER 3 --

CAREERS AND ENTREPRENEURIAL DECISION-MAKING: UNCOVERING GENERAL LOGICS OF PREDICTION AND CONTROL

This chapter is based on Engel, Y. Burg, J.C. van., Khapova, S. N., Kleijn, E. Careers and entrepreneurial decision-making: Uncovering the role of prediction and control. [under review].
Abstract

This study explores how prior career experiences shape entrepreneurs’ preference for causal and effectual decision-logics. We adopt a qualitative research approach including verbal protocols and interviews with a sample of 28 entrepreneurs and propose a framework of four different career profiles, which in turn, are related to different emphases on effectuation and causation. In particular, we show how different career behaviors, as enacted over time in response to experiences with career uncertainty, are distinctively related to later use of effectuation and causation through their common foundation in the notions of prediction and control.

**Keywords:** Career, Effectuation, Causation, Control, Prediction
3.1. Introduction

When starting a new venture, entrepreneurs are confronted by a sequence of decision tasks that may define and shape the venture’s evolution (Aldrich, 1999; Cardinal, Sitkin, & Long, 2004; Eisenhardt & Schoonhoven, 1990; Kimberly & Bouchikhi, 1995). Studying the nature of cognitive differences in approaching these decisions is therefore essential for entrepreneurship research (Baron, 2004; Grégoire et al., 2011; Mitchell et al., 2007; Sarasvathy, 2008). Scholars have made significant progress by identifying and distinguishing between two decision-making logics that are commonly applied in entrepreneurial settings: causation and effectuation. Causation is a deliberative reasoning model that emphasizes a logic of prediction while effectuation is a set of heuristics that emphasizes a logic of non-predictive control (Sarasvathy, 2001; Sarasvathy, 2008). A growing stream of studies (see Perry et al., 2011 for review) propose that experts – defined as highly experienced and successful entrepreneurs – predominantly rely on effectuation to frame decision problems. Put simply, an extensive career in starting and operating new ventures is argued to shape the ways in which entrepreneurs process information, reason, and make decisions (Dew et al., 2009a).

Yet, evidence is mounting to show that non-experts, and even novice entrepreneurs, often rely on effectuation as well (Brettel et al., 2012; Chandler et al., 2011; Read & Dolmans, 2012). In fact, even if we accept that “the relationship between entrepreneurial experience and the increased use of effectual logic is strong and significant” (Sarasvathy, 2012: 7), we are left to wonder about what shapes the use of effectuation among entrepreneurs without prior entrepreneurial experience. In other words, what in one’s career, other than direct experience in starting new ventures, drives the propensity to use effectuation and causation? In light of the fact that for most entrepreneurs this form of prior experience is absent (Sørensen & Fassiotto, 2011), theory provides a useful, but incomplete, answer to the question that we explore in this study, namely: how do prior career experiences shape entrepreneurial decision-making?

In the current paper we argue that, as commonly assumed by Sarasvathy and colleagues (Dew et al., 2009a; Sarasvathy, 2008), it is indeed career experience that drives entrepreneurs’ preference for a certain decision-making logic. However, we deviate from their implicit assumption that career experience exclusively refers to experience as an entrepreneur. Instead, we explicitly attend to a set of career strategy behaviors (DiRenzo and Greenhaus, 2011) that are not seemingly tied to the task of establishing new ventures, but rather become such if and when
entrepreneurship is initiated (Aldrich and Young, 2013). We explore and inductively identify several such strategies through in-depth interviews and verbal protocol analysis with twenty-eight Dutch entrepreneurs. Subsequently, we bring together insights from contemporary career theory (Sullivan & Baruch, 2009), entrepreneurship (Sarasvathy, 2001) and strategic management (Wiltbank et al., 2006) to conceptualize our findings in a framework depicting the relationship between careers and entrepreneurial decision-making.

This study makes several contributions. First, we address the question of how entrepreneurs obtain their cognitive structures (Mitchell et al., 2007). Thus, the study expands our knowledge on the antecedents of entrepreneurial decision-making, and in particular on effectuation (Sarasvathy, 2008). Furthermore, we respond to calls to distinguish between antecedents of entrepreneurial cognition as they relate to the very experience of entrepreneurship (Grégoire et al., 2011). Finally, by introducing contemporary career theory to the study of entrepreneurial cognition we heed the recent call to build links between organizational theory and entrepreneurship (Sørensen & Fassiotto, 2011), and show how certain career strategies are anchored and can ultimately be traced back to either the logic of prediction or the logic of control (cf. Wiltbank et al., 2006).

3.2. Theoretical Background

3.2.1. Causation and effectuation: the case of predictive and non-predictive control

In providing a detailed account of her groundbreaking study, Sarasvathy (2008) teased out the cognitive commonalities as exhibited by expert entrepreneurs when they work through typical entrepreneurial problems. She used think-aloud protocols in which the subjects were required to continually verbalize their thinking and describe their logic of action. Tracing the relationships between the experts' underlying logic (as coded from their think-aloud protocols) and their observed reactions to the problems they faced (captured by their decisions), Sarasvathy was able to identify two distinctive kinds of decision-making logics, namely: causation and effectuation (Sarasvathy, 2001).

Causation is referred to as a rational reasoning model that emphasizes prediction and the discovery of opportunities that exist within a given problem space (Sarasvathy, 2008). When an entrepreneur applies a causal logic, he or she will try to predict an uncertain future by starting with a given goal, focusing on expected return, emphasizing competitive analyses, and attempting to avoid unexpected contingencies. Effectuation, on the other hand, emphasizes a
logic of non-predictive control where the entrepreneur focuses on the potential opportunities that can be crafted by applying existing means to reshape the problem space itself (Sarasvathy, 2001; Wiltbank et al., 2006). Hence, when applying an effectual frame an entrepreneur would seek to control an unpredictable future by starting with a given set of means, focusing on affordable loss, emphasizing partnerships, and exploiting unexpected contingencies as they arise.

As is the case with other approaches that deal with the question of “what to do next?”, the overarching conceptual differentiator between effectuation and causation is one’s view of the future as it relates to different degrees of predictability and controllability (Wiltbank et al., 2006). Sarasvathy (2001) asserts that effectuation can be classified to reflect a logic of non-predictive control while causation highlights control through prediction. Indeed, this distinction in emphases on control and prediction is an important one as it highlights not only the differences between effectuation and causation (Table 3.1), but also what they respectively share with decision-making approaches in other domains (see Wiltbank et al., 2006 for a review).

Table 3.1. Differences between causation and effectuation

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Causation</th>
<th>Effectuation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The Logic - View of the future</strong></td>
<td>Predictive control. Causal logic frames the future as a continuation of the past. Hence accurate prediction is both necessary and useful.</td>
<td>Creative control. Effectual logic frames the future as shaped (at least partially) by willful agents. Prediction is therefore neither easy nor useful.</td>
</tr>
<tr>
<td><strong>Dimension 1 - Basis for taking action</strong></td>
<td>Goal-oriented. In the causal frame, goals, even when constrained by limited means, determine sub-goals. Goals determine actions, including which individuals to bring on board.</td>
<td>Means-oriented. In the effectual frame, goals emerge by imagining courses of action based on given means. Similarly, who comes on board determines what can be and needs to be done. And not vice versa.</td>
</tr>
<tr>
<td><strong>Dimension 2 - Predisposition toward risk and resources</strong></td>
<td>Expected return. Causal logic frames the new venture creation problem as one of pursuing the (risk-adjusted) maximum opportunity and obtaining the required resources to do so. The focus here is on the upside potential.</td>
<td>Affordable loss. Effectual logic frames the problem as one of pursuing adequately satisfactory opportunities without investing more resources than stakeholders can afford to lose. The focus here is on limiting downside potential.</td>
</tr>
<tr>
<td><strong>Dimension 3 - Attitude toward outsiders</strong></td>
<td>Competitive analysis. Causal frames promulgate a competitive attitude toward outsiders. Relationships are driven by competitive analyses and the desire to limit dilution of ownership as far as possible.</td>
<td>Partnerships. Effectual frames advocate stitching together partnerships to create new markets. Relationships, particularly equity partnerships drive the shape and trajectory of the new venture.</td>
</tr>
<tr>
<td><strong>Dimension 4 - Attitudes toward unexpected contingencies</strong></td>
<td>Avoiding. Accurate predictions, careful planning and unwavering focus on targets form hallmarks of causal frames. Contingencies, therefore, are seen as obstacles to be avoided.</td>
<td>Leveraging. Eschewing predictions, imaginative re-thinking of possibilities and continual transformations of targets characterize effectual frames. Contingencies, therefore, are seen as opportunities for novelty creation — and hence to be leveraged.</td>
</tr>
</tbody>
</table>

*Note: Adapted from Sarasvathy (2001) and Dew et al. (2009)*
Despite these differences Sarasvathy (2001: 245) reminds us that “both effectuation and causation are integral parts of human reasoning and can occur simultaneously, overlapping and intertwining over different contexts of decisions and actions”. Hence, entrepreneurs are expected to vary their use of these logics depending on a multitude of factors such as the decision context, their individual preference, or the venture’s life cycle (Sarasvathy, 2008). While we acknowledge these factors and concur with the assertion that every unique situational context might cause a variation in the decision-making logic employed, we follow Sarasvathy’s (2008: 131) observation that these ‘do not rule out the argument that expert entrepreneurs may have learned to prefer an effectual logic’. We thus point to a particular interest in examining whether a preference (i.e., a dominant logic) to apply an effectual or causal logic to a similar situation would be determined in accordance with one’s idiosyncratic career experiences.

3.2.2. Career experience as antecedent of decision-making logic

It is widely acknowledged that experience is an important factor to influence decision-making (Cyert & March, 1963; Gabrielsson & Politis, 2011; Gunz & Jalland, 1996; Sarasvathy, 2008; Ucbasaran, Westhead, & Wright, 2009). To better understand this relationship, we turn to the cognitive psychology literature, and the concept of bounded rationality (March & Simon, 1958). When facing a decision task, individuals neither comprehensively search for, nor accurately interpret, all available options and subsequent consequences because their cognitive capacity is limited (Cooper, Folta, & Woo, 1995; March & Simon, 1958; Simon, Houghton, & Aquino, 2000). Instead, they can be expected to rely on simplified cognitive models that originate from past experiences (Fern et al., 2012; Gunz & Jalland, 1996). Put differently, individuals tend to repeat the things they learned and exploit the knowledge they possess, with the result being that decision-making is primarily a function of prior experience (e.g., Corbett, 2005; Cyert & March, 1963; Minniti & Bygrave, 2001; Mullins & Forlani, 2005; Politis, 2005; Ronstadt, 1988).

In this study we particularly focus on careers as a vehicle of experience accumulation and, subsequently, on how this experience shapes one’s preference for causal or effectual decision-making. Therefore, it is vital to our understanding to be informed by the literature about organizational careers. Career theory, which mostly concerned itself with the careers of employees in established organizations (Arthur et al., 1989; Gunz & Peiperl, 2007), has developed several frameworks to describe a wide variety of career paths, experiences, orientations, and behaviors (Sullivan & Baruch, 2009). Traditionally, careers were viewed as
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consisting of several linear stages, lined up hierarchically, that evolved within the structure of one or two organizations (e.g., Rosenbaum, 1979; Super, 1957; Wilensky, 1961). Yet, enduring environmental changes and raising uncertainty levels due to increased globalization and economic turbulence, have ultimately led to the arrival of alternative or “new” career types (e.g., DiRenzo & Greenhaus, 2011; Sullivan, 1999; Sullivan & Baruch, 2009). The “boundaryless career” (Arthur & Rousseau, 1996) and “protean career” (Briscoe et al., 2006; Hall, 1996) are prime examples of such career models. In these forms of career, and unlike the linear-traditional career, one's working life is viewed as independent from organizational boundaries and may therefore evolve in multiple directions simultaneously (Arthur & Rousseau, 1996). The increasing uncertainty present in one’s career is therefore one of the fundamental elements distinguishing the new careers from the more secure employment reality of the traditional career (see Table 3.2 for a summary of these differences).

### Table 3.2. Differences between traditional and new careers

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Traditional Career</th>
<th>New Career</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment characteristic</td>
<td>Stability</td>
<td>Dynamism</td>
</tr>
<tr>
<td>Career choice being made</td>
<td>Once, at an early career age</td>
<td>Repeatedly, emergently and adaptively</td>
</tr>
<tr>
<td>Main career responsibility lies with</td>
<td>Organization</td>
<td>Individual</td>
</tr>
<tr>
<td>Career horizon (workplace)</td>
<td>One organization</td>
<td>Several organizations, possibly self-employment</td>
</tr>
<tr>
<td>Career horizon (time)</td>
<td>Long</td>
<td>Short</td>
</tr>
<tr>
<td>Scope of change</td>
<td>Incremental</td>
<td>Transformational</td>
</tr>
<tr>
<td>Employer give/employee expect</td>
<td>Job security</td>
<td>Investment in employability</td>
</tr>
<tr>
<td>Progress criteria</td>
<td>Advance according to tenure</td>
<td>Advance according to results and knowledge</td>
</tr>
<tr>
<td>Success means</td>
<td>Winning the tournament, i.e., progress on the hierarchy ladder</td>
<td>Inner feeling of achievement</td>
</tr>
<tr>
<td>Training</td>
<td>Formal programs, employer initiated</td>
<td>Self-initiated, with a focus on transferable skills</td>
</tr>
<tr>
<td>Essence of career direction</td>
<td>Linear</td>
<td>Multidirectional</td>
</tr>
</tbody>
</table>

*Note: Adapted from Baruch (2004)*

With the characterization of different career models, career researchers have also observed a large variety of related strategies individuals enact to deal-with and manage their employment situation (Briscoe et al., 2012; DiRenzo & Greenhaus, 2011). Such behaviors may include career planning and development activities such as reputation and identity building, investments in skills and expertise, networking, and advice seeking, among others (Parker et al., 2009). Hence, a person for whom the traditional career represents the predominant employment reality is likely to enact very different career strategies over time in comparison to someone actualizing a boundaryless career (Sullivan & Baruch, 2009).

These differences notwithstanding, most people still experience their career as a
combination of these two extreme forms. While several studies show how new careers become available for a growing number of people and across different environments (e.g., Becker & Haunschild, 2003; Forret & Sullivan, 2003; Segers, Inceoglu, Vloeberghs, Bartram, & Henderickx, 2008), others report that individuals still exhibit more traditional career paths (e.g., Inkson, Gunz, Ganesh, & Roper, 2012; Ituma & Simpson, 2009; Smith & Sheridan, 2006). Moreover, various other studies illustrate individuals who enact “hybrid” careers that are characterized by elements of both the traditional and new career models (Sullivan & Baruch, 2009). Overall then, significant heterogeneity exists in the enactment of different careers over time and multiple career strategies may become salient within each individual career.

Owing to the exploratory nature of this study as dictated by our particular interest in the relationship between careers and entrepreneurial decision-making, we refrain from limiting our theoretical purview to any specific career framework, strategy, or set of variables ex-ante. Instead, we draw on a broader definition of career as “an individual’s work-related and other relevant experiences, both inside and outside of organizations, that form a unique pattern over the individual’s life span” (Sullivan & Baruch, 2009: 1543). Next to acknowledging movement between jobs, occupations or industries, this definition also emphasizes individual interpretation of career events and the decisions that shaped them. Thus, one’s career conveys not only a description of positions held, but also consists of the career strategies that were used to navigate to these positions. By interacting with friends, mentors, and colleagues, individuals acquire specific worldviews and styles of thinking, with different career experiences leading to different logics of thinking (Gunz & Jalland, 1996). While these are probably not learned in anticipation of future entrepreneurial tasks, they might become relevant if and when entrepreneurs initiate their ventures (Aldrich & Yang, 2013). We thus find this broader definition of career useful as it allows us to draw on the rich career literature for making theoretical sense of the observations in this study. Accordingly, the theory we develop aims to explain how founders’ prior career experiences drive entrepreneurial decision-making.

3.3. Methods

We sought to explore the processes and mechanisms through which prior career experience may be related to entrepreneurs’ decision-making logic. The study was exploratory in that we knew what the key constructs (i.e., careers, career strategies, effectuation, causation) were, but not the specific variables and relationships between them. In addition, as the phenomenon in question
was not previously investigated by existing studies, our objective was to build theory rather than test theory (Eisenhardt, 1989). Accordingly, a grounded theory approach (Glaser & Strauss, 1967) was adopted. The main advantage of this approach is its ‘groundedness’: a theory derived will be “faithful to everyday reality of the phenomenon under investigation” (Frost et al., 2010: 443) that can be later revised and developed by others. We therefore consider the inductive approach taken here consistent with the research goals and with the fundamental assumptions of grounded theory research (Pratt, 2009; Suddaby, 2006).

3.3.1. Sampling
Our sample consisted of twenty-eight entrepreneurs, all of which are firm founders and/or owners of at least one business. Potential respondents were first identified through proximate professional contacts and were subsequently screened to ensure compliance with our theoretical sampling criteria. Participants were required to have at least five years of work experience, either as employees or as self-employed (incl. entrepreneurial experience). To be able to capture a broad range of career experiences we aimed to establish meaningful variety in our sample in terms of (self-) employment, age, gender and industry diversity. Moreover, the sampling frame was kept constant as all entrepreneurs were Dutch nationals and founded businesses based in the Netherlands. We stopped adding new respondents to our sample when substantial new inferences ceased to emerge as we reached “theoretical saturation” (Strauss & Corbin, 1998).

The respondents’ age ranged from 25 to 65 years, with an average age of 46. A particular effort was made to achieve gender diversity, in which we succeeded. A total of 5 participants (18%) were female, reflecting the growing number of starting female entrepreneurs in The Netherlands (Kamer van Koophandel, 2011). Industry diversity was also achieved, as entrepreneurs were included from a broad range of industries such as retail, software systems, hospitality, trade, consultancy and transport. All respondents had attended high school, and most (89%) had earned graduate or professional degrees. Furthermore, a majority of the respondents

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15 To the best of our knowledge, only a single study has thus far examined the impact of careers in affecting entrepreneurs’ preference for effectuation and causation. Based on a sample of 291 entrepreneurs, Gabrielsson and Politis (2011) reported ample evidence that entrepreneurs’ preferred choice of career path influenced their decision-making when starting their venture. However, despite these encouraging results, Gabrielsson and Politis (2011) offer little in the way of insight into how careers are related to decision making. The processes and mechanisms through which a career may affect entrepreneurial decision-making remain unclear.
(61%) had more working experience as an employee in established organizations than as an entrepreneur, and only 3 respondents (11%) had been entrepreneurs throughout their entire working lives. Table 3.3 provides further descriptive data on the sample.

**Table 3.3. Descriptive statistics of respondents**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>S.D.</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year of birth</td>
<td>1965</td>
<td>10.4</td>
<td>1946</td>
<td>1986</td>
</tr>
<tr>
<td>Ventures started</td>
<td>2.3</td>
<td>2.1</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Years worked for those ventures</td>
<td>11.9</td>
<td>10.3</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td>Years worked under employment</td>
<td>12.3</td>
<td>10.6</td>
<td>0</td>
<td>40.5</td>
</tr>
</tbody>
</table>

*Note: Research participants (n = 28)*

### 3.3.2. Data collection

Data were collected during a four month period and consisted of 27 face-to-face interviews and one telephone interview. In order to collect data on both the respondents’ decision-making preference and their careers, the interview procedure was divided in two distinct parts. The first part involved a think-aloud verbal protocol (Ericsson & Simon, 1993), in which the respondents were asked to continuously think aloud as they were faced with decision-making assignments common to setting up a new venture (cf. Sarasvathy, 2008). Verbal protocols have proven to be a productive method for studying cognitive processes and heuristic strategies employed by people in many problem-solving and decision-making tasks (Ericsson & Simon, 1993), amongst them those of entrepreneurs (Dew et al., 2009a; Sarasvathy, 2008). The validity of thought sequences that are verbally reported derives from the minimal time interval between the occurrence of thoughts and their verbalization. As a result, threat from introspection or retrospection biases is largely reduced, “generating the most rigorously valid data possible in this line of research” (Dew et al., 2009a: 294). The protocol we adopted was the validated and empirically tested research instrument used by Dew et al. (2009a) (see Appendix 2.1) in which the respondents were asked to solve two problem assignments in order to transform an imaginary product, a game on entrepreneurship called *Venturing*, into a firm. On average, completing the problem

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16 The term interview in this case refers to a scheduled meeting with each respondent in which two data collection methods, a verbal protocol and a semi-structured interview, were conducted.
analysis took the respondents 30 minutes with no special difficulties arising.

After completion of the verbal protocol, a semi-structured interview was held with each respondent about his or her entire career. For this part, interviews were chosen as method of data collection in order to efficiently collect rich empirical data that could be used for comparative work (Miles & Huberman, 1994). The interview protocol was designed to elicit a detailed and lengthy, chronological narrative of the respondents’ career, starting from their highest educational level followed to setting up their (latest) venture. During the interview special attention was given to the role of career strategy behaviors and the reasons for which they were used. Each interview had a similar structure, but probes, informed by literature reviews, varied and were tailored according to the specific interview situation. All interviews were held in Dutch and had an average duration of 45 minutes. Additionally, the participants were requested to provide a copy of their CV in order to crosscheck the data acquired through the narrative, and when unanswered, secondary sources (e.g., professional networking sites such as LinkedIn) were consulted for this purpose.

3.3.3. Analytic strategy

Both the think-aloud verbal protocols and the semi-structured interviews were collected on tape, and transcribed afterwards. As a way of “getting intimate” with our data (Esterberg, 2002), we reviewed the recording of each interview several times, and repeatedly read each transcript. Furthermore, we transferred all data to the CAQDAS software package Atlas.ti™ to facilitate the process. Similar to our data collection, we decided to analyze the part on decision-making and the part on career behavior sequentially as this would ease the analysis process without influencing its final outcome. First we coded the verbal protocols. We developed a coding scheme (see Appendix 2.2) based on the inducted elements from the qualitative analysis by Sarasvathy (2008: 33-38). Since our objective was to merely determine the respondents’ orientation in decision-making, we were able to use these pre-set elements. Based on the counts of codes in each transcript for the two decision-making logics, we labeled the respondents as either having a propensity towards effectual reasoning, causal reasoning, or no preference at all. In order to assess the reliability of the coding the fourth author, who has considerable experience in coding qualitative research in general and effectuation related content in particular has independently coded 104 randomly selected semantic chunks from the verbal protocols. Comparison between the initial coding and this reliability check showed high inter-coder
agreement (k=0.8, Cohen, 1960). Any disagreements were discussed and resolved. The reported results are based on the reconciled coding for these cases where initial disagreement occurred.

We continued by coding the career stories of our respondents following an inductive, grounded theory development process (Corbin & Strauss, 1990; Glaser & Strauss, 1967). We first coded the interviews via the technique of “open coding” (Corbin & Strauss, 1990: 423). This involved a strict line-by-line examination of the transcripts to identify themes and categories with potential research significance. Our first round of coding resulted in a large set of descriptive codes that we reviewed in light of the verbal protocols. We compared different groupings of the codes with the verbal protocols that had been previously categorized (i.e. propensity towards effectuation, causation or no preference) to identify possible patterns and relationships. Soon we identified a working typology of two salient career strategies describing (1) respondents’ use of clear career goals (career goal orientation); and (2) respondents’ deliberate activities to continuously invest in their career development (investments in career capital). During the second phase of “axial coding” we systematically reassessed the original descriptive codes and refined them in alignment with these categories of behavior. At this point we were also able to move up a level of analysis and start plotting each individual respondent in accordance with these two categories. This allowed us to compare groups of individuals and see how the initial patterns we observed held across our sample. Once the data was reinterpreted according to the empirical categories, we searched for the theoretical dimensions underlying these categories in order to understand how they fitted together into a coherent image (e.g., Pratt, Rockmann, & Kaufmann, 2006). We thus went back and forth between our empirical categories and the literature in search of clarity in our inducted constructs. In addition, we focused our efforts on explaining how these themes relate to entrepreneurial decision-making, and effectuation theory more specifically. In this regard, and as discussed in our results below, we were progressively informed by Wiltbank et al’s (2006) influential idea that emphases on prediction and control are not only marking the underlying logics of effectuation and causation (Sarasvathy, 2001), but could rather define strategic actions more generally. Using this key understanding, we were able to map our inducted career elements onto a corresponding entrepreneurial decision-logic in what later became the core of our findings. The data analysis process we pursued is summarized in Figure 3.1.

In order to minimize the threat of bias in our coding procedure we had several meetings
in which we discussed these emergent categories and compared our understanding of them. While this process of open coding is consistent with the inductive method (Corbin & Strauss, 1990), it does not allow for the traditional inter-rater reliability calculations during the primary coding phase. Nonetheless, we were able to use our emergent codes and examine whether they fit the data. That is, the fourth author independently checked the interview transcripts and coded each respondent using the definitions that emerged during the primary coding phase. Overall percentage of agreement between the two coding rounds was sufficiently high both for career goal orientation (k = 0.93, Cohen, 1960) and for investments in career capital (k = 0.83, Cohen, 1960).

Figure 3.1. Data structure

<table>
<thead>
<tr>
<th>Empirical Codes</th>
<th>Theoretical Categories</th>
<th>Aggregate Theoretical Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Statements about 'career planning'; 'calculating career steps'</td>
<td><strong>High Career Goal Orientation</strong> (The presence of specific and predetermined goals in one’s career towards which action is shaped accordingly)</td>
<td>Prediction</td>
</tr>
<tr>
<td>- Pursuing occupational dreams (e.g., 'becoming a manager') or specific ambitions (e.g., 'reaching the top')</td>
<td><strong>Low Career Goal Orientation</strong> (The absence of specific and predetermined goals in one’s career)</td>
<td></td>
</tr>
<tr>
<td>- Expressions of disbelief in setting goals (e.g., 'too complex'; 'high uncertainty in career'; 'lack of preset dreams or ambitions’”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Building career through 'inputs or stimuli at immediate disposal'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Statements on 'valuing’’the activities and 'spending much time' on them</td>
<td><strong>High Active Investment in Career Capital</strong> (Intentional investment made in terms of time and energy towards enlarging one’s career capital)</td>
<td>Control</td>
</tr>
<tr>
<td>- Type of activities (e.g., 'networking' 'self-reflection'; 'next-to-work education')</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Statements on 'not believing in' the activities or 'having no time' to pursue them.</td>
<td><strong>Low Active Investment in Career Capital</strong> (No intentional investments made in terms of time and energy towards enlarging one’s career capital)</td>
<td></td>
</tr>
<tr>
<td>- Showing 'no initiative'; only 'obligatory' activities</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.4. Findings and Theory Development

Our analysis of entrepreneurs’ prior career experience exposed two different types of career strategy behaviors that are particularly relevant in their relationship to entrepreneurial decision-making. We start with defining and illustrating these two concepts: (1) career goal orientation and (2) investments in career capital. Illustrations from the study itself (see Table 3.4 for further exemplary quotes) and existing theoretical material are used to elucidate the aforementioned concepts.

Table 3.4. Supporting quotes for inducted career strategy behaviors

<table>
<thead>
<tr>
<th>Career Strategy Behavior</th>
<th>Exemplary Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>High career goal orientation</td>
<td>“If I look back on my career, I always went for certainty.” [R23]</td>
</tr>
<tr>
<td></td>
<td>“I set goals on a yearly basis and specify for each half year and month, I set very clear this is what I want to have accomplished end of the month. So I do set goals.” [R19]</td>
</tr>
<tr>
<td>Low career goal orientation</td>
<td>“You cannot force goals ... it all depends on the moment and opportunity ... you cannot force things to happen.” [R28]</td>
</tr>
<tr>
<td></td>
<td>“Planning my way to where I want to go, I have not been busy with that in my career.” [R26]</td>
</tr>
<tr>
<td>High investment in career capital</td>
<td>“I just maintain it very well because I am intrinsically motivated in the people and nice colleagues and I just maintain that, to have as much contact as possible.” [R17]</td>
</tr>
<tr>
<td></td>
<td>“Yes [I am] always [busy with enlarging skills en knowledge]. Apart from the fact that in my profession you have to earn a certain amount of education points a year that are obligatory ... I tend to spend a lot more time on it. I do this because it interests me but also to stay up to date ... and be more knowledgeable than my opponent.” [R22]</td>
</tr>
<tr>
<td>Low investment in career capital</td>
<td>“In general I will only invest in learning something when I need it. I rather focus on the things I want to accomplish than spending my time on those things.” [R14]</td>
</tr>
<tr>
<td></td>
<td>“I worked 36 years for the same boss at the same position, you can say I just dragged along.” [R28]</td>
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</tbody>
</table>
3.4.1. Career goal orientation

Career goal orientation refers to the extent to which an individual sets, and pursues specific predetermined career goals. For career researchers, these activities are often identified by a pre-specified plan of future career developments (Gould, 1979; Zikic & Klehe, 2006), when career goals are the desired outcomes in these plans such as salary, skills and position (Greenhaus, Callanan, & Godshalk, 2009).

We observed that 11 of the 28 interviewees expressed high levels of career goal orientation. They reported particular goals they had in mind, such as ‘becoming a manager’, and to pursue these goals they engaged in career planning and actively calculated career steps. These individuals were then able to entertain the promise of long-term job security and, often together with their employing organization, set out clear paths for career development in a sequence of positions carrying increasing responsibility, status and rewards. For instance one respondent explained:

“You have to at least know what you are doing and which direction you want to go to … You need a certain vision. At that point in time I am there, then I am there, and then I am there.” [R7]

Talking about such long term career goals another respondent stated:

“I have a vision concerning where I want to be and what I want to do from now till I am around the age of 50 or so. But that is what I always have done and how I arranged my life … to accomplish those things.” [R16]

In fact, this kind of future orientation towards their career came back again and again during the interviews:

“Above all thinking ahead and not getting caught up in details with the things you are doing today. So above all thinking like what do I want to achieve? Where do I have to go? And how am I going to come there? And what do I need to come there? … Maybe others think differently but I am really into thinking where I want to go.” [R20]

In contrast, individuals with low levels of career goal orientation (17 out of 28) expressed that they did not believe that setting career goals would be meaningful, or even useful in any way:
“Throughout my whole life I actually only had positions that I kind of created myself … I had no master plan or anything” [R24]

Often enough, the renunciation of goals was explained in terms of responses to uncertainty:

“I really moved away from that whole idea of planning … It is too difficult to plan your way. The market is changing continuously… I do not have goals, they form more along the way.” [R12]

Other respondents had actually rejected the idea of career planning and goal setting all together, reaching a point where their careers where seen as a flow of experiences that just “happened to them”:

“Planning my way to where I want to go, I have not been busy with that in my career… so I did not have the goal to work at a big five accountancy firm. I also did not have the goal to start working at the next company, doing all sorts of things there. Those were actually things that happened to me.” [R26]

3.4.2. Investments in career capital

Investments in career capital refer to the extent to which an individual actively engages in behaviors aimed to accumulate career resources. Such investments may include self-initiated actions to reshape one’s motivation and professional identity, build new skills and expertise, and enlarge his/her network reach and reputation (see Parker et al., 2009). For example, these individuals may self-initiate international careers or opt for lateral, or even downward, job moves to fulfill personal needs (Sullivan & Baruch, 2009). In addition, they explore new opportunities and receive both psychological and practical support by being open to outsiders and cultivating networks of relationships (Higgins & Kram, 2001) Importantly, these behaviors are not necessarily tied to the presence of clear career goals (i.e., investment in career capital are orthogonal to one’s career goal orientation) and may be triggered by a general aspiration to sustain employability (DiRenzo & Greenhaus, 2011).

In our sample, individuals with higher investments in career capital (19 out of 28) explained that they thought it was very important to engage in such activities, and that they spent much time on actively increasing their career capital:

“I have always been consciously and actively involved in self-development. That is part of the process. If you stop with developing no new opportunities will arrive
on your path … I have always and still am busy with that with the same energy and determination.” [R10]

These investments were often made around the acquisition of new knowledge or skills, which later become relevant for subsequent career stages:

“I was developing myself very actively with for instance computers … which formed the basis of my progress in the area of marketing … That was all while I owned a quiet store … So in that period I really formed and educated myself.” [R3]

In contrast, other respondents (9 out of 28) reported that such activities were less important to them. They stated, for instance, that they did not believe in such actions, or that they did not have sufficient time for them. As one individual expressed:

“You have people who are very active in networking and attend every opportunity to do so, but I am not such a person … I basically think it is nonsense … I do not gain anything from it. In general I will only invest in learning something when I need it. I rather focus on the things I want to accomplish than spending my time on those things.” [R14]

Others explained that their careers just moved without any direct interference with their own career capital:

“I do not engage much in educating myself and never really have … And actually I also spent very little attention towards networking activities as well. I have been in the lucky situation that the assignments came floating in automatically.” [R8]

3.4.3. Towards a framework of four career profiles: links to entrepreneurial decision-making

Combining low and high levels of these two types of career strategies yielded four different career profiles (Figure 3.2). Appropriately, an actor’s career goal orientation as well as the level of one’s investment in career capital are not seen as “either or” propositions, but rather consist of both continua. We then analyzed the extent to which entrepreneurs in each profile engaged in effectual or causal decision making, using the results from the thinking aloud procedure. The results show important differences in effectual versus causal decision making for each of the profiles, thus supporting our conjecture that career experiences influence entrepreneurial
decision-making. After having observed these results, we subsequently tied our findings with career theory, as well as with Wiltbank et al’s (2006) ideas regarding the role of prediction and control in strategic decision-making more generally, and consequently, with effectuation and causation. By doing this, we build empirically supported theory about the relationship between our inducted career strategies and different emphases on prediction and control. This abstraction from data to aggregate theoretical categories (see figure 3.1) is evoked to produce an emergent meaning with regard to the relationship between careers and entrepreneurial decision-making. The four career profiles and their relationship with effectual and causal decision making will be discussed in turn, supported by additional quotes as presented in Table 3.5.

**Figure 3.2.** Four career profiles based on career goal orientation and investment in career capital

3.4.3.1. Profile 1 – The Navigators

The individuals in this first quadrant maintained a high goal oriented strategy for building their careers and a low emphasis on actively increasing their career capital. We name them *navigators* as they solely navigated their way towards their predetermined goals. All individuals in this category had set themselves clear long-term goals to reach in their career, such as becoming a senior publisher or director of finance at their employing organization. Once determined, they
Chapter 3

engaged in focused and persistent pursuit of these goals. Concurrently, they did not show any consideration to increasing their career capital. This was generally thought of as a useless time commitment; time they rather spent on realizing their goals. As one respondent phrases it:

“I try to spend as little effort as possible on these activities because I want to aim for the things I want to accomplish. I know where I want to stand in two years from now … and so I will focus on reaching [that]. Now networking and those things … people desperately try to know everyone just in case … do they ever need them? I consider it a waste of my time.” [R1] Respondents with this profile have thus exhibited career behaviors that are based on a high level of prediction and a low level of control. Pursuing career goals necessitates prediction, as it requires careful planning of when and how to advance towards it (Gould, 1979; Pascall, Parker, & Evetts, 2000). Without being focused on increasing their career capital, these individuals did not actively shape new career opportunities, or attended to their employability (during times of non-entrepreneurial employment), pointing at a low level of control. Instead, they attempted to shape their career solely through predicting the way towards their pre-envisioned destination (i.e. predictive control). Such a passive stance with regard to investment in career capital is indicative of a more traditional career in which preemptive activities to accumulate career capital are seen as wasteful, or simply unnecessary (Sullivan & Baruch, 2009).

Results of the verbal protocol showed 68 percent of all statements made by the entrepreneurs with this career profile were statements of causation. In other words, these entrepreneurs had a propensity to employ causal reasoning when faced with the task of setting up a new venture. As previously mentioned, this type of reasoning relies on the logic of prediction (Sarasvathy, 2001). Thus, we see the career behavior these entrepreneurs showed, with high emphasis on prediction, is reflected in their preferred mode of decision-making in the process of founding a new business. The emphasis on control in their career on the other hand was low, leaving effectual reasoning underrepresented in their statements. Therefore, we propose:

*Proposition 1: Entrepreneurs with high career goal orientation and low active investment in career capital show a propensity to employ causal reasoning in the process of new venture creation.*

3.4.3.2. Profile 2 – The Responders

The individuals in the second quadrant maintained a low level of both goal oriented career
strategy and active investment in career capital. We name them responders as they merely responded to available means and factors in their environment through which their career took shape. In some way these individuals left their career to chance by maintaining an overall passive stance towards their career development. Unlike the navigators of the first quadrant, they held no predetermined goals that prescribed the course of action to take. Neither did they attempt to manage their career by focusing on employability or career opportunities through the accumulation of career capital. Instead, career decisions were made incrementally, taking one step at a time and solely depending on what came along. This stance is maybe best captured in the way one of the respondents evaluated his career:

“It all evolved by itself. You know I never really searched for the things I ended up doing. It always came to me and I answered [to it]… I never looked to reach something. And even now … I do not network … I have never approached customers. Customers always come to me.” [R15]

The career behavior of these individuals points to lower levels of both prediction and control. In other words, they proceeded “by being flexible and adaptive to situations as they develop[ed]” (Wiltbank et al., 2006: 985), in which case planning based on prediction is not necessary as there is no predetermined direction to proceed to. Neither is the behavior based on control, as these individuals remained inactive in constructing their career through building up career capital.

In answering the verbal protocols, the entrepreneurs with this career profile did not show a particular preference for either type of decision-making reasoning; namely, 51 percent of all statements made by these entrepreneurs were statements of effectuation, against 49 percent statements of causation. This result is reasonable considering the absence of career behavior based on either a high level of prediction or control. Owing to the adaptive stance they maintained throughout their career, these entrepreneurs did not have a pre-set preference for any type of decision-making reasoning when setting up a new venture. Thus we suggest:

Proposition 2: Entrepreneurs with low career goal orientation and low active investment in career capital equally employ effectual and causal reasoning in the process of new venture creation.

3.4.3.3. Profile 3 – The Builders

The individuals in the third quadrant maintained a high level of both goal oriented career strategy and active investment in career capital. We name them builders as they persistently built their
careers through pursuing goals and accumulating means. Similar to the navigators of the first quadrant, these individuals pursued future oriented and goal dominated careers. In other words, they were driven by clear and predetermined goals they wished to achieve in their career. Yet simultaneously, these people also engaged in activities to accumulate their career capital. They continuously tried to become better at what they did, learn new skills and meet new people, and were aware of the future career opportunities that might result from these actions. The following quote by one of the respondents represents this combination of both pursuing a goal and appreciating the accumulation of career capital:

“I decided I wanted to become a personal trainer [and] so I did … I [also] put my salary in an education. Well in principle you did not have to have diplomas to become a fitness instructor. But … I thought it was important because you become more skilled … and you can maybe take your advantage of that later on because you are better than others.” [R11]

Accordingly, the career behavior of these individuals is based on high levels of both prediction and control. They calculated and planned their way towards their pre-envisioned destinations, stressing the role of prediction as discussed in previous sections. Nonetheless at the same time, these individuals were also able to construct their career in a different manner, namely through their persistent accumulation of career capital. This enlarged pool of means gave way for new career opportunities and possibilities that had otherwise been unthinkable. Hence, next to the control they exerted through predicting, they could also achieve control by relying on their own career competencies.

Results of the verbal protocol showed 52 percent of all statements of the entrepreneurs with this career profile were statements of effectuation, and the other 48 percent statements of causation. Thus, similar to the responders of the previous quadrant, these entrepreneurs had no propensity to employ either type of decision-making logic in new venture creation. As their accumulated career experiences contained behavior based on both prediction and control these entrepreneurs used both modes of reasoning fairly equally and interchangeably when faced with the task of setting up a new venture. Therefore, we conclude that:

*Proposition 3: Entrepreneurs with high career goal orientation and high active investment in career capital equally employ effectual and causal reasoning in the process of new venture creation.*
3.4.3.4. Profile 4 – The Creators

The individuals at the fourth quadrant maintained a low goal oriented strategy for building their careers and a high emphasis on actively increasing career capital. We name these entrepreneurs creators as they created their career through transforming their career capital at hand into new career movements and opportunities. None of these individuals had set clear and predetermined goals to realize in their career. Some did have dreams, but held them lightly, “using them as visions of possibility rather than as aspirations that have to be realized” (Marshall, 1989: 287-288). They were however very active in accumulating their career capital, and it was through a focus on these means at hand that their careers took shape. For example, one of the respondents explains how she started her career by reasoning from her means:

“I did not really know what I wanted to do … I had studied industrial design [because] I had the feeling that suited me. I enjoyed technique, natural sciences and had a lot of affinity with product development … and through some people I knew from my last internship I found a job in that field. I guessed it was an appropriate start of my career.” [R24]

Within this career profile, behavior is based on a low level of prediction and a high level of control. Pursuing such a career can thus be fairly unpredictable, mostly since goals are not set in advance and action is based on determining the most appropriate move on a moment-to-moment basis. The diminishing value of clear goal setting and strict planning in these careers is a clear indication of deviation from a traditional career model and evidence for increased uncertainty in one’s career (Arthur and Rousseau, 1996). Still, through proactive investments in their career revolving around who they are, what they know and whom they know (i.e. their career capital), these individuals controlled their career and made prediction obsolete. Accumulating career capital formed the way to maintain or even increase this control as it extended employability and gave way for new career opportunities to imagine and create along the way. It is this career behavior that is geared best to change, risk and uncertainty (see Weick, 1996).

Maybe not surprisingly then, in answering the verbal protocols, 80 percent of all statements made by the entrepreneurs with this career profile were statements of effectuation. Put differently, these entrepreneurs showed a propensity towards adopting effectual reasoning when faced with the task of setting up a new venture. As this reasoning relies on the logic of control (Sarasvathy, 2001), we see the resemblance with the way they behaved throughout their career.
Here again, with less career behavior based on prediction, there were few statements of causation to be found in these entrepreneurs’ verbal protocols. This prompted us to conclude that:

*Proposition 4: Entrepreneurs with low career goal orientation and high active investment in career capital show a propensity to employ effectual reasoning in the process of new venture creation.*

**Table 3.5. Supporting quotes for career profiles**

<table>
<thead>
<tr>
<th>Career Profile</th>
<th>Exemplary Evidence</th>
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<tbody>
<tr>
<td><strong>1. Navigators</strong></td>
<td>“Well I studied aviation and then somehow I had ended up with sewer pipes and roads, that did not fit. So I thought it may be nice but I want to work in the business I studied for … That is what I learned to do, that is where I wanted to go; I do not engage in networking without a purpose, like I call someone to ask how they are doing, but rather network very practically. And that is to make sure you know the people that can help you in your business.” [R20]</td>
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<td><strong>2. Responders</strong></td>
<td>“I am definitely someone who calculates. Taking decisions based on as much good information as possible so to say; I am not someone who intentionally engages in networking. I do not attend network gatherings and those sort of things ... I doubt whether you actually benefit from it, no ...” [R7]</td>
</tr>
<tr>
<td><strong>3. Builders</strong></td>
<td>“I rolled into it. I never had the ambition to become the founder and director of a business. At some point it just happened; I just wait and see where the ship runs aground.” [R28]</td>
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<td></td>
<td>“No, I did not [invest in my career]. For sure it would have been better if I would have finished my Bachelor education and that I would have gone to the university ... Than I could have worked for three years at Ernst &amp; Young so that I could have entered one of these multinationals at a high level. But... you know, I did not want to do this, so I could not have accomplished it. No, I don’t regret it.” [R12]</td>
</tr>
<tr>
<td></td>
<td>“And then I also followed evening courses for pastry baking ... My normal education provided those things but I wanted to specialize myself more and become the best pastry baker of the Netherlands.” [R16]</td>
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|                                        | “I resigned from the police and I moved and I really went and lived on the bare minimum in order to be able start working at the
insurance agency. So it was really a long-term investment. I was convinced that when you have your diplomas...you can make the next step. And well, in the end that happened.” [R13]

4. Creators
(low career goal orientation and high investment in career capital)

“You are in control of your own destiny. Thus if you are convinced and passionate about something you do, then you can create your own market.” [R17]

“I spend a lot of time keeping up with the professional literature. I also pay attention to new designer techniques ... so yes that is very important. But that is something that I more or less already automatically do because I like it.” [R9]

3.5. Discussion and Implications

The aim of this study was to develop theory about how prior career experiences relates to entrepreneurs’ preference for causal and effectual decision logics. Based on qualitative data obtained from twenty-eight entrepreneurs, we presented a framework consisting of four distinct career profiles that relate to different entrepreneurial decision logics. Each career profile is characterized by varying levels and combinations of career goal orientation and investments in career capital. Furthermore, we showed how these career properties are analogous to the notions of prediction and control (Wiltbank et al., 2006), thereby explicating some of the mechanisms that link careers to entrepreneurial decision-making. We believe that with this study we make several important contributions.

In a broad sense, our findings contribute to research on entrepreneurial cognition. Researchers in this area have been predominantly occupied with the consequences that cognitive variables have on relevant outcomes, and not so much on the origins or development of these variables (Grégoire et al., 2011; Walsh, 1995). Our study attends to this gap by focusing on antecedents of a specific cognitive variable, namely decision-making logic. We thereby respond to recent calls to gain a better understanding of entrepreneurs’ cognitive differences (Grégoire et al., 2011; Mitchell et al., 2007).

Next, a related contribution is made to research that takes an interest in entrepreneurs’ careers. Our study is original in that we explore how careers shape entrepreneurial cognition by attending to experiences that pre-date entrepreneurial entry and are often outside the scope of traditional research on entrepreneurship. In doing so, we draw on a contemporary understanding of careers as repositories of individual knowledge and arenas for learning (Bird, 1996; Sullivan & Arthur, 2006). A growing number of management and organization scholars adopt this view in
order to better understand the resources that individuals develop and carry with them as their careers unfold (Dokko & Rosenkopf, 2010; Somaya, Williamson, & Lorinkova, 2008). Such focus may complement efforts by entrepreneurship scholars to better understand how different experiences are related to key variables within this domain (Reuber & Fischer, 1999). As Sørensen and Fassiotto (2011: 1325) note: ‘we need stronger claims about what it is people learn and how that learning is relevant to the entrepreneurial decision’. The identification of career properties which relate to the way in which individuals emphasize prediction and control, enables us to zoom-in on the important aspects of what people learn in their careers and explore further how variations in career experience are related to the preference to employ a certain decision making logic. Thus, to the extent to which one’s career can be framed in terms of relevance to the creation of a new venture (cf. Aldrich & Yang, 2013), our findings illuminate a new path for future investigations.

Consequently, the key take away from this study is that by taking a broader view on careers, rather than narrowing our gaze to activities that are clearly within the purview of entrepreneurship, we are able to identify distinct pathways to the development of entrepreneurial thinking. We therefore extend existing research that has thus far focused exclusively on notions of entrepreneurial expertise and experience (e.g., Dew et al., 2009a). At least in the case of effectuation then, the foundation of experiences that contribute to its development is much wider and may also include career experiences that predate entry to entrepreneurship (Grégoire et al., 2011). This is in line with the literature on the experiential essence of entrepreneurial thinking (Krueger, 2007), which suggests to focus on the study of developmental experiences and the lessons learned from those experiences. For example, our efforts here, while exploratory in nature, point to interesting links between how people deal with uncertainty in one domain (career management) and then apply it in another (starting a new venture). It seems that learning to cope with uncertainty over time is associated with the development of a more general logic of thinking grounded in one’s reduced emphasis on prediction and increased attention to non-predictive control. With this in mind we subscribe to Sarasvathy’s (2001) assertion that effectual reasoning might be more general and is indeed ubiquitous in human decisions overall. By illustrating how effectuation theory is related to careers we also join a growing stream of studies that demonstrated the existence of effectual thinking in domains other than entrepreneurship, such as marketing (Read et al., 2009a) and R&D management (Brettel et al., 2012).
While we have focused extensively on careers as antecedents of effectuation and causation, we have said little about the conditions under which these logics are likely to arise (i.e. the particular context in which a decision is embedded). A key claim of effectuation research is that the extent to which entrepreneurs perceive future states of the environment as uncertain (i.e., different levels of perceived uncertainty) constitutes the basis upon which decision logic is preferred (Sarasvathy, 2008; Wiltbank et al., 2006). For example, causal reasoning is assumed to be induced in the relatively more certain context of existing markets that are definable and measurable, and at later stages of new venture development (Sarasvathy, 2008). Contrarily, effectual reasoning is likely to be induced in case of unknown or non-existent markets (the case of Knightian uncertainty), and in the early stages of a new venture (Sarasvathy, 2008; Wiltbank et al., 2006). Thus, the same entrepreneur, irrespective of previous experiences, is likely to employ both causal and effectual reasoning, depending on what the circumstances call for. However, as Gabrielsson and Politis (2011) rightfully point out, it might also be the case “that individuals select into certain contexts that call for a more causal or effectual approach because their personal career preferences have resulted in a dominance of one logic over the other” (p. 293).

This links us back to our main point that the notion of career includes numerous references to uncertainty, and career researchers have long emphasized uncertainty as a central element of career theory (e.g., Sullivan & Baruch, 2009; Trevor Roberts, 2006; Weick, 1996). Our analysis showed that career strategy behaviors such as goal orientation and investments in career capital are related to an entrepreneur’s decision-making logic. These properties are also intimately tied to uncertainty, and more specifically, to the dimensions of prediction and control in one’s career (e.g., DiRenzo & Greenhaus, 2011). Thus, our study suggests that by dealing with different levels of uncertainty in their careers entrepreneurs develop perceptions and behaviors that reflect different emphasis on control and prediction (i.e. different career profiles). For instance, people that follow “new” career patterns (Arthur & Rousseau, 1996) are experiencing high levels of uncertainty over time and are likely to develop different career behaviors to deal with such uncertainty. Their emphasis on career planning is diminished and their working lives become “improvised through the application of accumulated career capital to new, frequently unanticipated, opportunities” (Inkson & Arthur, 2001: 59). Therefore, this study illustrates how traditional careers (Super, 1957) rest on the logic of prediction, while “new” careers (Arthur &
Rousseau, 1996) rest on the logic of control. If we take this argument one step further and consider Read et al’s (2009a: 5) comment that ‘entrepreneurial expertise equals expertise in uncertainty’, we can see how such expertise might originate from the enactment of “new” career behaviors. Hence, the antecedents of effectuation as they relate to uncertainty may be distinguished from the entrepreneurial experience itself. We therefore invite future research to take a closer look at the interplay between careers, uncertainty, and decision-making.

We further acknowledge the fact that in our inquiry of entrepreneurs’ careers we have identified only a small subsection from the possible pool of career properties that can relate to uncertainty, prediction and control, and ultimately to effectuation and causation. Indeed, there may be other, additional elements of one’s career that were left uncovered in the current research, such as the degree and kind of career mobility (i.e. physical and psychological) (Sullivan & Arthur, 2006), and type of career transitions (i.e. voluntary and involuntary) (Louis, 1980). Future research should seek to broaden our initial investigation by including these, and possibly other, elements that can be found in entrepreneurs’ career histories.

Finally, we see great promise in what effectuation theory can contribute to the study of careers. Wiltbank et al. (2006) already demonstrated that the dimensions of prediction and control, which underlay effectuation and causation, are relevant to theories in strategic management. We propose to extend the applicability and relevance of these concepts to the study of careers. As our analysis showed, different career profiles can be differentiated in accordance with their emphasis on control and prediction. Career theory has been struggling with the task of coming up with a clear distinction between the multitude of different career models (e.g., Sullivan & Baruch, 2009). It may just be that as prediction and control assist us in seeing more clearly the differences between theories of strategic management (Wiltbank et al., 2006), they would become a valuable conceptual tool for career researchers to delineate and clarify the boundaries of different career theories. We thus heed the call to make more connections between emerging entrepreneurship theories and organizational scholarship (Baron, 2010; Sørensen & Fassiotto, 2011).

3.5.1. Limitations

Like every other empirical study, this research has a number of limitations. A first limitation concerns the sample on which we based our analysis. Although we believe that the sample size used in this research is suited for its purpose of initial theory building and is also in line with the
Careers and Entrepreneurial Decision-Making: Uncovering the Role of Prediction and Control

methodological traditions of protocol studies (e.g., Dew et al., 2009a), we acknowledge that a larger sample size would increase the external validity of our findings considerably. Second, we relied on semi-structured interviews in order to retrieve the entrepreneurs’ career history, bearing the risk of retrospective bias affecting our data. Imperfect memory during retrospective reporting is an important source of response error that diminishes data quality (Belli, Shay, & Stafford, 2001). Research on autobiographic memory has proven that memory performance decreases with longer retention intervals between attaining and retrieving information (Rubin & Wenzel, 1996), which consequently increases the chances of underreporting and inaccuracy (Yoshihama, Gillespie, Hammock, Belli, & Tolman, 2005). We advise future research to employ alternative, more reliable data collection methods for gathering data on career histories that optimize retrospective recall, such as the Life History Calendar method (Caspi, Moffitt, Thornton, Freedman, & et al., 1996; Nelson, 2010), to avoid this possible bias. Finally, our investigation did not include important contextual elements that might have influenced entrepreneurs’ preference of decision-making logic. We thus see potential in future studies that would pay attention to the interplay of the decision task with the idiosyncratic nature of entrepreneurs’ careers. For example, it would be interesting to see how entrepreneurs with different career profiles respond to entrepreneurial tasks at different levels and types of uncertainty (e.g., Gustafsson, 2006; McKelvie et al., 2011).

3.6. Conclusion

We set out to study how the careers of entrepreneurs influence their preference for employing either causal or effectual reasoning in the process of new venture creation. Thus, we aimed to gain further insight into careers as the antecedents of entrepreneurial decision-making. Using verbal protocols and semi-structured interviews, we retrieved qualitative data on a sample of entrepreneurs concerning their decision-making approach and career history respectively. The results showed that the career experiences identified (i.e., career goal orientation and investment in career capital) rest on the same principles of prediction and control that underlie causal and effectual reasoning. We proposed a framework of four distinct career profiles, each accompanied with a specific decision-making approach to new venture creation. Our findings provide insights on entrepreneurship cognition in general and effectuation theory in specific.