The Duality of Passion in Entrepreneurship

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The Duality of Passion in Entrepreneurship:

Key words: passion, entrepreneurship, harmonious passion, obsessive passion, cognition, motivation

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I started my PhD journey in the spirit of “passionate scholarship”, in which researchers truly engage in crucial issues, deeply connected with personal meaningful topics, and freely share ideas that they care about. If I was to spend the next couple of years of my life engaged with one topic, I wanted it to be something that fascinates me, and that others consider relevant and can benefit from. Early on in my studies, I developed an interest in entrepreneurship, and a strong admiration and curiosity for the individual entrepreneurs, the movers and shakers, the people who manage to create value for the world out of thin air. I chose to study the person of the entrepreneur, in order to unravel the mystery of their courage and unshattering belief in their idea, which drives their pursuit. By being in close contact to entrepreneurs over the years of my PhD journey, studying and trying to understand them, the nature of my admiration for entrepreneurs changed. I do not look up to entrepreneurs, or idolize them as modern heroes anymore. Instead, I developed a different admiration for them, one that targets the troubled entrepreneurs’ prototype that I got to know, who do experience fear but move on despite it, and who sometimes consciously sacrifice free time and personal life for what they believe in; the entrepreneurs who, thanks to their passion, go through hardships, to eventually succeed, or not. Studying entrepreneurial passion over the course of these years gave me more insight into myself, into others, and definitely changed my perspective on the meaning of life.

Next, I would like to express my gratitude to the people who made my PhD journey possible.

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I appreciate the valuable comments made by my pre-examiners Prof. Dimo Dimov and Prof. Teemu Kautonen. Your input is highly valuable in going forward with the publication of the papers as well as the future development of my work in general.

My sincere gratitude goes to my parents and friends for supporting and encouraging me when the PhD life got rough, and especially for celebrating with me when an apparent milestone breakthrough was reached. Last, I am deeply grateful to Fabio, my part-time
lover and my full-time friend, for his unconditional support and love throughout the entire process.

These few words of appreciation come to prove that the academic achievement of the present work should not be ascribed only to myself, but even more so to the assistance and encouragement of many others.
LIST OF PAPERS

This doctoral dissertation contains a thesis frame and the following four papers, which are referred to in the text by their numerals:

I. Stroe, S., Thorgren, S., & Wincent, J.: What Do We Know about Passion in an Entrepreneurial Context?

II. Stroe, S., Wincent, J., & Parida, V.: Why do nascent entrepreneurs develop obsessive passion? The effect of role overload, goal challenge and goal progress

III. Stroe, S., Shepherd, D., & Wincent, J.: A Passion Model of the Negative Affect from Fear of Failure in the Entrepreneurial Context

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1 INTRODUCTION

1.1 Background to Research

The link between entrepreneurship, economic growth and innovation is well understood and well researched (Baumol, Litan, & Schramm, 2011). New ventures assume critical functions in all economies. By bringing forward product and process innovations, new venture reconfigure existing industries, constraining traditional, well-established counterpart companies to reevaluate their ways of doing business (Doutriaux, 1991; Knight, 1989). The increase in the standards of health and level of material comfort in the past centuries and can be ascribed to entrepreneurship and innovation in industries such as bio-technology and mass communication (Stangler, 2009). In the process, new firms can also increase value in society by helping increase the tax incomes of states, enhance national competitiveness and create jobs (Decker, Haltiwanger, Jarmin, & Miranda, 2014; Hafer, 2013). New ventures and the entrepreneurial spirit behind them are to be thanked for creating jobs and human progress within economies that suffer, and for helping innovative countries enhance their standards of living (Read & Sarasvathy, 2005; Santos Cumplido, 2004).

The critical role of entrepreneurship in today's economy has convinced most political leaders and policy makers to refocus their strategies on promoting the creation and development of new ventures (Aparicio, Urbano, & Audretsch, 2016; Autio & Rannikko, 2016). At the same time, it is known that the fruition of such initiatives depends not only on establishing programs that support entrepreneurs and promote new venture creation, but also on the motivation and ability of entrepreneurs themselves to persist and succeed in the face of numerous challenges (Gartner, 1990; Shane, Locke & Collins, 2003). The importance of understanding the individual entrepreneurs and studying their motivation and mental processes has been widely recognized (Shaver & Scott, 1991), because it is entrepreneurs who found new ventures in order to disseminate new ideas (Baumol et al., 2011). Consequently, entrepreneurship research has invested considerable effort in recognizing and understanding individual level constituents vital for engagement in entrepreneurship and to entrepreneurial success, in an effort to lower the economic and personal costs associated with failing ventures.

In the process of founding, entrepreneurs face great challenges that are characterized by uncertainty, ambiguity, scarcity of resources, marginal performance and information asymmetry, among other product and technology-related issues (Alvarez & Busenitz, 2001; Alvarez & Barney, 2005). Thus, entrepreneurs often find themselves in particularly complex and challenging situations. In the light of studies showing that, excluding the highest 25% of entrepreneurial incomes, being employed or moving back into an employed job makes more financial sense than starting a new venture (Hamilton, 2000), researchers have been investing a lot of scientific effort in trying to elucidate the motivational force that drives entrepreneurs to start exploiting opportunities, persist and not abandon their pursuit despite what may appear to be insurmountable obstacles and difficulties in the entrepreneurial process. Since the motivation to engage in opportunity exploitation and persist in the new venture creation process does not always seem to follow rational patterns of behavior, researchers have turned to affect and its motivational power when trying to explain engagement in entrepreneurship (Bird, 1989; Baron, 2008; Cardon, Wincent, Singh & Drnovsek, 2009; Foo, Uy & Baron, 2009). This approach is rooted in psychology, and more specifically in physiological and neurobiological theories explaining the cognitive appraisal and motivational tendencies intrinsic to affect (e.g., Damasio, 1994; Loewenstein, 2000; Zajonc, 1980). Indeed, a
close affective relation has been assumed to exist between the entrepreneur and the ventures they are creating (Cardon, Foo, Shepherd, & Wiklund, 2012; Shepherd, 2003): entrepreneurs make extensive investments of individual resources such as time, energy, full attention and work in their venturing initiatives and in most cases bet their personal financial capital, their career reputations and self-esteem on the success of the opportunity exploitation process. Therefore, the affective connection to the emerging venture has been recognized as an important source of motivation in entrepreneurial research.

Recently, there has been a growing scholarly interest in a specific affect – passion – that has been presumed to play an important role in clarifying the above-mentioned gap in understanding entrepreneurs’ motivation. Passion has been recognized as one of the most important affective experience integral to the entrepreneurial experience and distinctive of entrepreneurs (Baum & Locke, 2001; Cardon et al., 2009; Foo, 2009; Shane et al., 2003). Because of its intense and positive affective nature, passion is thought to drive energetic and persistent goal pursuit and to mobilize action to master challenging situations (Bierly, Kessler, & Christensen, 2000; Cardon et al., 2009). Thus, passion has been stipulated to be that motivational forces that helps entrepreneurs persist regardless of substantial obstacles and difficulties during the entrepreneurial process (Cardon et al., 2009). Moreover, besides its motivational power, as an affect, passion might also significantly influence the way entrepreneurs think, that is, their cognition (Baron, 2008; Cardon et al., 2009). The way in which entrepreneurs perceive and process information from their environment, as well as the thought processes and biases that lead them to decide for particular courses of action are crucial in identifying business opportunities and successfully exploiting them. Therefore, the questions of whether and how passion, as a ubiquitous affect experienced by entrepreneurs, influences perception and thinking of the entrepreneur has been of increasing interest for entrepreneurship scholars. Entrepreneurship is seen as an emotional endeavor (Baron, 2008). The new venture environment is highly unpredictable and rapidly changing (Lichtenstein, Dooley & Lumpkin, 2006) and the entrepreneurial processes are hectic, multifaceted, and compressed in time (Aldrich & Martinez, 2001). Decisions are often made under limited time and information, despite their complexity (Busenitz & Arthurs, 2007) and entrepreneurs cannot rely on prescribed set of procedures (Baron, 2008). It is under these conditions that affect such as passion is expected to have the highest influence on cognition (Forgas, 1995).

Thus, passion emerged as an essential source of motivation and perseverance for entrepreneurs, as well as an important influencing factor on entrepreneurs’ cognitive processes, gaining in importance and becoming representative of the entrepreneurial experience (Delgado García, Quevedo Puente, & Blanco Mazagatos, 2015; Cardon, Zietsma, Saparito, Metherne & Davis, 2005).

1.2 Research Problem and Research Aim

Despite advances in the last decade, the concept of passion does not yet have a clear theoretical base, and has not been yet clearly integrated in existing theoretical frameworks of entrepreneurship. The phenomenon of passion in entrepreneurship is mentioned very often in the popular and specialized press. Business books, interviews with entrepreneurs and autobiographies reveal passion as the main source of motivation and a prerequisite for success in entrepreneurship. Indeed, many successful entrepreneurs credit their drive to passion. However, there is not enough theoretically, sound proof that passion indeed helps explain the gap in understanding regarding
entrepreneurs’ motivation. Most research on passion in entrepreneurship relies on anecdotal evidence from practice and has therefore not yet managed to scientifically prove that passion’s reputation in practice is well deserved (Cardon et al., 2009). Scholarly investigations of passion in entrepreneurship assume various outcomes of passion, without explaining clearly the pathways through which passion leads to these outcomes (Cardon et al., 2012). Solid theoretical links to important and established constructs in entrepreneurship research such as motivation and cognition are missing. Although scholars have started developing conceptual frameworks explaining the affective nature of passion (Cardon et al., 2009; Murnieks, Mosakowski & Cardon, 2014), they have not explained how passion relates to entrepreneurs’ cognition and motivation. Indeed, we currently do have enough understanding of whether and how passion matters for entrepreneurs and their ventures. If we are to accept passion as a main motivational force in entrepreneurship, with important effects on cognition (e.g., Vallerand, Salvy, Mageau, Elliot, Denis, Grouzet, & Blanchard, 2007), we must gain deeper insights about the specific ways in which passion interacts with motivation and cognition.

Moreover, limitations in existing research leave gaps the theoretical basis explaining the functioning mechanisms through which passion exerts its potential influence on entrepreneurs’ cognition and motivation. The vast majority of existing research on passion in entrepreneurship focuses on passion as a positive affect. Building upon this characteristic that passion shares with many other positive affects, previous studies have adopted previous theoretical assumptions about the effects of positive affect, changing the independent variable to passion. Thereby, they reiterated many of the results of previous studies of general positive affect. While these studies offer a first understanding of passion’s cognitive and behavioral outcomes, they limit passion’s functions to those that derive out of it being a positive affect, and do not extend our understanding of the unique functioning mechanisms of passion. The definitional characteristics of passion transcend positive affect though. Overlooked theoretical account of the phenomenon of passion from psychology offer a new array of theoretical connections and allows us to investigate passion’s functions beyond those that derive from it being a positive affect. This opens up a broad new range of possibilities of theoretically understanding passion’s uniqueness as an affective state and the mechanisms by which it brings about important outcomes in the entrepreneurial process.

Furthermore, conceptual studies in the area of entrepreneurship looked at passion as a powerful positive force that drives entrepreneurs and promotes hard work, grit, perseverance, eagerness and high achievements (Baum & Locke, 2001; Cardon et al., 2009; Cardon & Kirk, 2015; Smilor, 1997). This view was underpinned by Cardon and colleagues’ (2009) definition of passion as a positive affective state. The ensuing empirical studies adopted this conceptualization and focused on the study of positive outcomes of entrepreneurial passion. Accordingly, they uncovered mainly positive outcomes of passion. These studies depict passion as a beneficial attribute of the entrepreneur that will unmistakably have positive consequences for the new venture. The prospect that passion might include detrimental effects as well has not been recognized or studied systematically in the entrepreneurship research, despite the fact that this option has been empirically validated in previous works that investigated passion in other domains such as sport, music or work (e.g., Ho, Wong & Lee, 2011; Philippe, Vallerand, Houfort, Lavigne & Donahue, 2010; Vallerand, Mageau, Elliot, Dumais, Demers & Rousseau, 2008). Even though some few papers have suggested that passion might include negative consequences (e.g., failure to recognize or accept disconfirming evidence; over-commitment despite failing venture) and have called for studies to investigate the debilitating, and not only the enabling functions of passion (Cardon et al., 2005; Cardon et al., 2012), entrepreneurship scholars have not yet thoroughly answered
this clarification request. Thus, by focusing only on the beneficial consequences effects of passion, existing research misguides us by disregarding eventual drawbacks of passion, and perpetuates a biased, counterfactual perspective on passion and its outcomes. Such an excessively beneficial depiction of passion could misguide entrepreneurs or venture capitalists into uncritically looking for passionate entrepreneurs to work with or invest in even though, actually, passion may not always have beneficial outcomes. Additionally, from a research point of view, associating passion exclusively to beneficial outcomes, without a simultaneous regard to possible detrimental outcomes, represents a distorted and fragmentary illustration of the passion phenomenon and fails to advance theory in this domain. This one-sided focus of passion research in entrepreneurship highlights the urgency to acknowledge the advantages, as well as the disadvantages of being passionate, and also the circumstances under which either result may occur.

Figure 1 summarizes the three research gaps. First, our knowledge regarding how passion relates to robust psychological mechanisms such as cognition and motivation is limited. It was assumed that passion sets things into motion in the entrepreneur. However, we do not know much about what exactly happens when the passion “wheel” starts to spin. Second, we currently do not have a clear understanding of the theoretical mechanisms underlying passion’s functioning and its eventual outcomes. Third, the possibility that passion has a dualistic nature and therefore also duplicitous outcomes on the entrepreneur and the venture has not yet received systematic attention in entrepreneurship, despite suggestions from results in related fields that this might be worth investigating.

![Figure 1: Current Gaps in Passion’s Understanding in Entrepreneurship](image)

In the light of the presented gaps in passion research in entrepreneurship, and from the background of the theoretical and empirical insights we can gain from related disciplines of study, a new and comprehensive understanding of the phenomenon of passion and its outcomes in the entrepreneurial process is needed.
I therefore pose the general research question:

Does passion play a role in the new venture emergence process and if so, how does passion influence the new venture emergence process?

The thesis addresses this general research question through a systematic literature review and three empirical studies. The systematic literature review (Paper I), conducted following established process methods (Tranfield, Denyer, & Smart, 2003), updates the current state of passion research in entrepreneurship, uncovering thereby yet unanswered questions and research gaps, and thereby informing the following papers of this dissertation. The following three papers look at determinants that influence passion (Paper II) and at passion’s cognitive and motivational outcomes (Paper III and Paper IV). Methodologically, I combine quantitative research with mixed methods research designs such as qualitative comparative analysis (Ragin, 2008). The quantitative research comprises a longitudinal study and a quasi-experimental cross-sectional study, while the qualitative comparative analysis is based on a cross-sectional study. As a whole, the four papers offer a better understanding of passion in nascent entrepreneurship.

Reflecting Popper’s (1959) suggestion that general knowledge advancement is mobilized by the advancement of specialized knowledge, we focus this work on advancing the emerging research stream of passion in entrepreneurship, as it advances the general knowledge in the field of entrepreneurship. The motivation for this thesis derives in part from the aim to gain a deep understanding of affective experiences of entrepreneurs and their outcomes, in theory and practice: The aim of this dissertation is to reframe the conceptualization of passion in entrepreneurship. It does so by uncovering the functioning mechanism through which passion exerts its influence in entrepreneurship as well as by considering the dualistic nature of the passion experience in entrepreneurship. In the next sections, I concisely review each paper’s individual theme, core concepts, research design, findings, and main contribution to this dissertation (see Table 1).

Paper I gives a thorough overview over the existing literature on passion in entrepreneurship. The article is entitled “What Do We Know about Passion in an Entrepreneurial Context?” and applies a systematic literature review method to uncover different conceptualization of passion used previously, structure studies on various outcomes of passion in entrepreneurship, as well as pinpoint inconsistencies and research gaps in this literature. The main contribution of this paper is that it brings preliminary proof of passion’s critical function in entrepreneurship and it uncovers the lack of a dualistic view on passion in entrepreneurship. Paper II specifically raises the question of how obsessive passion develops in entrepreneurship. The paper entitled “Why do Nascent Entrepreneurs Develop Obsessive Passion? The Effect of Role Overload, Goal Challenge and Goal Progress” conducts a longitudinal quantitative study and details how identity-relevant stressors in the nascent stages of the new venture can change the quality of passion into an obsessive one. In that lies also it main contribution of this paper to the thesis, it explains how passion can take on an obsessive nature early on in the new venture emergence process, due to pressures and challenges that affect the entrepreneurs emotionally. Paper III recognizes passion as an identity-relevant long-term affect and investigates its emotion regulatory function over other affective experiences in the nascent entrepreneurial process. Based on a quantitative analysis and quasi-experimental research design, “A Passion Model of the Negative Affect from Fear of Failure in the Entrepreneurial Context” reveals how harmonious and obsessive passion influence entrepreneurs’ perceptions and regulate negative affective experiences of the entrepreneur in different ways. The main contribution of this paper to the thesis is that it uncovers how passion, through it cognitive influence, can influence the
development of various affective experiences with motivational power. Importantly, it shows that these outcomes of passion are different depending on its type. Paper IV aims to understand how passion affects entrepreneurs’ decision-making logic choice. The paper entitled “The Role of Passion and Perception in Entrepreneurs’ Choice of Decision-Making Logic” is based on fuzzy set qualitative comparative analysis of cross-sectional data and shows that passion’s obsessive or harmonious nature is reflective of entrepreneur’s general cognitive approach toward the venture related activity. The main contribution of this study is the revelation that passion plays a coordinating role in entrepreneurs’ cognitive processes, and that this function of passion is unique to its nature.
<table>
<thead>
<tr>
<th>Research Question</th>
<th>Does passion play a role in the new venture emergence process and if so, how does passion influence the new venture emergence process?</th>
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<th>Paper I</th>
<th>Paper II</th>
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<tr>
<td><strong>Title</strong></td>
<td>What Do We Know about Passion in an Entrepreneurial Context?</td>
<td>Why do nascent entrepreneurs develop obsessive passion? The effect of role overload, goal challenge and goal progress</td>
<td>A Passion Model of the Negative Affect from Fear of Failure in the Entrepreneurial Context</td>
<td>The Role of Passion and Perception in Entrepreneurs’ Choice of Decision-Making Logic</td>
</tr>
<tr>
<td><strong>Theme</strong></td>
<td>Reviewing existing research on passion and its outcomes in entrepreneurship</td>
<td>Uncovering the determinants of obsessive passion</td>
<td>Passion’s dualistic effects on entrepreneurs’ affective experiences and motivation</td>
<td>Passion’s dualistic effects on entrepreneurs’ cognitions</td>
</tr>
<tr>
<td><strong>Core Concepts</strong></td>
<td>Dualistic model of passion, affective, cognitive, behavioral outcomes, interpersonal outcomes</td>
<td>Obsessive passion, role overload, goal challenge, goal commitment</td>
<td>Emotion regulation, negative affect, harmonious passion, obsessive passion, fear of failure</td>
<td>Effectuation, causation, harmonious passion, obsessive passion, self-efficacy, risk perceptions</td>
</tr>
<tr>
<td><strong>Research Design</strong></td>
<td>Systematic literature review</td>
<td>Longitudinal quantitative study using hierarchical regression analysis, based on survey data</td>
<td>Quantitative study with a quasi-experimental design using hierarchical regression analysis, based on survey data</td>
<td>Fuzzy set qualitative comparative analysis study, based on survey data</td>
</tr>
<tr>
<td><strong>Findings</strong></td>
<td>Most studies on passion until date focused of passion’s affective valence and investigated it as a beneficial force, despite recognition that it might have a “dark side”</td>
<td>Obsessive passion develops as an answer to perceptions of identity-relevant stress from difficult and important goals</td>
<td>Harmonious passion upregulates, while obsessive passion downregulates negative affect from fear of failure by influencing perceptions of failure threats differently</td>
<td>Harmonious and obsessive passion interact with perceptions of self-efficacy and risk to influence the choice of an effectual/causal decision-making logic</td>
</tr>
<tr>
<td><strong>Main contribution to this thesis</strong></td>
<td>Brings preliminary proof of passion’s importance and demonstrates the need for a dualistic view on passion in entrepreneurship</td>
<td>Explains how passion can become obsessive</td>
<td>Passion influences entrepreneurs’ cognitive perception and by that their affect and motivation. These outcomes of passion are different depending on its type</td>
<td>Passion has a coordinating role in entrepreneurs’ cognitive processes. This function of passion is unique to its type</td>
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**Conclusion:** Passion plays an important role in the cognitive and motivational processes of entrepreneurs and has a dualistic influence on them, depending on its nature.
The four papers of this dissertation offer suggestions for future theorizing on passion in entrepreneurship, as well as practice implications for entrepreneurs.

1.3 Thesis Structure

This thesis is article-based. Besides the collection of four individual papers in Part II, it comprises the dissertation frame (Part I), which presents the theoretical framework connecting the individual studies and the dissertation’s overall contribution to the literature. The papers are displayed at the end of the dissertation. A summary of the papers is outlined in Table 1.

The dissertation comprises seven chapters. The introduction presents the research problem and the research aim. The second chapter elaborates on the theoretical background of the thesis and places passion research into entrepreneurship studies. The third chapter introduces the research methodologies used in the papers of this dissertation. The fourth chapter comprises a summary of the four papers, presenting the various research designs and focusing on the main findings. The fifth chapter scrutinizes the contribution of each paper and discusses them within the current literature, pinpointing how each of them fit into the general framework of the dissertation. Chapter six presents the main limitations of each paper and of the dissertation overall. Finally, chapter seven introduces directions for future research and stresses practice implications of this work.
2 THEORETICAL BACKGROUND

2.1 Individual Level Determinants of Entrepreneurship

2.1.1 Entrepreneurship and the Entrepreneur

A long and sustained usage maintains that the entrepreneur is central to the creation and performance of the new venture (Bygrave & Hofer, 1991; Carland, Hoy, Carland, & Bolton 1988; Schumpeter, 1934). This tradition dates back to the first references of entrepreneurship. The term “entrepreneur” as it is used today can be traced back to the French military of the 17th century, where it designated the head of a military expedition. This might be reason why the English translation for the French word entrepreneur was “adventurer” or “merchant” (Redlich, 1949). Indeed, up until modern-day, it is related to risk, venture and progress. In the 18th century, the concept was first brought into economical context by the Irish-French economist and banker Richard Cantillon (Murphy, 1986). In his analysis, he differentiates between fixed income wage earners and entrepreneurs – non-fixed income wage earners, and defines the entrepreneur as an actor who buys goods at a certain price, so as to sell them later, possibly at a profit (Hébert & Link, 1989). For Cantillon, engaging in an economic activity “[…] without an assurance of the profits he will derive from his enterprise” (Cantillon, 1775, p. 47) was defining for an entrepreneur. Despite the fact that Cantillon does not mention explicitly neither risk nor uncertainty, over time, the term entrepreneur becomes frequently used to denominate risk-oriented individuals who start economic activities using new or enhanced practices. This meaning of the concept is ascribed to the early 19th century French economist Jean Baptiste Say (van Praag, 1999). Say identified an entrepreneur as someone who organizes and aligns the utilization of various factors of production, and “shifts economic resources out of an area of lower into an area of higher productivity and greater yield” (Drucker, 1985, p. 23). The Austrian economist Josef Schumpeter (1883-1950) was however the first one to lay modern theoretical foundations about entrepreneurs and particularly about their critical role for economic development. Moreover, by defining the entrepreneur as the economic agent who innovates and is an engine of “creative destruction”, he was he first to ascribe innovation to entrepreneurs. Schumpeter’s theories have received wide acceptance and provided a solid base for many scholars within the entrepreneurial domain. Indeed, Higgins (1959), Baumol (1968), Leibenstein (1978) and most of the economists who focused on entrepreneurship after him adopted the association entrepreneur-innovation. Continuing the work of Schumpeter, economists investigated the role of the entrepreneur for economic development (Knight, 1921; Baumol, 1968; Leff, 1978; Kent, Sexton, & Vesper, 1982). They considered entrepreneurs discoverers of business opportunities (Higgins, 1959; Penrose, 1959; Kirzner, 1976), risk-takers (Knight, 1921; Leibenstein, 1968; Kihlstrom & Laffont, 1979) or agents that informed the market of new element (Hayek, 1959). Despite these efforts, because of their complex behavior that could not be explained by the rationality-focused economical standards of the time, entrepreneurs appear only marginally, if at all, in 20th century classical models of economic development (Filion, 1997).

Since the 1980s, entrepreneurship research advanced greatly, was able to demonstrate considerable progress in its body of empirical knowledge, and therefore became a legitimate domain of scholarly research (Bygrave & Hofer, 1991). Even so, the terms “entrepreneurship” and “entrepreneur”, although in use for more than two centuries, have been ascribed various definitions, which have been continuously broadened,
adjusted and reframed. Analyzing the historical developments reported above, one can conclude that, historically, entrepreneurship was deliniated with keywords such as risk-taking (Knight, 1921; Kihlstrom & Laffont, 1979), innovation (Drucker, 1985; Schumpeter, 1934), recognition of market opportunity, marshalling or organization of resources (Kirzner, 1979; Higgins, 1959). Out of these definitional attributes, some drifted out of researchers’ focus. Recent studies showed that entrepreneurs might undertake risky ventures not because they are unconcerned about the risk, but because they do not perceive the amount of risk that others do in new ventures (Busenitz & Barney, 1997; Simon, Houghton, & Aquino, 2000). Therefore, risk-taking has been abandoned as a definitional character of entrepreneurship. The same goes for innovation: the blurred boundaries of the concept of innovation (Bessant & Tidd, 2007), together with the controversial empirical results of its effect on performance (Rosenbusch, Brinckmann, & Bausch, 2011) made researchers forgo it when defining entrepreneurship. Lately, the concept of opportunity and the process of identifying, evaluating and acting upon it have become persistent elements when discussing entrepreneurship (Bygrave & Hofer, 1991; Hitt, Ireland, Sirmon, & Trahms, 2011; Shane & Venkataraman, 2000; Timmons & Spinelli, 2003). Indeed, currently, the most used definition of entrepreneurship explains that the field of entrepreneurship involves opportunity discovery and exploitation processes; and the individuals who discover, evaluate, and exploit them (Shane & Venkataraman, 2000). This contemporary definition of entrepreneurship focuses on emergence and suggests that entrepreneurship research should focus on early-stage phenomena: how entrepreneurs detect and act upon opportunities and how new organizations emerge. With this definition, Shane and Venkataraman (2000) underscore that new venture emergence consists of two related processes, discovery, and exploitation of entrepreneurial opportunities. We follow this line of thought in the present work.

Despite the definitional identification of entrepreneurship with the process of new venture emergence, and therefore, with nascent entrepreneurs (Bygrave & Hofer, 1991; Hitt et al., 2011; Shane & Venkataraman, 2000; Timmons & Spinelli, 2003), the vast majority of entrepreneurship studies focus exclusively or primarily on the post-founding stage and are based on samples of already existing ventures (c.f. Davidsson & Wiklund, 2001; Shane & Venkataraman, 2000), disregarding thereby entrepreneurship’s unique conceptual domain as a research field. Research on nascent entrepreneurs, whereas important, is still in its infancy, despite renown projects such as the Panel Study of Entrepreneurial Dynamics (PSED) and the Global Entrepreneurship Monitor (GEM) projects (Carter, Gartner, & Reynolds, 1996; Katz & Gartner, 1988; Reynolds, 2008). A main reason therefore might be fact that, commonly, nascent ventures are constitutionally difficult to identify and analyze. That is, nascent venture do not show up in conventional firms’ directories, since they are not registered yet. After incorporation, they are typically new ventures and not nascent venture anymore, and thus fail to mirror the many nascent initiatives that do not manage to institute themselves as businesses. Furthermore, nascent venture are also not accounted for directories based on payment of taxed, employment data, or similar. As a result, data about nascent ventures and nascent entrepreneurs are not easily procurable from conventional sources (Honig & Samuelsson, 2012).

As previously mentioned, the general definition looks at the entrepreneur as someone who in engaged in opportunity discovery or exploitation (Davidsson, 2006; Shane & Venkataraman, 2000). However, these two phases have not only been used to explain who is an entrepreneur, but also to differentiate between various types of entrepreneurs depending on the phase in which they are currently involved in. The most inclusive concept of ‘latent entrepreneurship’ was used by Grilo and Irigoyen (2006). They define
everyone who would essentially prefer to be self-employed as a latent entrepreneur. Second, 'latent nascent entrepreneurs' are individuals who intend to found a venture within the next three years (Reynolds et al., 2005). This concept refers mostly to entrepreneurs engaged in the discovery phase and is more precise than the concept of latent entrepreneurship. However, it bases the definition of an entrepreneur on the existence of intention, without any proof of its concreteness. Particularly from the background of the weak empirical relation between intention and behavior (Bamberg, 2003; Davis, Challenger, Clegg, & Healey, 2008; Sniehotta, Presseau, & Araújo-Soares, 2014), this definition might be problematic. A more distinct concept is that of 'nascent entrepreneurship'. Nascent entrepreneurs are people who are actively involved in starting a new venture and who initiated serious activities that are intended to conclude in an operable organization (Aldrich & Ruef, 2006; Reynolds et al., 2005). Thus, as pictured in Figure 1, nascent entrepreneurs find themselves in the exploitation stage. This exploitation stage of the new venture emergence has a high importance, since it has been demonstrated that only 12% to 20% of nascent entrepreneurs will continue their efforts further and found the new venture (Reynolds & Curtin, 2008). Lastly, 'young entrepreneurs', represent those few that were once nascent entrepreneurs and that have successfully overcome the opportunity exploitation phase and are now operating the new venture past its emergence (Reynolds et al., 2005).

**The entrepreneurial process**

![Diagram of the entrepreneurial process](image)

**The empirical measures**

![Diagram of empirical measures](image)

**Figure 2 Phases of the Entrepreneurial Process and Empirical Measures used to Categorize Entrepreneurship**

Based on Shane and Venkataraman’s (2000) claim that an entrepreneur is not born until one of the various opportunities detected is acted upon, I focus in this work on nascent entrepreneurs in the opportunity exploitation phase. Moreover, nascent entrepreneurs in an exploitation stage can be either novice founders, or experienced founders who have previously created one or more venture. Founders of multiple venture can be further segmented into serial entrepreneurs, who have created ventures before and have then sold or halted them, and portfolio entrepreneurs, who run two or more businesses in parallel (Westhead & Wright, 1998; Carter & Ram, 2003). Since multiple venture
founders do not face the same challenges as novice entrepreneurs in the new venture emergence process, the conceptualization of nascent entrepreneurs used in this study includes exclusively novice entrepreneurs, that is, entrepreneurs that do not have considerable previous entrepreneurial experience (Davidsson & Honig, 2003). Furthermore, in line with Baron (2008), we concentrate our attention on nascent entrepreneurs who exploit opportunities individually rather than as part of a team.

The opportunity exploitation phase has been regarded as the “heart” of entrepreneurial activity (Breugst, Domurat, Patzelt, & Klaukien, 2011). This stage starts with the business concept identification and regards the factual organization creation associated with turning the business concept into practice (Hitt et al., 2011; Shane & Venkataraman, 2000). It includes entrepreneurs’ conscious engagement towards material establishment, which differentiates a previously invisible process from an ensuing visible one (Bhave, 1994). The opportunity exploitation stage comprises the acquisition and assembling of essential human and financial resources, as well as the initial business decision-making by the nascent entrepreneur (Hitt et al., 2011; Timmons & Spinelli, 2003). Indeed, at this stage, it is exclusively the nascent entrepreneurs’ efforts and decisions that can move the nascent venture forward (Arenius & Minniti, 2005; Corbett, 2005; Dimov, 2010). First, the nascent entrepreneurs hold a critical role in activities involved in the acquisition of financial capital from investors and persuasion of key partners and employees to join the new venture (Chen, Yao, & Kotha, 2009). Acquiring the necessary resources is a critical threshold in new venture creation (Shane, 2003). Thus, success of this vital step will increase the success chances of new ventures. Entrepreneurs’ motivation, together with their enthusiasm, preparedness and power of persuasiveness are key (e.g., Chen et al., 2009; Terry & Hogg, 2000) (Bhave, 1994). Second, despite high uncertainty and incomplete information, nascent entrepreneurs must decide on an adequate course of action and take sound decisions about organizational design, market making, or product development (Alvarez & Busenitz, 2001; Gruber, 2010; Shane et al., 2003). Entrepreneurs’ cognitions and decision making logics impact the approach employed in exploiting opportunities, and thereby the success of the new venture emergence process (Baron, 1998; Brinckmann & Kim, 2015).

Environmental factors being held constant, the nascent entrepreneur plays a critical role in the new venture emergence process. Entrepreneurship involves in the first place human agency, that is, human volition and human action (Baron, 2007). The entrepreneurial process is started and realized by individuals that act to pursue opportunities (Shane et al., 2012) and materialized because entrepreneurs envision new products or services and subsequently build them up and launch them, making new ventures operational (Baron, 2007). Without assuming that external knowledge sources or social networks (Foss, Lyngsie, & Zahra, 2013; Fuentes, Arroyo, Bojica, & Pérez, 2010) do not matter in the opportunity exploitation process, in this work, I investigate the individual nascent entrepreneur as the main determinant of the entrepreneurial exploitation process. To this goal, I look at entrepreneurship as the result of the combination of motivational and cognitive factors (willingness and ability) from the side of the entrepreneur (Locke, 2000; Shane et al., 2003). Following Shane et al. (2013), I hold that it is the willingness and ability of people to act on opportunities that plays the most critical role in the entrepreneurial process. Consistent with this, the presentation of the theoretical background continues with reviews of the literature on motivational and cognition processes in the nascent phases of new venture.
2.1.2 Cognition as a Source of Motivation in Entrepreneurship

The entrepreneurial process ensues because nascent entrepreneurs actively decide to pursue identified opportunities (Shane et al., 2003; Shane & Venkataraman, 2000). Understanding the motivation behind this initial and crucial step in the new venture emergence is highly important.

Motivation is defined as the driving force behind behavior (Madsen, 1974) and it is thought to include the psychological process causing “the arousal, direction, and persistence of voluntary actions that are goal oriented” (Mitchell, 1982, p.81). Motivation refers to the willingness to expend high amounts of effort toward achieving an outcome attractive for the well-being of the individual (Weiner, 2013). Motivational theorists differ in their opinion on where motivational energy is derived from, but most agree that motivation leads to a desire to exert effort towards achieving an objective. Motivation is highly important in entrepreneurship. The entrepreneurial process is full of failure possibilities (Shane, 2008) and stress (Aldrich, 2000; Baron, 1998). Entrepreneurs face heavy workloads and high personal risk (Baron, 2008; Harris, Saltstone, & Fraboni, 1999). Researchers in the field of entrepreneurship have always asked themselves where does entrepreneurs’ motivation comes from—that force that makes individuals persist in entrepreneurship in the face of all the uncertainty, hostility and pressure that can be found in the entrepreneurial process. To answer this question, researcher went about in different ways. Just as in organizational research, entrepreneurial research on motivation has developed from static content theories, to dynamic, process theories (Campbell et al., 1970; Segal, Borgia & Schoenfeld, 2005). Static content theories in entrepreneurship search for the specific, non-conditional, decontextualized, linear and bipolar dispositional traits within individuals (McAdams & Pals, 2006), that initiate, direct, and sustain behavior. On the other hand, dynamic process theories have a cognitive nature and focus on characteristic adaptations of entrepreneurs—that can be influenced by both traits and situational variables—such as attitudes and beliefs, and on the they in which they influence intentions and behaviors (McAdams & Pals, 2006; Segal et al., 2005).

Static content models of entrepreneurial motivation

Since entrepreneurship research has had an inherent focus on the person of the entrepreneur, questions related to the internal attributes of entrepreneurs have been in the center of attention of entrepreneurship research for many years. The role of personality in entrepreneurial career choice and in entrepreneurial cognition has received substantial research attention. The trait approach to entrepreneurship searched for transsituational consistency in personality characteristics of the entrepreneur and has been used to understand whether a person’s attributes could predict entrepreneurial behavior (Hornaday & Aboud, 1971; McClelland, 1961; Shaver & Scott, 1991). Various personological traits have been assumed not only to motivate individuals to create new ventures, but also contribute to venture success (Hornaday & Aboud 1971; Low & MacMillan, 1988). In investigating personality traits as sources of motivation for entrepreneurship, researchers started from the main characteristics of the entrepreneurial process: acting in the face of uncertainty, in order to achieve desired outcomes. Thus, they assumed entrepreneurs should possess some traits that attract them to and motivate them in such an endeavour. Among various such psychological characteristics that were deemed indispensable to a person’s capability for, and interest in, acting entrepreneurially (McClelland, 1961; Mischel, 1968), three attributes were consistently investigate: risk-taking propensity, need for achievement, and internal locus of control (Brockhaus, 1982).
Introduced by McClelland in 1961, risk-taking propensity is a first motivational trait thought to motivate entrepreneurs to engage in opportunity exploitation. Individuals high in need for achievement, such as entrepreneurs, were hypothesized to have moderate propensities to risk, since activities with this degree of risk will provide a challenge, yet appear to be attainable (Atkinson, 1957; McClelland, 1961). In spite of these theoretical assumptions, considerable past research proved that entrepreneurs do not deviate considerably from managers or even the general population in their risk-taking propensity (Palich & Bagby, 1995; Low & MacMillan, 1988). Recent studies (e.g., Corman, Perles, & Vancini, 1998; Sarasvathy, Simon, & Lave, 1998) showed that, entrepreneurs have a lower risk perception than the general population, and that is why they do not perceive their actions as risky.

Within the research domain of personological variables assumed to have motivational power and to be associated with new venture creation and success, achievement motive dispositions have received much attention. Based in achievement motivation theory (McClelland 1958), the concept of achievement motive dispositions emphasize that activity in achievement contexts can be oriented toward the achievement of success or the prevention of failure, and that these two tendencies will influence individuals’ aspiration level, willingness to exercise effort, preference for risk, and activity persistence (Atkinson & Feather 1966). The need for achievement and the need to avoid failure (Atkinson, 1957; McClelland, 1961). The need for achievement refers to the tendency to enjoy activities that have high degrees of outcome responsibility, demand skill and effort, have moderate degrees of risk, and include clear performance feedback (McClelland, 1961). Since these attributes characterize entrepreneurial roles better than other careers, McClelland (1961) argued that it is likely that people high in achievement motivation will be more prone to engage in entrepreneurial roles. Indeed, achievement motivation was shown to predict business founding and growth (Collins, Locke, & Hanges, 2000; Finneman, 1977; Johnson, 1990). Despite the various unresolved conceptual and methodological issues (Frey, 1984), achievement motivation seems to account for new venture creation.

The need to avoid failure, or dispositional fear of failure, on the other hand, refers to vulnerability to evaluative situations, and focusing on anticipation of negative affects when there is uncertainty about failure outcome (Atkinson, 1957; McClelland et al., 1976). Fear of failure is related to the perceived risks involved in launching a new venture (Arenius & Minniti 2005; Bosma & Schutjens 2011) and is often used as a proxy for risk aversion (e.g. Wagner & Stenberg, 2004) or as a overall attitude to risk (e.g. Langowitz & Minniti 2007). With some exceptions (Verheul & Van Mil, 2011), studies demonstrated that variations in fear of failure correlate to differences in entrepreneurial behaviour (Arenius & Minniti, 2005; Shinnar, Giacomin, & Janssen, 2012).

Locus of control is another motivational trait of interest for entrepreneurship, and internality has been identified as one of the most dominant entrepreneurial characteristics (Venkatapathy, 1984). Locus of control refers to the extent to which one believes that it is their action and personal characteristics that influence their outcomes of interest (Rotter, 1966). Individuals with an internal locus of control believe that they, through their actions, are able to control and directly affect outcomes, whereas individuals with an external locus of control believe that outcomes are out of their control (Rotter, 1966). Rotter (1966) holds that people with an internal locus of control would be more likely to engage in entrepreneurial behavior, because they are attracted to roles where their actions directly impact results. Just as in the case of achievement motivation, research on locus of control suggests that entrepreneurs differ from the general population in terms of locus of control (Bowen & Hisrich, 1986; Shapero, 1977).
Moreover, entrepreneurs’ internal locus of control was associated with new venture performance (Boone, DeBrabander & Van Witteloostuijn, 1996; Nwachukwu, 1995). As shown above, researchers found some persistent personality differences between entrepreneurs and non-entrepreneurs, which they assumed to stimulate entrepreneurial motivation. However, the usefulness of investigating fixed and subconscious personality traits of entrepreneurs as antecedents of entrepreneurship engagement and success has been questioned (Gartner, 1990). Personality traits cannot be changed or influenced. Moreover, as a result of various personological characteristics being ruled out or found to have been measured inadequately (Carland et al., 1988; Gartner, 1985), entrepreneurship scholars understood that the focus on the person as the unit of analysis does not equate with fixed personological variables, that, irrespective of situation, are supposed to lead to the creation of venture. Supported by advancements in psychology research, they changed focus away from static personality traits to cognitive perceptual processes of entrepreneurs as sources of motivation. As Ryan (1970) put it, “it seems a simple fact that human behavior is affected by conscious purposes, plans, intentions, tasks and the like” (p. 18).

**Cognitive process models of entrepreneurial motivation**

In recent entrepreneurship literature, the approach to investigating entrepreneurial motivation was, however, not represented only by studies of personality characteristic of the successful entrepreneur. Early on, it was convincingly argued that motivation and behavior should be regarded as the consequence of person-situation interactions (Mischel, 1968). The psychological emphasis on the person as the unit of analysis in entrepreneurship moved beyond the identification of specific personality variables presumed to lead to establishing new venture, and on to include cognition and cognitive processes leading to motivation and entrepreneurial behavior.

While in the neighboring field of organizational research process models of motivation such as Vroom’s (1964) expectancy theory, Locke’s (1968) goal-setting theory or Bandura’s (1977) self-efficacy theory were developed early on, it was not until the 1990s that such cognition-oriented models of entrepreneurial motivation took over entrepreneurship research. These models focus on perceptions, attitudes and beliefs of the entrepreneur, and on how they can predict intentions and behaviors (Segal et al., 2005). Central to the cognitive process approaches to motivation is perception, a complicated cognitive process that allows entrepreneurs to make sense of their internal and external contexts, through organization, identification, and interpretation of information (Krueger, 2000).

Many cognitive process-oriented models explaining the motivation to found a new venture are comparable to Vroom’s (1964) *expectancy theory of motivation*. These frameworks use different conceptualizations, however, Vroom’s expectancy framework can be recognized as the backbone and common denominator of these various models. This theory differentiates between effort (which arises from motivation), performance and outcomes and conceptualizes motivation as the combined function of the expectancy, instrumentality and valence. Expectancy can be describes as the strength of a person’s belief that higher or increased effort will yield better performance (Vroom, 1964). Instrumentality refers to the belief that if an individual performs well, then a valued outcome will come to the individual (Vroom, 1964). Thus, while expectancy reflects the belief that effort is instrumental to performance, instrumentality refers to the belief that performance will lead to the acquisition of positively valent outcomes and the avoidance of negatively valent outcomes. Valence is defined as the importance or the
value that the individual places upon the expected outcome, in other words, the outcomes desirability (Vroom, 1964).

A concept related to Vroom’s expectancy is self-efficacy. Anchored in social-cognitive theory (Bandura, 1986, 1997), self-efficacy is a situation specific motivation variable and refers to an individual perceptual estimate of the own ability to succeed at a given task (Bandura, 1997; Gist & Mitchell, 1992) and has been intensively used in entrepreneurship. Specifically, entrepreneurial self-efficacy regards to the strength of an individual’s perception that he or she can effectively perform the various tasks and roles if entrepreneurship (Chen, Greene & Crick, 1998). The assumption behind looking at self-efficacy as a motivator for entrepreneurial action relates to individuals’ tendency to choose situations and occupations in which they feel efficacious (Betz & Hackett, 1986, Miura, 1987; Scherer, Adams, Carley, & Wiebe, 1989). Indeed, entrepreneurial self-efficacy had been hypothesized and found to affect the likelihood of being an entrepreneur positively, as well as the development of entrepreneurial action (Boyd & Vozikis, 1994; Chen et al., 1998). Moreover, Baum (1994) found entrepreneurial self-efficacy to be the single best predictor of business growth among various general traits, skills and competencies of the founders.

Furthermore, researchers recognized another source of situational specific motivation, other than entrepreneurs confidence in achieving goals, i.e. self-efficacy, that motivate entrepreneurs. Specifically, goal setting theory claims that, because they reflect a desired state, goals motivate people to act towards their achievement and it proposes that challenging and specific goals prompt higher performance than other types of goals (Locke & Latham, 1990). Entrepreneurship researchers found goals to be a critical determinant of new venture survival (Carsrud & Krueger, 1995) and venture growth (Baum, Locke & Smith, 2001; Baum & Locke, 2004; Covin & Slevin, 1997; Tracy, Locke, & Renard, 1998). The goal setting theory might be thought to apparently contradict Vroom’s expectancy theory of motivation. Vroom’s expectancy is assumed to have a positive and linear relation to performance. On the other hand, because challenging goals are harder to achieve, in this cas, expectancy of goal success would supposedly have a negative relation to performance. However, goal theory distinguishes expectancy within versus expectancy between goal conditions and solves thereby this apparent inconsistence. When goal levels are held constant, which is assumed by Vroom's expectancy theory, higher expectancies lead to higher levels of performance also in goal theory (Locke, Motowidlo, & Bobko, 1986). Across goal levels however, lower expectancies caused by more challenging goals, are associated with higher performance. Another framework highly similar to Vroom’s expectancy theory that looked at entrepreneurial motivation was forwarded by Shaver and Scott (1991). They emphasized that new ventures emerge as deliberate choices of entrepreneurs resulted from positive perceptions and evaluations of feasibility (analogous to expectancy) and desirability (analogous to valence).

Similarly, another current process model of entrepreneurial motivation, implicitly and explicitly grounded in Vroom’s assumptions, is represented by the intensively discussed framework on entrepreneurial intentions. Concepts such as expectancy, perceived feasibility or self-efficacy are central to such models focusing on entrepreneurial intentions in order to predict entrepreneurial behavior. Moreover, the product of Vroom’s instrumentality and valence is comparable to measures used for the prediction of entrepreneurial intentions, such as perceived desirability, perceived utility, and outcome expectations. The most widely used theory of intention is the theory of planned behavior (Ajzen, 1985). This theory aims at understanding and predicting behavioral intentions in specific contexts and states that intentions and perceived control over that
specific behavior are the main antecedents of behavioral performance (Ajzen, 1991). Perceived behavioral control is a self-evaluation of one’s own competence regarding the behavior (Ajzen, 1991) and is analogous to Vroom’s (1964) expectancy, Shaver and Scott’s (1991) perceived feasibility or Bandura’s (1977) self-efficacy construct. Intention, in turn, depends on the perceived desirability of behavior performance, that is, of attitude towards behaviour and perceived social norms. Attitude towards behaviour regards the degree to which a person has a positive or negative evaluation of the behaviour (Ajzen & Madden, 1986). It is comparable to Vroom’s (1964) valence. The second predictor of intentions, subjective norm, regards the perception of pressure from the society to perform (or not perform) the behaviour in question (Ajzen, 1991). The majority of articles applying the theory of planned behavior in the new venture context have done so only partially, limiting themselves to explaining the formation of intentions, and often using student samples and cross-sectional design (e.g., Autio, Keeley, Klofsten, Parker, & Hay, 2001; Kolvereid, 1996; Krueger, Reilly & Carsrud, 2000; Van Gelderen, Brand, van Praag, Bodewes, Poutsma, & van Gils, 2008). There are studies that performed longitudinal tests of the complete theory of planned behavior (Goethner, Obschonka, Silbereisen, & Cantner, 2012), using also entrepreneurs’ sample (Kautonen, Van Gelderen & Tornikoski, 2013; Kautonen, Van Gelderen & Fink, 2015; Kolvereid & Isaksen, 2006). These studies have different results. While Kautonen et al., (2013) provided a full test of the theory of planned behavior and found entrepreneurial intentions and perceived behavioral control to be significant predictors of subsequent behaviour, Kolvereid and Isaksen (2006) could only find party support for the theory of planned behavior: perceived behavioral control did not add to the explanation of behavior. Kautonen et al. (2015) on the other hand uncovered that intentions alone do not lead to starting a venture, and that volitional aspects are important in understanding the intention-action relationship (Kautonen et al., 2015). Despite inconclusive first studies, the theory of planned behavior continues to provide us considerable insights in understanding entrepreneurial motivation, and has the potential to explain engagement in entrepreneurial action.

2.1.3 Cognition as a Success Factor in Itself in Entrepreneurship

Motivation and drive are a first necessary condition for individuals to engage in opportunity exploitation. However, human undertakings, particularly complex activities such as opportunity exploitation and venture emergence, are a result of people’s cognitive processes. Besides motivation, entrepreneurs’ cognitive processes such as sound thinking, decision-making and planning are important in order to set the adequate course of action (Baron, 2004). Entrepreneurship research has shown that cognitions affect not only the identification of business opportunities, but also the decision to quest for perceived opportunities and successful exploitation of opportunities (Baron, 2004; Forbes, 1999). Understanding the cognitive infrastructure underlying entrepreneurial thinking and action offers us various tools to significantly improve our understanding of how the entrepreneurial process starts and develops over time (Krueger & Brazeal, 1994; Krueger, 2000; Shepherd & Krueger, 2002). Studying entrepreneurial cognitive processes has significantly increased the understanding of the manner in which entrepreneurs frame the context around them, learn from it, and reason differently about opportunity then non-entrepreneurs (e.g., Baron, 1998; Krueger, 2000; Mitchell, Busenitz, Lant, McDougall, Morse, & Smith, 2002; Sarasvathy, 2001). Recognizing this, and supported by the cognitive revolution in psychology, researchers have invested significant effort into understanding entrepreneurial cognitions as determinants of the courses of action entrepreneurs take, and, therefore, of the new venture success (Busenitz & Lau, 1996). A systematic account of human cognitive process is beyond the
scope of this work. Cognition is a complex psychological field and includes various aspects of the human mind such as perception, judgements, decision-making, problem solving, heuristics, memory, or learning (Baron, 1998). I instead focus on those cognitive aspects that were considered to be particularly relevant in entrepreneurship and specifically in the opportunity exploitation phase.

Cognitive scientists suggest there are two broad modes or styles of thought: heuristics and systematic processing. In the case of **heuristic processing**, information is processed quickly and without effort, in conformity with different simple heuristics (Baron, 2004). Heuristic processing focuses on how individuals simplify information processing while still producing appropriate, although maybe not ideal behaviors (Lord & Maher, 1990). This type of processing is easy (requires little cognitive effort) and is efficient (requires little time) (Ucbasaran, Wright, Westhead, & Busenitz, 2008). It was suggested that heuristic processing may be particularly relevant in entrepreneurship (Amit, MacCrimmon, Zietsma, & Oesch, 2001; Ucbasaran et al., 2008; Wright, Hoskisson, Busenitz, & Dial, 2000). Given the distinctive conditions of decision uncertainty and decision complexity (Hambrick & Crozier, 1985), where complex situations are to be faced with incomplete or uncertain information, entrepreneurs are thought to commonly engage in heuristic processing to assemble limited information and lead their decision-making in the face of turmoils (Busenitz & Barney, 1997).

Heuristic processing has the role of reducing effort and mental processing capacity in such circumstances and can include **cognitive biases**. **Overconfidence** is a highly discussed cognitive bias in entrepreneurship (Oskamp, 1965). It refers to the failure to recognize the limits of one’s knowledge (Russo & Schoemaker, 1992; Zacharakis & Shepherd, 2001) and arises across different information domains (Barnes, 1984). Overconfident entrepreneurs are too optimistic in their estimating abilities on initial information, and do not revise these initial estimates sufficiently after receiving new data (Alpert & Raiffa, 1982; Oskamp, 1965) Therefore, they fail to realize to which degree their estimates may be incorrect (Tversky & Kahneman, 1975). When entrepreneurs are overconfident, they treat assumptions as reality and do fail to acknowledge the risk in making decisions derived from those assumptions. Therefore, overconfidence bias lowers an entrepreneur’s perception of the risk (Barnes, 1984; Russo & Schoemaker, 1992) and can therefore help nascent entrepreneurs transition from opportunity identification to opportunity exploitation (Ucbasaran et al., 2008). Indeed, overconfidence has been shown to occur with entrepreneurs (Cooper, Woo, & Dunkelberg, 1988; Busenitz & Barney, 1997; Camerer & Lovallo, 1999), and to be associated with self-esteem, high aspiration and achievement (Johnson & Fowler, 2011), but also high risk of failing (Camerer & Lovallo, 1999; Ucbasaran Westhead, & Wright, 2006; Hayward, Shepherd, & Griffin, 2006).

A second bias present among entrepreneur is the **illusion of control**. In this case, individual overemphasizes the role of their skill in increasing performance in situations where chance plays an important role and skill is actually not decisive (Langer, 1975). While overconfidence refers to overestimating of one’s certainty referring to their metaknowledge (Russo & Schoemaker, 1992), illusion of control regards the illusion that the own skills or abilities to predict and cope with future events. Individuals with an illusion of control will fail to respond distinctlty to controllable and uncontrollable situations (Langer, 1975). It has been suggested that entrepreneurs think they can exercise control over people and events (Shaver & Scott, 1991). Moreover, Keh, Foo and Lim (2002) empirically proved that entrepreneurs exhibiting an illusion of control will play down risk because they believe their skills can forestall negative circumstances.
Therefore, illusion of control might lead to higher engagement in opportunity exploitation.

**Representativeness** or the belief in the law of small numbers refers to a cognitive bias where decision-makers are ready to generalize based on only a few attributes of a person or only a few observations of a specified circumstance (Tversky & Kahneman, 1975; Bazerman, 1990). This decision-making shortcut is particularly common in entrepreneurial settings, where large random samples to reliably estimate key pieces of information are rarely available (Busenitz & Barney, 1997), forcing entrepreneurs to rely on poor data such as their personal experience to guide their decision-making. The representativeness heuristic allows decision-making without having complete information. Since the opportunity exploitation often takes place in an uncertain environment, the representativeness heuristic may be critical in enabling the nascent entrepreneur to move forward in the venture emergence process (Ucbasaran et al., 2008). Because they induce entrepreneurs to predict positive results more substantially than is justified (Baron, 2004), these previously mentioned heuristics and biases reduce risk perception (Kahneman & Lovallo, 1993), and therefore help entrepreneurs “take the plunge” and start exploiting opportunities. However, cognitive biases might also negatively influence successful opportunity exploitation, since they cause misconstrual of information processing and might therefore cause suboptimal decisions (e.g., Baron, 1998, Busenitz & Barney, 1997; Simon et al., 2000). These in turn may turn out fatal particularly for nascent ventures, who do not have plenty of resources to rectify errors.

On the other hand, since entrepreneurs are, by definition, pioneers with regard to their offering or their business models, they must also engross themselves in precise analysis of circumstances and events, and develop strategic plans. **Systematic processing** involves careful and analytic thinking (Baron, 2004) and assumes that people rigorously process all significant information in order to maximize an outcome of interest (Lord & Maher, 1990). Systematic processing is typically associated with structural coordination of business activities and planning future developments (Ucbasaran et al., 2008). While this type of processing is optimal and accurate, it is slow (demands time) and requires effort (demands cognitive resources) (Kullik & Perry, 1994). An outcome of systematic processing important for nascent entrepreneurs is **business planning**. Business planning refers to a series of rational-comprehensive and formal cognitive processes aiming at predicting the future and developing suitable courses of action (Mintzberg, 1981). Critical constituents of business planning are: definition of goals, generation of alternative path to achieve these goals, assessing and deciding among alternatives (market research, forecasts, competitor analysis) as well as implementation control (Armstrong, 1982; Porter, 1985). Nowadays, business planning is considered a crucial step in the new venture emergence process, desirable and effective in gaining legitimacy with investors and increasing success chances (Cassar & Friedman, 2009). However, empirical result on the usefulness of business planning for nascent entrepreneurs are mixed (Castrogiovanni, 1996).

A first array of study result underline positive effects of planning for nascent entrepreneurs. Thereafter, nascent entrepreneurs who develop business plans seem to persist more than those who do not (Delmar & Shane, 2003; Honig & Karlsson, 2004; Liao & Gartner, 2006; Perry, 2001). However, persistence can have duplicitous outcomes: persistence with planning might lead to overcoming imminent obstacles in the venture creation process or, on the other hand, it might cause strong devotion to a possibly unpromising course of action. Furthermore, business planning was found to have a positive influence on progress and the achievement of specific gestation milestones (Delmar & Shane, 2003). Moreover, planning seems to help with the general
success and growth of new ventures (Bracker, Keats, & Pearson, 1998; Ford, Matthews, & Baucus, 2003). On the other hand, many studies did not find any positive influence of business planning on starting the business operations (van Gelderen, Thurik, & Bosma, 2005; Honig & Karlsson, 2004; Tornikoski & Newbert, 2007). Going even further, other results show that nascent entrepreneurs that are more engrossed in internal tasks, such as the development of business plans, were less likely to have sales and create cash flow, and that successful ventures had a bias toward action rather than planning (Carter, Gartner & Reynolds, 1996; Honig & Karlsson, 2004). These mixed results might be attributable to the assumption underlying business planning. Thereafter, the planner has the knowledge needed for careful planning, and the future is predictable at least to some extent (Mintzberg, 2000). However, both of these assumptions do not hold in a nascent entrepreneurial context. Foreseeing the future under conditions of uncertainty is even harder for nascent entrepreneurs, who have only limited knowledge of business venturing.

As portrayed above, neither heuristic nor systematic processing are always leading to beneficial outcomes. The suitability of both processing strategies will depend on the judgmental domain and context. Entrepreneurial decision effectiveness is determined not so much by how well an entrepreneur functions in a particular processing mode, but, rather, by the capacity to change between these two cognitive setups as needed (Louis & Sutton, 1991).

Closely related to heuristic and systematic processing are entrepreneurial decision-making logics. The logics used by entrepreneurs to frame decisions play an important role in decision-making. Frames refer to “the decision-maker’s conception of the acts, outcomes, and contingencies associated with a particular choice.” (Tversky & Kahneman, 1981, p. 453). Logical framing is important, because the particular frames entrepreneurs use will have an effect on what they perceive as relevant problems, which alternatives they develop and attend to, what they count as data, and what inferences they make about the situation (Johnson & Lakoff, 2002). In trying to understand which logical frames entrepreneurs use, scholars have uncovered two different sets of principles that differentiate expert from novice entrepreneurs (Dew, Read, Sarasvathy, & Wiltbank, 2009; Sarasvathy, 2001; Read, Song, & Smit, 2009). A first identified decision-making logic used by entrepreneurs relies on systematic processing modes and is constituted of predicting the future based on given information. Sarasvathy (2001) refers to this prediction-based approach as causation, and defines it as comprising decision processes that “take a particular effect as given and focus on selecting between means to create that effect” (p. 245). However, this approach’s utility in the entrepreneurial context was questioned, because available information and external feedback about new ideas are equivocal in the new venture process (Dew et al., 2009). Indeed, studies uncovered that expert entrepreneurs use an effectual logic for framing decision making. Effectuation refers to an alternative set of rationales, oriented towards action and control (Read & Sarasvathy, 2005; Sarasvathy, 2001; Sarasvathy & Dew, 2005; Wiltbank, Dew, Read, & Sarasvathy, 2006). While causal predictive framing refers to discovering and exploiting current opportunities within a prearranged problem space, effectual non-predictive logic focuses on rearranging the problem space restructuring present realities into new opportunities (Wiltbank et al., 2006). Specifically, causal and effectual decision-making logics differ on an array of specific heuristics principles that are applied in the new venture creation process. First, regarding the nature of the future, while causation emphasizes foreseeable features of an undefined future, effectuation aims at controllable parts of an unforeseeable future (Sarasvathy, 2001). Second, the causal framing has goals as basis for taking action and focuses at identifying the optimal alternative for achieving the given goals. On the other hand, effectual logic allows goals to emerge contingently.
over time, depending on action taken based on available means (Dew et al., 2009; Sarasvathy, 2001; 2008). Third, regarding the attitude towards unexpected contingencies, the causal frame focuses in avoiding uncertain situation as much as possible, while in effectuation logic, uncertain situations will be sought, in the hope of succeeding to exploit them (Sarasvathy, 2001). Regarding the attitudes towards stakeholders, causal framing promotes strategic teaming up with selected stakeholders that can help achieve the set goals, while effectual logic focused on means-oriented partnerships with self-selected stakeholders (Dew et al., 2009). Last, with respect to the predisposition toward risk, causation functions on the basis of maximizing the upside potential, pursuing an expected return and raising the necessary resources for that, while effectuation focuses on limiting the downside potential and investing only what you can afford to lose (Sarasvathy, 2001). Researchers found that effectuation, although conceptualized as an expert decision-making logic, is used by nascent entrepreneurs as well (Engel, Dimitrova, Khapova, & Elfring, 2014), as well as by corporate entrepreneurs (Brettel, Mauer, Engelen, & Küpper, 2012). These two decision-making logics are not mutually exclusive, and entrepreneurs appear in fact to make use of both (Dew et al., 2009). One is not necessarily preferable to other, although effectuation has been assumed to lead to more innovation (Frese, 2014). Moreover, in a meta-analysis, Read et al. (2009) found that the use of effectuation in young ventures positively impacts venture success.

2.1.4 Affect and Cognition in Entrepreneurship

Lately, in trying to better understand where entrepreneurs’ motivation comes from, researchers have turned their attention away from purely cognitive factors, changed their emphasis from so-called ‘cold’ to more ‘hot’ cognitive processes (Seo, Barrett, & Bartunek, 2004), and integrated affect into cognitive process-oriented models of motivation. Thereafter, affect has a critical influence on cognitive perceptions that lead to motivation (Bird, 1989; Baron, 2008; Cardon et al., 2009; Foo et al., 2009). Moreover, affect is also starting to be recognized as a factor that interferes in and influences entrepreneurial cognitive processes unrelated to motivation, but that play an important role in the entrepreneurship, such as systematic and heuristic processing and decision-making.

These developments were ignited by the realization that entrepreneurship is a highly emotional endeavor (Baron, 2008). The first reason for this is the nature of the new venture environment: highly unpredictable and rapidly changing (Lichtenstein et al., 2006). Indeed, entrepreneurial processes are hectic, multifaceted, and compressed in time (Aldrich & Martinez, 2001). Decisions are often made under limited time and information, despite their complexity (Busenitz & Arthurs, 2007) and entrepreneurs cannot rely on prescribed set of procedures (Baron, 2008). It is under these conditions that affect is assumed to have the highest influence on cognition and behavior (Forgas, 1995). Second, a close emotional relation between the entrepreneur and the venture has been assumed to exist (Cardon et al., 2012; Shepherd, 2003): entrepreneurs make significant investments of individual resources such as time, energy, full attention and work in their venturing initiatives and in most cases bet their personal financial capital, their career reputations and self-esteem on the new venture’s success.

Consequently, researchers have started to recognize affect as an integral aspect of the new venture pursuit, crucial for reaching a deep understanding of entrepreneurial cognition, and by extension, entrepreneurial motivation.
In fact, considering the above, one might wonder why affect has emerged as an important discourse in entrepreneurship research only halfway through the first decade of the twenty-first century (Grichnik, Smeja, & Welpe, 2010; Welpe, Spörrle, Grichnik, Michl, & Audretsch, 2012). The explanation for this is that affect has not always been a legitimate topic of research in business science. In fact, for many centuries, affect has been conceptualized only as an undesirable antipode to cognition. In the Western culture, ‘thinking’ and ‘feeling’ have been juxtaposed in opposition since many centuries. This functional contrasting dates back to the ancient Greeks and has been propagated by the Catholic Church in the medieval age, up until modern times (Lazarus, 1991). In the Aristotelian Greek ideal, which the middle ages church also adopted, rationality was an ideal to be followed in all decision-making and judgments. Affects were considered inferior human expressions and were thought to impede reason. Therefore, they were to be modulated and moderated by reason (Damasio, 1994). This stance was strengthened philosophically by classic rationalists such as Rene Descartes, Gottfried Leibniz, and Baruch Spinoza in the 17th century. In the mid-20th century, rationalization of economics behavior was at its peak when Max Weber excluded emotions from rational action and sociological explanations (Barbalet, 2000) and categorized different types of rationality, making the framework of rational thinking more flexible and therefore easier to use by scientists. Emotion was not seen as a legitimate subject for theory and research in social and economic sciences. Rational behaviors (volitional, future-focused, controlled and value maximizing) were attributed to the cognitive system, while the affective system was considered responsible for irrational behaviors (involuntary, shortsighted, will-less, hyperbolic discounting) (c.f Lee, Amir & Ariely, 2009). Emotions appeared briefly on the map in the 1960s and 1970s, during the cognitive movement in social science, but only to show that people can influence their emotional reactions depending how they choose to construe their social situations (Lazarus, 1991).

It was not until the 1980s that affect, cognition and motivation were shown to be richly interdigitated systems that constantly interact (Hilgard, 1980). Since, then, affect’s important – positive and negative – role in economical science, has been broadly recognized and studied (Ochsner & Lieberman, 2001; Panksepp, 2003). Advancements in neurosciences could specify the physiological correlates of emotional activities and undeniably connect them with decision-making (Cohen, 2005; Phelps, 2006). Advanced technologies for monitoring activity in the human brain while performing cognitive tasks indicates that affect and cognition interact at very basic levels of neural functioning (Baron, 2008; Cohen, 2005; Willingham & Dunn, 2003). Decisions cannot be made only by listening to only one of them: cognitions by themselves alone are incapable of triggering instrumental action, unless they are coupled with an emotion that activates a motivational state capable of recruiting action (Zajonc, 2000). Without a personal stake in the transaction with the environment, cognition is impersonal, cold and not enough to trigger action (Damasio, 1994; Lazarus, 1991). Besides its function of lending motivational power to cognitions, affective drives may also overrule cognitive processes so that behavior can seem irrational (Camerer, Loewenstein, & Prelec, 2005). Affective experiences can give valuable direction whenever the environment does not supply enough information needed for thorough rational analysis (Baron, 2008), but they can also cloud rational judgements and make us choose unwise courses of action (Forgas, 1995; Isen, 2000). Therefore, affect is being incorporated more and more into research on decision-making processes and behavior in economic contexts (Côté, 2005; Côté & Morgan, 2002; Fisher & Ashkanasy, 2000).

Affect is a wide-ranging theoretical category, an umbrella term that comprises the general phenomenon of subjective feelings (Barsade, 2002). Such subjective feelings include moods, emotions and long-term affect. These three types of affective experiences
differ in their intensity, specificity, and duration. Moods (Barsade, 2002), are diffuse—
there is no specific salient cause, low intensity, and lasting affective responses to general
stimuli (Forgas, 1992). Emotions are highly intense, fleeting affective responses to
specific stimuli (Forgas, 1992). They have a clear cognitive content, and a definite cause
(Forgas, 1992), and can include anger, happiness, fear, and joy (Lerner & Keltner, 2000).
Long-term affective states, or sentiments (Frijda, Mesquita, Sonnemans, & van Goozen,
1991), are enduring emotional experiences directed towards people, activities or objects,
and which influence what we believe about these people, activities or objects, structuring
there human social relationships and person-environment interactions (Oatley, 2000).
Long-term affect make reference to the specific target in a way that is coherent over time,
commits the person to a course of action and a certain set of beliefs, and have therefor
an important function in long-term goal-directed action (Oatley, 2000; Zamuner, 2011).
Affect can also include feelings. The term ‘feeling’ has been used to denominate the
conscious recognition of an affective state, its abstraction and its labeling as such
(Barrett, Mesquita, Ochsner, & Gross, 2007). At times, affective states permeate the
consciousness in the form of feelings, but more frequently they rest at an unconscious
level from which they exert their influence. All affective states involve valence (positive
or negative), and determine approach and avoidance motivations, fulfiling in this way
the role of preserving the organism and promoting well-being (Camerer et al., 2005;
Zajonc, 2000).

Although the connection between affect and cognition is undisputed in psychology and
management sciences, the directionality of their interrelation has been a subject of a long
debate (Lazarus, 1982; Zajonc, 1980; 1984). A first viewpoint supported by Zajonc is that
affect is precursory to cognition. This account differentiates clearly between affect and
cognition, and frames affect as an instinctual reaction to a stimulus that occurs before
any cognitive processes (Zajonc, 1980). This perspective suggests that affective reactions
can take place without thorough perceptual and cognitive encryption and can be made
quicker and with more certainty than cognitive judgments (Zajonc, 1980). In contrast,
Lazarus (Lazarus, 1982; Lazarus, 1991) integrates cognition into affect and states that
cognition is precursory to affect. Thereafter, affect is elicited as a result of cognitive
appraisals of information regarding the affective quality (pleasant/ unpleasant;
significant/ insignificant) of the stimuli in the environment and the person-environment
interaction. Although the debate is still ongoing (e.g. Coppin & Sander, 2016) recent
constructive opinions (e.g., Lerner & Keltner, 2000) argue that affect can exit both before
and after cognition: initial affective reactions stimulate thinking, which brings about
affect. Further research holds that, in an additional reiteration, affect is needed for
capacitating more rational forms of thinking (e.g. Damasio, 1994).

Although based on the solid theoretical grounds of appraisal theories of emotion
(Lazarus, 1991), research on the cognitive antecedents of affective reactions in
entrepreneurship has been scant. A first reason for this might be the complexity of the
appraisal process, whose continuous nature make its measurement challenging (Coppin
& Sander, 2016). A second reason might be that the majority of extant research on affect
in entrepreneurship focused on basic, short-term affective experiences such as fear,
anger, joy (Foo, 2009; Foo et al., 2009; Welpe et al., 2012), that are considered to be
instinctual reactions to a stimulus (Lerner & Keltner, 2000; Zajonc,1980), and where the
appraisal process is happening automatically (e.g. Moors, 2009).

A preferred approach of looking at the affect-cognition interaction in entrepreneurship
has been considering affect a determinant of cognition (Delgado García et al., 2015).
Research investigating the cognitive outcomes of affective reactions can be grouped in
two categories: a broad research stream using a valence approach, and an emerging research stream using an appraisal tendency framework.

The valence approach to investigating the affect’s determinants in entrepreneurship relies on one of the main characteristic of affective states, namely their pleasantness or unpleasantness and on the fact that entrepreneurs can use this as a source of information (Ellsworth & Scherer, 2003; Schwarz & Clore, 2003). Emotions can become a source of information although they might be attribute to unrelated events (Gangemi, Mancini, & van den Hout, 2007; Lerner, Small, & Loewenstein, 2004; Schwarz & Clore, 1996). Pleasent or positively valenced emotions include joy, happiness, or hope and can be summarized under the concept of positive affect, while unpleasant or negatively valenced emotions include fear, anger, or sadness and can be summated to negative affect. While positively valenced emotions usually prompt the recollection of optimistic evaluation and positive information, emotions with negative valence prompt the recollection of pessimistic judgments and negative information (Direnfeld & Roberts, 2006; Johnson & Tversky, 1983).

Guided by the influential conceptual paper of Robert Baron (2008), the vast majority of research focusing on the valence approach used the Affect Infusion Model (AIM) (Forgas, 1995) as a theoretical basis for explaining affect’s consequences. The AIM is a well-developed framework that blends various findings about the function of affect in the process of thinking and distinguishes thereby two mechanisms. The first mechanisin, referred to as affect-as-information (Schwarz & Clore, 2003), is grounded on the informative character of affect and claims that affective states offer additional heuristic cues that are processed (e.g., Clore, Gasper, & Garvin, 2001; Schwarz, 2001). Thereafter, people deploy affective information as a heuristic to increase the speed of the evaluation process (Forgas, 1995). Thus, emotions offer additional information that can be used to infer responses to a specific stimulus (Schwarz & Clore, 2003; Ellsworth & Scherer, 2003). For example, positive emotions indicate that things are proceeding fine and the contextual surrounding is safe. Such circumstances may reassure individuals, making them attempt novel undertakings (Fredrickson, 2004) and may activate laxer, less methodical, and more divergent thinking (e.g., Isen, 2001). On the contrary, negative emotions indicates that things are not going fine; thus, individuals will systematically address the problem and process information carefully before find a solution or deciding on a course of action (Martin & Stoner, 1996; Schwarz & Clore, 2003). The second mechanism explaining the effect of emotions on cognition relates to the priming effect of emotions. It suggests that affect primes, or filters the type of information that is being processed (Bower & Forgas, 2001). Thereafter, emotions can direct attention toward, and facilitates the storage and the recollection of similarly valenced information (Forgas & George, 2001; Isen & Shalker, 1982), or prime the combination of that information. This primed emotion-congruent information will in turn function as the foundation for the judgment process (Baron, 2008). For instance, positive affect primes positive associations or memories, while negative affect function the other way around. When feeling positive emotions, entrepreneurs might concentrate on the venture’s positive features, while, when feeling negative emotions, they might recall the venture’s negative sides (e.g. Bower, 1991).

Following the AIM, and especially the affect-as-information perspective, Foo and colleagues (2009) investigated the effect of incidental* positive affect on cognition, and

* While incidental affect refers to affect unrelated to an evaluation or decision – in this case affect unrelated to the venture – integral affect refers to affect that is included in the
showed that, since positive affect indicates that things are going fine, it lead entrepreneurs to exert effort beyond what is required by immediate tasks. Grichnik et al. (2010) found support for the assumption that incidental positive affect will lead to more positive opportunity evaluation. Furthermore, with the help of the AIM, which holds that positive arousal and pleasant feelings increase the cognitive flexibility and enable the expansion and combination of cognitive frameworks in new ways, integral* positive affects such as vigor, joy and passion towards the venture were found to increased opportunity exploitation (Welpe et al., 2012; Klaukien et al., 2013) and entrepreneurial intentions (Biraglia & Kadile, 2016; Huyghe, Knockaert, & Obschonka, 2016) and to increase entrepreneur’s perceptions of self-efficacy (Murnieks et al., 2014). Moreover, research showed that, since positive affect occupies cognitive space that is no longer available for logical thinking (Mackie & Worth, 1991), positive emotional experiences might lead entrepreneurs away from substantive processing strategies, and towards the use of heuristic strategies and, eventually, cognitive biases (Buehler, Griffin, & Ross, 1995; Busenitz & Barney, 1997; Busenitz & Arthur, 2006). Regarding negatively valenced affects, Foo and colleagues (2009) demonstrated that incidental negative affect might indicate that progress towards fulfilling the existing tasks is slower than desired and therefore, lead entrepreneurs to exert more effort on tasks. Negative affect, as well as mixed and conflicting emotions were shown to increase risk perceptions among entrepreneurs (Foo, 2011; Johnson & Tversky, 1983; Podoynitsyna, Van der Bij, & Song, 2011), which in turn, might influence the preference for a causal versus effectual decision framing (Sarasvathy, 2001). Furthermore, the integral affect of fear regarding the venture’s outcomes was shown to reduce opportunity exploitation (Welpe et al., 2012).

While the valence approach looks at emotion’s main characteristic of pleasantness or unpleasantness, the appraisal tendency framework to investigating the affect’s consequences in entrepreneurship is based on the tendency of affective states to elicit particular appraisals (Smith & Ellsworth, 1985; Ellsworth & Smith, 1988). The appraisal tendency framework leans on two claims. First, affect triggers alterations in cognition, which persist in time and extend to events unrelated to the affect-eliciting stimulus (Gangemi et al., 2007; Lerner et al., 2004). Second, affective states are associated with to particular appraisals of a stimulus or of the person-stimulus interaction (Smith & Ellsworth, 1985; Ellsworth & Smith, 1988) and therefore offers the individual feeling these affects compelling information about the personal value allocated to the affect-eliciting stimulus (Schwarz, 1990). This information predisposes individuals to think in specific ways and take particular actions. Besides valence (discrete, positive or negative), other important appraisal dimensions on which individuals appraise the affect-eliciting stimulus are significance or desirability of stimulus for the individual’s goals (continuum from low to high), predictability or uncertainty regarding the occurrence of the affect-eliciting stimulus (continuum from low to high), and control or the individual’s ability to influence and cope with the consequences of the affect-eliciting stimulus (continuum from individual to situational control) (Frijda, Kuipers, & Ter Schure, 1989; Ochsner & Gross, 2005).

While the valence approach posits that same valenced emotions to produce identical cognitive assessments, the appraisal tendency approach assumes that it is the appraisal process intrinsic in to affective reactions, and not their valence, to influence evaluations. Literature reviews show that entrepreneurship research has stressed mostly the valence influences of affect and has not greatly considered the cognitive appraisal processes perceiver’s internal representation of the stimulus currently under consideration – in our case the entrepreneur’s internal representation of the venture (Västfjäll et al., 2016)
intrinsic to affect (Delgado García et al., 2015). However, there are some studies who looked at affect’s influence on cognitions through an appraisal tendency lens. For example, Foo (2009) used previous work on cognitive appraisal tendency of various basic emotions such as incidental fear, anger, hope and happiness (Lerner & Keltner, 2001; Smith & Ellsworth, 1985). Although they have different valence, in terms of their cognitive appraisal tendencies, hope is similar to fear: both hope and fear are described by appraisals of uncertainty and situational control. On the other hand, happiness resembles anger: both include appraisal tendencies of certainty and individual control, although they have opposite valence. Acknowledging the role of risk perceptions in entrepreneurial opportunity evaluation, Foo (2009) hypothesized and found that incidental fear and hope will lead to higher risk perception than incidental anger and happiness. Based on the same arguments, Welpe et al. (2012) studied the effect of various integral – that is opportunity-related – affects on entrepreneurial opportunity exploitation. They found that fear, because it includes appraisals of uncertainty and situational control, will directly relate to less entrepreneurial opportunity exploitation. Furthermore, they assumed and demonstrated that both joy and anger, because they both include appraisals certainty and individual control lead to increased opportunity exploitation tendencies.

2.2 Passion in Entrepreneurship

2.2.1 Definition of Passion

One of the most important affective experience integral to the entrepreneurial experience is passion. Passion is a deeply embedded element of entrepreneurial action (Baron, 2002; Baum et al., 2001; Bird, 1989; Graham, 2006; Shane et al., 2003). Going back to Schumpeter’s work (1951), passion was invoked to explain entrepreneurial behavior that defines rationality, such as uncommon risk taking, intense concentration and unshakable faith in a dream.

The phenomenon of passion in entrepreneurship is very often mentioned also in the popular and specialized press. Business books, interviews with entrepreneurs and autobiographies reveal passion as the main prerequisite for success in entrepreneurship. Many successful entrepreneurs credit their success to passion. Richard Branson of Virgin Group states that: “you need passion to create a truly successful business. Running a business will be a tough experience, it helps to have that passion that keep you going” * and Steve Jobs of Apple asserted that “there are many moments that are filled with despair and agony,. . . it’s so hard that if you don’t have a passion, you’ll give up”. On the other hand, academics have also turned to passion as a definitional experience of entrepreneurship. Thereafter, Bird (1989, p. 7-9) stated that entrepreneurial behavior can be “passionate, full of emotional energy, drive and spirit” and Smilor (1997, p. 342) considers passion as “perhaps the most observed phenomenon of the entrepreneurial process”.

However, despite the pervasive appeal of passion, it was only in the past 10 years that entrepreneurship scholars started to sistematically study the affective experience of passion by entrepreneurs.

* We accessed these quotes at http://www.evancarmichael.com.
Ethimologically, the word “passion” comes from Latin word passio, which then again
derives its origin from the ancient Greek pásho, both meaning to suffer, to endure
(Vallerand & Houlfort, 2003). Starting in the late 12th century A.D. and going up to the
present, the word “passion” was often used in the Christian religion in connection to the
life and suffering of Jesus Christ on the cross and the suffering of the martyrs. But even
long before that, philosophers have been interested in this concept. The Stoic
philosopher Epitectus (55-135 AD) developed a parallel philosophical stream placing
passion in the realm of the irrationality and affect. He asserted that passion, an intense
emotional state, blinds individuals and makes listening to reason impossible, and
therefore needs to be thoroughly studied (Epitectus, 1916). Indeed, the word ‘passions’
was used to identify a whole spectrum of highly intense emotions and irrational human
drives such as desire, aversion, hope, fear, grief, and joy (Hume, 1777). The discrepancy
between passion as irrationality and reason as rationality has been assumed since then
up until modern times. In the 17th century, this view of passion as a primal irrational
instinct was still dominating, being advocated among others by the main representative
of Rationalism, Spinoza (1632-1677), who considered people consumed by passion as
passive, enslaved by their passion and as losing reason and control. In the same time, a
second, more positive view emerged, recognizing that passion can move individuals to
act. This perspective is represented by Rene Descartes (1596-1650) in his “Passions of
the Soul” (1649). He looks at passion as a strong emotion with behavioral tendencies
(“what is passion in a soul is usually an action in the body”; Descartes, 1989, p. 5), with
people being active towards it. Hegel (1770-1830) – to whom the quote “nothing great in
the world has ever been accomplished without passion” belongs – was the first to point
out that passion is necessary in order to reach the highest level of achievement. However,
even in this more positive accounts of passion that recognized its adaptive benefits,
emotion only considered useful as long as it is backed with reason (Barnouw, 1992).

Social psychology researchers were the first to bring passion into the modern social
sciences arena. At first, they looked at the concept of passion in the area of romantic love
(e.g. Hatfield & Sprecher, 1986; Sternberg, 1986). At the beginning of the 2000’s
however, Robert Vallerand and his colleagues (2003) introduced the concept of passion
towards activities. They define passion as “a strong inclination towards an activity that
people like, or even love, that they find important and in which they invest considerable
amounts of time and energy” (Vallerand et al., 2003, p. 757). This definition looks at
passionate individuals as being emotionally stimulated and affectively drawn toward the
target of one’s passion (Vallerand, 2010). Moreover, due to the close link between the
person’s identity and the passionate activity, passion is supposed to drive an
energetically pursuit of the passionate activity over extended intervals of time. Hence,
passion is suggested to go beyond experiencing “love” for an activity. When
entrepreneurs are passionate, they highly value the activity, invest considerable time and
effort in it, and turn it into a central part of their identity and life. Passionate
entrepreneurs will not merely engage in the new venture activities. They will define
themselves as “entrepreneurs” and will most probably live out some aspects of this
identity in all the domains of their life (Vallerand et al., 2003).

Due to the fact that passion has a meaningful identity connection, it differentiates itself
from other similar affective and motivational concepts that have been subject of
entrepreneurship scholars’ query. Although associated to motivation, passion is a
distinct concept. While motivation includes a diverse set of psychological effects
prompting people to expend effort (Brehm & Self, 1989; Gatewood, Shaver, Powers, &
Gartner, 2002), passion refers particularly to strong predispositions towards specific
tasks. Thus, passion is also different from intrinsic motivation. Intrinsic motivation, just
as passion, includes the aspect of taking part in an activity out of pure pleasure.
Nonetheless, unlike passionate activities, intrinsically motivated activities are not internalized in the person’s self (Deci & Ryan, 1985), but arise during short-term person-task concurrences (Koestner & Losier, 2002). Furthermore, unlike passion, extrinsic motivation involves participating in a task without feelings of enjoyment, with the goal of attaining a desired reward external to the activity. Moreover, simple interest in an activity implies situational, short-term enjoyment and curiosity about the content of an activity, without any commitment (Hidi & Baird, 1986; Mitchell, 1993). Passion on the other hand, does not only imply an enduring interest, but in this case the activity is internalized in the person’s identity and becomes definitional for the self.

Vallerand’s theory on passion and the research leaning on it representing a rigorous and acclaimed psychological foundation for the study of passion in general. In the last 15 years, Vallerand and his associated research group have published over 25 studies spanning over 30 different conceptual and empirical articles focusing on passion toward various activities. As targets of passion, they focus on activities such as sports, music, hobbies, but also work.

Echoing Schumpeter’s (1951) recognition that entrepreneurs need a strong willpower and determination, the first entrepreneurship studies that mentioned passion thought of it as providing an affective mean for coping with the challenges found in the entrepreneurial pursuit and used it interchangeably with other concepts such as love (Baum & Locke, 2004; Cardon et al., 2005), pride (Bierly et al., 2000), enthusiasm or joy (Smilor, 1997). The first definitions of passion in entrepreneurship looked at it as an individual trait, focusing less on the precise objects that passion is projected on. Thereafter, Baum and colleagues (Baum & Locke, 2004; Baum et al., 2001) theorized passion as one important element of a chief executive officer’s individual traits, mirroring the love, affective attachment to, and longing for work. Even if these scholars looked at passion as a personality trait, these early efforts to delineate passion have a shared focus on affect, and specifically positive affect of “love” for work (Baum & Locke, 2004, p. 588; Shane et al., 2003, p. 268).

A more solid conceptualization of passion in entrepreneurship, was offered by Cardon and colleagues (2009). Following the definition of Vallerand and colleagues (2003) definition, they diverged from the trait perspective on passion, and conceptualized passion as an affective experience that forms at the intersection between the individual and the venture. They drew on the affect and identity literatures and defined entrepreneurial passion as “consciously accessible, intense positive feelings experienced by engagement in entrepreneurial activities associated with roles that are meaningful and salient to the self-identity of the entrepreneur” (Cardon et al., 2009, p. 517). Following Vallerand and colleagues’ (2003) definitional characteristics of passion, these authors’ definition underscores two critical elements of entrepreneurial passion. First, they suggested that passion is a positive affective experience. Second, Cardon et al. (2009) call attention to the importance of role identities, and specifically three role identities based on three major venture-related activities: an inventor identity, a founder identity, and a developer identity.

Another definition of passion, grounded as well in the seminal work of Vallerand and colleagues (2003) is offered by Chen et al. (2009). They look at passion as “an entrepreneur’s intense affective state accompanied by cognitive and behavioral manifestations of high personal value” (Chen et al., 2009). So, besides its affective character, Chen and colleagues underline the passion’s cognitive and behavioral aspects. Thereafter, passionate entrepreneurs not only feel strong feelings, but their minds are
also extremely active and busy with venture related thoughts, and they are highly likely
to take concrete steps to address their passion.

Drawing on these definitions, and for the scope of this work, I define passion as:

\[ \text{a long-term intense affective state experienced by engaging in activities connected with a meaningful and salient self-identity.} \]

As a long-term affective experience directed at the venture-related activities, passion will
structure the entrepreneur-venture relationship (Cardon et al., 2005; Oatley, 2000). Thanks to its enduring nature, passion will lend motivational strength to entrepreneurs’
long-term pursuit of such venture-related (Camerer et al., 2005; Vallerand et al., 2007;
Zajonc, 1998; Zamuner, 2001). Also, because of its relative stability in time, passion will
also affecting entrepreneurs’ beliefs and action plans regarding the venture (Oatley,
2000). Moreover, because it is an identity-focused affect, passion will be an intense
affective state and will have a strong motivational power: entrepreneurs will feel highly
motivated to approach and engage in activities that allow them to enact and validate a
highly valued salient identities (Cardon et al., 2009; Smith & Ellsworth, 1985; Ellsworth
& Smith, 1988; Vallerand et al., 2003). However, entrepreneurs will not simply desire to
engage in the venture activities in whatever way. Because of the basic human need of
competence (Deci & Ryan, 2000), which is even more salient in the case of self-defining
activities, passionate entrepreneurs will need to feel competent at operating in the
passionate field (Vallerand et al., 2007). Since human in general and entrepreneurs in
particular cannot obtain psychological satisfaction in defining their own personal
identity through incompetence (Deci & Ryan, 2000; Hidi & Renninger, 2006), the
entrepreneurs will be motivated to engaging in the passionate venture activity in a
competent manner (Vallerand et al., 2007).

### 2.2.2 Duality of Passion

Theoretical advancements in the area of entrepreneurship looked at passion as a
powerful positive force that drives entrepreneurs and promotes hard work, grit,
perseverance, eagerness and high achievements (Baum et al., 2001; Cardon et al., 2009;
Cardon & Kirk, 2015; Smilor, 1997). This view was underpinned by Cardon and
colleagues’ (2009) definition of passion as a positive affective state. The ensuing
empirical studies adopted this conceptualization and focused on the study of positive
outcomes of entrepreneurial passion. Accordingly, they found passion to invigorate
entrepreneurial intentions (Huyghe et al., 2016) increase proaction, learning goal
orientation and creativity (Syed & Mueller, 2015), enhance affective commitment of
employees (Breugst et al., 2012), and even lead to venture growth (Drnovsek, Cardon, &
Patel, 2016). These theoretical conceptualization and empirical findings depict passion
as a beneficial attribute of the entrepreneur that will unmistakably have positive
consequences for the new venture. The prospect that passion might include detrimental
effects as wess has not been recognized or studied systematically in the entrepreneurship
research, despite the fact that this option has been validated empirically in previous
works that investigated passion in other domains such as sport, music or work (e.g., Ho
et al., 2011; Philippe et al., 2010; Vallerand et al., 2008). Even though some few papers
have suggested that passion might include negative consequences (e.g., failure to
recognize or accept disconfirming evidence; over-commitment despite failing venture)
and have advised future research to examine the debilitating, and not only the enabling
functions of passion (Cardon et al., 2005; Cardon et al., 2012), entrepreneurship scholars
have not yet thoroughly answered this call. This one-sided focus of passion research in
entrepreneurship highlights the urgency to acknowledge the advantages, as well as the
disadvantages of being passionate, and also the circumstances under which either result
may occur.

However, literature from social psychology offers a theoretical framework that can help
entrepreneurship research on passion account for the eventual downside of passion as
well. This framework is the dualistic model of passion, forwarded by Vallerand and his
colleagues (Vallerand, 2008; Vallerand & Houlfort, 2003; Vallerand et al., 2003) and
which tackles the above-mentioned dualism intrinsic to passion.

Both conceptualizations – the dualistic model of passion and the Cardon’s framework on
entrepreneurial passion – recognize passion as including an affective component, and
also acknowledge the identity importance of the entrepreneurial activities for individual
entrepreneurs, which makes them experience intense identification with these activities
(Cardon et al., 2005). Simultaneously, there are significant dissimilarities between the
two frameworks. First, the dualistic model of passion examines individuals’ passion for
the entrepreneurial activity generally, rather than for the different individual
entrepreneurial roles of inventing, founding, and growing. Just as previous work using
the dualistic model of passion has found that people can make overall valuations of their
passion for an activity in general (e.g., teaching, Carbonneau, Vallerand, Fernet, & Guay,
2008), although it could be divided into various aspects (e.g., teaching classes,
terrelating with parents, having a function in committees), it has been analogically
recognized and also empirically proven that entrepreneurs make general evaluations of
their passion for the overall entrepreneurial role (Baum et al., 2001; Baum & Locke,
2003; Cardon et al., 2013; Murnieks et al., 2014). Another divergence between the
dualistic model of passion used in this work and Cardon et al.’s theorizing of passion is
that, while both frameworks incorporate the identification of the entrepreneur’s identity
with the passionate activity, the former extends beyond to distinguish a second way, less
functional way in which the entrepreneurial activities can be internalized into the
entrepreneurs’ identity. While Cardon and colleagues’ model focuses only on a
harmonious, functional type of passion (Murnieks et al., 2014), the dualistic model of
passion is able to look at passion differentially and consider not only the passion that is
within the entrepreneur’s control (harmonious passion) but also the one that is not
( obsessive passion). By that, the dualistic model allows for testing of whether, depending
on its nature, passion leads to positive or negative outcomes.

The dualistic model of passion posits that people internalize activities in their identity if
these activities are highly valued by the individual. Moreover, it suggests that two
different types of passion can develop, harmonious and obsessive, depending on how the
passionate activity is been internalized into the entrepreneurs’ self-identity.

Harmonious passion develops in individuals when they freely accept that the focal
activity validates their highly held identity and therefore pursuing the activity causes a
sense of will and personal validation (Vallerand et al., 2003; Cardon et al., 2009). In the
case of harmonious passion, the desired outcome for the entrepreneurs is improvement
in their ability to master venture related tasks. In this case, engaging in the passionate
activity in a competent way is experienced as an end in itself (Elliot, 1999; Nicholls,
1984). Because it mirrors an autonomous type of activity engagement, harmonious
passion is thought to generate mastery goals (Duda, 2001; Dweck, 1986). Thus, an
adaptive achievement process focused on task-centered goals process is thought to be
prompted by harmonious passion.
Thanks to this adaptive involvement with the passionate activity, harmonious passion is likely to favor the development of positive experiences. Thus, harmoniously passionate entrepreneurs will be able to engage fully and concentrate on their current venture tasks and be subject to positive experiences during the venture activity (flow, positive affect, Cardon et al., 2009; life satisfaction, Vallerand et al., 2003.). Harmoniously passionate entrepreneurs will engage in the passionate venture activity with a secure feeling of self-esteem, in a flexible, non-defensive and mindful manner (Brown & Ryan, 2003). Such intrinsic and integrative self-processes (Deci & Ryan, 2000; Ryan & Deci, 2002) can lead to openness to new experiences (Hodgins & Knee, 2002) and creativity (Cardon et al., 2009; Liu, Chen & Yao, 2011). When this passion is experienced, the venture activity has a prominent but not overriding role in the entrepreneurs’ identity and is in accord with other parts of the individual’s life. Thus, no conflicts exist between the passionate activity and other life domains (Vallerand, 2010). Because the harmonious passionate person controls the activity, harmonious passionate people will be able to abandon the passionate activity completel, if the activity has come to be a enduring source of negative experiences in their lives. Thus, in the case of harmonious passion, entrepreneurs are flexible with their behavioral engagement in the passionate activity.

Conversely, obsessive passion originates from interpersonal or intra-personal pressures associated with the engagement in the activity (e.g., new venture activity), such as to increase self-esteem or to generate feelings of social acceptance or feelings of superiority (Vallerand et al. 2003). These pressures compel the individual to continue with the activity to sustain these (perceived as critically important) outcomes (Amiot, Vallerand, & Blanchard, 2006). Because of these controlling, and not integrative, self-processes, obsessive passionate people will participate in the activity with a low sense of self-esteem, which will be contingent on the success of the focal activity (Hodgins & Knee, 2002; Lafrenière, Bélanger, Sedikides, & Vallerand, 2011; Vallerand, 2010). Obsessive passion will involve a more actively self-evaluative or social view of the self (Nicholls, 1984; Vallerand et al., 2007). For obsessively passionate entrepreneurs, mastering the task is not enough to signal competence. Mastery will only be experienced as a vehicle to an end and not an end in itself. To assess their ability and competence, obsessively passionate entrepreneurs will measure it by comparing it to measurable, external performance standards. As such, obsessive passionate entrepreneurs were predicted to have ego-involvement type of goals, that is, performance-approach (high performance at venture related tasks) and performance-avoidance goals (avoiding performing lower than others) (Elliot, 1999; Nicholls, 1984; Vallerand et al., 2007). Hence, although obsessively passionate individuals are highly motivated to perform the activity (Amiot et al., 2006), they rely heavily on activity engagement for their self-esteem (Lafrenière et al., 2011). Therefore, obsessive passionate individuals will exhibit a strict persistence in the passionate activity, and they will notbe able to stop engagement in the activity. Although some benefits migh accrue from the rigid and strict persistence of obsessively passionate entrepreneurs (e.g., continued effort and enhanced performance), obsessive passion is highly likely to bring about detrimential outcomes for the entrepreneur. Therefore, the rigidity intrinsic to obsessive passion could possibly affect the way the entrepreneurs’ mind functions during engagement in the passionate activity – the rigidity in thinking might lead to less creativity. These ego-invested processes that are at play (Hodgins & Knee, 2002) will likely lead to a mindset characterized by defensiveness to guard against new experiences (Knee & Zuckerman, 1998; Vallerand et al., 2003; Vallerand, 2010) and reliance on established habits and routines (Hodgins & Knee, 2002; Knee & Zuckerman, 1998; Vallerand et al., 2003). Moreover, the desire to engage exclusively in the passionate domain might bring about conflicts with other life domains, and the individual might suffer when being prevented from engaging in the passionate work (Vallerand, 2010).
2.2.3 Development of Harmonious and Obsessive Passion

The self-determination theory by Deci and Ryan (2000) is a psychological theory of goal-directed behavior explaining that people have the elementary psychological needs: the need of autonomy (a longing to feel a sense of personal initiative), the need of competence (a desire to interrelate effectively with the environment), and the need of relatedness (a longing to feel connected to other significant people). Thereafter, individuals are naturally inclined to engage in different activities in hope of satisfying these needs. In this search for self-fulfillment and personal growth, humans are endowed with motivational and passion tendencies, and tend internalize valued activities, in order to grow the self (Deci & Ryan, 2010). In this process, passions can emerge.

Based on the self-determination theory, the dualistic model of passion (Vallerand et al., 2003) argues that the initial development of passion happens through the process of activity selection, activity valuation, and the internalization of the activity representation in the person’s identity. Activity selection refers to the individual favouring a particular activity over others. The concordance between the activity and its correlated behaviours on the one hand, and the person’s identity on the other, will stimulate the growth of passion toward that specific activity (Vallerand, 2010). Activity valuation refers to the personal meaning the activity has for the individual and is thought to have a significant function in the activity’s internalization in the self-identity. As described by the self-determination theory, people tend to internalize activities’s representations in the self and include them in their self definition, put the case that these activities are highly meaningful (Aron, Aron, & Smollan, 1992; Deci et al., 1994). The higher is the meaning of the activity for the person’s identity, the more will it be internalized, and the more passion will develop. Hence, activity valuation reflects the degree of intensity (or quantity) triggering growth of passion (Vallerand, 2010). In such a case, the values, attitudes and regulatory structures associated with the behavior relevant for that activity will become internalized in the individual’s identity. This internalization process can occur in a controlled, or in an autonomous way (Deci, Eghrari, Patrick, & Leone, 1994; Deci & Ryan, 2000; Sheldon, 2002; Vallerand, 1997; Vallerand & Ratelle, 2002), and this will determine the nature of passion that will develop. The internalization process can be considered to influence the quality dimension, or the nature of passion that will ensue. While an autonomous internalization of the activity representation will stimulate the development of harmonious passion, a controlled internalization is assumed to result in obsessive passion.

A controlled internalization of a passionate activity usually happens when the activity is being selected and valued because of interpersonal or intrapersonal pressures, while an autonomous internalization takes place without any pressure, when the individual liberally accept the activity as significant for them with a sense of volition (Vallerand et al., 2003). Internalization shifts from autonomous to controlled as the strength of factors that induce concerns about evaluations of competence increases (Elliot, 1999; Nicholls, 1984; Vallerand et al., 2007).

A first critical determining factor during the process of internalization is the degree to which the social environment around the entrepreneur is controlling or autonomy-supportive with regard to the activity selection and activity valuation (Deci & Ryan, 1987). Parents, teachers, and significant others have been studied in previous psychology works as representatives of the social environment that might influence the quality of the internalization of passionate activities (e.g. Mageau et al., 2009). In the same line of thought, the social environment around the entrepreneur (family, friends or the society as a whole) might exercise pressures on an entrepreneur-to-be. Interpersonal pressures
can be exercised by parents that act controlling towards the selection and valuation of the entrepreneurial activity and by that try to influence their children to become entrepreneurs. This might be the case with entrepreneurial parents that expect their children to follow the same path. A controlled internalization can also take place because of intrapersonal pressures. This can happen when the entrepreneur feels internally pressured to comply with expectancies from his or her surroundings. Prospective entrepreneurs might choose self-employment in order not to disappoint significant others or because friends or the society hold a high opinion of this career path. Other intrapersonal pressure source can be active in the case of push-entrepreneurs (Amit & Muller, 1995), which engage in entrepreneurial activities because of pressures to financially provide for their families. Such internal or external controlling contexts will make entrepreneurs feel less like origin of their behavior, and experience less autonomy in the activity selection and evaluation. Therefore, they will promote a controlled internalization of the activity in the person’s identity, thus contributing to the development of an obsessive passion. On the other hand, autonomy-supportive environments will promote choice and enhance feelings of self-initiation of the own behavior (Mageau & Vallerand, 2003; Vallerand, Fortier, & Guay, 1997), and therefore facilitate the autonomous internalization of the interesting activity in one’s identity, promoting harmonious passion. Research has shown that autonomy support from family and school teachers enables children’s autonomous internalization of the standards and guidelines of various activities such as learning (Mageau & Vallerand, 2003; Vallerand et al., 1997). This might be the case with entrepreneurs as well. If their parental or school socialization encourages choice and self-initiation in the career selection, individuals are more likely to develop a harmonious entrepreneurial passion, if this is the professional path they choose.

A second contributing factor to the type of internalization process and therefore to the type of passion that initially develops, regards personal factors, and more specifically, individual differences in autonomy and control orientation (Vallerand & Houlfort, 2003; Vallerand & Miquelon, 2007). An autonomous personality orientation (the personal inclination to engage in activities out of own pleasure) leads to autonomous internalization process, whereas a controlled personality orientation (the personal inclination to engage in activities because of external or internal pressures) was associated with a controlled internalization style (Guay et al., 2003; Vallerand, 1997). Thus, provided that people value an enjoyable activity highly, having an autonomous personality will enable the growth and sustainment of a harmonious passion. The other way round, a controlled personality orientation should lead to the development of obsessive passion.

The quality of the internalization process influences the initial development of one prevalent type of passion, obsessive or harmonious, which is operating habitually. However, the prevalent passion can be to strengthen furthermore or the other type of passion can be made effective under various conditions (Vallerand, 2010). By continuously engaging in the venture related activities, the initial type of passion developed might change (Vallerand et al., 2003; Vallerand, 2010). Specifically, the occurrence or nonexistence of social and personal factors that bear on the type of internalization process (autonomous or controlled) will influence the ongoing progress of passion in the respective way. In organizational settings, recent research demonstrated the role of contextual factors in defining a controlling versus an autonomy-supportive social contextual climate. Thereafter, organizational support, the degree to which employees feel that the organization appreciates employees’ contributions and highly regards their well-being (Eisenberger, Huntington, Hutchinson, & Sowa, 1986), has been used to portray autonomy support provided by the organization.
to the individual. Thus, it was assumed that organizations that equip employees with a balanced, flexible, and safe work environment, and value employees’ opinions and work, create conditions that should promote harmonious passion (Vallerand, 2010). Secondly, interpersonal factors such as the type of leadership (Bass, 1985) have been assumed to influence the type of passion developed (Houlfort et al., 2010). Thereafter, transformational leadership should promote harmonious passion because it makes employees’ feel more valued and renders their tasks more interesting, while assisting autonomy through personalized attention. To the contrary, transactional leadership (Bass, 1985) should promote obsessive passion (Houlfort et al., 2010), because it lays up the organizational context in a way that is contributing to a controlling climate, by monitoring subordinates’ behavior and using extrinsic rewards. Although entrepreneurs have autonomy over the way in which they structure their work and decide to achieve their goals, the entrepreneurial context is generally represented by situations where competence is being evaluated, situations that therefore fit therefore a controlling rather than autonomy-supportive environment (Deci, Koestner, & Ryan, 1999; Nicholls, 1984): overload, stress, deadlines, targets, and comparison with competition (Aldrich, 2000; Baron, 1998; Shane, 2008).

Besides the general contextual climate, the social setting around entrepreneurs might have an effect on the degree of control or autonomy present in the environment. Unlike employed individuals, entrepreneurs will usually not find support in their barely established organizations, and, for good or for worst, they do not have managers. It is incubators, government agencies and more often investors that constitute the social climate around entrepreneurs. Especially investors are highly likely to influence the degree of autonomy present in the entrepreneurs’ environment. By the nature of their relation, investors might represent a controlling force on entrepreneurs (Cable & Shane, 1997; Sahlman, 1990). Investors will most likely judge entrepreneurs by outcomes that are not directly related to performing the activity in itself (e.g. revenue, market share), and make them feel coerced to behave in a certain way (e.g. work long hours). Investors might also force deadlines on entrepreneurs and encourage comparison with competition (De Clercq, Fried, Lehtonen, & Sapienza, 2006). Such evaluations, rewards, threats, surveillance, and deadlines will lower the feeling of autonomy of entrepreneurs, force them decouple from the involvement with the entrepreneurial task itself and focus on the outcomes of the entrepreneurial activity, and thus cause obsessive passion to develop. Government agencies and incubators on the other hand might be able to institute an autonomy-supportive environment, by allowing entrepreneurs to focus on the entrepreneurial task itself, providing them with a sense of ownership regarding their behaviour and decisions, encourage their initiatives and support them in their quest for personal development, without forcing specific external performance targets on them (Deci & Ryan, 2010).

Just as in the case of initial development of passion, personal factors can also influence its on-going development. The values held by the individual represent a relevant factor. Previous studies (Kasser, 2002; Kasser & Ryan, 1993) demonstrated that individuals can hold either predominantly intrinsic or predominantly extrinsic values. Intrinsic values are consistent with the person’s psychological needs of competence, autonomy, and relatedness and are therefore naturally gratifying to follow. On the other hand, extrinsic values such as financial success, image, and popularity mirror a high significance of rewards and social praise. These dissimilar categories of values might direct people toward harmonious or obsessive passion (Vallerand, 2010). Since intrinsic values are embedded in the authentic self (Kasser, 2002), they are expected to foster harmonious passion. On the other hand, extrinsic values are assumed to promote obsessive passion, because they are representative of controlled and ego-invested self-structures (Vallerand
Another relevant personal determinant of passion was considered to be perfectionism (Vallerand, 2010). Perfectionist individuals hold overly high standards of achievement (Flett & Hewitt, 2002). Two types of perfectionism are especially relevant for the study of passion (Schiphof, Brunnel, & Vallerand, 2009). Self-oriented perfectionism is defined as having overly high standards for oneself, but not for others, and includes flexible standards that can be actively altered by the person. Self-oriented perfectionism has been named “positive perfectionism”, because it usually leads to positive outcomes (Miquelon, Vallerand, Grouzet, & Cardinal, 2005). On the other hand, socially prescribed perfectionism denotes an individual’s impression that other important people are inflicting overly high standards and expectations on oneself and that one has to fulfill these expectations to content them. Socially prescribed perfectionism has been correlated with negative outcomes (Miquelon et al., 2005). Previous studies with individuals involved in physical activities show that, because self-oriented perfectionism takes origin in the autonomous self, it can predict harmonious passion, while socially prescribed perfectionism is rooted in external control and will therefore lead to obsessive passion (Schiphof et al., 2009).
3 DATA AND METHODS

The dissertation comprises a systematic literature review piece and three empirical studies. The empirical work is based on different data sets and uses a variety of quantitative and qualitative comparative research designs to analyze the research question (see Table 2).

The three empirical papers apply quantitative and mixed methods research methodologies and aim at empirically testing previously unexplored relations between passion and other personological, cognitive, emotional, and motivational individual-level variables related to nascent entrepreneurs. The combined work underlines the duality of passion’s functions in entrepreneurship and the emotional intensity of the nascent stage of venture emergence.

Table 2 Research Methodologies in the Papers of this Dissertation

<table>
<thead>
<tr>
<th>Study</th>
<th>Study Type</th>
<th>Sample</th>
<th>Main variables</th>
<th>Data Analysis</th>
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<td></td>
<td>systematic literature review</td>
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<td>Paper II</td>
<td>Quantitative; Longitudinal</td>
<td>n=45</td>
<td>Role overload, goal challenge, progress,</td>
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<td>sample with two waves</td>
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<td>Paper III</td>
<td>Quantitative; Cross-sectional</td>
<td>n=80</td>
<td>Fear of failure, harmonious passion, obsessive</td>
<td>Hierarchical Multiple Regression with SPSS 23</td>
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<td></td>
<td>Cross-sectional</td>
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<td>risk perception, effectuation, causation</td>
<td>fsQCA 3.0</td>
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3.1 Research Philosophy

Positivism is the dominant paradigm in administrative sciences generally (Peterson, 2004). Positivism assumes a realist ontology, emphasizing universal laws of cause and effect, and holding that a world of objectively defined facts exists independent of human cognition (Henwood & Pidgeon, 1993; Krauss, 2005). In the same time, positivism includes an epistemological position corresponding to theory of truth (Friedrichs & Kratochwil, 2009), holding that world is knowable and true knowledge reflects an independent-from-the-mind world (Krauss, 2005). Positivism deploys a hypothetico-deductive methodology (Henwood & Pidgeon, 1993). In this deductivist tradition the researcher begins “[...] with an abstract, logical relationship among concepts then moves towards concrete empirical evidence”, (Neuman, 1997, p. 46). Here, existing theory has the role of informing the derivation of hypotheses, the choice of variables, and the resulting measures the researcher plans to use. Within this paradigm the researcher articulates a specific theoretical outline and then approaches its testing.

Although the majority of existing academic work on passion in entrepreneurship research is of conceptual nature, the sparse empirical studies that have been conducted follow deductive, quantitative methodologies in the vast majority of cases. This can be traced back to the methods used by passion researchers in psychology, who developed valid and reliable scales for passion and employed quantitative tools, thereby acting as models for entrepreneurship scholars that studied passion. Since entrepreneurship researchers have approached passion research having as models studies of passion from psychology, they emulated methods and measures of passion used in psychology, and adopted positivist, quantitative methodologies.

From a philosophical theory point of view, this dissertation as well adopts an overall deductive approach to investigating the phenomenon of passion in entrepreneurship, its properties and relations by forming and testing hypotheses. However, Paper III of this dissertation introduces inductive elements through the use of mixed methods such as fuzzy set qualitative comparative analysis (fsQCA) (Ragin, 2008), where one learns from the patterns in the data. Paper III aims to investigate how passion interacts with other perceptual variables to influence decision-making of entrepreneurs. To answer this question a technique that permits the identification of multiple causal pathways and interaction effects was needed. These could not be detectable via statistical analysis such as quantitative analysis, that usually requires the data set to conform to one model. Therefore, I used the mixed methods analysis technique of fsQCA, which pairs qualitative and quantitative case data to recognize necessary and sufficient conditions for an outcome. Set theoretic methods in general and fsQCA in particular, provide an alternative to do research in the social sciences, beyond the quantitative-qualitative divide, capturing concepts’ differences both in terms of kind (qualitative) and degree (quantitative).

3.2 Research Context

Contextually, this research is focused on nascent entrepreneurs engaged in opportunity exploitation. Data about nascent entrepreneurs are not easily procurable from conventional sources, since nascent entrepreneurs are hard to identify because they do not appear in conventional business directories. In fact, to my knowledge, this is the first study gathering data on passion from nascent entrepreneurs. Although they have been given little scholarly attention in the past (Ross & Byrd, 2010), start-up events such as new venture competitions have been recognized as a launch pad for nascent
entrepreneurs (Fishback, 2007; Ross & Byrd, 2011). These events are fitted for the needs of nascent ventures, offering nascent entrepreneurs access to practical knowledge, mentorship and resources to exploit the identified opportunity. Besides the support and chance to validate their idea, nascent entrepreneurs get recognition and exposure to investors and the press. Indeed, new venture emergence workshops and competitions are a valuable source of data about nascent entrepreneurs. Lately, some entrepreneurship scholars turned to start-up event and competitions to answer a variety of questions (Foo, Wong, & Ong, 2004; Russell, Atchison, & Brooks, 2008), some of them even related to the nascent entrepreneurs’ passion (Chen et al., 2009). Thus, for this study, I identified active nascent entrepreneurs by contacting participants of new venture emergence competitions. This approach helped override methodological difficulties resulting from by hindsight bias and memory deterioration caused by studying nascent entrepreneurs and the venture emergence process ex-post with entrepreneurs at more advanced stages (cf. Davidsson & Honig, 2003). Thereby, I could also consider efforts that failed or were discarded at early stages, and thus get a more complete understanding of nascent entrepreneurs. Moreover, this data gathering design excludes so-called “latent” nascent entrepreneurs (Reynolds et al., 2005) that hold mere intentions to engage in opportunity exploitation, but where no tangible progression towards starting a new venture is being observed. Moreover, it also leaves out new ventures that are already in operation and functioning. Thus, the data gatherings concentrate on samples of nascent entrepreneurs and supply valid and reliable data, expanding our knowledge about features of passion that might have a high significance during the early stages of the entrepreneurial pursuit.

3.3 Data Gathering and Measures

For all three empirical papers of this dissertation (Paper II, III, and IV), data were collected by surveying nascent entrepreneurs participating in start-up events.

The data for Paper II was collected in Berlin, Germany in July and August 2014. The context was three highly intense weekend-long start-up events that included monetary prizes. During the event, the entrepreneurs faced different challenges, played out their business ideas or demonstrated their prototype against opponents, and pitched in front of investors. The data was collected by administering a survey instrument at two time points: once before the event and the second at the end of the events. A survey on the independent and control variables were collected before the event start, which resulted in 49 completed surveys. After the event, the entrepreneurs were asked to complete another survey, this time concerning the dependent variable. At this second data gathering, only 45 surveys were returned. Thus, a lagged approach was used to gather the data from a sample of 45 nascent entrepreneurs. I met the entrepreneurs personally and administered the survey questionnaire. This encouraged participants to answer the questions reflectively and thereby lowered problems related to introspection (Schweiger, Anderson & Locke, 1985), which are common when surveying affect and cognitions. To ensure a high quality of responses, the questionnaire was kept short. The average age in the sample was 32, and 66% of respondents were men. The respondents were highly educated and the majority had no previous entrepreneurial experience. The average number of years of work experience across the entire sample was six years. Regarding the measures employed, the independent variable, role overload, was measured using the established 3-item scale by Beehr, Walsh and Taber (1976), adapted for the entrepreneurial role. Consistent with previous goal-challenge research (Locke, Latham, & Erez, 1988), the goal challenge moderator was measured using a single item scale. The second moderator, the level of achieved goal progress, was measured using Gielnik,
Spitzmuller, Schmitt, Klemann and Frese’s (2015) adaptation of van Gelderen, van de Sluis, & Jansen (2005) 7-item scale. For this, as well as for Paper III and Paper IV, the two types of passion, here the dependent variables, were measured by employing Vallerand et al.’s (2003) widely accepted measure, which has been reported to have high levels of validity and reliability for a range of activities and languages (Marsh et al., 2013). The original scale refers to a nonspecific activity, so we rewrote the items to refer to entrepreneurial activity. Respondents were also asked to report their age, gender, education level, and work and entrepreneurial experience. These data, as well as the relative obsessive passion orientation at time 1 were used as control variables.

The data for Paper III was gathered in August and September 2014 in Germany. A major entrepreneurship foundation in Germany organizes an annual start-up competition in which nascent entrepreneurs present their emergent ventures to a jury of experts and to a general public audience. We used the evaluation phase of the competition as our research setting. In this phase, the nascent ventures are presented online, and both the expert jury and the general public audience allocate points to those participating in the competition based on certain criteria, such as product feasibility, market potential, gained traction, team competence, and investment readiness. I contacted the 815 participating nascent entrepreneurs through the event organizer’s weekly newsletter and invited the entrepreneurs to complete our survey online. We received responses from 110 entrepreneurs, representing a 13.5% response rate. After cleaning the data, the final sample size was 80 entrepreneurs. Half of the respondents were under 30 years old, 89% were under 45 years old, and 70% were male. The surveyed entrepreneurs were highly educated, with 69% having earned a college degree, and had an average of one year of previous founding experience. The independent variable, fear of failure, was measured with a six-item short version of the Herman (1990) Scale (consistent with Elliot & Thrash, 2004). As in the previous paper, the moderators, harmonious and obsessive passion were measures with Vallerand et al.’s (2003) scale. To measure the dependent variable, negative affect, I had participants indicate the extent to which they experienced negative affect during the period in which they were pitching their venture to the judges and the audience (and the judges were assessing the pitches). Negative affect was captured using 10 items from the Positive and Negative Affect Schedule (PANAS) (Watson, Clark & Tellegen, 1988). Since the tendency to experience negative affect from venture activities might differ depending on different personal characteristics, such as age, gender, educational background, and/or founding and working experience, I controlled for these possible effects.

The data for Paper IV was gathered in summer 2015 from the participants of the consecutive annual start-up competition organized by the same entrepreneurship foundation in Germany. The same procedure of contacting the nascent entrepreneurs through the event organizer’s weekly newsletter was employed. This time, 76 replies were returned, amounting to 50 usable surveys. On average, the respondents were 34 years old. 74% were male and 76% had earned a college degree. Regarding the measure used, we employed the dualistic model of passion scale for harmonious and obsessive passion (Vallerand et al., 2003). Effectuation and causation were measured with the scales developed by Chandler, DeTienne, McKelvie, and Mumford (2011). Perceptions of entrepreneurial self-efficacy were measured using 15 items from Chen and colleagues (1998), as adapted by Forbes (2005) and used by Cardon and Kirk (2013). Risk perception was measured using 7-item scale by Podoynitsyna et al. (2012).
3.4 Procedure and Statistical Analysis

Multiple statistical analyses were used on this study. Paper I included a systematic literature review, hierarchical regression analysis was deployed in Paper II and III, and fuzzy set qualitative comparative analysis was used in Paper IV. Due to the study designs, categorized variables were applied in Paper II, III and IV. Analyses were conducted using SPSS 23 (Paper II and III), AMOS 23 (Paper II and III) and fsQCA 3.0 (Paper IV).

In conceptual Paper I, following the process Tranfield et al. (2003) suggested, I searched leading electronic databases such as ABI-Inform, Business Source Premier, and the American Psychological Association’s databases. I used the search terms “passion” AND “entrepreneur*” or “new venture” in titles and abstracts and covered the period up to and including December 2016. The search terms are inclusive enough to account for the most relevant articles within the conceptual limits and sufficiently exclusive enough to remove irrelevant studies. Beside empirical pieces, I chose to include conceptual articles as well, since passion research in entrepreneurship is still at an early stage, with some important works being conceptual. Moreover, I included books and dissertations in the review to gain a broader view on the state of the research. This process resulted in 33 published articles, one book, one dissertation, and two conference papers, amounting to 37 studies published between 1989 and 2016.

In Paper II and Paper III, the conceptual models and respective hypotheses were tested using hierarchical regression analysis (Bagozzi, 1994; Cohen & Cohen, 1983). Studies with smaller data sets are common in entrepreneurship research (Short, Ketchen, Combs and Ireland, 2010), and applying regression analysis circumvents problems of model fit that appear when using structural equation modeling in small sample sizes (Kline, 2005). As recommended by Aiken and West (1991), the independent variables were mean-centred and standardised prior to forming the interaction terms in both papers. In each step of the hierarchical analysis, incremental R² and F tests of statistical significance were evaluated. We first entered the control variables (basel model), after which we added the independent variables (independent effects only model) and then focal two-way interactions (full model). In both Paper II and Paper III as well, we computed variance inflation factor (VIF) scores to ensure that multicollinearity is not an issue. Because the measure for both dependent and independent variables were gathered through self-reports, they might be at risk of common method bias. To help alleviate possible influences of common method bias on the findings, we employed procedural, as well as statistical revisions in both papers (Podsakoff & Organ, 1986; Podsakoff et al., 2003). These techniques included separation of the dependent and independent variables in the survey, reverse-coding various items in the survey, and testing the data with Harman's one-factor test, which did not show any emerging single factor to account for most of the variance (Podsakoff et al., 2003). Finally, we analyzed the data using the unmeasured latent factor method approach. Only low variance was accounted for by the method factor, (Hair, Black, Babin, Anderson & Tatham, 2006) and the regression weights did not show great differences when we added the common latent factor, which indicates that common method bias is unlikely to unduly influence both studies’ results.

Paper IV addresses various determinants that might lead to the choice of decision-making logic by entrepreneurs. While useful for extracting the net effects of single variables, multiple regression analysis can only prove the existence of monotonically increasing and decreasing relationships between two variables. Thus, it might not be the best method to investigate decision-making logics (Ragin, 2008). Net effects do not take into consideration all features of reality. Not all cases in a data sets endorse solely negative or solely positive relation between the independent and the dependent variables
This is even less the case for the study of decision-making processes, where people weight in different evaluations at the same time when they engage in decision-making. Therefore, fuzzy-set Qualitative Comparative Analysis (fsQCA) was chosen as an analysis method for this paper, because it aims at identifying various configurations that all lead to the same outcome, and not independent effects (Ragin, 2008). FsQCA is a set-theoretic method of analyses that closely examines how various configurations of causal conditions contribute to a specific outcome (Fiss, 2007). This method identifies patterns of various causal conditions and the outcome, rather than focusing on how one individual independent variable relates to an outcome. The study used fsQCA to investigate the relation between various causal variables (harmonious passion, obsessive passion, self-efficacy, risk perception) and the outcomes of effectuation and causation. The software used was fsQCA 3.0. It is recommended that the process of transforming original scaled values into fuzzy-set membership scores for all conditions and outcomes should be based on theoretical and substantive knowledge (Ragin, 2008). In this regard, Ragin (2008) proposes the direct method of calibration. This method consist in defining three qualitative anchors: the threshold for full membership, the crossover point and the threshold for full non-membership. To generate these anchors, we applied the 10th, 50th, and 90th percentiles respectively (Misangyi, & Acharya, 2014, Kraus Richter, Brem, Cheng, & Chang, 2016; López-Cabarcos, Vázquez-Rodríguez, & Piñeiro-Chousa, 2016). The first step in a study using fsQCA regards checking whether the causal conditions are necessary conditions for the outcome to happen. In the second step, an fsQCA-study performs a sufficiency test with the help of a truth table, to uncover the possible configurations that explain the presence of the outcome variables.
4 SUMMARY OF RESEARCH PAPERS

This work addresses the advanced research question through a systematic literature review and three empirical studies, which complement each other in shedding light on the identified research gaps illustrated in Figure 1. Figure 3 below summarizes the approach. Regarding the first research gap, Paper III and IV investigate how passion affects cognition, and in a second step, motivation; while Paper II questions whether passion, in turn, can also be affected by cognition. Based on the understanding the status of scholarship on passion gained in Paper I, the other three papers turn to the cognitive appraisal framework as a theoretical basis for explaining passion’s functioning mechanism, helping thereby clarify the second identified research gap. Lastly, all four papers of this study take into consideration the dual nature of passion in entrepreneurship, in an effort to clarify the third research gap regarding the lack of regard towards all aspects of passion.

**Figure 3  Individual Papers’ Relation to Investigating the Research Gaps**

This section includes summaries of the four research papers that make up this dissertation. Following an outline of each paper’s (empirical) research design and findings in this section, the main contributions of each individual paper and the dissertation overall are elaborated upon and reviewed in the discussion section.
4.1 Paper I: What do we know about Passion in an Entrepreneurial Context?

The goal of the first paper was to describe the status of scholarship on passion in entrepreneurship. To this goal, a systematic literature review was conducted. First, the findings of this comprehensive literature review allowed me to present various conceptualizations of passion existing in entrepreneurship, identify their similarities and contradictions, and substantiate their complementarity. Particularly, the dualistic model of passion (Vallerand et al., 2003) was compared and integrated with Cardon and colleagues (2009) conceptualization of entrepreneurial passion. Despite the fact that these two models have evolved in relative isolation and uncovered different aspects of entrepreneurs’ passionate experience, they were shown to be complementary. Second, the literature review uncovered that research on the antecedents of passion in entrepreneurship is inexistent, with a prominent exception that investigates the importance of entrepreneurial identity centrality in the development of harmonious passion (Murnieks et al., 2014). Explanations on the determinants of obsessive passion lack completely. Third, the study establishes to what extent existing research has progressed towards clarifying passion’s outcome in entrepreneurship, and summarizes and systematically presents the research progress on passion’s outcomes in entrepreneurship. Although most studies were of conceptual nature or based on anecdotal evidence, passion has been found to have important outcomes on entrepreneur’s intrapersonal outcomes such as emotional experiences, cognitions, and behavior, as well as intrapersonal effects on other stakeholders of the venture such as employees and investors. Thereby, however, researchers looked almost exclusively at the harmonious nature of passion, without extensive focus on obsessive passion. Moreover, solid theoretical explanations about the exact mechanisms through which passion exerts all these effects were scarce. Finally, the study comments on and evaluates the status of passion research in entrepreneurship, coming to the conclusion that, despite considerable advancements, research on passion in entrepreneurship is still at an early-stage. In doing this, it also provides implications for practice and policy and describe directions for future research. By highlighting the gaps in the current understanding of passion in entrepreneurship, this first study informed the other three papers of this dissertation.

4.2 Paper II: Why do early stage founders develop obsessive passion? The effect of role overload, goal challenge and goal progress

Although entrepreneurial research has recognized passion as a main characteristic of entrepreneurs, it has tended to neglect the fact that not all passion has been hypothesized to be equal. When passion takes an obsessive quality, its outcomes for the venture and especially for the entrepreneur can turn problematic, if not harmful. Because the outcomes of passion can differ depending on its nature, it is important to understand what reinforces and makes one or the other type of passion operative. Although existing research expands our knowledge about passion’s nature and its general outcomes, it includes considerable theoretical and empirical gaps regarding the determinants and the development of obsessive passion. If we agree that passion can be of different types (e.g., Vallerand et al., 2007), we need to understand the factors that influence passion’s nature, so we can win a deeper understanding into how this motivational force develops and functions. Therefore, specifically addressing a research gap uncovered in paper I, the second paper aims at bringing some initial empirical evidence on why nascent entrepreneurs’ passion may take an obsessive turn. Drawing on theory on identity relevant role stressors (Kahn, Wolfe, Quinn, Snoek & Rosenthal, 1964; Thoits, 1991)
paper II explores the manner in which the stressful contextual climate in the nascent stages of the new venture emergence process influences the quality of the affective engagement of entrepreneurs with the venture activity. To this end, the study proposes that when perceiving the stressor of role overload, entrepreneurs try to resolve this identity relevant stressful situation by excessively engaging with the passionate entrepreneurial activity, in this way increasing their relative obsessive passion orientation. Moreover, the study expands the view on the relation between perceptions of role overload and obsessive passion by integrating the transactional theory of stress and coping (Lazarus, 1968; Lazarus & Folkman, 1984) to better understand how role overload can be experienced with different intensities depending on its motivational incongruence and relevance. To this end, goal challenge and achieved progress are introduces as moderators that affect the meaning of role overload, making it more motivationally incongruent and more motivationally relevant for the self of the entrepreneur, and amplifying thus its effect on obsessive passion. The study employs a survey in which nascent entrepreneurs report their perceived role overload and feelings of passion at two points in time, and finds empirical support for the main and the moderating hypotheses. In uncovering the prominent function of the stress perception of role overload as a determinant of obsessive passion, the results of Paper II empirically back up theoretical considerations defining passion as not simply an inborn personality trait, but rather a distinctive affective experience influenced by the circumstances at the beginning of the venture process (Cardon et al., 2009; Markman, Baron & Balkin, 2003). Moreover, the study rests on alternative ground than previous research, where passion is suggested to be merely a result of a positive experience (Murnieks et al., 2014).

4.3 Paper III: A Passion Model of the Negative Affect from Fear of Failure in the Entrepreneurial Context

Although entrepreneurship research emphasizes passion’s important role as a motivational force (e.g., Baum & Locke, 2004; Cardon et al., 2009; Cardon & Kirk, 2015; Murnieks et al., 2014), studies pinpointing the exact mechanisms by which passion exerts its motivational role have been scant. Paper III assumes that passion’s motivational force originates from its capacity to regulate the intensity other affective experiences. Thus, the study theoretically and empirically examines passion’s emotion-regulatory function in the nascent stage of the entrepreneurial process. Building on the tenets of emotion regulation theory (Frijda, 2013; Gross, 1998), which advocates that an affect with higher importance for the identity can modify how another affective episode unfolds (Gross, Sheppes, & Urry, 2011), Paper III reveals that passion, as an enduring feeling of higher relevance for the entrepreneur’s identity, can regulate negative affect. Specifically, this study uncovers passion’s role in affecting entrepreneurs’ perceptions of the external failure cues and its role in changing the intensity of negative affect that derives from the perceptions of failure cues. Leaning on trait activation theory (Tett & Burnett, 2003; Tett & Gutterman, 2000), the study first establishes a positive relationship between nascent entrepreneurs’ dispositional trait of fear of failure and the experience of situational negative affect in failure-prone situations. Then, the study theorizes on how the intensity of the negative affect from fear of failure is influenced by the different kinds of passion experienced by the entrepreneurs: harmonious and obsessive. The model is tested using a quasi-experimental field study in the naturally occurring setting of a nascent venture competition, on a sample of nascent entrepreneurs. Using the evaluation phase of the competition as the research setting ensures that the (not always salient) dispositional trait of fear of failure is activated and emotionally expressed (Cacciotti, Hayton, Mitchell, & Giazitzoglou, 2016). The results of the study reflect that, indeed, nascent entrepreneurs high in fear of failure experience
more negative affect. Moreover, and most importantly, passion was found to regulate this relationship. Specifically, the analysis shows that passion seems to have a dualistic-regulatory-effect depending on its nature—harmonious or obsessive. In particular, harmonious passion was found to dampen the influence of fear of failure on negative affect, whereas obsessive passion intensified this relationship. Thus, although passion has generally been considered to be beneficial to venture performance (e.g., Baum & Locke, 2004; Cardon, et al., 2009), the findings in paper III point to the tentative conclusion that passion can also have a detrimental regulatory effect, depending on its type.

4.4 Paper IV: The Role of Passion and Perception in Entrepreneurs’ Choice of Decision-Making Logic

In trying to clarify the use of effectual and causal decision-making logics among nascent entrepreneurs, Paper IV suggests that choice of decision-making logic may have little to do with the level of expertise of the entrepreneurs. Instead, how they think might be linked more closely to their affective experiences, and cognitive evaluation of the self and of the environment (Bandura, 1997; Baron, 2008). As an identity-focused affect with strong motivational power, passion is highly likely to interfere with the cognitive processes of entrepreneurs, and thus, influence also their choice of the decision-making logic. However, exploring the effect of passion on the decision-making logic choice requires the recognition that there are two distinct types of passion, with different characteristics and different outcomes for the entrepreneur—harmonious and obsessive passion. Passion triggers a cognitive predisposition of evaluating courses of action in line with the internalization that activated passion (Cardon et al., 2005; Lerner & Keltner, 2000). Since entrepreneurs’ venture-related achievement processes have different foci depending on whether they are harmoniously or and obsessively passionate, the two types of passion might influence entrepreneurs’ choice of decision-making frames differently (Smith & Ellsworth, 1987). While the presence of harmonious passion in nascent entrepreneurs was expected to affect the degree to which they use effectuation, obsessive passion was assumed to lead to the use a causal decision-making frame. The data analysis method used to test these propositions is fuzzy-set Qualitative Comparative Analysis (fsQCA), a set-theoretic analysis technique that closely examines how causal conditions lead to a specific outcome. As such, fsQCA aids in untangling some of the intricacies of the choice of decision-making logics. The results show that, although neither type of passion alone was found to influence the use of either a causal, or an effectual decision-making logic by nascent entrepreneurs, passion did play an important coordinating role in entrepreneurs’ cognitive processes. Paper IV showed that passion plays a guiding role over other perceptual variables such as entrepreneurial self-efficacy and risk perception, in the choice of effectual versus causal logic. In line with the literature, the results of the study provide an added level of detail concerning how passion interact with perceptual variables to guide the cognitive processes of the entrepreneurs. Considering both types of passion—harmonious and obsessive—seems to be important in understanding entrepreneurs’ choice of one or the other decision-making logic. The two types of passion seem to guide entrepreneurs towards opposing decision-making frames.
5 DISCUSSION: CONSIDERING PASSION’S DUALISTIC FUNCTIONS IN ENTREPRENEURSHIP

The Discussion section presents the contributions of this dissertation. First, the research question is revisited and the different individual contributions of each paper to answering it are presented (Section 5.1). Thereafter, the contributions of the dissertation as a whole are discussed. Section 5.2 describes how this work contributes to a better, theoretically grounded understanding of passion, by situating it against the backdrop of various other cognitive and motivational experiences of the entrepreneur, and uncovering its reciprocal relation with cognition. Section 5.3 uncovers new functioning mechanisms of passion in entrepreneurship, based on a robust theoretical foundation. It shows that passion, as an enduring affective state that results from the internalization of the passionate activity into the identity of the entrepreneur, fulfills critical functions in regulating other affective and motivational experiences of entrepreneurs and coordinating their decision-making frames. Section 5.4 presents the crucial importance of considering passion’s duality in entrepreneurship and its duplicitous effects on affect, cognition and motivation of the entrepreneur, depending on its type.

5.1 Individual Papers’ Contributions to Answering the Research Question

The aim of this dissertation is to attempt to reframe the conceptualization of passion in entrepreneurship. As a whole, the work was guided by a general research question: does passion play a role in the new venture emergence process and if so, how does passion influence the new venture emergence process? To address this question, one systematic literature review was drafted and three empirical studies were conducted. Each paper raised various sub-questions that helped clarify and address the main research question. Each paper had the goal of answering specific previously unattended questions, so that, taken together, they can increase our understanding of passion in entrepreneurship. The subsequent sections outline the research questions raised in each study and the association each paper has with the main research question of the thesis.

Paper I contributed to this dissertation by investigating what is the status of scholarship on passion in entrepreneurship. Since previous literature on passion is fragmented in its conceptualization of the phenomenon and partly based on anecdotal evidence, the literature review in Paper I opened the discussion and structured our current knowledge of passion in entrepreneurship. This paper identified, critically evaluated and integrated the findings of prior research on passion in the field of entrepreneurship, underlining on the one hand the critical role of passion on a wide variety of entrepreneurial outcomes, and on the other hand calling attention to some critically important, but ignored aspects of passion. Besides synthesizing the preliminary proof of passion’s critical function in entrepreneurship, the paper’s main contribution lies in uncovering previous literature’s lack of thorough consideration towards the theoretical mechanisms that underlie passion and towards its duality in entrepreneurship. Gaining a better understanding of previous literature permitted uncovering further unresolved research issues that were investigated further in the following studies.

A complete understanding of passion in entrepreneurship implies looking not only at its harmonious side, but understanding also its obsessive side. Therefore, Paper II investigated how obsessive passion comes about in the nascent stages of the venture. This study shows that, since passion is an identity-focused affect, perceptions of identity-
relevant stressors can change its quality into obsessive. This paper contributes to the dissertation by focusing on passion’s duality in entrepreneurship and uncovering cognitive perceptual factors as determinants of passion’s “dark” side. Moreover, it underlines the fact that the nascent stages of new venturing are filled with pressures and challenges that affect the entrepreneurs emotionally. Thus, a better understanding of the obsessive side of passion requires acknowledging the importance of perceptions of role stress in early venturing.

Paper III aims to investigate how passion influences the affective experiences and motivation of the nascent entrepreneur. The study’s results show that, as an identity-relevant enduring affect, passion influences entrepreneurs’ perceptions and cognitions, thereby affecting the development of various affective experiences with motivational power. This work thus uncovers that the source of passion’s motivational strength potentially lies in its emotion regulatory function. Moreover, Paper III underlines the importance of considering passion’s duality, by demonstrating that obsessive and harmonious passion have opposing regulatory effects. Also, it recognized that entrepreneurs’ passionate affective experience should not be investigated in isolation, since it is situated among and interacts with other affective and perceptual experiences of the entrepreneur.

Paper IV aims to understand how passion affects entrepreneurs’ decision-making logic choice. The study reveals that, because of its internalized identity importance, passion permeates entrepreneurs’ cognitions and coordinates entrepreneurs’ perceptions, influencing in this way the choice of decision-making logic employed by entrepreneurs. Passion’s obsessive or harmonious nature is found to be reflective of entrepreneur’s general approach towards venture related activity. Paper IV’s main contribution to the dissertation is that it uncovers a new role of passion in complex entrepreneurial cognitions, and specifically, a coordinating role in the choice of decision-making logic. Moreover, it underlines the meaningfulness of considering passion’s duality in entrepreneurship, by showing that passion predisposes entrepreneurs to different decision-making frames, depending on its nature.

5.2 Contributions of Passion in Clarifying the Affect-Cognition Relation

The first research gap uncovered at the beginning of this dissertation referred to our knowledge regarding the way in which passion relates to psychological mechanisms such as cognition. Arguments from psychology and neuroscience demonstrated that affect and cognition are interconnected (e.g. Damasio, 1994; Lazarus, 1991). Mounting evidence explains that affective and cognitive systems interact in complex ways during problem solving (e.g., Clore, 1994; Isen, Daubman, & Nowicki, 1987), learning (e.g., Cook, & Mineka, 1989; Öhman, 1986), decision making, memory (Cahill, Prins, Weber, & McGaugh, 1994; Christianson, 1992) and other important forms of cognition, all important and directly linked to activities performed by entrepreneurs while starting new ventures (Baron, 2008). A first set of theories, whose main exponent is the cognitive appraisal theory (Frijda, 1986; Lazarus, 1991), have assumed that cognition influences affect. The other perspective, which is more customary in entrepreneurship research on affect (e.g. Baron 2007; Hayton & Cholakova, 2012; Schwarz & Clore, 1988), relies on psychological theories that deal with the impact of affect on cognition and decision-making. This dissertation considers and applies both these perspectives, in an effort to better understand the phenomenon of passion in entrepreneurship, and portrays how cognitive perceptions of the entrepreneur interrelate with affective experiences such as passion.
First, this dissertation brings theoretical and empirical proof on how cognitive perceptions affect passion. Perception is the complex cognitive process that allows entrepreneurs to make sense of the information around through organization, identification, and interpretation (Krueger, 2000). Because the creation of a new venture is, essentially, a social activity, social cognitive abilities such as perception matters greatly for the affective experiences of the entrepreneur (Baron & Markman, 2003). How the external environment and the venture tasks become represented in entrepreneurs' minds is highly important for the way their will feel about the venture activity. Because of the uncertain context they are active in, nascent entrepreneurs are exposed to threats and ambiguous situations on a regular basis (Foo et al., 2009; Sine, Mitsuhashi & Kirsch, 2006). Perceptions of uncertainty about outcomes and of heavy workloads will strongly affect the entrepreneurs' affective experiences, especially in the light of the high amounts of energy they invest in the new ventures and their high personal risks. As illustrated in Figure 4, Paper II of this dissertation focuses on cognitive perceptions of identity-relevant stressors in the environment of the entrepreneur and investigates how they affect the nature of the passion experienced by the entrepreneurs. Considering that people respond strongly to perceptions of threats that endanger the competent enactment and validation of highly regarded identities, the study found an important effect of cognitive perceptions of threats on the nature of entrepreneurs' passion.

On the other hand, this dissertation demonstrates also how passion, given its meaningfulness in terms of identity, can influence cognitive perceptions of the entrepreneur. Paper III shows how passion can influence perceptions of failure cues. Since failure would have a critical effect on the passionate entrepreneurs' achievement process, failure cues will be permeated with identity-relevant meaning. Depending on the nature of the passion of entrepreneurs, failure cues will be perceived in different ways and take on different meanings. Furthermore, Paper IV shows how passion can influence the way in which entrepreneurs' perceptions of the environment and of the self are utilized. Since passion is reflective of entrepreneur's general cognitive approach toward
the venture related activity, it will influence the weight of risk and self-efficacy perceptions when choosing courses of action and decision-making frames.

Thus, by demonstrating that passion can influence, but also be influenced by cognition, this dissertation clarifies the important two-way interactions between passion and cognition and thereby the first research gap. Moreover, it furthers our understanding of the dynamic relations between affective and cognitive processes involved in new venture emergence.

5.3 Alternative Functions of Passion in Entrepreneurship

The second research gap this work tried to close regarded the lack of clear understanding of the theoretical mechanisms underlying passion’s functioning and its eventual outcomes. I set on to do so by first gaining a careful understanding of passion’s definitional characteristics. In this dissertation, passion is defined and investigated as an enduring affect that results from the internalization of the highly regarded passionate activity’s representation in the entrepreneur’s identity (Burke & Reitzes, 1991; Cardon et al., 2009; Vallerand et al., 2003). Because people care highly about their activities internalized in their identities, passion will entail appraisals of high significance regarding the passionate activity. These definitional characteristics of passion that this dissertation adopts from the neighboring field of psychology offers a more solid theoretical explanation of passion’s strong motivational and cognitive power. Previous research focused on passion’s functions that derived from it being a positive affect and did not considered the intricacies that derive from the definitional internalization characteristic of passion and its implications for passion research. However, as this work suggests, the resulting appraisals of high significance are key for clarifying the gap in the understanding of passion’s motivational force and its functions in entrepreneurship.

As Paper I uncovers, previous research has investigated the cognitive and behavioral outcomes that derive from the affective experience of passion mostly by using the valence approach to affect (described in further detail in Section 2.1.4). Thereafter, passion is considered a positive affect towards the venture. Leveraging this characteristic that passion shares with many other positive affects, these studies have duplicated previous research that investigates outcomes of positive affect, changing the independent variable to passion. Thereby, they reiterated many of the results of previous studies of general positive affect. While these studies offered a first (although biased, as it will be shown in Section 5.4) understanding of passion’s cognitive and behavioral outcomes, they limit passion’s functions to those that derive out of it being a positive affect.

As opposed to this, and as illustrated in Figure 4 the present dissertation recognizes that passion’s motivational strength as an affect and its uniqueness lie rather in its inherent cognitive appraisal tendencies, than in its positive valence. Because the passionate activity’s representation is internalized the individual’s identity, passion takes on an intense and enduring character and elicits long lasting appraisals of high significance and desirability regarding the venture related activity (Smith & Ellsworth, 1985; Ellsworth & Smith, 1988). Therefore, passion entails a high motivational force and it influences entrepreneurs’ beliefs and action plans regarding the venture (Cardon et al., 2005; Oatley, 2000). The conceptualization of passion as including cognitive appraisals tendencies of high significance resulting from identity internalization processes offers a new array of theoretical connections and allows us to investigate passion’s motivational functions beyond those that derive from it being a positive affect.
Paper III focuses on the examination of co-occurring affective processes and builds on the tenets of emotion regulation theory (Frijda, 2013; Gross, 1998), which advocates that various affective experiences modulate and regulate one another depending on the relative importance of each affect’s intrinsic appraisals of the significance their targets have for the identity of the individual (Farmer, Yao & Kung-Mcintyre, 2011; Fredrickson, Mancuso, Branigan & Tugade, 2000; Mesquita & Frijda, 2011). Thereafter, the study underlines passion’s intrinsic appraisal of the venture activity as highly significant and uncovers a new role of passion in the entrepreneurial process: that of regulating the intensity of other affective reactions that include appraisals less significant for the identity of the entrepreneur.

While studies using the valence approach shed light on passion’s effects on cognitive processes such as perception and alertness, the appraisal tendency framework allows us to investigate passion’s role in more complex cognitions such as decision-making logic. Following this line of thought, Paper IV builds on passion’s intrinsic appraisal processes of significance, and uncovers a new function of passion: its coordinating role in the choice of decision-making logic by entrepreneurs. This study argues that passion triggers a cognitive predisposition of assessing courses of action in conformity with the type of internalization that activated passion (Cardon et al., 2005; Lerner & Keltner, 2000). It thus proves there is a strong relation between how the entrepreneur internalized the passionate activity in the self, what is the focus of entrepreneurs’ venture-related cognitions, and how the person frames decision-making (Smith & Ellsworth, 1987).

Thus, in theoretically and empirically examining two new functions that passion fulfills in the entrepreneurial process—the emotion regulatory function and the decision-making logic coordination function—this dissertation offers additional and complementary explanations for the importance of passion for entrepreneurship. The current work goes over and above previous studies that looked at passion’s outcomes only considering its valence and offers a more nuanced conceptualization of passion’s functions in entrepreneurship and more fine-grained explanations of the mechanisms through which passion exerts its influence on various critical entrepreneurial outcomes.

5.4 The Dualistic Nature of Passion

The last research gap this dissertation tried to close referred to the disregard and lack of knowledge regarding passion’s dualistic nature and eventual duplicitous outcomes. Through its review of the passion literature in entrepreneurship, Paper I uncovers that current studies have almost exclusively focused on the harmonious side of passion, and shown mostly positive outcomes of such passion. This trend in passion research reflects a greater general trend in entrepreneurship research of looking at affect from its positive side and underlining its potential beneficial effects (Delgado Garcia et al., 2015). Starting from a currently accepted definition of passion as a positive affective state (Cardon et al., 2009), research in entrepreneurship focused on the study of positive outcomes of passion and found passion to invigorate entrepreneurial intentions (Huyghe et al., 2016) increase proaction, learning goal orientation and creativity (Syed & Mueller, 2015), enhance affective commitment of employees (Breugst et al., 2012), and even lead to venture growth (Drnovsek et al., 2016). These studies depict entrepreneurial passion as a beneficial attribute of the entrepreneur that will unmistakably have positive consequences for the new venture. However, passion might not always a positive force in entrepreneurship, leading to beneficial outcomes (Vallerand et al., 2003). The prospect that passion has a dark side as well has been empirically validated in previous studies that investigated passion in other domains such as sport, music or work (Philippe et al.,
However, these results from neighbouring fields have not been thoroughly acknowledged in entrepreneurship; in our field of research, passion's duality has not been systematically studied. Associating entrepreneurs' passion to only positive outcomes, without a simultaneous regard to possible detrimental outcomes, represents a distorted and fragmentary illustration of the passion phenomenon and fails to advance theory in this area. This one-sided emphasis on passion in entrepreneurship research highlights the need to acknowledge the dysfunctional, and not only the functional type of passion, as well as the circumstances under which either may occur.

This dissertation takes an important step in this direction by transferring the dualistic model of passion (Vallerand et al., 2003) from social psychology to entrepreneurship and providing a more differentiated understanding of the nature of passion, which is currently missing in unidimensional conceptualization of passion as a positive affect. This work acknowledges that, depending on how entrepreneurs internalize the passionate activity into their identities (for further detail, see Section 2.2.3), entrepreneurs' passion can take on a harmonious, or an obsessive nature. These two types of passion differ in important ways on various dimensions. While obsessive passion is associated with negative affect, and a defensive and rigid engagement in the venture-related activity, harmonious passion is related to positive affect and an open and flexible engagement with the venture (Vallerand et al., 2003). Moreover, in the case of obsessive passion, the involvement with the venture is outcome oriented and the achievement goals are focused on external performance, while harmonious passion is described by process and task orientation and mastery achievement goals (Vallerand et al., 2007). Because of these different definitional characteristics, harmonious and obsessive passion are expected to have different effects on a variety of entrepreneurial outcomes. They will be representative of two different types of affective engagement in the venture activities, and will influence entrepreneurs’ beliefs and action plans regarding the venture differently. By differentiating between the two types of passion, this dissertation offers a clear and precise representation of passion in entrepreneurship that uncovers crucial relations and potentially negative outcomes that would have otherwise remained covered up by prior undifferentiated conceptualizations of passion. Thereby, we invalidate existing standpoints that consider passion as always advantageous, and emphasize that the nature of passion counts. Then again, this new evidence is crucial for expanding the nomological framework of passion to comprise eventual detrimental outcomes of passion, and also in moderating the excessively positive perspective that is omnipresent at the moment, in both academic, as well as practice accounts.

First, as depicted in Figure 4, Paper II investigates how the obsessive nature of entrepreneurs' passion develops. Based on theory of identity-relevant stressors (Thoits, 1991), this study explores how a stressful context in the nascent stages of new venture creation influences entrepreneurs’ obsessive passion. These theoretical and empirical considerations rest on alternative ground than previous research—where passion is assumed to be merely the result of a positive experience (Cardon et al., 2009) —and thus expand the understanding on passion’s duality. Paper III acknowledges passion’s duality, distinguishes between harmonious and obsessive passion, and test whether passion has different emotion regulatory effects on other affective experiences, depending on its nature. This study uncovers that, because obsessive and harmonious passion differ in the aspects of the passionate activity they appraise as significant, they will regulate entrepreneurs’ negative affect differently. The results of Paper III uncover opposing regulatory effects of passion depending on its type. Specifically, obsessive passion upregulates, while and harmonious passion downregulates negative affect. Thus, Paper III proves that taking a differentiated look at passion is vital in understanding its emotion regulatory function and affective and motivational outcomes. Paper IV proves that taking
a dualistic view on passion in entrepreneurship is crucial in understanding another important function of passion in entrepreneurship, that of coordinating entrepreneurs’ choice of decision-making frame. Since passion’s obsessive and harmonious natures are reflective of different general cognitive approaches of the entrepreneurs toward the venture related activity, the two types of passion will guide entrepreneurs towards different decision-making frames. Thus, Paper IV underlines the importance of passion’s duality for entrepreneurs’ cognitive functioning.

This dissertation addresses this need to develop and test a more comprehensive framework of passion in entrepreneurship and gain an unbiased understanding over its functions and outcomes. This work extends the scholarly focus from only harmonious passion to both harmonious and obsessive passion, distinguishes the characteristics of these two forms of passion in entrepreneurship, investigates their development and demonstrates that they can have very different effects on the entrepreneurs’ affective, cognitive and motivational functioning. Therefore, it proves that considering passion in only one of its qualities will lead to an incomplete understanding of passion and its outcomes.

Lastly, this dissertation contributes back to the dualistic model of passion from psychology, by extending its validity domain to an emotionally intense work-context of entrepreneurship. This work expands the nomological net of the passion construct, by uncovering and describing new mechanisms through which both types of passion function, shedding light on the complexity of the passion phenomenon, and reinforcing its critical role in entrepreneurship.


6 LIMITATIONS

The dissertation is limited in at least three ways: (i) the empirical studies are based on samples of nascent entrepreneurs in Germany; (ii) the measures used to test the hypothesized relations are self-reported; (iii) real causality could not be assessed in all papers. Below I will briefly discuss those limitations.

The research context of this study focuses on nascent entrepreneurs. While nascent entrepreneurs are representative of the definition of entrepreneurship (Shane & Venkataraman, 2000), they are nonetheless distinctive from entrepreneurs at later stages of the new venture emergence process. Therefore, I cannot say for sure whether the relationships observed in this work would still be found with a sample of more advanced entrepreneurs. Although I am confident that the current findings would hold also in the case of entrepreneurs who are not in a nascent stage, I recommend future studies to replicate the present results and also to investigate new aspects of passion’s duality at different stages of entrepreneurs’ new venture journey, but also to explore the dynamics of passion over the course of the whole venture development. Moreover, given that our samples consisted uniquely of nascent entrepreneurs based in Germany, our results may also not be generalizable across cultures. Indeed, it might be that passion is experienced differently in different cultures. Therefore, we encourage further work to replicate our findings to see whether they hold also with other groups in entrepreneurs and in other geographical or cultural settings. Although enough for the purpose of statistical inference and in line with other entrepreneurship and psychology research (Cohen, 1978; Lykken, 1968), the studies are based on from fairly limited samples of nascent entrepreneurs, since entrepreneurs at this stage are difficult to identity and contact (Honig & Samuelsson, 2012). Furthermore, since this is the first study to empirically analyze passion among nascent entrepreneurs, the present empirical findings need to be replicated and validated further, to ensure confidence in the generalizability of the results.

Since the focus of this work was on entrepreneurs’ subjective experience of passion, the measures employed in the studies relied only on entrepreneurs’ self-reports, and not on more objective criteria (e.g., video recordings, third-person ratings of the entrepreneur’s passion). Although self-report scales of passion are the accepted standard in psychology and entrepreneurship research, inquiring entrepreneurs directly about their passionate feelings might be problematic. It might be limiting to ask entrepreneurs how they feel, because they might not always know, or, out of social-desirability issues, they might be reluctant to admit they are not passionate or that they are obsessively passionate. Future studies might address such limitations of self-surveys by deploying non-survey based approaches like ‘360-degree’ assessments of entrepreneurs’ passion from spouses, family, and employee reports, which might offer a better and more accurate understanding of the passion experience. However, the measures deployed here were used in previous research and have been shown to have stable reliability and validity. Nevertheless, affective experiences such as passion are very complex, thus it is necessary for this research to be replicated with additional measures.

Another limitation of this work is that, except for the study in Paper II, the other studies utilize a cross-sectional design (Paper III and Paper IV). Therefore, those studies are limited in their capacity to demonstrate causal conclusions as to whether passion regulates negative affect arising from fear of failure, or whether passion coordinates other perceptual variables in the choice of decision-making logic, even though these relations are supported by theory and by the nature of the constructs. Inferences of this
type can only be be drawn in longitudinal or experimental studies. However, considering that prior longitudinal work analyzing passion (in other contexts) showed that passion influenced subsequent affective experiences and drove subsequent cognitions and behaviors, might indicate that comparable causal relations could exist also in the entrepreneurial domain (Vallerand et al., 2007). Future research would benefit from adopting a longitudinal or experimental design to assess these possibilities and more fully establish the causality inferred herein. Such studies using a longitudinal research design and repeated measurements could help us further understand the interplay between short-term affective reactions, long-term affect, perceptions, and dispositional traits and could specifically shed more light on passion’s function over time.
7 IMPLICATIONS

7.1 Implications for Future Research

This dissertation places passion among perceptual, cognitive factors that play an important role in entrepreneurship and investigates the interrelations among them. First, Paper I demonstrated that perceptions of identity-relevant stress by the entrepreneurs could influence the nature of their passion. Specifically, perceiving role overload – especially when high levels of goal challenge and achieved progress enhance its motivational incongruence and motivational relevance, respectively – can facilitate the development of obsessive passion. Further studies could focus on other contextual stressors related to the identity-relevant entrepreneurial role (e.g. role ambiguity, role conflict) and investigate how these influence the nature of passion. Since this is the first empirical effort to investigate the development of passion’s obsessive quality, further research is needed to replicate our baseline findings in similar or different settings, while searching for additional mechanisms to those examined in this study. Moreover, to gain a better grasp of the development of passion, future research should track entrepreneurs’ passion over a longer period with repeated measurements. Such a study would yield further insight into this issue. For example, it would explain whether passion eventually settles into a harmonious or obsessive state after the critical initial venture phase or whether a particular type of passion re-emerges and intensifies depending on the circumstances at a given time. By doing so, future research could offer a better understanding of what entrepreneurial intensity during the nascent stages of the venture implies for the long-term affective experiences of entrepreneurs. Second, while Paper II demonstrated that cognitive perceptions of the entrepreneur can influence passion, the other studies in this dissertation uncovered that passion as well can influence cognitive processes of entrepreneurs. Paper III looked into how passion affects perceptions of failure cues, while Paper IV shows how passion can influence the way in which entrepreneurs’ perceptions of the environment and of the self are deployed. Thus, the relationship between passion on one hand, and cognition on the other might be bidirectional, indicating the possibility of a circular loop. Thus, future research employing a longitudinal research design could investigate more dynamic models of passion and cognition and examine these topics.

Previous literature has not yet touched on other functions passion fulfils in the entrepreneurial process, beyond valence-based functions that arise from the assumption that passion is a positive affective state. This dissertation went beyond, focused on passion’s nature as an enduring, intense feeling that involves cognitive appraisals of identity relevance of the venture identity, and theoretically and empirically uncovered its emotion regulatory function. Specifically, Paper III focused on co-occurring emotional processes and demonstrated that passion can regulate the developments of momentary negative affect arisen from the activation of fear of failure. We believe the present study opens a new perspective for looking at passion as a regulatory mechanism with self-regulatory power. Future research can go further and help us understand more about passion’s regulatory functions regarding other short-term affective states and the momentary circumstances at play. For example, considering that positive affect has been shown to increase predisposition to several cognitive biases (Busenitz & Barney, 1997), it would be interesting to understand whether the two types of passion increase or suppress momentary positive affect following the same regulatory direction as they did in the case of negative affect. While in this work, harmonious passion was found to downregulate negative affect, future research can investigate whether it upregulates positive affect. In the same line of thought, while the current work proves that obsessive
passion upregulates negative affect, it would be interesting to find out its regulatory effect on positive affect. Moreover, future research could explore co-occurrence and interaction of passion and other enduring affective states such as enduring grief, anxiety or depression that might come about in the case of new venture failure.

Paper IV of this study investigated the effect of passion on the entrepreneurs’ choice of decision-making frames. Specifically, harmonious passion was found to play a role in coordinating the choice of effectuation, while obsessive passion guided entrepreneurs toward choosing causation. In demonstrating that passion can help shape entrepreneurs’ choice of decision-making logic, our study stimulates further questions about the interplay between passion and decision-making. Given that this is the first study to empirically examine the relation between passion and decision-making logics such as effectuation and causation, the current set of findings need to be further replicated and validated, in order to offer greater proof of the generalizability of the results. For instance, future research can investigate further mechanisms by which passion might influence decision-making processes, besides those used in this work – the focus of the venture-related achievement process. Also, future research can also turn the causality assumption around and investigate whether it is decision-making logics such as effectuation/ causation, that, because of their focus on the venture tasks/ outcomes, influence the nature of entrepreneurs’ passion.

This work provides a theoretical and empirical justification of passion’s dualistic conceptualization and operationalization in the entrepreneurial domain. This elucidation contributes to the progress of the topic of study, by emphasizing the need to account for the various ways in which the new venture activity can be internalized into entrepreneurs’ identity and, successively, the need to differentiate the forms of passion entrepreneurs experience. First, this will enable researchers to rule out inessential measurement variance that may conceal important relations or generate conflicting results linked to passion, but also promote the advancement of a more comprehensive and more accurate nomological framework of passion in entrepreneurship that properly mirrors the distinct outcomes and determinants of each type of passion. Therefore, future research should consider differentiating theoretically and empirically between harmonious and obsessive passion when studying passion in entrepreneurship.

This work uncovered that the affective and cognitive outcomes of passion are unique to its type, whether harmonious or obsessive. The studies of this dissertation showed that, depending on its harmonious or obsessive nature, passion can regulate negative affect in different ways, and can coordinates perceptions towards different decision-making logics. However, this dissertation did not make any assumptions about the advantageousness of any of these outcomes for new venture performance, and by consequence did not conclude that one type of passion is better than the other. It might be too simplistic to coin harmonious passion as the beneficial type of passion, and obsessive as the detrimental one. This work refrained from doing so and advises future research to do the same. However, when looking exclusively at the outcomes of passion for the individual entrepreneur, this work did demonstrate that harmonious passion might lead to more functional outcomes than an obsessive one. Paper III showed that, while harmonious passion help the entrepreneur downregulate negative affect, obsessive passion actually upregulates it. As a matter of fact, the result found in this work mirror previous results from social-psychology. Such studies showed that, while both types of passion can lead to performance (Vallerand et al., 2007; 2008), they do so by talking different roads. While leading to performance, harmonious engagement in activities was shown to activate adaptive achievement goals and facilitate psychological well-being. On the other hand, obsessive engagement in activities involved maladaptive achievement
goals, prevented individuals from appreciating and indulging in the activity engagement and did not enable psychological well-being (Vallerand et al., 2007; 2008). Future research is needed to understand whether passion’s positive outcomes at the venture level (e.g. (Baum & Locke, 2004; Drnovsek et al., 2016) might equate to negative outcomes at the individual entrepreneur level. It could be that passion—the same force that drives the venture forward—can also consume and harm the entrepreneur as a person because of its intensity and the unilateral focus on the venture. Passion might be good for the new venture, but it might also negatively influences the well-being of entrepreneurs. This conflict of interest is worth further scholarly attention. Moreover, it is highly likely that neither of the two passion types are always beneficial or detrimental. Although it might have more positive outcomes for the entrepreneurs, harmonious passion might also have negative effects on the venture resulting from blindness to disconfirming evidence. On the other hand, although obsessive passion might be detrimental for the well-being and mental health of the entrepreneur, it might lead to focus on high achievement on venture tasks. Future research could investigate interesting questions such as under which circumstances each type of passion is preferable from various points of view.

It is worth pointing out that the conceptualization and measurement of passion used in this dissertation does not contravene the model of entrepreneurial passion advanced by Cardon and colleagues (2009). Cardon et al. (2009) called attention to the existence of various entrepreneurial role identities, based on three major venture-related activities: (1) an inventor identity, in which the passion is focused on recognizing, creating, and exploring new opportunities; (2) a founder identity, in which the passion is focused on launching a venture for commercializing and exploiting opportunities; and (3) a developer identity, in which the passion is focused on fostering, growing, and expanding the venture after its launching. Howsoever, they assumed that passion for these three role identities is mainly a positive force. This work does not reject the assertion that entrepreneurs experience different degrees of passion for various entrepreneurial roles. Instead, it argues that one’s research question should ultimately guide the selection of the framework used to study passion: whether referring to the entrepreneurs’ overall role, or to more detailed entrepreneurial roles. In fact, future research should bring the two perspective together, investigating the harmonious or obsessive nature of various entrepreneurial roles. Future studies can explore how entrepreneurial passion for inventing, founding, or developing can take on a harmonious or obsessive quality, investigate how these may complement or substitute for each other, as well as look at the implications of different combinations for the individual entrepreneur and new venture outcomes.

7.2 Practice Implications

For entrepreneurs and individuals or organizations that counsel them, the findings of this work offer interesting insights that might increase entrepreneurs’ chances of successfully engaging in the entrepreneurial processes. This dissertation takes a differentiated look at passion and uncovers duplicitous and contrasting effects of passion depending on its nature. By acknowledging the differences between harmonious and obsessive passion’s outcomes, this study suggests that glorifying passion and trying to foster it independently of its type might not be desirable nor possible without also recognizing and taking into account its possible negative side.

First, this work indicates that entrepreneurs should understand and acknowledge all aspects of their passionate feelings. By doing so, they may be better prepared to overrule
potential negative effects of passion, while reaping its benefits as a source of motivation and resilience. A very first step for taking charge of passion and avoiding its potentially dysfunctional effects would be gaining awareness that such outcomes might accompany the experience of passion (cf. Baron, Branscombe, & Byrne, 2008). Second, passionate entrepreneurs should practice detachment from initial plans and ideas and try to consciously regulate their excitement levels (cf. Carver & Scheier, 2001) in an effort to remain flexible in their thinking (Dirks, Cummings, & Pierce, 1996). From the above arguments, emotional intelligence emerges as an important skill for reaping the positive outcomes and minimizing the negative outcomes of passion. Research by Salovey and Mayer (1990) and Goleman (1998) has suggested that emotional intelligence is a trainable ability. Educators should focus on teaching future entrepreneurs not only how to identify and distinguish their emotions, but also how to regulate or adjust them, as well as their related behavioral tendencies (Gross, 1998; Kerr, Garvin, Heaton, & Boyle, 2006). By acknowledging the nature of their own passion, emotionally intelligent entrepreneurs will sample their affective impulses and deploy this information to construct behaviors and responses in emotionally intense situations (Rafaeli & Sutton, 1990).

Even though this study did not investigate nor find proof of potential negative outcomes of passion on the new venture performance, it suggested that passion could have negative effects on the well-being of the entrepreneur. Obsessive passion may form part of the affective–motivational foundation that helps entrepreneurs persevere even when facing challenges. However, despite its potentially beneficial outcomes for the new venture performance, obsessive passion could boost negative affective experiences and therefore have negative effects on entrepreneurs’ well-being, as Paper III shows. This implies that, if the goal of entrepreneurs is to maintain a pleasant engagement in the new venture activities and increase their personal well-being, they should try to develop harmonious passion and inhibit the development of obsessive passion. Further results of this research offer suggestions on how to do so. By showing that the nature of passion can develop and change after its emergence, unlike stable traits, the present findings offer more actionable recommendations on how entrepreneurs can avoid develop their obsessive passion. Specifically, since obsessive passion might originate from the stress of entrepreneurial endeavours and develop into an integral part of their passion, entrepreneurs might benefit from developing resilience and strategies to cope with role stressors. Moreover, the people and the context surrounding the entrepreneurs can assist in this regard. Autonomy support from the work environment has been shown to increase entrepreneurs’ feelings of autonomy and therefore harmonious passion (Vallerand et al., 2003). A contextual social environment that supports autonomy will give entrepreneurs a sense of ownership regarding their behavior and decisions and will encourage their initiatives and support them in their quest. On the other hand, a controlling social climate will cause entrepreneurs to feel coerced into behaving a certain way, will judge them by outcomes unrelated to the activity itself, will force deadlines on them, and encourage comparisons with competition. Incubators, government agencies, and often investors are those who constitute the social climate around entrepreneurs, who can therefore help mitigate negative outcomes of entrepreneurs’ passion. Main tasks of these stakeholders, therefore, should be to promote open communication, flexible work designs, and supervisory empowerment practices, which may encourage nascent entrepreneurs to take ownership in their new venture and develop a sense of autonomy (Deci & Ryan, 2010).
REFERENCES


What Do We Know about Passion in an Entrepreneurial Context?

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To be published in a forthcoming book edited by Robert Vallerand

Abstract

The notion of passion has received increasing attention from entrepreneurship scholars in the past decade. Passion is the motivational and inspirational force that keeps entrepreneurs advancing and helps them succeed in the face of the uncertainty, hostility, and stress that characterize the entrepreneurial process. This chapter surveys the literature on the outcomes of passion in entrepreneurship. The findings reveal that passion is consequential not only with respect to intrapersonal outcomes (affect, cognition, behavior, and performance), but also for interpersonal results. The review offers specific suggestions that will be instrumental in carrying out future research regarding the role of passion in entrepreneurship and specifies implications for entrepreneurship practitioners.

Key Words:

Passion, entrepreneurship, harmonious passion, obsessive passion, cognitive processes, interpersonal relationships, performance, outcomes of passion

1. Entrepreneurship Research on Passion

Many successful entrepreneurs have credited their success to passion. Steve Jobs, founder of Apple, emphasized the role of passion in persisting and reaching one's business goals, and Richard Branson, who created Virgin Records and revolutionized the music industry, indicated passion is one of the strongest predictors of an idea's success. Indeed, passion is profoundly ingrained in the tradition and practice of entrepreneurship. Only ten years ago, however, did entrepreneurial passion catch the attention of entrepreneurship researchers. Basing their ideas on the foundational work of Robert Vallerand from psychology, entrepreneurship scholars have moved the research base forward in meaningful ways. They have differentiated entrepreneurial passion from related concepts, derived a generally accepted definition of the concept, and developed a measuring tool specific to passion as experienced by entrepreneurs. On this basis, an increasing amount of research has been conducted, especially on the outcomes of passion, all critical to the entrepreneurial process. This chapter reviews this research. At this stage, when research on passion in entrepreneurship is surpassing its nascent stage, a systematic review of the literature is needed to summarize existing evidence and inform meaningful future research directions. To thoroughly review the current state of scholarship on passion's outcomes in entrepreneurship, we conducted a systematic literature review following the process.
Tranfield, Denyer, and Smart (2003) and Macpherson and Jones (2010) suggested, which has been applied in recent review articles (e.g., Cacciotti & Hayton, 2015; Wang & Chugh 2014). We searched leading electronic databases such as ABI-Inform, Business Source Premier, and the American Psychological Association’s databases. We used the search terms “passion” AND “entrepreneur*” or “new venture” in titles and abstracts and covered the period up to and including December 2016. The search terms are inclusive enough to account for the most relevant articles within the conceptual limits and sufficiently exclusive enough to remove irrelevant studies. We chose to include conceptual articles, because passion research in entrepreneurship is still at an early stage, with some important works being conceptual. Moreover, we included books and dissertations in our review to gain a broader view on the state of the research. This process resulted in 33 published articles, one book, one dissertation, and two conference papers, amounting to 37 studies published between 1989 and 2016. Notably, the majority of these were published after 2005. In the sections that follow, we draw on the findings from this comprehensive literature review to first present the various conceptualizations of passion existing in entrepreneurship and substantiate their complementarity. Next, we summarize and systematically present the research progress on passion’s outcomes in entrepreneurship. Finally, we outline an agenda for future research and describe practical applications worthy of deliberation.

2. Conceptualizations of passion in entrepreneurship

2.1. The dualistic model of passion versus entrepreneurial passion

Passion has always been at the heart of entrepreneurship (Cardon, Zietsma, Saparito, Matherne, & Davis, 2005). Bird (1989, p. 7-8) suggested that “entrepreneurial behavior is passionate, full of emotional energy, drive, and spirit.” Similarly, Smilor (1997, p. 342) indicated that passion is “perhaps the most observed phenomenon of the entrepreneurial process.” The notion of entrepreneurial passion, however, has gained focused scholarly attention only in the past 10 years.

Early entrepreneurship research treated passion as a personal trait, focusing less on the precise objects that passion is projected on. For example, Baum and colleagues (Baum & Locke, 2004; Baum, Locke, & Smith, 2001) conceptualized passion as one important element of a chief executive officer’s individual traits, mirroring the love, affective attachment to, and longing for work. Even if scholars considered passion a personality trait, these early efforts to delimitate passion have a common focus on affect, especially positive affect. Thereafter, Baum and Locke called passion (for work) “love” for work (2004, p. 588); Shane, Locke, and Collins called it a “selfish love of work” (2003, p. 268); and Smilor (1997, p. 342) defined passion as the “enthusiasm, joy, and even zeal that come from the energetic and unflagging pursuit of a worthy, challenging, and uplifting purpose.”

Cardon, Wincent, Singh, and Drnovsek (2009) introduced a theoretical conceptualization of passion in entrepreneurship, diverging from the trait perspective on passion. These authors conceptualized passion as an affective experience that forms at the intersection between the individual and the venture and guides cognitions and behavior. They drew on the affect and identity literatures and defined entrepreneurial passion as “consciously accessible, intense positive feelings experienced by engagement in entrepreneurial activities associated with roles that are meaningful and salient to the self-identity of the entrepreneur” (Cardon et al., 2009, p. 517). Their theoretical work has
prominent implications for understanding the nature of entrepreneurial passion and the
cognitive mechanisms through which it influences entrepreneurial behaviors. These
authors’ definition underscores the critical elements of affect and identity in defining
entrepreneurial passion in several ways. First, they suggested that passion is
accompanied by positive affect. This could have a significant direct or indirect effect on
individual behaviors via enhanced motivation reflected in their goal cognition, according
to the affect and motivation literatures (Fredrickson, 2004; Seo, Barrett, & Bartuneck,
2004). Second, Cardon et al. (2009) called attention to the importance of
entrepreneurial role identity and conceptualized three distinct entrepreneurial role
identities based on three major venture-related activities: (1) an inventor identity, in
which the passion is focused on recognizing, creating, and exploring new opportunities;
(2) a founder identity, in which the passion is focused on launching a venture for
commercializing and exploiting opportunities; and (3) a developer identity, in which the
passion is focused on fostering, growing, and expanding the venture after its launching.
These different types of passion related to different identity roles affect goal-
related cognitions differently, and lead to various entrepreneurial outcomes, depending on their
type (Cardon et al., 2009). Studies on passion in entrepreneurship started using this
conceptualization and the corresponding developed scale (Cardon, Gregoire, Stevens, &
Patel, 2013). Guided by the definition of passion as a positive feeling, the vast majori-
ty of these studies focused on positive outcomes of entrepreneurial passion (Breugst,
Domurath, Patzelt, & Klaukien, 2012; Drnovsek, Cardon, & Patel, 2016; Cardon & Kirk,
2015; Syed & Mueller, 2015).

An alternative, model of passion grounded in the psychological theory of self-
determination (Deci & Ryan, 2000) and validated in various contexts is the dualistic
model of passion by Vallerand and colleagues (2003). This model distinguishes between
harmonious and obsessive passion. Harmonious passion refers to a strong, but balanced
predisposition to engage in the entrepreneurial activity freely and with a sense of desire,
while obsessive passion is a more intense and unbalanced type of passion where the
entrepreneur overly engages in the venturing activity out of intra- and/or interpersonal
pressures (Vallerand et al., 2003). Result from other domains such as work, or sports,
have demonstrated that more adaptive consequences are assumed to follow from
harmonious than obsessive passion (Vallerand, 2010).

Some studies have focused on harmonious (Murnieks, Cardon, Sudek, White, & Brooks,
2016) or obsessive passion (Huyghe, Knockaert, & Obschonka, 2016) individually,
however only investigating positive outcomes of these two types of passion. Thus, studies
in entrepreneurship have yet to rigorously considered the duality of passion. Anchoring
entrepreneurial passion in the dualistic model of passion allows researchers to study
passion for entrepreneurial activities more broadly, without having to focus on specific
roles such as inventing, founding, and developing, which are the focus in Cardon et al.’s
(2009) theoretical considerations about entrepreneurial passion.

These two research streams—Vallerand and colleagues’ (2003) dualistic model of
passion and Cardon and colleagues (2009) theory of entrepreneurial passion—have
evolved in relative isolation. However, disregarding small variations in their definitions,
considerable overlap exists between them. First, both research streams assume that
passion includes affective elements, specifically intense positive emotions focused on an
object or activity meaningful to the individual’s identity. Second, both models
acknowledge the need to include identity aspects as key to the motivational power that
derives from passion. Even though Cardon et al. (2009) are more unambiguous about
including entrepreneurial identities in the definition of entrepreneurial passion,
Vallerand and his colleagues (Vallerand et al., 2003; Vallerand et al., 2007) as well have emphasized the significance of connecting passion to identities.

Whereas entrepreneurial passion focuses on the object of passion (the different activities that fulfill different roles), the dualistic model of passion applied to entrepreneurship relates to the quality of the passion. Thus, Vallerand et al.’s (2003) dualistic model of passion and Cardon et al.’s (2009) conceptualization of entrepreneurial passion provide complementary perspectives. Indeed, entrepreneurial passion for inventing, founding, or growing can be harmonious or obsessive. Cardon and colleagues (2009) mentioned the potential for obsessive passion, which could arise from these role identities and acknowledged that experiencing entrepreneurial passion too intensely may lead to obsessive, blind, or misdirected responses. On the other hand, Vallerand’s dualistic model of passion recognized and even emphasizes that passion is a domain-specific motivational concept.

Recognizing that the two existing categorizations of passion can be applied concomitantly to explain and measure the passion entrepreneurs feel, scholars are starting to integrate the dualistic model of passion with Cardon’s definition. (For two examples of such integration, see Murnieks et al., 2016 and Huyghe et al., 2016.)

### 2.2. Other conceptualizations of passion

#### 2.2.1. Affective, cognitive, behavioral passion

Although passion’s accepted definition categorizes it as pertaining to the realm of affect (Cardon et al., 2009), researchers have not ignored the fact that, due to its intensity, the experience of passion will permeate entrepreneurs’ thinking and acting as well. In explaining the way in which the entrepreneur’s passion can influence potential investors, Chen, Yao, and Kotha (2009) expanded the conceptualization of passion by differentiating between affective, cognitive, and behavioral passion. They defined entrepreneurial passion “as an entrepreneur's intense affective state accompanied by cognitive and behavioral manifestations of high personal value” (p. 201) and explained that passionate entrepreneurs not only experience and exhibit intense and positive emotions toward their projects, but their thoughts are constantly occupied by business venture issues, and they are likely to mobilize resources and act to address their passion.

Affective manifestations of passion can include verbal expression (the use of vocabularies that specify one’s affective state, such as “excited” or “enthusiastic”), as well as nonverbal cues (the use of body language and facial expressions, such as ample gestures or smiles). Cognitive manifestations of passion have been equated with the entrepreneur’s cognitive preparedness in business matters, for example, through thorough preparation and an elaborate business plan or business presentation or through purposeful answers and creative solutions to any concerns stakeholders may raise (Chen et al., 2009; Mitteness, Sudek, & Cardon, 2012). Behavioral expressions of passion are more difficult to perceive (Chen et al., 2009) and are reflected by the degree of commitment to one’s venture and by more extensive planning and preparation.

Social psychologists have supported this view on passion, by treating passion as a motivational concept that comprises affective, cognitive, and behavioral constituents. For example, Vallerand et al. (2003, p. 756) defined passion as “a strong inclination toward an activity that people like [affective], that they find important [cognitive], and in which they invest time and energy [behavioral].” However, it is worth mentioning that
some researchers in the entrepreneurial field disagree with the argument presented above. They consider cognitive and behavioral manifestations of passion, as outcomes of passion, and not consituents of the passion experience itself (Mitteness et al., 2012).

2.2.2. Experienced, displayed and perceived passion

As it will be explained in more detail in Section 3, passion not only affects the individual entrepreneur experiencing it, but it also effects the people around the entrepreneur, such as employees, partners, customers, or investors. Because passion may strongly indicate how dedicated entrepreneurs are to investing personal resource (such as time and effort) required to make the new venture successful (Vallerand et al., 2003), researchers have argued that it plays a critical role in convincing external stakeholders such as investors, employees and customers trust and commit to the new venture (Chen et al., 2009). As such, researchers have further distinguished between the passion that entrepreneurs experience (i.e., feel), the passion entrepreneurs display to others, and the passion other stakeholders in the firm perceive. Whereas some scholars have exphasized passion as felt by entrepreneurs (e.g., Klaukien et al., 2013; Cardon et al., 2009), others have suggested that displayed and perceived passion is just as critical (Cardon, 2008, Chen et al., 2009), because it focuses on how external parties perceive the entrepreneur and the new venture.

The distinction between experienced passion and displayed passion is tied to the fact that, while entrepreneurs are able to display, and do indeed show genuine emotions at times, they might also employ emotional labor to exhibit affective states they do not feel, or obscure other emotions they do feel, with the goal of gaining some sort of advantage (Dashborough & Ashkanasy, 2002; Rafaeli & Sutton, 1987). Displayed passion, in turn, is distinct from perceived passion. Displayed affective, cognitive, and behavioral signs of passion might not be perceived in the same way by different people, or external stakeholders might perceive the displayed passion as insincere (Cardon, Sudek, & Mitteness, 2009; Mitteness et al., 2012).

2.2.3. Team passion

Entrepreneurial passion researchers recognize that, in most cases, it is teams, and not solo entrepreneurs who found and lead most new ventures. Because individual entrepreneurs can vary greatly in the intensity and foci of their passions (Breugst et al., 2012; Cardon et al., 2013), teams may also vary in the extent to which members are similar or different in their individual entrepreneurial passions and in the extent to which they can form a shared team passion for a common identity. To date, two conceptual studies have looked at entrepreneurial passion in teams and have tried to understand how an entrepreneur's passion functions when he or she is part of a founding team, and when each founding member of the team experiences different types of passion.

In their 2009 work, Drnovsek, Cardon, and Murnieks conceptualized collective passion “as the combined entrepreneurial passion experienced by members of a team of entrepreneurs, including potential differences in the level and focus of each member's individual passion” (Drnovsek et al., 2009: 193). They proposed that depending on the type of collective passion within the team, the entrepreneurial team’s affective dynamics will differ. According to the authors, a balanced team occurs when at least passion for each of the three key role identities—inventor, founder, developer, and all members feel at least one of the three types of passion. Such teams will have moderate team cohesion,
cognitive conflict, and affective conflict, making the balanced passion constellation the most desirable. A focused team, in which all members feel passionate toward the same role identity, will have high team cohesion and cognitive conflict, and low affective conflict. Lastly, a mixed team, in which some team members feel passion for any of the entrepreneurial roles, will have low team cohesion, temperate cognitive conflict, and high affective conflict. A mixed team, therefore, is the least preferable passion constellation. Drnovsek and colleagues (2009) opened up the discussion about the importance of a team’s different passion constellation for team dynamics and, ultimately, for team performance.

In a recent article, Cardon, Post, and Forster (2016) went one step further and conceptualized team entrepreneurial passion as the passion of the team overall, not the combination of team members’ individual passions. Building on the theoretical framework of the emergence and influence of group emotions (Barsade & Gibson, 1998), the authors looked at the team, and not the individual, as the reference point for feelings and identity centrality. In other words, they asked, “How passionate is the whole team for inventing, founding, and developing?” Such team entrepreneurial passion encapsulates the collective identity and shared emotions of the team, independently of individual team members’ identities or emotions. Cardon and colleagues (2016) showed how a team’s diversity along two identity-based affective dimensions (focus and intensity) can combine to influence the emergence of team-level affect and the quality of the new venture team’s processes and performance. They found that poly-focal team entrepreneurial passion (when members share positive, intense feelings for a collective identity with multiple foci) has a stronger influence on team performance than mono-focal team entrepreneurial passion (when members share positive, intense feelings for a collective identity with one focus). Moreover, team entrepreneurial passion is also thought to influence the new venture team members’ own individual passion foci and intensities, as well as their exits and entries.

3. Outcomes of passion in entrepreneurship

Next we present the extant findings of the literature review on passion’s outcomes in entrepreneurship. We grouped these studies based on the type of outcomes of passion they consider, either intrapersonal outcomes for the individual entrepreneur or interpersonal outcomes for other stakeholders surrounding the entrepreneur, such as investors or employees. Furthermore, we categorized the intrapersonal outcomes into affective, cognitive, behavioral, and venture performance outcomes.

3.1. Intrapersonal outcomes

3.1.1. Affective outcomes

Affective outcomes refer to entrepreneur’s types of emotional experiences, such as emotions and feelings, either negative or positive, experienced in the entrepreneurial process. Consistent with early works on entrepreneurial passion by Bird (1989) and Smilor (1997), who defined passion as emotional energy and a driving force, other studies found that passion leads to feelings of empowerment, energy (Bierly et al., 2000), enthusiasm (Cardon et al., 2005), pride (Bierly et al., 2000), and love (Baum & Locke, 2004; Cardon et al., 2005). Furthermore, passion helps gauge positively valenced inclinations, while helping entrepreneurs cope with negative experiences (Murnieks, Mosakowski, & Cardon, 2014).
The affective consequences of passion in entrepreneurship definitely warrant further scholarly attention. Although passion has been generally considered a positive feeling, research in other domains suggests it can also lead to negative affective experiences and be detrimental for the entrepreneur’s well-being and mental health (Mageau et al., 2005; Philippe et al., 2010; Ratelle et al., 2004). Indeed, it could be that passion, the same force that drives the venture forward, can also consume and harm the entrepreneur him- or herself because of its intensity and the unilateral focus on the venture.

3.1.2. Cognitive outcomes

The interaction between feelings and cognition has interested entrepreneurship scholars in their quest to understand how the former influences the latter. Indeed, most studies on passion in entrepreneurship have concentrated on cognitive outcomes.

Passion influences the thinking of entrepreneurs from the start of the entrepreneurial process, during the intention formation phase. Research has supported this assumption and found passion to enhance startup intentions by invigorating entrepreneurs’ considerations of feasibility and desirability (Biraglia & Kadile, 2016; DeClercq, Honig, & Martin, 2013). Huyghe and colleagues (2016) further showed how, in the academic context, researchers’ entrepreneurial passion for inventing was related to higher spin-off and start-up intentions. Indeed, researchers’ obsessive scientific passion was found to be positively related to their intentions to create a spin-off, but negatively associated with their inclination to start a venture. These results highlight the importance of recognizing the different aspects of an individual’s passion, be its object or its quality.

Furthermore, passion was hypothesized to influence the goal-setting process in entrepreneurship. In their influential conceptual article on entrepreneurial passion, Cardon et al. (2009) identified passion as a provider of coherence for goal-directed cognitions. Specifically, they proposed that entrepreneurial passion will impact the level of difficulty intrinsic to the goals entrepreneurs set for themselves and their ventures, their commitment to these goals, and the way they strive to achieve these goals. According to Cardon and colleagues (2009), passionate entrepreneurs hold bolstered success beliefs and an inflated belief in their competences and resources and therefore set more challenging goals for themselves and their ventures. Moreover, entrepreneurial passion should lead to more goal commitment. Thereafter, when identity-relevant goals are triggered by positive emotions, entrepreneurs feel highly motivated to pursue the set goals (Baron & Ward, 2004), are highly committed to them. Interestingly, however, entrepreneurial passion was assumed to lead to lower levels of goal striving, since passionate entrepreneurs are less sensitive to contrary market information, and therefore not likely to go back and to make regular and systematic evaluations of goal progress. Therefore, they will be less prone to alter and adjust their initial goals and plans. Other researchers have investigated the relationship between passion and goals. For example, Baum and Locke (2004) found passion led to higher goals, whereas Syed and Mueller (2015) found a positive relationship between passion and learning goal orientation. Drnovsek and colleagues (2016) investigated the relationship between the experience of entrepreneurial passion for developing and goal-setting and found that passion for developing leads to goal commitment, but not goal challenge.

Entrepreneurial passion is also believed to affect the degree to which entrepreneurs believe they can achieve the goals they set for themselves and their ventures. Accordingly,
self-efficacy was investigated as another important cognitive outcome of passion. Indeed, an individual’s self evaluation of his or her physiological state was assumed to increase self-efficacy (Wood & Bandura, 1989). In such cases, positive stimulation and enjoyable affective states linked with an activity can boost confidence in one’s ability to succeed at that activity. Baum and Locke (2004) demonstrated that a passion for work is positively associated to the entrepreneurs’ self-efficacy of entrepreneurs. Following this line of thought, Murnieks et al. (2014) found that entrepreneurs’ passion is positively associated to their self-efficacy. Similarly, Baum et al.’s (2001) study showed that passion can lead to increased feelings of competency.

Passion permeates entrepreneurs’ judgement and leads them to believe their work is meaningful (Bierly et al., 2000; Ma & Tan, 2006) and satisfying (Thorgren et al., 2013). Passion also leads entrepreneurs to intensely identify themselves with the venture (Cardon et al., 2005) and experience success and difficulties as personal events (Bird, 1989). Although this identification forms the essence of passion, it is not necessarily functional. Research has supported the notion that entrepreneurial passion sustains optimism in the face of setbacks (Bird, 1989). However, some conceptual works suggested that passion might also include positive illusions, which in turn may facilitate cognitive biases, distort entrepreneurs’ perceptions and lead to increased opportunity exploitation (Branzei & Zietsma, 2003) or rigid insistence with chanceless courses of action (Winnen, 2005).

Reflecting the above study results, Winnen (2005) found in a qualitative study that passion influences the entrepreneur’s entire decision-making process, from strategies, to the planning process, to the venture’s direction and focus. Taking these research findings together, we can conclude that entrepreneurial passion can have wide and ambivalent effects on the cognition of entrepreneurs, from entrepreneurial intentions and goal setting, to believing in themselves and in their venture and role tensions.

### 3.1.3. Behavioral outcomes

Passion was found to influence entrepreneurs’ behavior along the entire entrepreneurial process. In their study on hybrid entrepreneurship, Thorgren, Nordström, and Wincent (2014) found that entrepreneurial passion is the key reason for combining fixed employment with a side venture, and that it leads individuals to develop parallel self-employment– dependent employment occupations. Once the decision to engage in entrepreneurship has been made, passion was found to affect entrepreneurs’ alertness and the opportunity identification process. Specifically, passion indirectly increases entrepreneurs’ alertness (through proaction, learning goal orientation, and creativity, [Syed & Mueller, 2015]) and was assumed to facilitates entrepreneurial opportunity recognition and idea development (Brännback et al., 2006; Shane et al., 2003). However, the effect of passion on opportunity recognition was assumed to not always be positive. According to Winnen (2005), entrepreneurial passion might limit the types of opportunities entrepreneurs were willing to explore because they focus on opportunity recognition related to their area of their passion. Passion was found to play a role not only in opportunity recognition, but also in the decision to exploit opportunities. Klaukien et al. (2013) found that passion exercised a general positive influence on owners-managers’ tendency to exploit new product opportunities. In addition to opportunity search and exploration, passion has also been found to assist opportunity execution (Shane et al., 2003) and competitive strategy (Baum et al., 2001).
A comprehensive theoretical account of the effect of passion on entrepreneurial behavior is found in Cardon et al.'s (2009) theoretical framework of entrepreneurial passion, which holds that passion leads to persistent behavior toward the venture activities. Indeed, the main behavioral outcome of passion that has been investigated in entrepreneurship seems to be persistence, harder work, and greater effort. When entrepreneurial activities are not only enjoyable but are also highly significant to one's identity, as with passion, it can be expected that individuals will be prone to persist. As such, they can enjoy the positive experiences longer, reinforce their highly regarded identity, and diminish the risk of identity loss caused by disengaging prematurely from the activity (Cardon et al., 2009). Cardon et al. (2013) assumed that passion for founding and for developing ventures are associated with greater persistence. Further studies relate entrepreneurial passion with entrepreneurs’ persistence and greater effort (Bird, 1989; Murnieks et al., 2014; Winnen, 2005), tenacity (Bird, 1989), commitment (Bierly et al., 2000), grit (Syed & Mueller, 2014), and proaction (Syed & Mueller, 2015) and have revealed it to be a moderator of the relationship between entrepreneurial self-efficacy and persistence (Cardon & Kirk, 2015).

Passion was assumed not only to increase the intensity and time entrepreneurs dedicate to their ventures, but also the quality of their involvement. Accordingly, Cardon et al., (2009) consolidated passion as a direct and indirect antecedent of creative problem solving. Based on the psychology of positive emotions (Fredrickson, 2004), Cardon et al. (2009) asserted that passion allows entrepreneurs to identify original information patterns, process new stimuli and existing knowledge in new ways to come up with creative answers to problems. When passion is too positive or intense, however, an entrepreneur may refuse to engage in alternative courses of actions, out of the fear that this may diminish and divert from the currently experienced positive feelings. This may curtail the efficient and open-minded style of problem-solving usually ascribes with passion. Thus, entrepreneurial passion is thought to have an inverted U-shaped relation with on creativity in the various passion domains (inventing, founding, growing) (Cardon et al., 2009). In the same study, Cardon and colleagues (2009) also explained that when entrepreneurs experience passion, they feel a positive exhilaration and ignore activities or people that may distract them from the passionate activity. Therefore, entrepreneurial passion is thought to be positively associated to be absorbed in the venture activity.

Moreover, passion has been hypothesized to increase the quality of entrepreneurs’ involvement with ventures by improving their communication behavior; thereafter, passion might promote emotional display, help entrepreneurs communicate their vision, and lead to transformational leadership (Cardon, 2008).

3.1.4. Performance outcomes

Passion in entrepreneurship has typically been indirectly associated with venture performance. Baron and Hannan (2002) found founders’ passion to be associated with human resource expertise and therefore a lower likelihood of organizational failure. Baum and his colleagues (Baum & Locke, 2004; Baum et al., 2001) proves that passionate love for work does not influence venture growth in a direct way, but instead functions through mediation by a variety of behavioral-related mechanisms, such as goals or self-efficacy. In a study of New Zeelander entrepreneurs and employees, Haar, Taylor, and Wilson (2009) found that a passionate entrepreneurs could augment his or her venture’s entrepreneurial culture; moreover, this entrepreneurial culture was shown to increase in turn the financial performance of the firm.
The noteworthy exception of a work that directly associates passion with performance is a recent study by Drnovsek and colleagues (2016), who found direct positive consequences of passion for developing on new venture growth and an indirect positive effect through goal commitment.

### 3.2. Interpersonal outcomes

Entrepreneurial research has recognized that passion is often critical to convince investors, employees, or customers to commit their financial resources, time, or effort in the new venture. Indeed, early in entrepreneurial passion research, passion was thought to mobilize others’ beliefs and energy (Bird, 1989).

#### 3.2.1. Outcomes on investors

In one of the first articles that empirically investigated the interpersonal effects of entrepreneurial passion, Chen and colleagues (2009) looked at passion in the setting of business plan presentations and conceptualized passion as having two different but related constituents—an affective part, passion, and a cognitive part, preparedness. Passion is displayed through verbal and non-verbal indicators such as facial expressions, gestures and tone, while preparedness is revealed in the quality and the degree of preparation of the business presentation. Chen and colleagues (2009) found that the cognitive side of passion had a substantial positive influence on the investment decision on venture capitalists, while the affective side of passion was not significant.

Although counterintuitive, Cardon et al. (2009) supported the finding about the lack of significance of affective passion for venture capitalists’ funding decisions. Their results showed that investors used displayed cognitive passion (preparedness) in their investment decisions. However, displayed affective passion (enthusiasm) and displayed behavioral passion (commitment) were not found to have the same effect. Interestingly, this same work found that the relationship between the three types of displayed passion and greater funding chances was found to be mediated by passion that perceived by investors at an initial screening phase, but not at a later funding phase. This suggests that displayed passion varies depending might matter differently depending on the phase of the investment process.

The effect of affective passion on investor decision, not supported Chen et al. (2009) and Cardon et al., (2009), was found to be important in a study conducted by Hsu, Haynie, Simmons, and McKelvie (2014). In an experimental conjoint analysis of more than 2700 investment decisions, these authors found that angel investors and venture capitalists are more likely to invest in an opportunity if they perceive that the entrepreneur displays affective passion. Moreover, the entrepreneurs’ passion was found to be more important for angel investors than for venture capitalists. In the same line of thought, Davis, Hmieleski, Webb and Coombs (forthcoming) found that perceived affective passion of the entrepreneur will moderate the degree to which perceived product creativity generates positive affective reactions in funders. Murnieks et al. (2016) found similar results: investors will evaluate entrepreneurs who show greater passion more favorably. Mitteness et al. (2012) also found a relation between perceived affective passion and positive assessments of funding potential. Furthermore, they explored how various personal characteristics of investors influence the relation between passion as perceived by the investor and assessments of funding potential. Their findings suggest a stronger relation in the case of older, more intuitive investors, who had a highly open personality
and were willing to act as mentors. Unexpectedly, the relation’s strength declines for investors who were extraverted and had a promotion-dominated, regulatory focus.

### 3.2.2. Outcomes on other stakeholders

Regarding the effect of entrepreneurial passion on employees, this relationship has been investigated in only two studies, despite its importance. In her 2008 conceptual article, Cardon suggested that entrepreneurial passion can be transformed into employee passion, which was defined as a combination of employees’ positive and intense feelings (affective component) with their perceptions of organizational meaningfulness (cognitive component). Thereafter, entrepreneurs’ passion would promote emotional display, which through the mechanism of emotional mimicry could lead to similar positive and intense feelings in employees. Moreover, Cardon (2008) advanced the proposition that passionate entrepreneurs are likely to be transformational leaders, and this, in turn, may enhance the social comparison process of passion contagion. However, passion was not expected to affect the identity relevance and meaningfulness of the organization for employees.

An interesting empirical account of the effect of entrepreneurs’ passion on employees is given in Breugst et al. (2012). They showed that employees’ perceptions of the entrepreneurs’ passion for inventing, founding, and developing affect employees’ positive affect experienced in the job, as well as their goal clarity, thus influencing their commitment to the new venture. While perceived passion for inventing and growing had a positive effect on employees’ positive affect experienced at work and, therefore, on employees’ affective commitment towards the venture, perceived passion for founding, however, was found to negatively influence employees’ positive affect and therefore, indirectly, their affective commitment. These interesting results prove that passion does not function only through its contagious force as positive affect, but that it also has a signaling function regarding presumed goals and attitudes of the passionate entrepreneur.

### 4. Areas for future research

Based on this review, it is evident that significant progress has been made in conceptualizing entrepreneurial passion and examining its positive and negative consequences. On the other hand, substantive knowledge gaps surfaced. Firstly, with one exception, this systematic literature review did not find any works focusing on passion’s determinants. Furthermore, regarding passion’s outcomes, two of the most important gaps we observed relate to the lack of consideration of passion’s dualistic nature and the dominance of positive valence-based accounts when trying to explain the mechanisms behind passion’s effects in entrepreneurship. In this section, we identify the theoretical and empirical gaps and provide specific suggestions on how to advance research regarding the role of passion in entrepreneurship.

#### 4.1. Theoretical gaps and future directions

This literature review uncovered that research on the antecedents of passion in entrepreneurship is inexistent, with one prominent exception that investigates the importance of entrepreneurial identity centrality in the development of passion
(Murnieks et al., 2014). Thus, future research can get inspiration from the self-determination theory might be a fruitful basis for future research.

As uncovered by this work, current studies have almost exclusively focused on the harmonious side of passion, and shown mostly positive outcomes of such passion. Existing research has not yet investigated passion's dualistic nature and eventual duplicitous outcomes. However, the prospect that passion has a dark side as well has been empirically demonstrated in other domains such as sport, music or work (e.g., Ho, Wong, & Lee, 2011; Philippe, Vallerand, Houlfort, Lavigne & Donahue, 2010; Vallerand, Mageau, Elliot, Dumais, Demers & Rousseau, 2008). Thus, we might benefit if future research will systematically acknowledge and study passion's duality in entrepreneurship, with the help of the dualistic model of passion.

Moreover, future research is needed to understand whether passion's positive outcomes at the venture level might equate to negative outcomes at the individual level. It could be that passion—the same force that drives the venture forward—can also consume and harm the entrepreneur as a person because of its intensity and the unilateral focus on the venture. The type of passion that investors like to see in entrepreneurs might be precisely the one that negatively influences their well-being. This conflict of interest is worth further scholarly attention. Future research has yet to bring together the conceptualization of entrepreneurial passion towards inventing, founding, and growing and the dualistic model of passion. Future studies can explore how entrepreneurial passion for inventing, founding, or developing can embrace a harmonious or obsessive quality, as well as look at the implications of different combinations for the individual entrepreneur and new venture outcomes.

Lately, the conceptualization of passion has been extended with the suggestion that the object of an entrepreneur's passion may hold identity centrality (Murnieks et al., 2014). However, there has been little theorizing concerning what passion’s identity relation implicates for passion's functioning and its outcomes. As shown in this work, research has not investigated passion's functioning and outcomes through this identity lens yet. The vast majority of research on passion in entrepreneurship focuses of passion as a positive affect. Building upon this characteristic that passion shares with many other positive affects, previous studies have mainly used theories on affect priming of judgements (Forgas, 1992), the broaden-and-build theory of positive emotions (Fredrickson, 2004) or theories on emotional contagion (Hatfield, Cacioppo, & Rapson, 1993) to investigate the outcomes of passion. While these studies offered a good understanding of passion’s cognitive and behavioral outcomes, they might be limiting passion’s functions to those that derive out of it being a positive affect. Future research should try to investigate passion’s unique functions beyond those that derive from it being a positive affect.

Another theoretical gap that needs further attention is the inter-temporal dynamics of entrepreneurial passion over the course of the venture. This issue needs clarification because currently different opinions coexist among passion researchers. Cardon and colleagues (2009) claimed that because identities tend to be enduring, passion is a relatively stable feeling that does not easily change over time. On the other hand, Gielnik et al. (2015) demonstrated that passion can fluctuate over relatively short periods of time. How stable is passion, and how does it change over the venture life cycle? Longitudinal studies are needed to understand the dynamics of the passion experience and the way it changes over time.
As mentioned in reviewing passion’s outcomes, the current research mainly focuses on individual-level consequences. Multilevel data is needed to determine how passion affects the venture or its employees. Thereafter, it will be worthwhile to study the effects of passion on venture-level outcomes (creation, growth, likelihood of survival, and success) or market-related outcomes (development of new products, technologies, or the general competitiveness of the market). Moreover, considering that new ventures feature close and nonhierarchical interactions between employees and the entrepreneur, it would be useful to expand the current research on the influence of the entrepreneur’s passion on employees’ feelings, judgments, and ultimately their passion for work.

Another opportunity for future research relates to the conceptualization of passion. A business venture can be a tool to fulfill many passions. The target of an entrepreneur’s passion can be, for example, a value (universalism in the case of social entrepreneurs, self-direction in the case of lifestyle entrepreneurs), a personal hobby (sports, travelling), or relating to people (coaching and helping employees and customers).

### 4.2. Empirical gaps and future directions

From an empirical perspective, one area for future research pressingly needs scholarly attention: the lack of longitudinal data. The majority of passion studies, many of which we reviewed in this chapter, are cross-sectional. This implies that interpreting the findings needs to be done prudently, as causality cannot be evaluated, even though theories might support it. The relationship between passion on one hand, and cognition and behavior on the other might be bidirectional, indicating the possible existence of a circular loop. Indeed, a 2015 Gielnik and colleagues study found that entrepreneurial effort predicted changes in entrepreneurial passion. Longitudinal studies are needed to clarify this two-way relationship: passion can be a consequence and not only an antecedent of cognition and behavior. Furthermore, the relationship between passion and venture outcomes can be cyclical. Theory informs us that the more successful the venture, the higher the founder’s experienced positive feelings and competence (Carver & Scheier, 2001) and the higher his or her passion (Vallerand et al., 2003). Therefore, future research should examine these issues using a longitudinal research design and testusting a more dynamic passion model.

Further methods appropriate for studying passion over time might involve incorporating qualitative data such as longitudinal data collections for multiple case studies (Haynie & Shepherd, 2011) or process and event-driven approaches (Van de Ven & Engleman, 2004). Furthermore, experiential sampling methodology (Uy, Foo, & Aguinis, 2010) over periods longer than just weeks would be useful in capturing the non-static nature of passion and understand how it develops over time. Non-survey based approaches would also help overcome the limitations of asking entrepreneurs about their feelings, because they might not always know or might be reluctant to admit to emotional experiences such as obsessive passion. Regarding the limitations of self-surveys, 360 degree assessments of entrepreneurs’ passion from spouses, family, and employee reports should also be explored for a better and more accurate understanding of the passion experience.

### 5. Applications

Our review of the consequences of passion in entrepreneurship offers several applications to practice and implications for entrepreneurs, policymakers, entrepreneurship educators, and advisors. First, passion has generally been found to
have positive outcomes for the entrepreneur and the venture. If so, how can policymakers
and advisors inspire entrepreneurs to find, develop and deploy their passion? Entrepreneurs
cannot be taught to be more passionate (Cardon et al., 2009); instead, tone could try to
teach nascent entrepreneurs to recognize which activity engagement provide them with positive affective experience, so that those feelings can be channeled
toward fruitful outcomes. Educators could help nascent entrepreneurs inspect their
identity, and especially the salient and meaningful parts of their identity (whether
inventing new products, founding, or growing ventures). Thereafter, they can scrutinize
opportunities and potential business ideas that build on those identity parts (Haynie &
Shepherd, 2011). In the case of experiences entrepreneurs who already tend to
experience passion in their work, the focus of entrepreneurship educators and advisors
should perhaps fall on helping such individuals maintain their passion over time and
revive it when it starts to fade.

As revealed in this chapter, some studies started to suggest that passion might have to
detrimental outcomes: blindness to disconfirming evidence (Cardon et al., 2005),
warranted persistence in certain courses of action, reluctance to exit (Adomdza &
Baron, 2013), or low cooperation with others (Dirks, Cummings, & Pierce, 1996). A very
first step for avoiding such outcomes would be gaining awareness that they might
accomplish the experience of passion (cf. Baron, Branscombe, & Byrne 2008). Second,
passionate entrepreneurs should practice detachment from initial plans and ideas and
try to consciously regulate their excitement levels (cf. Carver & Scheier, 2001) in an effort
to remain flexible in their thinking (Dirks et al., 1996). Emotional intelligence might help
reaping the positive outcomes and minimizing the negative outcomes of passion.

Study results reviewed in this chapter have suggested that expressions of passion are
crucial in winning over stakeholders such as investors, employees, customers, or
partners and maintaining their commitment to the venture. Therefore, entrepreneurs
must convey authentic enthusiasm and commitment to others and display that they are
prepared and willing to work hard (Chen et al., 2009; Mitteness et al., 2012).
Enterpreneurs lacking the natural inclination to display enthusiasm may want to study
how to increase their language or bodily expressions of high energy and when interacting
with the venture’s stakeholders, in order to be perceived as more passionate. On the other
hand, entrepreneurs that easily show their enthusiasm for the venture should remember
the importance of being well prepared and organizing their arguments in a thoughtful
and in-depth way.

Last but not least, entrepreneurship and entrepreneurial orientation transcends the
domain of new firm foundation. Learning from successful entrepreneurs and
understanding the factors that can further develop entrepreneurial passion will help top
managers, HR managers, educators, governments, and policymakers activate the right
levers to boost entrepreneurial passion in their employees, students, or community in
general.

6. Conclusion

This chapter offers a much-needed systematic review of the literature on passion’s
outcome in entrepreneurship. The comprehensive review of evidence shows that various
conceptualization models of passion coexist in the literature. We describe and collate
these separate views on entrepreneurial passion by showing their complementarity. Most
important, we contribute to the entrepreneurship literature with a comprehensive,
organized overview of passion’s outcomes in entrepreneurship. Clarity about passion’s consequences in entrepreneurship is needed to develop the field further.

We find that research has focused mostly on positive outcomes of passion. Future studies can use the dualistic model of passion from psychology to uncover more about passion’s dualistic nature and its detrimental effects. Moreover, this review uncovered that existent research in entrepreneurship focused mainly on the intrapersonal consequences of passion and much less on the interpersonal consequences on the venture’s other stakeholders. The majority of the research conducted to date is correlational in nature. We have yet to see whether outcomes can also lead to changes in passion.

We encourage scholars to be inspired by our directions for future research and use this work as a base for systematic studies of passion in entrepreneurship. Also, we hope to have helped entrepreneurship practitioners understand the benefits and threats of being passionate. The use of the word “passion” permeates entrepreneurs’ lives. Recognizing this, researchers in entrepreneurship have focused on this concept and uncovered a variety of critical outcomes. However, significant room still exists for future scholars to make theoretical and empirical contributions to the field.
References


APPENDIX 2  PAPER II

Why do early stage founders develop obsessive passion?
The effect of role overload, goal challenge and goal progress

Silvia Stroe, Joakim Wincent, and Vinit Parida

In the review process at Small Business Economics

Abstract

Drawing on theory on identity-relevant role stressors, this research addresses the question of how a stressful contextual climate in the early stages of the new venture creation process influences the entrepreneur's inclination towards obsessive passion. Consistent with the theoretically derived hypotheses, a preliminary test from data of nascent entrepreneurs indicates that a contextual climate of stress related to role overload prompts entrepreneurs to overly engage with the venture activity, thereby leading to higher relative obsessive passion orientation. Furthermore, high levels of goal challenge and achieved progress enhances the effect of role overload, making it more motivationally incongruent and more motivationally relevant for the entrepreneur. This effect in turn increases entrepreneurs' inclination towards obsessive passion.

Key words:

Obsessive passion, role overload, nascent entrepreneurs, goal challenge, perceived progress

1. Introduction

Passion has been identified as a core characteristic of entrepreneurial behavior (Bird, 1989; Locke, 2000) and “perhaps the most observed phenomenon of the entrepreneurial process” (Smilor, 1997, p. 342). Passion is considered essential for individuals to engage in an activity that is inherently uncertain and requires them to deal with resource shortages. In short, individuals need passion to persevere in the intense, risky, stressful pursuit of entrepreneurship (Timmons, 2000). Furthermore, numerous researchers have proposed that passion influences entrepreneurs' creativity, information processing, and decision making (Baum & Locke, 2004; Cardon, Wincent, Singh & Drnovsek, 2009; De Clercq, Honig & Martin, 2013; Thorgren & Wincent, 2015), with positive effects on entrepreneurs' behavior and performance (Busenitz & Barney, 1997; Simon et al., 2000).

Although entrepreneurial research has recognized passion as a main characteristic of entrepreneurs, it has tended to neglect the fact that not all passion has been hypothesized to be equal. When passion takes an obsessive quality, its outcomes for the venture and especially for the entrepreneur can turn problematic, if not harmful. Social psychology has shown that obsessive passion can have a host of dysfunctional effects such as negative affect, reduced well-being, burnout, conflicts with one's personal life, biased decision-making, and dysfunctional efforts to move forward with an idea or proposal despite
negative feedback (Ho, Wong & Lee, 2011; Philippe, Vallerand, Houlfort, Lavigne & Donahue, 2010; Vallerand et al., 2008a; Vallerand et al., 2003).

Because the outcomes of passion can differ depending on its type, understanding what reinforces and makes a particular type of passion operative is crucial. Following works on intrinsic versus extrinsic motivation and the self-determination theory, the dualistic model by Vallerand and colleagues offered a theoretical basis for explaining the emergence of different qualities of passion in domains such as sports or work. Nevertheless, little is known about how different types of passion develop after they emerge and why one type of passion dominates another.

This paper ties in theory on identity-relevant role stressors (Kahn, Wolfe, Quinn, Snoek & Rosenthal, 1964; Thoits, 1991) and aims to bring initial empirical evidence on why entrepreneurs’ passion may become obsessive. Specifically, we reveal the importance of the context for the type of affective engagement entrepreneurs develop towards the venture activity. Our purpose is to explore the manner in which the pressured context around the nascent stages of the venture process moulds the nature of passion. To this end, we develop and test hypotheses regarding what determines the obsessive nature of passion among nascent entrepreneurs. We posit that when experiencing role overload, entrepreneurs try to resolve this identity-relevant stressor by excessively engaging with the passionate entrepreneurial activity, which thus affects the nature of their passion. We empirically evaluate this using a survey in which entrepreneurs reported their perceived role overload and feelings of passion at two points in time. Furthermore, we draw on the transactional theory of stress and coping and tested the moderating effect of the level of goal challenge and perceived progress on the relationship between role overload and the nature of passion. By shedding light on differences between types of passion, we hope to contribute to the entrepreneurship literature in various ways.

First, we respond to entrepreneurship researchers’ call for research into the determinants of passion in entrepreneurship (Cardon, Foo, Shepherd & Wiklund, 2012; Murnieks, Mosakowski, & Cardon, 2014). Here, we refer not only to the presence of passion, but also its nature. Our research clarifies what is it that makes passion take on an obsessive and not a harmonious quality in an entrepreneurial context. To this end, we consider the role of the context and acknowledge the prominent influence of the stressor of role overload on the relative obsessive passion orientation. The present study rests on alternative ground than previous research – where passion is suggested to be merely a result of a positive experience – and thus complements the emerging body of literature focusing on the determinants of passion (Murnieks et al., 2014). Secondly, we broaden the view on the relation between role overload and obsessive passion by integrating the transactional theory of stress and coping. This helps us better understand how role overload may be experienced with different intensities depending on its motivational incongruence and relevance. To this end, we examine goal challenge and achieved progress as moderators that affect the intensity of role overload, making it more motivationally incongruent and motivationally relevant for the entrepreneur’s self. This in turn increases entrepreneurs’ orientation towards obsessive passion. Third, we help bridge a gap in the passion literature arising from a neglect of nascent stage entrepreneurial experiences and the way they shape affective engagement in the venture. We address the lack of attention towards this issue by concentrating on how circumstances in the nascent stage entrepreneurship influence the type of passion developed by entrepreneurs. We test the conceptual model and the advanced hypotheses on a sample of nascent entrepreneurs to investigate differences in the nature of their passion for the venture.
1. Theoretical foundations and hypotheses development

1.1 The difference between harmonious and obsessive passion

The dualistic model of passion comes from psychology literature. Lately, however, scholars started to delve into its effects in entrepreneurial contexts (e.g. Huyghe, Knockaert & Obschonka, 2016; Murnieks, Mosakowski, & Cardon, 2014). The dualistic model looks at passion as “a strong inclination toward an activity that people like, that they find important, and in which they invest time and energy” (Vallerand et al., 2003, p. 756). Besides the strong liking for and enjoyment of the activity, a second essential feature of passion is that the passionate activity’s representation is internalized in the entrepreneur’s identity (Amiot, Vallerand & Blanchard, 2006). In differentiating harmonious and obsessive passion, the dualistic model of passion emphasized how whether the activity is internalized in an individual’s identity in a volitional or a pressured manner, respectively, and whether the individual engages in the entrepreneurial activity in a balanced or rigid way.

In line with this dualistic view, Vallerand and colleagues (2003) proposed that two distinct types of passion could develop: a harmonious, or an obsessive passion. Harmonious passion develops from an autonomous, controllable integration where the entrepreneurial activity is considered important but is not overly consuming (Bélanger, Lafrenière, Vallerand & Kruglanski, 2013, Forest, Mageau, Sarrazin & Morin, 2011, Ho et al., 2011; Vallerand et al., 2003). Harmoniously passionate entrepreneurs can control their engagement with the venture-related activity, which does not take on an overwhelming proportion of their lives and is well integrated with other life domains (Vallerand et al., 2003). In contrast, obsessive entrepreneurial passion concerns a strong and uncontrollable urge to partake in the activity (Vallerand et al., 2003). For example, an obsessive entrepreneur would work late and in the weekends despite the negative consequences on his or her mental health and family life. Stopping would even shake his or her self-esteem. Consequently, the engagement in the obsessively passionate activity becomes hard to control and integrate with other life domains (Bélanger et al., 2013; Vallerand et al., 2003). Hence, harmonious and obsessive passion are different in terms of whether the entrepreneur balances the time he or she spends on the venture activity and other life domains (harmonious), or whether the venture activity takes on a primary, overwhelming role in the entrepreneur’s life (obsessive). If passion is harmonious, the activity will remain under the entrepreneur’s control. If, on the other hand, passion is obsessive, the activity controls the entrepreneur (Vallerand et al., 2003).

The dualistic model of passion acknowledges the important role of contextual climate in the entrepreneurs’ optimal functioning and therefore in the form of passion that the entrepreneurs develops (Deci & Ryan, 2000; Vallerand, 2010). While an autonomy-supportive context helps entrepreneurs maintain a balance and enjoy engaging in the activity, a pressured context prompts the individual to engage intensively in the venture activity, which begins to occupy a disproportionately large space in his or her life (Vallerand et al., 2003). Starting from these theoretical foundations, and further building on the theory of identity-relevant stressors and the transactional theory of stress and coping, we examine whether the quality of the interpersonal and intrapersonal context surrounding the entrepreneur determines the type of passion that develops.

1.2 Role overload as a determinant of the nature of passion
Individuals who have taken the leap and started a new venture are known to be passionate and perceive the role identity of an entrepreneur as having a high value for themselves (Bird, 1989; Smilor, 1997). During the nascent stage of the new venture development, however, specific environmental circumstances and the task characteristics of the venture might still influence the qualitative development of their passion (Vallerand et al., 2003; Vallerand, 2010).

Sociologists and psychologists acknowledge the importance of perceptions of stress within the process of identity forming (Thoits, 1991). Theory about role stress and role stressors (Kahn et al., 1964) states that difficult contexts such as entrepreneurship can have seriously affect an individual’s affective state. Nascent entrepreneurs have heavy workloads, face personal and business risks, and have a great need for achievement more than other roles (Gabrielson & Politis, 2011; Harris, Saltstone & Fraboni, 1999). Founding a venture comprises numerous commitments, deadlines, time pressures, and pressured evaluations, so nascent entrepreneurs often become overburdened (Companys & McMulle, 2007). When launching and developing new ventures, nascent entrepreneurs face a daunting array of potential environmental stressors, notably an intense workload, also defined as role overload (Wincent & Örtqvist, 2009). Role overload is a role stressor representing the degree to which people are cognitively overtaxed because of excessive time pressure, commitments and responsibilities for the available capabilities and resources (Reilly, 1982). Role overload is perceived when high role demands cannot be managed within a given time period and are not supplemented by the skills and capabilities to handle such demands. It also refers to the simultaneously experienced stress (Kahn, 1978; Pines & Maslach, 1978). Meeting so many demands might be very difficult within given resource limits, especially for founders that are just starting their entrepreneurial pursuit (Kibler, 2013).

Research has shown that role overload contributes significantly to strain, potentially leading to negative psychiatric outcomes (Rahim & Psenicka, 1996), greater emotional exhaustion (Fogarty, Singh, Rhoads & Moore, 2000) and psychological tension (French & Caplan, 1972), and even burnout (Cordes, Dougherty & Blum, 1997). Yet, stressors such as role overload can also fuel individuals’ energy and competitive spirit and provide the pressure needed to perform well (Filion, 1991). According to previous result, the effects of role overload on cognitive functioning mean that role overload might also have affective outcomes (Kahn et al., 1964) and therefore influence the nature of passion developed by the entrepreneur.

Role identity as an entrepreneur gives individuals a sense of meaning and purpose and provides behavioral direction (Thoits, 1983). Because the role expectations linked to entrepreneurship are normative, the adequacy of entrepreneurs’ identity performance has inferences for self-evaluation (Hoelter, 1983; Sieber, 1974). A failure to comply with normative expectations in identity performance should influence one’s self-concept and self-esteem. This failure is therefore to be important an important factor in passion development. Role overload embodies an identity relevant stressor in that it represents a potential threat to one’s self-image, arising from the potential failure of meeting the role requirements of an entrepreneur. In other words, role overload creates strains that threaten to disrupt the entrepreneurs’ salient role identity (Thoits, 1991). Therefore, entrepreneurs will perceive role overload as a stress – that is, an imbalance that must be resolved. Perceptions of overloaded in a role that is an important part of their identity will prompt entrepreneurs to engage more intensively, both cognitively and behaviorally, in the venture, in an attempt to resolve the conflict and regain control over the self-defining role. Time is a limited resource, so the increased time and energy devoted to the entrepreneurial role will reduce the time available for other roles such as family.
Moreover, venture-related thoughts will be likely to occupy the entrepreneur’s mind even when he or she is engaging in other activities. Therefore, the entrepreneurial activity is more likely to occupy excessive space in the entrepreneur’s life, causing conflicts with other activities (House & Rizzo, 1972; Kahn et al., 1964). Specifically, we hypothesize that role overload will lay the foundation for the development of obsessive passion by imposing additional pressures and encouraging more intense activity engagement:

**Hypothesis 1:** Greater role overload of nascent entrepreneurs is associated with a greater relative obsessive passion orientation.

### 1.3 The moderating effects of goal challenge and achieved progress

Not all entrepreneurs respond uniformly to role-related phenomena such as role overload (Morris & Snyder, 1979; Van Sell, Brief, & Schuler, 1976). The transactional theory of stress and coping (Lazarus, 1968; Lazarus & Folkman, 1984) holds that stress is not a property of the person, but arises in conjunction with a particular type of task and environment (Lazarus, 1991b). The intensity of the emotional reactions to stress depends on the degree to which individuals appraise environmental demands as threatening and challenging (Lazarus & Folkman, 1984). The individual’s cognitive appraisal of the stress in the environment is based on two consideration: the degree of motivational congruence or incongruence of the stressful circumstance – that is, whether the circumstance thwarts or facilitates an individual’s goals (Smith & Lazarus, 1990) – and the motivational relevance of the circumstance (Smith & Lazarus, 1990) – that is, the degree to which “there is a personal stake in the encounter” (Lazarus, 1993, p. 6). Perceptions of motivational incongruence and motivational relevance will signal stressful situations involving challenges and threats to the individual's well-being (Lazarus, 1994) and thus generate the potential for a highly activating, however negatively valenced emotion (Lazarus, 1991a). We therefore tested whether goal challenge and achieved progress act as moderators that make entrepreneurs react more obsessively to overload that threatens their role identity as entrepreneurs.

#### 1.3.1 Goal challenge

When an entrepreneur has more challenging goals, the motivational incongruence of role overload is more arousing and overwhelming. A challenging goal will lead the overloaded entrepreneur into a deeper state of maladaptive stress because the perceived discrepancy between the actual and the desired conditions is greater and occupies more cognitive capacity (Smith, Tong, & Ellsworth, 2014). The stress and distraction of task caused by overwhelming role demands lead to an even more intense and one-sided engagement when goals seem difficult to achieve. With challenging tasks, the entrepreneur is unlikely to resolve the role overload without engaging intensively in the activity. In such a stress-laden environment, the cognitive pressure and the threat of failing cause the nascent entrepreneur to feel an urgent need to engage in the venturing activity to resolve the high discrepancy. This enhances the obsessive element of passion. Thus, we predict the following:

**Hypothesis 2:** The positive relation between role overload and a relative obsessive passion orientation of nascent entrepreneurs is reinforced by a higher level of goal challenge.

#### 1.3.2 Achieved progress
The impact of role stressors on the individual depends on the identity-relevance of the roles affected by stressors (Smith & Lazarus, 1990; Thoits, 1991). Role identities differ in their relevance or salience for the person's self-conceptions (McCall & Simmons, 1966; Rosenberg, 1979; Stryker & Serpe, 1982; Weigert et al., 1986). The higher the salience of a role identity, the more behavioral direction and meaning the individual develops from enacting the role. We thus expect a salient role identity to exert a greater influence on the entrepreneur's psychological well-being. Research has shown that roles that are endorsed competently are more likely to be salient in the identity hierarchy of the individual's (Hoelter, 1983; Rosenberg, 1979). We therefore test whether entrepreneurs with higher perceived progress levels in venture-related activities will respond to the identity threatening stressor of role overload more intensively than those with lower levels of perceived progress.

Perceiving role overload should be more-identity relevant if the entrepreneur has already progressed in the venture goals and experienced the resulting feelings of competence (Deci & Ryan, 2000; Vallerand et al., 2003). When threatening to disrupt an individual's salient role-identity, stressors such as role overload will spur on entrepreneurs to engage longer and more intensely in the venture activity than in lower-valued role involvements, examples of which include entrepreneurs that have achieved little towards pursuing their ventures. Experiencing role overload when goal progress and competence have been experienced constitutes a higher threat for self-integrity, so thoughts about venture-related tasks might encroach on other activities and cause conflicts with other domains. This process is expected to encourage development of an obsessive form of passion. We therefore posit the following:

**Hypothesis 3**: The positive relation between role overload and the relative obsessive passion orientation of nascent entrepreneurs is reinforced by a higher level of achieved goal progress.

### 2. Methodology

#### 2.1 Empirical setting and data collection

This paper explore how specific role stressors influence the way nascent entrepreneurs adopt the entrepreneurial role identity and how these role stressors mould the type of passion developed by the entrepreneur (Vallerand et al., 2003). Consistent with our research aims, our goal was to identify a sample of active entrepreneurs that had started the new venture process, but that are still, however, at a nascent stage. We therefore gathered the data during three start-up events for nascent founders in Berlin, Germany in July and August 2014. The data was collected at two points in time on a sample of 45 nascent entrepreneurs by administering a survey. One of the authors was present, met personally with the founders, and introduced the survey. This helped ensure that the participants answered the questions reflectively and thus lowered the introspection problem (Schweiger, Anderson & Locke, 1985), which is common to surveying affect and cognitions. Prior to administering the survey, it was piloted with three doctoral researchers, the event organizers, and two entrepreneurs who gave feedback and advice. To ensure the quality of the answers, the questionnaire was kept short.

The average age in the sample was 32, and 66% of the respondents were men. The respondends were highly educated, with 69% having earned a college degree. The average number of years of previous working experience was six years. The majority had no previous founding experience.
2.2 Measures

To assess entrepreneurs’ orientation toward harmonious and obsessive passion, we followed the previously established method of computing scores. This method has been used in examining subjects’ relative intrinsic versus extrinsic motivation orientation (Deci & Ryan, 2000; Schmuck, Kasser & Ryan, 2000; Sheldon & Krieger, 2004). We computed a relative obsessive orientation passion score by subtracting the harmonious index from the obsessive index at time 2. High scores thus reflect a higher relative obsessive orientation.

To measure the two types of passion, we employed the well-received measurement from Vallerand and colleagues (2003), which has demonstrated high levels of validity and reliability across different activities and languages. Because the original scale refers to a nonspecific activity, we adapted it by rephrasing the items to denote the entrepreneurial activity. Given the time constraints in the present study’s context, we used this brief version of the passion scale with two items for each type of passion. Whenever time constraints prevent using longer measures, short measures should be used, provided they have adequate psychometric properties and demonstrated validity (Tashakkori and Teddlie, 2010). Consistent with previous research, the psychometric properties and validity of the briefer versions of the passion scale have been shown to be highly similar to those obtained for the full measure (Vallerand et al., 2008a; 2008b). Both subscales used to measure within-person-surplus demonstrated acceptable internal consistency: Cronbach’s α = .79 and .80 for obsessive and harmonious passion, respectively. The items were rated on a 5-point Likert scale (1 = not at all, 5 = to a very great extent).

Role overload was measured using the established 3-item scale by Beehr, Walsh and Taber (1976), adapted for the entrepreneurial role. The items were rated on a 5-point Likert scale (1 = not at all, 5 = to a very great extent). A sample item is: “I do not have any freetime in my role as a founder.” The measure yielded acceptable internal consistency, with a composite reliability of .714 (Hair, Anderson, Tatham and Black, 1998).

Consistent with previous goal-challenge research (Locke, Latham, and Erez, 1988) goal challenge was measured using a single 5-point Likert scale (1 = not at all, 5 = to a very great extent): “How difficult do you think it will be for you to turn your idea into a real business?” (Latham, Mitchell, and Dossett, 1978). Although single-item measures are usually less reliable, this statement captures the very essence of goal challenge compared to multi-item scales (see Yukl and Latham, 1978).

The level of achieved goal progress was measured using Gielnik Spitzmuller, Schmitt, Klemann, & Frese’s (2015) adaptation of the 7-item scale created by van Gelderen, van de Sluis and Jansen (2005), which inquires about the perceived level of goal achievement on several aspects of the venture. The participants rated seven items on a 5-point Likert scale ranging from 1 = not at all to 5 = to a very great extent. The measure had a Cronbach’s α of .88.

Respondents were asked to report their age, gender, education level, as well as previous working and founding experience. These data were used as control variables, consistent with previous entrepreneurship studies (Bird, 1989; Byrnes, Miller, & Schafer, 1999; Chen et al., 2009; Hayward, Shepherd, & Griffin, 2006; Kanfer & Ackerman, 2004; Vallerand et al., 2007). Moreover, we controlled for the relative obsessive passion orientation at t1. Entrepreneurs’ age was assessed by asking how old they were at the time.
of the data collection. Gender was coded as male = 1 and female = 2. The education variable was coded from 1 for university degree and 0 for no university degree. Founding and working experience were captured by the number of years the person had been involved previously in a new venture as a founder or in an employment relationship, respectively. Relative obsessive passion orientation at time 1 was computed by subtracting the harmonious index from the obsessive index at t2, using the short dualistic passion scale (Vallerand et al., 2008a; 2008b).

2.3 Common method bias considerations

To account for potential common method bias, we adhered to the suggestions of Podsakoff and Organ (1986) and Podsakoff, MacKenzie, Lee and Podsakoff (2003). First, we gathered data on the independent and dependent variables at different points in time; that is, we employed a longitudinal data set. Second, during the data collection period, we took several steps to control for common method bias, such as guaranteeing respondents that their responses would remain anonymous and confidential and emphasizing that there were no correct or incorrect answers (Podsakoff et al., 2003). Third, Harman’s one-factor analysis does not show a dominant first unrotated principal component (eigenvalue: 4.44, cumulative variance: 30%), indicating that common method bias should not affect the findings unduly (Podsakoff et al., 2003). Fourth, we also followed Podsakoff et al.’s (2003) and Gaskin’s (2012) recommendations and examined the data using the unmeasured latent factor method. We permitted all self-reported items to load on their assumed theoretical constructs, as well as on an uncorrelated method factor. We then paralleled the results of the latent factor model with the initial full factor measurement model without the latent method factor. Only .053 of the variance was accounted for by the method factor, significantly below the .500 cutoff value (Hair, Anderson, Tatham, & Black, 1998). In addition, the regression weights did not show great differences when the common latent factor was added (difference lower than .200). This shows that the variance explained by our indicators stays almost the same after adding the common latent factor. These results show that common-method bias is not likely to influence the present study’s results, permitting us to begin hypotheses testing.

3. Results

Table 1 summarizes the descriptive statistics and sample correlations for the study variables. Overall, the correlations among the independent variables are modest. To ensure that multicollinearity was not an issue, however, we computed variance inflation factors (VIF) scores for all regression models used to test the hypotheses. Most of the values of all first-order terms are far below 2, with only two above that level, which would be below the rule-of-thumb cutoff of 10 for regression models (cf. Hair et al., 1998). The models are also robust to including or excluding variables. Therefore, multicollinearity was not an important issue in the results.

The model was tested using hierarchical regression analysis (Bagozzi, 1994; Cohen & Cohen, 1983). Studies with smaller data sets are common in entrepreneurship research (Short, Ketchen, Combs and Ireland, 2010), and applying regression analysis circumvents problems of model fit that appear when using structural equation modeling in small sample sizes (Kline, 2005). As Aiken and West (1991) recommended, the independent variables were mean-centered and standardized prior to forming the interaction terms. In each step of the hierarchical analysis, incremental R2 and F tests of
statistical significance were evaluated. The regression results are presented in Table 2. We first enter the control variables (Model 1), followed by the direct effects of the independent variable (Model 2). In a third and fourth step, we included the interaction terms (Model 3, Model 4).

As evident, we find role overload has a statistically significant influence on the obsessive passion orientation (β = .34, p < .05). Therefore, Hypothesis 1 is supported. Moreover, we find that the level of goal challenge and achieved progress moderate the relationship between role overload and obsessive passion orientation. In addition to reporting coefficients in the expected directions, the interaction effect of role overload and goal challenge on obsessive passion orientation is statistically significant (p < .05). This is also the case for the interaction between role overload and achieved progress on the obsessive passion orientation (p < .01). Thus, both Hypotheses 2 and 3 are supported.

We plotted the effect of role overload on obsessive passion orientation, for high- and low levels of goal challenge and perceived progress. Values of the moderators were set at one standard deviation (SD) above and below the mean, as Cohen and Cohen (1983) suggested. The plots are displayed in Figures 1 and 2. Figure 1 illustrates a considerable difference in obsessive passion orientation. Succinctly stated, individuals with high levels of role overload experience much higher levels of obsessive passion if they have challenging goals. Figure 2 shows that those highly overloaded entrepreneurs who they have already achieved some progress develop a more obsessive passion that those who have not.
Table 1 Means, Standard Deviations, and Pearson’s Correlations

<table>
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<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>VIF</th>
<th>1</th>
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<th>6</th>
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<tr>
<td>2. Age</td>
<td>32.16</td>
<td>7.46</td>
<td>2.12</td>
<td>.06</td>
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<td>3. Gender</td>
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<td>-</td>
<td>1.26</td>
<td>-.07</td>
<td>-.01</td>
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<tr>
<td>4. Education</td>
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<td>-</td>
<td>1.23</td>
<td>.05</td>
<td>.07</td>
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<td>5. Founding experience</td>
<td>1.36</td>
<td>3.84</td>
<td>1.80</td>
<td>.42**</td>
<td>.43**</td>
<td>.13</td>
<td>.02</td>
<td></td>
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<tr>
<td>6. Working experience</td>
<td>5.56</td>
<td>6.02</td>
<td>2.86</td>
<td>.18</td>
<td>.69**</td>
<td>.09</td>
<td>-.06</td>
<td>.63**</td>
<td></td>
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<td>7. OP orientation t1</td>
<td>-2.37</td>
<td>1.97</td>
<td>1.52</td>
<td>.44**</td>
<td>-.17</td>
<td>-.35*</td>
<td>-.16</td>
<td>-.07</td>
<td>-.05</td>
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<tr>
<td>8. Role overload</td>
<td>2.99</td>
<td>.77</td>
<td>1.27</td>
<td>.47**</td>
<td>-.01</td>
<td>.01</td>
<td>.06</td>
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<td>.13</td>
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<tr>
<td>9. Goal Challenge</td>
<td>3.31</td>
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<td>1.21</td>
<td>-.13</td>
<td>-.06</td>
<td>.07</td>
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<td>-.01</td>
<td>-.02</td>
<td>-.20</td>
<td>-.03</td>
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<td>10. Perceived progress</td>
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<td>1.22</td>
<td>-.14</td>
<td>-.14</td>
<td>-.21</td>
<td>-.14</td>
<td>-.24</td>
<td>-.31*</td>
<td>-.01</td>
<td>-.03</td>
<td>.24</td>
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</tbody>
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*\(p < .05\); **\(p < .01\); ***\(p < .001\)
Table 2 Hierarchical Regression Analysis: Independent and Interaction Effects on the Relative Obsessive Passion Orientation

<table>
<thead>
<tr>
<th></th>
<th>Model I</th>
<th>Model II</th>
<th>Model III</th>
<th>Model IV</th>
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</thead>
<tbody>
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<td>Age</td>
<td>.01</td>
<td>.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
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<tr>
<td>Education</td>
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<td>.06</td>
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<tr>
<td>Founding experience</td>
<td>.52*</td>
<td>.43**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working experience</td>
<td>-.13</td>
<td>-.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative OP orientation t1</td>
<td>.51***</td>
<td>.39**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role Overload</td>
<td>-</td>
<td>-</td>
<td>.34*</td>
<td></td>
</tr>
<tr>
<td>Goal Challenge</td>
<td>.01</td>
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<tr>
<td>Perceived Goal Progress</td>
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<td>-.06</td>
<td></td>
</tr>
<tr>
<td>Overload × Challenge</td>
<td>.33*</td>
<td></td>
<td>.33***</td>
<td>.36**</td>
</tr>
<tr>
<td>Overload × Progress</td>
<td>.33***</td>
<td>.39***</td>
<td>.48***</td>
<td>.52***</td>
</tr>
</tbody>
</table>

Note: Standardized regression coefficients are displayed in the table.  
* p < .05; ** p < .01; *** p < .001

Figure 1 Interaction Effect of Role Overload and Goal Challenge on the Relative Obsessive Passion Orientation
1. Conclusions

Although anecdotal evidence abounds concerning passion as a common characteristic of entrepreneurs, academic research explaining how its obsessive variant develops has been limited. The present work backs theoretical accounts that regard passion not simply as an inborn personality characteristic (Markman, Baron & Balkin, 2003), but more a distinctive affective experience influenced by the circumstances at the beginning of the venture process (Cardon et al., 2009). This is essential because entrepreneurship is one significant impetus of economic progress (Audresh, Thurik, Verheul & Wennekers, 2002; Carree & Thurik, 2003). If passion is not simply a personal characteristic, and if entrepreneurs can understand what determines the quality of the passion that drives them, they may also be able to rein that passion and influence its nature to ensure it fuels positive outcomes and advances their goals.

The present research supports the influence of perceptions of role overload on the obsessive passion orientation. Drawing on theory on identity relevant role stressors (Kahn et al., 1964; Thoits, 1991), our framework and hypotheses acknowledge how role overload fosters a relative obsessive orientation of passion. Furthermore, supported by the transactional theory of stress and coping, we bring proof that goal challenge and level of perceived progress can amplify this relationship, by accentuating role overload's incongruence and relevance. Therefore, the present research suggests that a better understanding of the obsessive side of passion requires acknowledging the importance of role stress in early venturing. To resolve the time pressure and multitude of commitments they face on a daily basis, entrepreneurs will invest significant time, effort, and cognitive resources to the venture activity, and in doing so, they will augment the obsessive orientation of their passion. These efforts will be even more intense when entrepreneurs have set challenging goals for their venture and when have more to lose...
by not resolving the overload when they have experienced progress and therefore competence.

We believe the present study opens a new perspective for looking at passion and its development. We base this understanding on the implicit price of role overload. Role overload has been discussed as a prominent characteristic of entrepreneurs given their context (Parasuraman, Purohit, Godshall & Beutell, 1996; Rahim, 1996). At the same time, the quality of the passion that early stage entrepreneurs develop has been discussed as obsessive (Smilor, 1997). Readers may agree that this supports the face validity of our framework; indeed, entrepreneurial passion might develop an obsessive character precisely because of the experiences related to the early venture stage itself. We encourage future research to shed more light on the new theoretical mechanism we used to explain how role overload might activate and develop the obsessive element of passion.

Moreover, the present research goes beyond the direct influence of role overload and considers its interaction with goal challenge and progress achieved, which has not yet been discussed in the passion research. Interestingly, and contrary to arguments perceiving challenging goals as a requirement for the experience of activating states such as flow (Csikszentmihalyi, 1996), we found that the goal challenge leads to an even more obsessive passion when coupled with role overload. In investigating these moderators, we encourage subsequent research to go beyond the self-determination mechanisms that other studies have previously examined regarding the development of passion (Bonneville-Roussy, Vallerand & Bouffard, 2013; Lalande et al., 2015). Further research is needed to better understand the antecedents of passion; indeed, the view on identity relevant stressors presents an alternative.

The present study has several limitations. First, this study was used to test the role of stressors in developing passion’s quality; consequently, only role overload and its interactions were included as an independent variable. We acknowledge, however, that many exogenous variables rooted in other theories such as personality traits may contribute to developing different qualities of passion. Future research is needed to rule out alternative explanations. The data for the present study were collected at a startup event, in a setting that allowed us to reach a group of entrepreneurs at the desired stage. Readers should note, however, that our results are not generalizable over entrepreneurs at all stages and should thus interpret our results with caution. Moreover, given that our sample consists uniquely of entrepreneurs based in Germany, our results may also not be generalizable across cultures. Indeed, it might be that passion is viewed and experienced differently in different cultures.

Largely because of the difficulty of gathering longitudinal data among early stage entrepreneurs the sample size is relatively small. Although the sample was enough for statistical inference and in line with its disciplinary traditions, we overtly recognize that the research site may impose some limitations on the generalizability of the findings, which would be significantly improved with larger samples (McMullen & Shepherd, 2006). Therefore, we encourage further work to duplicate our baseline findings in other settings, while simultaneously searching for additional mechanisms than those examined in the present study. Furthermore, in this study we offer a snapshot on passion’s quality development. To understand it better, however, future research should follow entrepreneurs’ passion over a longer time period, with repeated measurements. In this way, we will be able to imply more, and, for example, understand whether passion eventually settles into a harmonious or obsessive orientation after the critical initial venture phase or whether one or the other type of passion is reinforced and made operative depending on momentary circumstances at play.
To conclude, it is worth mentioning that despite its potential negative effect on the entrepreneur’s well-being, the obsessive orientation of passion might count among the affective–motivational foundation that entrepreneurs use to persist despite the challenges of venturing. Entrepreneurs should understand that obsession might be an integral part of their passion and a potentially necessary response to stressful entrepreneurial pursuits. Indeed, an obsessive passion orientation may help entrepreneurs sustain goal-related behavior over time and assist in reaching desired outcomes. It may likely be the case that vilifying the obsessive orientation of passion or trying to eradicate it might be neither desirable nor possible without also affecting its positive attributes. In turn, entrepreneurs should understand and recognize all aspects of their passionate feelings. By doing so, they will be better able to regulate the negative effects of obsessive passion on their well-being, while reaping its positive, motivational, and persistent qualities.
References


APPENDIX 3  PAPER III

A Passion Model of the Negative Affect from Fear of Failure in the Entrepreneurial Context

Silvia Stroe, Dean Shepherd and Joakim Wincent

In the review process at Small Business Economics

Abstract
Passion is investigated as a mechanism that regulates the negative affective consequences of fear of failure in the nascent stages of the entrepreneurial process. First, with the help of trait activation theory, we establish a relationship between fear of failure and negative affect. Thereafter, confrontation with failure possibilities is likely to activate the founders’ fear of failure into experiences of negative affect. We then use emotion regulation as a theoretical framework to explore how different kinds of passion experienced by an entrepreneur impact the relationship between fear of failure and negative affect. Our data, gathered in a naturally occurring setting of nascent entrepreneurs involved in a start-up competition, suggest a dualistic-regulatory effect of passion depending on its type. Harmonious passion was found to decrease the influence of fear of failure on negative affect. In contrast, obsessive passion increased the effect that fear of failure has on negative affect. Research and practice implications are discussed.

Key words:
Dualistic model of passion, emotion regulation, fear of failure, negative affect, nascent entrepreneurship

1. Introduction

In the nascent stages of venturing, uncertainty is high (Knight, 1921; McMullen & Shepherd, 2006), missteps are numerous (Shane, 2008), and pressures are great (Aldrich, 2000; Baron, 1998). Under such conditions, it is not surprising that entrepreneurs experience negative affect (Patzelt & Shepherd, 2011; Shepherd, 2003; Shepherd & Cardon, 2009), such as fear, anxiety, and worry (Fisher et al., 2013; Grichnik, 2008; Grichnik et al., 2010; Rahim, 1996). These negative affective experiences can be detrimental because negative affect has been found to narrow attention (Baron, 2008; Forgas, 1995; Isen, 2000), constrict thinking (Estrada et al., 1997; Hassan et al., 2013; Tiedens & Linton, 2001), and enhance preferences for less-effective stress-coping strategies (e.g., Carver & Scheier, 2001), which in turn obstruct the learning and adaptation (Bower, 1992) crucial in early-stage venturing (Minniti & Bygrave, 2001). Furthermore, negative affect has been found to inhibit the formation of strong relationships (Barsade, 2002; Brundin et al., 2008; Sy et al., 2005), which are also critical to new venture success (Aldrich and Zimmer, 1986; Davidsson & Honig, 2003; Ostgaard & Birley, 1996).

Because negative affect has been found to have a detrimental effect on the type of thinking (e.g., Forgas, 1995; Fredrickson, 2004; Isen, 2000), flexible actions (e.g., Frijda, 1986; Lazarus, 1991), and social relationships (Ashkanasy & Daus, 2002; Barsade, 2002)
required of entrepreneurs in the nascent stages of venturing (Baron, 1998; Minniti & Bygrave, 2001), scholars have been interested in determining its antecedents. One stream of research has focused on individual traits as a source of negative affective experiences (Gray, 1994; Lykken & Tellegen, 1996; Rusting & Larsen, 1997; DeVries, 1977), such as neuroticism (Costa & McCrae, 1987; Eysenck, 1990; Gray & McNaughton, 2000), narcissism (Baumeister et al., 1996; Stucke & Sporer, 2002), and fear of failure (Atkinson, 1957; Elliot, 1997; Martin & Marsh, 2003). A parallel stream of research has focused on domain-specific antecedents, such as self-efficacy (Bandura, 1997; Jerusalem & Schwarzer, 1992), work autonomy (Blais & Brière, 1992; Sheldon, Ryan, & Reis, 1996; Thompson & Pratkanis, 2006), and passion (Mageau & Vallerand, 2007; Vallerand et al., 2003). Although these streams have independently made important contributions to our understanding of entrepreneurs' negative affective experiences, we do not yet have a clear picture of how traits and domain-specific motivational constructs concomitantly influence entrepreneurs' negative affect.

To take a step toward addressing this gap, we build on trait activation theory to investigate how traits become activated and emotionally expressed when one is presented with trait-relevant situational cues (Tett & Burnett, 2003; Tett & Gutterman, 2000). Specifically, we address recent calls for research on fear of failure (Cacciotti & Hayton, 2014; Cacciotti, Hayton, Mitchell, & Giazitzoglou, 2016) by theorizing on how fear of failure is activated and emotionally expressed when entrepreneurs are presented with tasks for which they are (harmoniously and/or obsessively) passionate about. We test our model using a quasi-experimental field study on a sample of 80 entrepreneurs. In doing so, we make three primary contributions.

First, we contribute to the literature on entrepreneurial affective experiences by uncovering an important antecedent of the negative affect experienced by entrepreneurs in the early stage venturing process: dispositional fear of failure. Fear of failure has typically been captured as a trait (e.g. Arenius & Minniti 2005; Hessels et al., 2011; Wagner & Stenberg, 2004) and linked to motivation—the motivation to not act (Welpe et al., 2012; Hessels et al., 2011; Shinnar et al., 2012) but also the motivation to act (Martin & Marsh, 2003; Mitchell & Shepherd, 2010). We complement these studies on fear of failure by investigating the negative affective reaction of individuals with fear of failure when engaged in a highly uncertain task—nascent entrepreneurship. This approach provides insight into individuals' affective reactions stemming from fear of failure in an entrepreneurial context.

Second, we contribute to the fear of failure literature, by going further than previous studies which focused on the consequences of fear of failure in the pre-founding stage, and uncovering how active nascent entrepreneurs experience fear of failure and cope with its affective consequences throughout the entrepreneurial process. Also, we theorize and find that fear of failure is not always highly salient, although it is considered an enduring characteristic of the individual (e.g., Arenius & Minniti, 2005; Hessels et al., 2011). Fear of failure generates little negative affect for entrepreneurial tasks the entrepreneur is very harmoniously passionate about, but it does generate high negative affect for tasks the entrepreneur is very obsessively passionate about. Therefore, the affective response to fear of failure is dampened or magnified by the type and intensity of the entrepreneur's passion for the entrepreneurial activity.

Third, we contribute to the literature on passion in entrepreneurship by uncovering a new function of it: passion's emotion regulatory function, and prove that, as an enduring feeling of higher relevance for the entrepreneurs’ identity, passion has a role in governing shorter-term affective experiences.
Moreover, although most entrepreneurship research has looked at the harmonious side of passion and its beneficial outcomes (Cardon & Kirk, 2015; Chen et al., 2009; Drnovsek et al., 2016; Murnieks et al., 2012), studies from psychology posit that passion can also have an obsessive nature and lead to detrimental outcomes (Vallerand et al., 2003). We extend the research on passion in entrepreneurship by exploring how both types of passion—harmonious and obsessive—impact the development of negative affect by moderating the relationship between an individual’s fear of failure and negative affect. We theorize and find that in terms of negative affect, the difference between high and low harmonious passion and between high and low obsessive passion is greatest for those individuals high in fear of failure but has little effect for those low in fear of failure. This finding highlights the importance of individual differences when considering the impact of domain-specific motivational constructs on the entrepreneur’s affective reaction.

This paper proceeds as follows. Using a trait activation perspective and building on the literatures on fear of failure and passion, we develop a model to explain entrepreneurs’ negative affect. We begin by theorizing on how individuals differ in their fear of failure and how these differences explain entrepreneurs’ negative affect. We then theorize on how the relationship between fear of failure and negative affect is influenced by the type and intensity of the entrepreneur’s passion for the activity.

2. Theoretical Framework

2.1 Fear of failure and Negative Affect

Fear of failure refers to a dispositional trait where the desire to avoid failure orients individuals toward the negative possibilities of activities (Atkinson 1957; Morgan & Sisak 2016). Previous research on fear of failure in entrepreneurship has suggested that the cognitive and behavioral consequences of dispositional fear of failure can be both detrimental—negative impact on entrepreneurial intentions (Arenius & Minniti 2005; Shinnar et al. 2012), opportunity recognition and exploitation decisions (Klaukien & Patzelt 2009; Mitchell & Shepherd 2010), and subsequent re-engagement in an entrepreneurial career (Autio & Pathak 2010; Hessels et al. 2011)—as well as beneficial—it might stimulate greater effort and striving and motivate increased engagement in the entrepreneurial task (Elliot & Church 1997; Mitchell & Shepherd 2010; Cacciotti & Hayton 2014). Regarding the affective consequences of the activation of the individual disposition toward fear of failure however, there is less debate: researchers agree that they are detrimental (Atkinson 1957; Elliot 1997; Martin & Marsh 2003). For example, in the domain of sports, fear of failure has been found to stimulate negative affect, such as worry, stress, and anxiety (Conroy & Metzler, 2004; Conroy et al., 2002; Kaye et al., 2008), which in turn adversely impacts both psychological well-being and relationship quality (Lavallee et al., 2009). In the work context, fear of failure has been found to be negatively associated with job satisfaction (Roberson, 1990) and positively associated with depression (Coats et al., 1996). Recent research has similarly proposed that in the entrepreneurial context, fear of failure is likely to trigger a negative affective reaction (Cacciotti et al., 2016).

Differences in affective experiences are due, at least in part, to internal causes. Some stable inter-individual dispositions are linked to susceptibilities to negative affect (Gray, 1994; Pickering et al., 1999; Zelenski & Larsen, 2002). One such personality disposition is fear of failure. Fear of failure creates a framework for how the entrepreneur defines and experiences failure and, accordingly, feels, thinks, and acts in competence-relevant contexts (Heckhausen, 1975). For an entrepreneur with high fear of failure, failure shows
general incompetence and conveys the meaning that the self is not worthy of appreciation and is at risk of being disconsidered. Given this perceived severe adversity of the failure experience, in achievement settings, such an individual high in fear of failure will be perceptually and cognitively oriented to the possibility of failure (Elliot & Thrash, 2004).

Because of the uncertain context they are active in, nascent entrepreneurs are exposed to failure-relevant cues and threats on a regular basis (Shaver & Scott, 1991). They face a number of managerial challenges, including hiring and training employees (Barber et al., 1999; Heneman et al., 2000; Williamson, 2000), dealing with conflict due to ambiguous new roles (Begley & Boyd, 1987; Sine, Mitsuhashi, & Kirsch., 2006), and establishing routines to become more reliable (Aldrich & Yang, 2013; Singh et al., 1986). Entrepreneurs of nascent ventures also face issues of legitimacy (Aldrich & Fiol, 1994; Scott, 1994; Tornikoski & Newbert, 2007), which can create problems with accessing financial resources (Pollack et al., 2012; Shane & Cable, 2002), securing the support of key suppliers (Delmar & Shane, 2004; Stinchcombe, 1965), and attracting customers (Wiewel & Hunter, 1985; Zimmerman & Zeitz, 2002). Moreover, nascent entrepreneurs face potential threats from incumbents and new entrants (Mitchell, 1991; McMullen and Shepherd, 2006).

Individuals high in fear of failure are more likely to attend to these challenges, problems, and threats; delve into the possibility of failing at them; and therefore have negative affective reactions as a result. The pressure associated with having to prove themselves to others in a competence-relevant setting will bring about negative affect in entrepreneurs high in fear of failure since they will be more susceptible to negative affect when exposed to failure-relevant cues (Zelenski & Larsen, 2002). Based on the above reasoning, we offer the following baseline hypothesis:

**Hypothesis 1:** In nascent entrepreneurship, entrepreneurs with higher fear of failure will experience more negative affect than entrepreneurs with lower fear of failure.

### 2.2 Passion as an emotional regulator

Although dispositional fear of failure likely directly influences entrepreneurs’ negative affect, individuals also have the capacity to regulate their emotions—that is, to control (at least somewhat) the physiological, behavioral, and experiential components of their affective reactions (Gross, 1998; Gross & Thompson, 2007). Emotion regulation occurs when an emotion with higher significance for the self takes precedence over another unfolding emotion and modifies it (Frijda, 2013; Gross, 1998). Enduring emotions that fulfill a domain-specific motivational function are likely to take up an emotion regulation role.

Passion is such a domain-specific motivational construct that refers to an intense and enduring emotional state experienced by engaging in activities connected with a meaningful and salient self-identity (Cardon et al. 2009; Vallerand 2008). Passion results from the internalization of the highly regarded passionate activity’s representation in the entrepreneur’s identity (Burke & Reitzes, 1991; Cardon et al., 2009; Vallerand et al., 2003), and has been described as the essence of the motivation for entrepreneurial action (Smilor, 1997). As an enduring feeling of higher relevance for the entrepreneur’s identity that includes emotionally important goals, passion will influence entrepreneurs’ perceptions and cognitions regarding the venture (Cardon et al., 2009, Oatley, 2000), and the way in which external information will be perceived and processed (Frijda, 2005). Thus, passion might affect entrepreneurs’ perception and
processing of external information cues regarding the possibility of failure, thereby affecting the development and intensity of negative affect that derives from the perception of failure cues.

However, exploring the effect of passion on the perception and processing of failure cues requires the recognition that there are two distinct types of passion, resulting from different internalization processes, and including different foci of achievement. Based on the dualistic model of passion (Vallerand et al. 2003), we distinguish between harmonious and obsessive passion to advance our theorizing on the affective response to fear of failure in nascent entrepreneurship. Harmonious and obsessive passion derive from different internalization processes of the passionate activity in the identity of the entrepreneur and in the types of achievement goals they focus on.

Harmonious passion develops in individuals when they freely accept that the focal activity validates their highly held identity and when pursuing the activity stimulates a sense of will and personal endorsement (Vallerand et al., 2003; Cardon et al., 2009). That is, harmoniously passionate individuals are not driven by external demands or rewards but by an intrinsic motivation to engage in the activity (Lafrenière et al., 2011, Ryan & Deci, 2000). Harmonious passion was shown to not be linked to external performance goals (Vallerand et al., 2007). In the case of harmonious passion, the desired outcome for the entrepreneurs is improvement in their ability to master venture related tasks. In this case, engaging in the passionate activity in a competent way is experienced as an end in itself (Elliot, 1999; Nicholls, 1984). Because it mirrors an autonomous activity engagement, harmonious passion is thought to trigger mastery goals (Duda, 2001; Dweck, 1986). Thus, an adaptive achievement process focused on task-centered goals process is posited to be induced by harmonious passion.

Whether and how intensely external information about failure possibilities will be perceived and processed depends on the relevance of this information to the fulfillment/hindrance of the achievement goal. Since harmonious passionate entrepreneurs’ identity-related achievement goal in an intrinsic goal of mastering the task, harmoniously passionate entrepreneurs are likely to be less sensitive to external information failure. Based on the above reasoning, we offer the following hypothesis:

**Hypothesis 2:** In nascent entrepreneurship, the positive relationship between fear of failure and negative affect is less positive when there is high harmonious passion than when there is low harmonious passion.

Conversely, obsessive passion originates from interpersonal or intra-personal pressures associated with the engagement in the activity (e.g., new venture activity), such as to increase self-esteem or to generate feelings of social acceptance or feelings of superiority (Vallerand et al. 2003). These pressures compel the individual to continue with the activity to sustain these (perceived as critically important) outcomes (Amiot, Vallerand & Blanchard, 2006). Because internally controlling, and not integrative self-processes are at play (Hodgins & Knee, 2002), obsessive passionate people will take part in the passionate activity with a frail sense of self-esteem, contingent on the success of the focal activity (Lafrenière et al. 2011; Vallerand 2010). They will rely heavily on activity engagement for their self-esteem (Lafrenière et al., 2011) and thus display a rigid persistence toward the activity.

Obsessive passion will involve a more actively self-evaluative or social view of the self (Nicholls, 1984; Vallerand et al., 2007). For obsessively passionate entrepreneurs, mastering the task is not enough to signal competence. Mastery will only be experienced
as a vehicle to an end rather than an end in itself. To assess their ability and competence, obsessively passionate entrepreneurs will measure it by comparing it to measurable, external performance standards. As such, obsessive passionate entrepreneurs were predicted to have ego-involvement type of goals, that is, performance-approach (high performance at venture related tasks) and performance-avoidance goals (avoiding performing lower than others) (Elliot, 1999; Nicholls, 1984; Vallerand et al., 2007).

The way in which passionate entrepreneurs will process and give meaning to perceived external failure information depends on what this information signifies for the desired achievement goals. The source of motivation for obsessively passionate entrepreneurs are external reinforcements of high performance. Such entrepreneurs will care highly about effectively pursuing their external performance goal competently. Thus, information about failure is likely to have high negative significance for obsessively passionate entrepreneurs. Based on the above reasoning, we offer the following hypothesis:

**Hypothesis 3:** In nascent entrepreneurship, the positive relationship between fear of failure and negative affect is more positive when there is high obsessive passion than when there is low obsessive passion.

3. Methods

3.1 Empirical Context and Sample

Fear of failure is considered a stable dispositional that is activated when entrepreneurs are in evaluative contexts with the potential for failure. In such specific situations, cognitive patterns and beliefs about with the detrimental outcomes of failure are activated and generate specific affective responses (Conroy, 2004). Given the specificity of fear of failure, recent research has recommended that the specific situation of f interest—in our context, the entrepreneurial situation, should be considered when investigating fear of failure (Cacciotti et al., 2016). We followed this recommendation and tested the hypotheses using a quasi-experimental field study in the naturally occurring setting of nascent ventures competition.

A major entrepreneurship foundation in Germany organizes an annual start-up competition in which entrepreneurs present their nascent stage ventures to a jury of experts and to a general public audience. We used the evaluation phase of the competition as our research setting. In this phase, the nascent ventures are presented online, and both the expert jury and the general public audience allocate points to those participating in the competition based on certain criteria, such as product feasibility, market potential, gained traction, team competence, and investment readiness.

We contacted the entrepreneurs of the 815 participating ventures through the event organizer’s weekly newsletter and invited the entrepreneurs to complete our survey online. We incentivized survey participation by offering the chance to win two tickets to the most popular entrepreneurship practitioners’ conference in Germany. Prior to administering the survey, we pilot tested it with three doctoral researchers, with the event organizers, and with two entrepreneurs. The pre-test of the instrument revealed that the respondents had no difficulty answering any of the survey instrument’s items, so we proceeded with administering the questionnaire.

We received responses from 110 entrepreneurs, representing a 13.5% response rate. Out of these responses, 19 were incomplete, one had unacceptably low reliability (indicating
that the person had not taken the survey seriously), and 10 were not involved with in nascent entrepreneurship, for example, the entrepreneurs had founded the venture more than 10 years ago. After excluding these 30 responses, the final sample size was 80 entrepreneurs. Half of the respondents were under 30 years old, 89% were under 45 years old, and 70% were male. The surveyed entrepreneurs were highly educated, with 69% having earned a college degree, and had an average of one year of previous founding experience.

3.2 Measures

Negative affect (dependent variable). To measure negative affect, we had participants indicate the extent to which they experienced negative affect during the period in which they were pitching their venture to the judges and the audience (and the judges were assessing the pitches). Negative affect was captured using the Positive and Negative Affect Schedule (PANAS) (Watson et al., 1988). The 10 items were assessed on a five-point scale ranging from 1 (very slightly or not at all) to 5 (extremely). Studies have shown that PANAS has good psychometric properties (see Miller et al., 2005; Watson et al., 1988). In the present study, the reliability of the negative affect measure yielded a Cronbach’s alpha of .89.

Fear of failure (independent variable). We measured fear of failure with a six-item short version of the Herman (1990) Scale (consistent with Elliot & Thrash, 2004). This shortened fear-of-failure scale has been shown to have good reliability and validity (Elliot & Church, 1997; Elliot & Thrash, 2004; Elliot, personal communication, 2015). Participants’ responses ranged from 1 (I completely disagree) to 5 (I completely agree). Sample items include “I often avoid a task because I am afraid that I will make mistakes” and “When I start doing poorly on a task, I feel like giving up.” We found that scale had good reliability—a Cronbach’s alpha of .87.

Harmonious passion (moderator). We assessed harmonious passion using the Passion Scale (Vallerand et al., 2003), which has demonstrated high levels of validity and reliability across different activities and languages (e.g., Marsh et al., 2013; Vallerand et al., 2007). The five-point Likert scale ranged from 1 (I completely disagree) to 5 (I completely agree). Item wording was changed to fit the founding context (e.g., the word “activity” was replaced with “venture activity”). Sample items include “My role as an entrepreneur is in harmony with the other activities in my life” and “Being an entrepreneur is in harmony with other things that are part of me.” The Cronbach’s alpha for the six harmonious passion items was .88.

Obsessive passion (moderator). Obsessive passion was also assessed using six items of the Passion Scale (Vallerand et al., 2003). Participants’ responses ranged from 1 (I completely disagree) to 5 (I completely agree). Item wording was changed in the same way it was for the harmonious passion items. Sample items include “Being an entrepreneur is so exciting that I sometimes lose control over it” and “I have the impression that my role as an entrepreneur controls me.” The Cronbach’s alpha for the obsessive Passion Scale was .83.

Control variables. The tendency to experience negative affect from venture activities might differ depending on different personal characteristics, such as age (Mroczek & Kolarz, 1998), gender (Byrnes, Miller, & Schafer, 1999), educational background (Chen et al., 2009; Vallerand et al., 2007), and/or founding and working experience (Bird,
Therefore, we controlled for these possible effects. We captured the entrepreneurs’ age by asking them how old they were in years at the time of data collection. We also asked them to indicate their gender (which we coded 1 for male and 0 for female), their highest level of education (measured from 1 [secondary school] to 6 [PhD]), and both their founding experience (the number of years they were involved in new ventures they founded) and working experience (consistent with research about occupational learning and work-task performance (McDaniel, 1986; Schmidt et al., 1986, 1989) (it was coded 1 if previously employed for more than seven years and 0 otherwise).

4. Results

New ventures are often started by one or a few nascent entrepreneurs. The entrepreneurs are the sole source of information about their nascent ventures. Just as many other studies, this work as well not able to collect data from various informants. Since we used data from a cross-sectional survey and single respondent, the there is a risk of common method bias. Therefore, before testing the hypothesized model, we statistically evaluated the risk of common method bias. To help alleviate possible influences of common method bias on the findings, we employed procedural, as well as statistical revisions (Podsakoff & Organ, 1986; Podsakoff et al., 2003). First, we separated the dependent and independent variables in the questionnaire to diminish respondents’ capacity to use answers from previous questions to choose subsequent answers. Second, we assured participants of anonymity, stressed that there were no correct or incorrect answers, and encouraged truthful answers. Third, by using previously validated scales, we hope to have reduced social desirability bias at both the construct and scale-item level. Moreover, it appears that anonymous electronic questionnaires are less likely to be affected by social desirability bias than face-to-face interviews (Richman et al., 1999). Fourth, Harman’s one-factor analysis does not show a dominant first unrotated principal component (eigenvalue: 6.86, cumulative variance: 25%), indicating that common method bias should not affect the findings unduly (Podsakoff et al., 2003).

Finally, we evaluated the data using the unmeasured latent factor method. That is, we permitted all self-reported items to load both on their assumed theoretical constructs, as well as on an uncorrelated method factor. We then paralleled the results of the latent factor model with the initial full factor measurement model without the latent method factor. Only .19 of the variance was accounted for by the method factor, significantly below the .50 cutoff value (Hair et al., 2006). In addition, the regression weights did not show great differences when we added the common latent factor, which indicates that common method bias is unlikely to unduly influence the study’s results.

In Table 1, we provide the descriptive statistics and an inter-correlation matrix. Overall, the correlations among the independent variables are low to modest. However, to make sure that multicollinearity is not a problem, we computed variance inflation factor (VIF) scores. We found that all VIFs were substantially below the conservative cutoff value of 5.0 (Studenmund, 1992), indicating that multicollinearity is unlikely to unduly influence the results of the analyses.

The hypotheses were tested using hierarchical regression analysis (Cohen, 1978; Cohen & Cohen, 1983). As Aiken and West (1991) recommended, the independent variables were mean-centered and standardized prior to forming the interaction terms. We report the results of the hierarchical regression analysis in Table 2. We first entered the control variables (basel model), after which we added the independent variables (independent
effects only model) and then focal two-way interactions (full model). The main effects
only model accounts for a significant amount of variance over and above the baseline
model ($\Delta R^2 = .39, p < .001$). The coefficient for fear of failure is positive and significant
($\beta = .50, p < .001$), indicating that in early-stage venturing, entrepreneurs with higher
fear of failure will experience more negative affect than entrepreneurs with lower fear of
failure. This finding provides support for Hypothesis 1. The coefficient for obsessive
passion was significant and positive ($\beta = .26, p < .05$), indicating that the higher the
obsessive passion, the greater the negative affect. The coefficient for harmonious passion
was not significant ($p > .10$).
Table 1 Means, Standard Deviations, and Inter-Correlation Matrix

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>S.D</th>
<th>VIF</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<td>1. Negative Affect</td>
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<tr>
<td>2. Age</td>
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<td>2.23</td>
<td>-.11</td>
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<tr>
<td>3. Gender</td>
<td>69%</td>
<td>.47</td>
<td>1.12</td>
<td>-.24*</td>
<td>-.01</td>
<td>1.00</td>
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<tr>
<td>4. Education</td>
<td>5.11</td>
<td>1.39</td>
<td>1.11</td>
<td>-.04</td>
<td>.28*</td>
<td>-.04</td>
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<td></td>
<td></td>
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<tr>
<td>5. Founding Experience</td>
<td>0.99</td>
<td>1.63</td>
<td>1.17</td>
<td>-.09</td>
<td>.24*</td>
<td>-.11</td>
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<td>1.00</td>
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<td>6. Working Experience</td>
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<td>-.18</td>
<td>.72**</td>
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<td>.29*</td>
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<td>7. Fear of Failure</td>
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<td>.86</td>
<td>1.08</td>
<td>.50**</td>
<td>.02</td>
<td>-.12</td>
<td>-.10</td>
<td>-.07</td>
<td>-.02</td>
<td>1.00</td>
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<td>8. Harmonious Passion</td>
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<td>1.33</td>
<td>-.08</td>
<td>-.12</td>
<td>.04</td>
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<td>9. Obsessive Passion</td>
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<td>-.19</td>
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<td>.17</td>
<td>-.06</td>
<td>-.10</td>
<td>.43**</td>
<td>1.00</td>
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*p < .05; **p < .01; ***p < .001; n = 80.
Table 2 Hierarchical Regression Analysis: Fear of Failure, Passion, and Negative Affect

<table>
<thead>
<tr>
<th></th>
<th>Base Model</th>
<th>Main Effects Only Model</th>
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<tr>
<td>Age</td>
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<td>Education</td>
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<td>Working Experience</td>
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<tr>
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<td>.47***</td>
<td>.47***</td>
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<tr>
<td>Harmonious Passion</td>
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<td>-.08</td>
<td></td>
</tr>
<tr>
<td>Obsessive Passion</td>
<td>.26*</td>
<td>.19</td>
<td></td>
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<tr>
<td>Fear of Failure x</td>
<td></td>
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<tr>
<td>Harmonious Passion</td>
<td>-.25*</td>
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<td>Fear of Failure x</td>
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<td>Obsessive Passion</td>
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$R^2$                      | .11        | .39***                  | .47***     |
Adj. $R^2$                 | .05        | .32***                  | .39***     |
$\Delta R^2$               |            | .28***                  | .08***     |

Note: Standardized regression coefficients are displayed in the table. 
*p < .05; **p < .01; ***p < .001; n = 80.

The full model comprising the interaction effects accounts for a significant amount of variance over and above the main effects only model ($\Delta R^2 = .08, p < .001$). The coefficient for the interaction of fear of failure and harmonious passion is significant and negative ($\beta = -.25, p < .05$), and the coefficient for the interaction of fear of failure and obsessive passion is significant and positive ($\beta = .25, p < .05$). To interpret the nature of these contingent relationships, we plotted high (one standard deviation above the mean) and low (one standard deviation below the mean) passion on a $y$-axis of negative affect and an $x$-axis of fear of failure. As illustrated in Figure 1, for nascent entrepreneurs, the positive relationship between fear of failure and negative affect is less positive when there is high harmonious passion than when there is low harmonious passion. This finding provides support for Hypothesis 2. As illustrated in Figure 2, nascent entrepreneurs, the positive relationship between fear of failure and negative affect is more positive when there is high obsessive passion than when there is low obsessive passion. This finding provides support for Hypothesis 3.
Figure 1  Interaction of Fear of Failure and Harmonious Passion on Negative Affect

Figure 2  Interaction of Fear of Failure and Obsessive Passion on Negative Affect
1. Discussion

The aim of this paper is to uncover the negative affective consequences of entrepreneurs’ fear of failure and to understand how different types of passion can regulate these affective reactions. We situate our study in a particularly relevant setting—namely, a naturally occurring context of nascent entrepreneurs pitching their early-stage ventures to external audiences (in the form of a start-up competition). We chose this context because the negative affective consequences of fear of failure are likely to be activated given the wide range of potentially negative feedback. We find that those entrepreneurs high in fear of failure experience more negative affect and that passion regulates this relationship. Specifically, our analysis shows that the nature of passion’s regulatory effect depends on the type of passion—harmonious or obsessive. Particularly, we provide empirical proof that harmonious passion dampens the role of fear of failure on negative affect, whereas obsessive passion intensifies this relationship. These findings point to the tentative conclusion that passion’s regulatory function is unique to each type of passion. In the case of harmonious passion, the perceived level of attainment of the mastery achievement goal is not highly threatened by external failure cues. Thus, harmonious passion will downregulate the development of negative affect arising from the perception of such cues. Conversely, obsessive passionate entrepreneurs are likely to perceive and process external failure cues in a much more intense way, due to their external performance-based achievement goals. Therefore, obsessive passion will upregulate the development of negative affect, when fear of failure is activated.

Our findings in the current study contribute to ongoing research in several ways. First, while the literature on fear of failure in entrepreneurship has almost exclusively focused on the pre-founding stage, the current study expands our understanding of how active nascent entrepreneurs experience fear of failure and handle its affective consequences throughout the entrepreneurial process. Consistent with trait activation theory (Tett & Guterman, 2000; Tett & Burnett, 2003) and in line with previous research on fear of failure (e.g., Cacciotti et al., 2016), we demonstrate that there is a positive relationship between fear of failure as a personal disposition and the experience of negative affect. In addition, we investigate how, once activated by situational cues, dispositional fear of failure can translate into situational negative affect, which is important given that a substantial body of research has highlighted negative affect’s detrimental consequences for decision making (Conway, et al., 2013; Fredrickson, 2004), including in the entrepreneurial context (Patzelt & Shepherd, 2011; Shepherd, 2003).

Second, although research on the role of passion in the entrepreneurial process has developed considerably over the past years, with several studies emphasizing passion’s important role in coordinating cognition and behavior (e.g., Cardon et al., 2009; Cardon & Kirk, 2015; Ma & Tan, 2006) as well as its direct consequences, such as persisting through difficulties and suppressing alternative goals (Bélanger et al., 2013; Bird, 1989; Cardon et al., 2009; Murrieiks et al., 2014), the current study is unique in that it theoretically and empirically examines other functions passion fulfills in the entrepreneurial process—specifically, passion’s emotion-regulation function. Specifically, we uncover passion’s role in governing the entrepreneurial affective experience and influencing the intensity of other affective reactions. Building on the tenets of emotion regulation theory (Frijda, 2013; Gross, 1998), which advocates the importance of subconscious or conscious activation of a higher-meaning goal/activity (Farmer et al., 2011; Fredrickson et al., 2000; Mesquita & Frijda, 2011), we reveal that passion is an enduring feeling of higher relevance for the entrepreneur’s identity that can play a role in regulating the negative affective consequences of fear of failure. Our study
indicates that although fear of failure is associated with higher levels of negative affect at the within-person level, passion moderates this relationship at the between-person level. That is, we uncover the emotion-regulation role of the enduring, intense feeling of passion that some individuals experience when engaged in entrepreneurial activities, lending empirical support to recent interest in this topic (Cardon et al., 2012; Patzelt & Shepherd, 2011).

Research about passion in entrepreneurship has suggested that passion leads to motivation and persistence in the entrepreneurial process and keeps entrepreneurs on track (Cardon et al., 2009; Cardon & Kirk, 2015; Murnieks et al., 2014). However, no study to date has examined whether these effects are due to passion’s governing role over affective situations in which entrepreneurs may experience negative affect. Our research suggests that passion influences the perception and processing of external failure cues, influencing thereby the intensity of developing negative affective reactions to fear of failure. In demonstrating passion’s regulatory role, we offer an additional and complementary explanation for the importance of passion throughout the entrepreneurial process.

Third, we incorporate the current conceptualization of passion as harmonious and obsessive into an emotion-regulation framework and consider the unique achievement goal of each type of passion (mastery vs. performance goals). Specifically, our study takes a differentiated look at regulatory mechanisms and uncovers a duplicitous regulatory effect of passion. Interestingly, although passion has generally been considered to be beneficial to venture performance (e.g., Baum & Locke, 2004; Cardon, et al., 2009; Smilor, 1997; Vallerand, 2008), our study suggests that passion can also have a detrimental regulatory effect depending on its type and that people with different types of passion have different negative affective reactions to fear of failure. By acknowledging these regulatory differences between harmonious and obsessive passion, we suggest that glorifying passion and trying to foster it independently of its type might not be desirable nor possible without also recognizing and taking into account its possible negative side.

2. Limitations and Future Research

As with all studies, the current work is not free of limitations that elicit avenues for future inquiry. First, this study could not prove the existence of causal relations, since it is grounded on cross-sectional data. Caution is required in the analysis of the findings, although the nature of the constructs support caution. Indeed, Shook et al. (2004, p. 398) argue that “the strongest inference of causality may be made only when the temporal ordering of variables is demonstrated”. Although the variables “fear of failure”, “passion” and “negative affect” were measured at the same point in time, their different degree of persistence over time give us comfort that the relationships we observe are real and not driven by our research design. Fear of failure is a stable personality trait of the individual (Atkinson, 1957; McClelland et al., 1953), an unchanging attribute that dates back to parental socialization (Elliot & Thrash, 2004) and may be coped with but not altered (Morgan & Sisak, 2016). Even if there is little research about the persistence of passion over time, the research that does exist suggests that passion is a rather persistent individual attribute. Cardon, Gregoire, Stevens and Patel (2013) have tested the enduring nature of passion among 122 entrepreneurs over an 18-month period. Their results indicate that “entrepreneurs’ experience of passion was enduring. Paired t-tests of entrepreneurs’ responses to each item across the two periods did not reveal any significant differences.” (Cardon et al., 2013, p. 387). On the other hand, negative affect refers to short-lived, fleeting emotional experiences (Carver & Scheier, 1990; Watson et
Future studies using a longitudinal research design and repeated measurements could help us further understand the interplay between short-term affective reactions, long-term affect, and dispositional traits and could specifically shed more light on passion’s regulatory function over time.

Second, we collected the data for the present study from nascent entrepreneurs at a startup competition, a setting that was highly likely to activate the entrepreneurs’ fear of failure. Although this sample and research design is in line with other entrepreneurship and psychology studies (Cohen, 1978; Lykken, 1968), these conditions may impose some limitations on the generalizability of the findings across other groups of entrepreneurs or for other contexts. Moreover, given that our sample consists uniquely of entrepreneurs based in Germany, our results may also not be generalizable across cultures. Indeed, it might be that passion is experienced differently in different cultures. Therefore, we encourage further work to replicate our findings in other settings and extend the conceptual model.

Third, although we focused on the regulatory effect of passion on the affective consequences of fear of failure, the same mechanisms may extend to other consequences of fear of failure in the entrepreneurial context and/or other contexts. Future research can look into whether passion’s regulatory effect extends to the motivational and behavioral consequences of fear of failure in the entrepreneurial context and/or other management contexts. In particular, fear of failure is thought not only to have an inhibitory effect on entrepreneurial action but also to stimulate greater striving in some instances (Cacciotti et al., 2016; Mitchell & Shepherd, 2011). Considering that we theorized and found the two types of passion to have opposite moderating roles on the relationship between fear of failure and negative affect, future research can contribute by investigating whether the two types of passion have opposite moderating roles in the relationship between fear of failure and the amount of effort invested in the venture. Such research can help determine whether a breakeven point or an optimum equilibrium exists for regulating fear of failure, beyond which the regulatory effects are disadvantageous for the person of the entrepreneur as well as for the new venture.

Finally, future research can help us understand how harmonious passion and obsessive passion have different regulatory functions by exploring, for example, different affective states that are being regulated and the momentary circumstances at play. For example, it would be interesting to understand the regulatory functions of passion that increase or suppress positive rather than—or in addition to—negative momentary affect. With a focus on the relationships involved in the generation of positive affect, is the nature of the moderating relationships of the different types of passion the opposite to what has been found in the current study? There are many opportunities for future research.

3. Conclusion

To conclude, this work shows that entrepreneurs’ passion affects their experience of negative affect as a consequence of dispositional fear of failure in different ways depending on the type of passion. Specifically, the more entrepreneurs experience harmonious passion, the less intense their negative affective reactions to fear of failure will be. In contrast, the more entrepreneurs experience obsessive passion, the more intense their negative affective reaction to fear of failure will be. Hopefully these results will stimulate future research on the regulatory outcomes of passion on different types of affective reactions throughout the entrepreneurial process.
References


APPENDIX 4  PAPER IV

The Role of Passion and Perception in Entrepreneurs’ Choice of Decision-Making Logic

Silvia Stroe

Abstract

This study extends the literature on entrepreneurial decision-making logics by investigating the use of effectuation and causation among nascent entrepreneurs. We test the configurational effect of passion, risk perception and entrepreneurial self-efficacy for effectual and causal decision-making. The results, based on data gathered with 50 early-stage entrepreneurs, show that, more than passion, entrepreneurial self-efficacy and risk perception alone, is it their combinations that led to a causal, respectively an effectual logic. As such, this fsQCA study helps to disentangle some of the intricacies of the choice of decision-making logics.

Key words:

Effectuation, causation, harmonious passion, obsessive passion, entrepreneurial self-efficacy, risk perception

1. Introduction and relevance of the topic

In her seminal work, Sarasvathy (2001) distinguished between decision-making logics that focus on prediction or those that focus on non-predictive control. On the one hand, prediction can have an essential function in a goal-directed pursuit: if individuals can predict the future, they can control the outcomes and thereby be more likely to experience success. The predictive decision-making logic, called also causation (Sarasvathy, 2001, 2008) concerns pursuing success with the help of estimations and analyses aimed at developing precise factual predictions of expected future outcomes. Predictive strategies such as causation can include developing scenarios, approximating consequences, and formulating refined portfolio strategies with various alternatives (Wiltbank, Read, Dew, & Sarasvathy, 2009). The assumption in the causal practice is that one can gain control over outcomes by predicting the venture context and placing the venture in a favourable position for future success.

However, in complex and uncertain context, such as the entrepreneurial context, the accuracy and usefulness of predictions is reduced (Dew, Read, Sarasvathy, & Wiltbank, 2009; Read, Song, & Smit, 2009). Prediction becomes increasingly complex and hard, and, therefore, decision makers may benefit more from employing decision logics that reduces their requirements of prediction (March, 2006; Axelrod & Cohen, 1999). Such an approach is effectuation, a framework of non-predictive control. Effectuation builds upon the assumption that one does not need to forecast the future, if one can control future developments (Sarasvathy, 2001). In extremely ambiguous contexts, a focus on
non-predictive control may be more advatageous than predictive methods. Effectuation refers to a framework of various heuristic principles, coherent among themselves, which focus on developing and controlling solutions to uncertainty. At the base of the effectual principles, there is the emphasis on the resources in one’s possession, and not future pre-set goals (Sarasvathy, 2001, 2008; Perry, Chandler, & Markova, 2012). Conversely, in causal decision-making logic, goals are highly emphasized and the objective is to find and gather the resources for attaining the goals.

The logic of effectuation was uncovered while studying expert entrepreneurs, who seemed to sidestep prediction in handling the uncertainty intrinsic in developing new ventures (Sarasvathy, 2008). As novice entrepreneurs seem to prefer the use of predictive decision-making logics such as causation, the main supposition in interpreting these findings was that the increase in expertise in creating new ventures contributes to significant changes in how entrepreneurs take decisions (Dew et al., 2009; Read et al., 2009b). Therefore, in recent years, entrepreneurial expertise became the backbone of the theory on effectual decision-making (Sarasvathy, 2001). However, this assumption was never directly tested and emerging research has questioned the prevailing belief of solely relying on experience-based explanations (Baron, 2009). Considering that recent studies report the use of effectuation by nascent entrepreneurs too (e.g., Brettel, Mauer, Engelen, & Küpper, 2012; Chandler, DeTienne, McKelvie, & Mumford, 2011), it is obvious that theory still does not adequately explain if and why nascent entrepreneurs use an effectual decision-making logic. Moreover, despite the rapidly growing volume of studies devoted to the use of effectuation versus causation by entrepreneurs (Perry et al., 2012; Read et al., 2009b; Read, Sarasvathy, Dew, & Wiltbank, 2016), research on their antecedents remains limited in scope.

As a baseline for uncovering the antecedents of causation and effectuation, this study includes prominent and widely discussed individual-level variables from the existing entrepreneurial literature that have been shown to impact a variety of entrepreneurial outcomes (Baum & Locke, 2004; Chen, Greene, & Crick, 1998; Simon, Houghton, & Aquino, 2000), and have been suggested to impact entrepreneurial decision-making more generally (Cardon, Wincent, Singh, & Drnovsek, 2009; Hmielski & Baron, 2008; McMullen & Shepherd, 2006), but have been overlooked in prior effectuation research: passion, risk perceptions and entrepreneurial self-efficacy.

Effectuation has been coined as a theory of entrepreneurial expertise (Sarasvathy & Dew, 2008). However, our perspective suggests that entrepreneurs’ decision-making choice may be less closely linked with concrete competence and resources of the entrepreneurs. Instead, how they think and behave might have more to do with their affective preferences, and cognitive evaluation of the self and of the environment (Bandura, 1997; Baron, 2008). Indeed, individuals orient to situations and decide how to pursue their goals on the basis of their beliefs (Schoenfeld, 2011). Individual-level variables such as passion, risk perceptions and entrepreneurial self-efficacy are psychological constructs that have significant bearing in understanding entrepreneurial drive and behavior, and by extension, entrepreneurial decision-making (Boyd & Vozikis, 1994; Cardon et al., 2009; Mitchell et al., 2002; Simon et al., 2000). Such psychological factors might explain preferences for and beliefs about the suitability of a predictive or a non-predictive decision-making process. Moreover, they are common factors present among nascent as well as experienced entrepreneurs. Therefore, they can advance our knowledge of entrepreneurs’ reliance on effectuation versus causation, beyond the explanatory power of a theory of entrepreneurial experience.
2. Theoretical framework and research propositions

2.1 Causation and Effectuation

Causal decision-making logic relies on systematic processing modes and is constituted of predicting the future based on given information. Effectual logic is the alternative set of rationales, oriented towards action and control (Read & Sarasvathy 2005; Sarasvathy 2001; Sarasvathy & Dew 2005; Wiltbank et al. 2006). While causal predictive framing refers to discovering and exploiting of current opportunities within a prearranged problem space, effectual non-predictive logic focuses on rearranging the problem space and restructuring present realities into new opportunities (Wiltbank et al., 2006). Specifically, causal and effectual decision-making logics differ on an array of specific heuristics principles that are applied in the new venture creation process.

Firstly, regarding the basis for making decisions and taking action, causation looks at a specific goal as fixed, and concentrates on choosing the right way to attain that goal. Under a causal, or predictive logic, entrepreneurs start by setting a goal and plan on how to achieve that goal. As part of the planning, they analyze various dimensions of the contextual environment such as the competitors, the market situation, and their competitive advantage and positioning (Brinckmann, Grichnik, Kapsa, 2010). Starting from this investigation, entrepreneurs elaborate a tactical blueprint and gather the necessary means to attain the agreed goal (Sarasvathy, 2008). On the other hand, effectuation starts from the resources at the disposal of the entrepreneur or the entrepreneurial team and focuses on increasing and optimizing the possible results that can be developed with those means (Sarasvathy, 2001; Sarasvathy & Dew, 2005).

Second, with respect to unforeseen contingencies, causal and effectual frames differ in the way entrepreneurs react to unexpected events and deal with the market context and challenges. Causation aspires to implement the initial strategic plan and responds negatively to eventual unforeseeable events, which are considered detrimental obstacles to the execution of the plan (Sarasvathy, 2001). Effectuation, on the other hand, is an adaptive process, that seeks for and incorporates feedback from the outside. This flexibility allows effectual decision-making to utilize unforeseen occasions to the advantage of the emerging firm (Chandler et al., 2011).

Third, causal and effectual decision-making frames also diverge on how the entrepreneur perceives, interrelates with, and includes other stakeholders in the creation and development process of new venture. Entrepreneurs following a causal framework are competitor-oriented, focus on building their competitive advantage, and protect their venture’s know-how for outsiders. They develop partnerships based on complementary competencies that can help them achieve their main goals, and set clear guidelines for these partnerships (Read, Dew, Sarasvathy, Song, Wiltbank, 2009). In contrast, venture creation processes under an effectual logic are not only open to, but also contingent on the participation of other committed stakeholders. They supply and offer their own resources, co-creating the future track and the emerging goals of the firm, and by that reduce uncertainty for the entrepreneurs (Read et al., 2009a). Moreover, effectual entrepreneurs are open with their developing products, for example, are revealing the potential customers in hope for helpful feedback.

Last, regarding resources and risk, causal and effectual frames have different approaches to the amount and flexibility of the investments they make. Since causation is grounded on a clear plan, it usually needs big investments, so that the expected returns can be maximized. On the other hand, effectuation acknowledges the intrinsic ambiguity of the
entrepreneurial context and follows a principle of affordable loss (Read & Sarasvathy, 2005). Here, the focus is not on high investments that allow for the maximization of potential future returns, but on available resources and small investments, so that the new venture does not suffer in case the investment are lost (Dew et al., 2009).

2.2 Passion as a determinant of effectuation and causation

Passion is an intensive positive feeling towards the venture activities, which develops as a reaction to a distant, but anticipated desired state of venture (Cardon et al., 2005; Cardon et al. 2009; Vallerand, 2008). Passion’s strong motivational force comes from the evaluation of the future desired venture outcome as highly significant for the well-being of the entrepreneur (Cardon et al., 2005). Therefore, passion will likely play a role in the choice of the decision-making process supposed to guide the entrepreneur towards achieving the highly significant venture outcome—the focus of passion. However, exploring the effect of passion on the decision-making logic used requires the recognition that there are two distinct types of passion, with different characteristics and different outcomes for the entrepreneur—harmonious and obsessive passion.

Harmoniously passionate entrepreneurs engaged in the entrepreneurial activity because they derive pleasure out of it, and not because of external or internal pressures (Lafrenière, Bélanger, Sedikides, & Vallerand 2011; Ryan & Deci, 2000). Therefore, harmonious passion is characterized by process-focused motivation where entrepreneurs are more likely to focus on the venture activity itself and on improving themselves at it, rather than on the outcomes and goals (Pham & Taylor, 1999; Vallerand et al., 2007). As a result of integrative self-processes that are at play, harmoniously passionate entrepreneurs have a sense of control over the venture activity, are flexible and less rigid in their goal pursuit (Vallerand et al., 2003), and open to new experiences and to experimentation (Hodgins & Knee, 2002). Because of this flexibility, harmonious passionate entrepreneurs are more likely to embrace and integrate the unexpected in their decision-making, as well as to work together with internal and external partners in building up the venture. Moreover, because harmonious passion leads to positive affective experiences (Mageau et al., 2005; Vallerand et al., 2003), harmoniously passionate entrepreneurs are more likely to adopt a heuristic processing strategy such as effectuation (Isen, 1987).

**Proposition 1:** High values of harmonious passion in entrepreneurs results in the use of effectuation.

Obsessive passion on the other hand, originates from engaging in entrepreneurship because of interpersonal or intra-personal pressures, such as to increase self-esteem or to generate feelings of social acceptance or feelings of superiority (Vallerand et al., 2003). Therefore, obsessive passion is characterized by an outcome-focused motivation where entrepreneurs have a constant preoccupation with achieving the planned goals rather than focusing on the venture task at hand (Pham & Taylor, 1999; Vallerand, 2010). Therefore, they are more likely to be goal-driven, and to plan and envision desired entrepreneurial outcomes (Lafrenière et al. 2011; Vallerand et al., 2003). Obsessive passionate entrepreneurs were shown to set performance goals for themselves, that is, to be competitor-oriented and focus on defeating other actors or trying to prevent failure relative to others (Vallerand et al., 2007). Furthermore, obsessive passionate entrepreneurs try to avoid and anticipate the unexpected (Vallerand, 2010), have a rigid view on goal attainment, and do not feel in control of the venture activity (Vallerand et al., 2003). Therefore, they will be likely to rigidly follow initial goals and plans and to persist in achieving them (Cardon et al., 2009). Moreover, because of their defensive
engagement in the venture activity, obsessively passionate entrepreneurs will experience distress and negative affect while engaging in the entrepreneurial activity (Vallerand et al., 2003). Therefore, they are more likely to adopt a systematic processing strategy such as causation (Schwarz & Clore, 1996).

**Proposition 2:** High values of obsessive passion in entrepreneurs results in the use of causation.

### 2.3 Risk Perception as a determinant of decision-making logics

Variations in risk perception, or how a person identifies configurations of chances and probabilities (Kuieger & Dickinson, 1994), are critical in the choice between a predictive or a non-predictive decision-making logic (Ghosh & Ray, 1992; Sarasvathy, 2008). How entrepreneurs respond in a decision context depends on how they interpret signals from the environment. The perception of risk in the environment will lower the entrepreneur’s perceived ability to control the outcomes of their behavior (Jackson & Dutton, 1988), lowering the utility of setting fixed goals, following plans and making big investments. Instead, risk perception will draw entrepreneurs to the use of a non-predictive decision-making logics, where the focus is on the managing the process instead of focusing on outcomes. Perceiving the environment as risky will make entrepreneurs weight their next steps better, move the venture forward in smaller steps, considering developments of the contextual situation (Sitkin & Weingart, 1995), and seek the support of partners and pre-commitments to counter balance the risk (Read et al., 2009b).

**Proposition 3:** High values of risk perception of the entrepreneurs results in the use of effectuation.

### 2.4 Entrepreneurial self-efficacy

Entrepreneurial self-efficacy reflects the strength of entrepreneurs’ perceptions of their own ability to successfully reach goals in the new venture process (Bandura, 1991; Chen et al., 1998). Since entrepreneurial decisions are often attributed to such (over)confidence in ability (Hayward, Shepherd, & Griffin, 2006; Koellinger, Minniti, & Schade, 2007), entrepreneurial self-efficacy is an important antecedent in decision-making in general. Entrepreneurial self-efficacy offers the level of confidence required to expect success in attaining the venture’s goals (Boyd & Vozikis, 1994). Such a perception might also lead entrepreneurs to believe that they are in a position to foretell the outcomes that arise out of the venture activities (Bandura, 1997), and therefore to a causal decision process. Indeed, it seems that self-efficacious entrepreneurs are also more likely to focus on the future and construct or visualize success scenarios that guide performance (Gollwitzer, 1999; Wood & Bandura, 1989). Therefore, they are expected to be more committed to planning (Bandura, 1997; Luszczynska, Scholz, & Schwarzer, 2005). Moreover, highly self-efficacious entrepreneurs will set clear and challenging goals, monitor themselves, spend much effort in goal attainment and possess a stronger commitment to these goals (Bandura, 1997; Gollwitzer, 1999). Indeed, perceived self-efficacy was shown to be crucial to practical managerial techniques such as goal-setting and performance feedback (Locke, Frederick, Lee & Bobko, 1984).

**Proposition 4:** High values of entrepreneurial self-efficacy of entrepreneurs results in the use of causation.

On the other hand, entrepreneurial self-efficacy can also stimulate heuristic thinking and propagate the entrepreneurs’ belief in their own ability to directly shape the environment (Busenitz & Barley, 1997; Wood & Bandura, 1989). Self-efficacious entrepreneurs will
focus on opportunities in the environment (Bandura, 1997; Engel, Dimitrova, Khapova, & Elfring, 2014) and will therefore likely deal with unexpected events as a source of opportunity (Sarasvathy, 2008). Therefore, and since effectuation operates by utilizing proactiveness, agency, and control, entrepreneurial self-efficacy is likely to be a mechanism that triggers non-predictive, effectual decision processes (Sarasvathy & Dew, 2008).

**Proposition 5:** High values of entrepreneurial self-efficacy of entrepreneurs results in the use of effectuation.

### 3. Method

#### 3.1 Sample

Since this study was focused on the use of causation and effectuation by nascent entrepreneurs without entrepreneurial expertise, we designed the data gathering so as to meet this condition. In order to make sure we build a sample containing exclusively early-stage entrepreneurs, we contacted a major entrepreneurship foundation in Germany, which organizes an annual start-up competition in which only first time entrepreneurs with early-stage ventures are allowed to participate. We contacted the entrepreneurs of the 328 participating ventures through the event organizer’s weekly newsletter and invited the entrepreneurs to complete our survey online. We incentivized survey participation by offering the chance to win one of three entrepreneurship tool books. Prior to administering the survey, we pilot tested it with three doctoral researchers, with the event organizers, and with two entrepreneurs. The pre-test of the instrument revealed that the respondents had no difficulty answering any of the survey instrument’s items, so we proceeded with administering the self-reported questionnaire. We received responses from 76 entrepreneurs, representing a 23.1% response rate. Out of these responses, 24 were incomplete, and two had unacceptably low reliability (indicating that the person had not taken the survey seriously). After excluding these 26 responses, the final sample size was 50 entrepreneurs. On average, the respondents were 34 years old. 74% were male and 76% had earned a college degree.

#### 3.2 Measures

As previously stated, we measure causation and effectuation following Chandler et al. (2011). For causation, sample items include: “We organized and implemented control processes to make sure we met objectives”, “We researched and selected target markets and did meaningful competitive analysis”. The Cronbach’s α for the seven causation items was .85. Following Chandler et al. (2011), we treat effectuation as a formative construct, comprising the following sub-components: flexibility, affordable loss, experimentation and pre-commitments. Each of these sub-scales was accounted for using various items (Chandler et al., 2011; Frese, 2014). Items for flexibility include: “We were flexible and took advantage of opportunities as they arose.” A sample item for the experimentation sub-dimension is: “The product/service that we now provide is substantially different than we first imagined”. The Cronbach’s alphas for each variable were acceptable, considering the nature of the construct (from 0.65 for the four items related to experimentation to 0.84 for the four items related to pre-commitments), and comparable to what previous research found (Chandler et al., 2011; Harms & Schiele, 2012; Dew, Read, Sarasvathy, & Wiltbank, 2015). Harmonious, as well as obsessive passion was measured with the dualistic model of passion scale (Vallerand et al., 2003). Sample items for harmonious passion include “My role as an entrepreneur is in harmony
with the other activities in my life” and “Being an entrepreneur is in harmony with other things that are part of me.” Items measuring obsessive passion included: “Being an entrepreneur is so exciting that I sometimes lose control over it” and “I have the impression that my role as an entrepreneur controls me.” Both scales demonstrated acceptable internal consistency: Cronbach’s α were .77 and .79 for harmonious and obsessive passion, respectively. For entrepreneurial self-efficacy, we use 15 items from Chen and colleagues (1998), as adapted by Forbes (2005) and used by Cardon and Kirk (2013). The question was formulated as “Please indicate the degree of certainty you have in your ability to perform the following tasks;” and sample items were: “establish and achieve goals and objectives”, “make decisions under risk and uncertainty.” The measure yielded good internal consistency, with a Cronbach’s α of .86. Risk perception was measure using 7 item scale by Podoynitsyna, Van der Bij, & Song, 2012, and the measure had a Cronbach’s α of .76. The question was formulated as: “How would you characterize the challenges (for example, threats from new competitors, volatile markets and technologies, rapidly changing customer preferences) that you encounter in your new venture?” and sample items were: “as chances” (reversed), “as threats.”

3.3 fsQCA method

The method for data analysis used in this work is fuzzy-set Qualitative Comparative Analysis (fsQCA), a set-theoretic method of analyses that closely examines how various configurations of causal conditions contribute to a specific outcome (Fiss, 2007). FsQCA takes a configurational approach to investigating the way in which various determinants interact to produce an outcome. The technique can manage substantial causal complexity (Ragin, 2000; 2008) and usually employs small samples. FsQCA identifies patterns of various causal conditions and the outcome, rather than focusing on how one individual independent variable relates to an outcome.

3.4 Calibration of variables

The analysis used fsQCA to investigate the relation between various causal variables (harmonious passion, obsessive passion, self-efficacy, risk perception) and the outcomes of effectuation and causation. The software used was fsQCA 3.0. It is recommended that the process of transforming original scaled values into fuzzy-set membership scores for all conditions and outcomes should based on theoretical and substantive knowledge (Ragin, 2008). In this regard, Ragin (2008) proposes the direct method of calibration. This method consist in defining three qualitative anchors: the threshold for full membership, the crossover point and the threshold for full non-membership. To generate these anchors, we applied the 10th, 50th, and 90th percentiles respectively (Misangyi, & Acharya, 2014, Kraus Richter, Brem, Cheng, & Chang, 2016; López-Cabarcos, Vázquez-Rodríguez, & Piñeiro-Chousa, 2016).

4. Key Findings

4.1 Analysis of Necessity

A first analysis in fsQCA check whether the causal conditions must be present for the outcome to occur (analysis of necessity). As customary in fsQCA analyses, the assessment of causal necessity was based on a consistency threshold of 0.9 (Schneider, Schulze-Bentrop, & Paunescu, 2010). Table 1 illustrated the causal necessity analysis
results. Noteworthy, none of the identified causal conditions appears to be necessary for either causation or effectuation, because they do not exceed the threshold of 0.9. Therefore, the results do not support any of the forwarded propositions.

### Table 1 Analysis of necessary conditions for the presence of causation and effectuation

<table>
<thead>
<tr>
<th>Outcome variable</th>
<th>Causation</th>
<th>Effectuation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conditions tested</strong></td>
<td>Consistency</td>
<td>Coverage</td>
</tr>
<tr>
<td>Harmonious passion</td>
<td>0.679707</td>
<td>0.687192</td>
</tr>
<tr>
<td>~ Harmonious passion</td>
<td>0.568864</td>
<td>0.514990</td>
</tr>
<tr>
<td>Obsessive passion</td>
<td>0.590993</td>
<td>0.605343</td>
</tr>
<tr>
<td>~ Obsessive passion</td>
<td>0.592030</td>
<td>0.529817</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>0.732676</td>
<td>0.808157</td>
</tr>
<tr>
<td>~ Self-efficacy</td>
<td>0.544945</td>
<td>0.459049</td>
</tr>
<tr>
<td>Risk perception</td>
<td>0.513928</td>
<td>0.575978</td>
</tr>
<tr>
<td>~ Risk perception</td>
<td>0.660351</td>
<td>0.549629</td>
</tr>
</tbody>
</table>

### 4.2 Analysis of Sufficiency

After the necessity analysis, the next step is to find different possible combinations of conditions that are connected to the outcomes of effectuation and causation presence in terms of causal sufficiency. This is executed in a sufficiency test, with the help of the truth table. In this work, the assessment of causal sufficiency was based the frequency threshold is 1 and a consistency threshold is 0.75. The first measure indicates that only those configurations that include at least one case are empirically pertinent (Viss, 2012). The second measure indicates the extent to which membership in the outcome is systematically higher than or equal to membership in a causal configuration. Table 2 shows the results of the sufficiency analysis and describes causal associations of configurations with the presence of causation and to effectuation. These solutions incorporate all logical remainders that are in line with the presence of the outcomes, as implied by the theoretical basis (Ragin, 2008). The analysis uncovers two casual configurations for the presence of causation and three causal configuration for effectuation. Measures of consistency and coverage are displayed for the overall solutions, as well as for the individual configuration. Coverage refers to the extent to which the solutions explain all cases of presence of effectuation and causation, and can oscillate between 0 to 1 (Ragin, 2008). The coverage of the overall solution is 0.80 for the presence of causation is 0.80 and 0.70 for the presence of effectuation, demonstrating the coverage of a considerable share of the sample. The individual five configurations display consistency scores ranging from 0.82 to 0.66, implying their sufficiency in triggering the presence of the outcome.
Table 2 Analysis of sufficient conditions for the presence of causation and effectuation

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Causation</th>
<th>Effectuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harmonious passion</td>
<td>IA</td>
<td>IIA</td>
</tr>
<tr>
<td>Obsessive passion</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Entrepreneurial self-efficacy</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Risk perception</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Consistency</td>
<td>0.80</td>
<td>0.66</td>
</tr>
<tr>
<td>Raw Coverage</td>
<td>0.73</td>
<td>0.37</td>
</tr>
<tr>
<td>Unique Coverage</td>
<td>0.43</td>
<td>0.07</td>
</tr>
<tr>
<td>Overall solution consistency</td>
<td>0.72</td>
<td>0.77</td>
</tr>
<tr>
<td>Overall solution coverage</td>
<td>0.80</td>
<td>0.70</td>
</tr>
</tbody>
</table>

Black circles (i.e. ●) indicate the presence of a condition, and unfilled circles (i.e. ○) its absence.

Because higher degree of coverage reflects better empirical explanations of the outcome (Ragin, 2008), Table 2 ranks the configurations depending on their raw coverage. For the explanation of the subsequent configurations, the character * denotes the logical operator AND, while the character ~ denotes the condition’s absence (e.g., low level of self-efficacy).

For the presence of causation, the first configuration IA (ese) suggests that entrepreneurial self-efficacy, the belief that one is capable of achieving the venture goals, is a sufficient (though not necessary) condition for the choice of the predictive, goal-focused logic of causation. Second, configuration IIA (op * ~rp) shows that high levels of obsessive passion will only turn entrepreneurs toward a causal decision-making style when the lack of perceived risks justifies this choice.

For the presence of effectuation, harmonious passion alone is not a sufficient condition, but does play an important role. The first configuration IB (hp * ese) shows that, if they experience harmonious passion, self-efficacious entrepreneurs will not use a causal decision-making logic, but an effectual one. Or, as the second configuration IIB (hp * rp) shows, when risk is perceived in the environment, harmonious passion is needed in order to justify the choice of an effectual, non-predictive decision process. The third configuration IIIB (ese * rp * ~op) shows another path to the use of effectuation: self-efficacious entrepreneurs that perceive risks for the venture need to not be obsessively passionate in order to acknowledge the benefits of using a non-predictive decision-making logic.

5. Discussion, Limitations and Contributions

5.1 Discussion

This study analyzes when, and in which circumstances, individual decision makers’ passion, risk perception, and entrepreneurial self-efficacy account for the use of a causal or effectual decision-making logic. This work employs fsQCA, a comparative analysis method that investigates relations between a set of causal variables and the outcome variables. This method is particularly suitable for the study of decision-making logics,
because individuals weight in many different evaluations concomitantly when engaging in decision-making. Our empirical results reveal interesting and novel patterns that increases our knowledge regarding of the role of individual decision makers' affective and cognitive evaluations as critical determinants of the application of the decision-making frames of effectuation and causation in a nascent venture setting.

None of the antecedent conditions alone is necessary or almost necessary, but these conditions constitute various overlapping causal configurations sufficient for demonstrating presence of causal, as well as effectual decision processes.

First, regarding the influence of individual factors on the use of causation, the solution suggests that the presence of entrepreneurial self-efficacy seems to be sufficient for orienting individuals towards the use of causation, because the perception of ability to perform the entrepreneurial task increases their perceived control and allows them to engage in predictive decision strategies. This is in line with previous studies that found a preference of self-efficacious entrepreneurs for predictive decision-making elements (Boyd & Vozikis, 1994; Gollwitzer, 1999; Wood & Bandura, 1989). Secondly, causation seems to be used also by obsessive passionate entrepreneurs who do not perceive risk in the environment. Proposition 2 assumed that obsessively passionate entrepreneurs are likely to engage in causal decision processes. However, our results suggests that they need to perceive this as appropriate, because of a low perceived risk in the environment, in order to give way to a predictive decision-making style. This result suggest that passionate entrepreneurs do not attend solely to their “gut” feelings in their decision processes, but engage in rational consideration—such as evaluation of the environment—as well, supporting thus the view on passion as a “consciously accessible” feeling (Cardon et al., 2009, p. 517).

In the case of effectuation, harmonious passion seems to function as a balancing force in the entrepreneurs’ choice of decision-making style. Harmonious passion alone is not a sufficient condition for the use of effectuation, but it is indeed key to the use of effectuation. This is in line with previous literature that recognized passion’s role in coordinating cognition and behavior (e.g., Cardon et al., 2009; Cardon & Kirk, 2015; Ma & Tan, 2006). Our results show that, harmonious passion seems to steer entrepreneurial self-efficacy—the perception of high ability to perform the entrepreneurial task—away from using a causal decision-making logic, and towards the choice of an effectual decision process. This result reflects previous research underlining harmonious passionate entrepreneurs’ preference for a flexible, process-oriented engagement in the venture activities (Lafrenière et al., 2011; Vallerand et al., 2003), where newly arisen environmental opportunities are integrated and taken advantage of (Klaukien, Shepherd, & Patzelt, 2013; Thorgren & Wincent, 2013), but only if the entrepreneur feels competent to do so. Furthermore, unlike what the study assumed in Proposition 3, the perception of risk alone was not sufficient to steer entrepreneurs towards a non-predictive decision process. When risk is perceived in the environment, harmonious passion is needed in order to make entrepreneurs aware of the advantages of a non-predictive decision-making logic such as effectuation. This results substantiates previous research showing that harmonious passion facilitates adaptive cognitive processes (Forest, Mageau, Sarrazin, & Morin, 2011; Vallerand. 2010). Lastly, entrepreneurial self-efficacy and the perception of risk seem to lead to effectuation when obsessive passion is not present. This result supports the assumption that entrepreneurs need to not experience obsessive passion in order to be able to deploy effectuation when positive evaluation of the own entrepreneurial capabilities and perceptions of risk in the environment demand it. While our study could not prove that the presence of obsessive passion alone is sufficient for entrepreneurs to choose causation, it seems that its absence
does indeed allow entrepreneurs to use effectuation, assuming other conditions are met. This comes to support previous result that found obsessive passionate entrepreneurs to have a preference for predictive decision elements (Lafrenière et al. 2011; Vallerand et al., 2003; Vallerand, 2010).

The results of this study indicate that different types of individual-level variables interact to influence entrepreneurs’ choice of decision-making logic. Considering both types of passion—harmonious and obsessive—seems to be important in understanding entrepreneurs’ choice of one or the other decision-making logic. Because of their different motivational foci—process versus outcome-focused—the two types of passion seem to guide entrepreneurs in their decision-making logic choices. Specifically, harmonious passion seems to be an important, although not necessary condition for effectuation.

5.2 Limitations and Future Research

This research is not free of limitations. First, the sample consist of German nascent entrepreneurs. Thus, further research is needed to replicate these present findings in a different geographical or cultural area and with other entrepreneurial groups. Second, it would be interesting to evaluate whether the causal configurations found in this study remain static over time. Our study focuses on affective and perceptual individual antecedents of decision-making logic. Further research on the antecedents of effectuation and causation should consider additional individual-level variables such as personality traits or motivational constructs, or even go a level up and investigate team level variables such as team conflict or team cooperativeness levels (Reuber, Fischer, & Coviello, 2016). Finally, previous research on the antecedents of effectuation and causation in various contexts (da Costa & Brettel, 2011; Johannson & McKelvie, 2012) relies almost exclusively on multiple regression analysis. Further complementary studies employing the QCA method could uncover further combinations of individual-level factors that lead to predictive versus non-predictive decision logics.

5.3 Contributions

Our study contributes to the effectuation literature by proposing and testing individual-level predictors of effectual/ causal decision processes, thereby answering calls for clarifying the determinants of these two decision-making logics (e.g. Chandler et al., 2011; Reuber et al., 2016). Although in conformity with previous research, this study offers additional insights regarding the individual-level factors that might influence the choice of decision-making frame over and above just expertise (Sarasvathy, 2008). The effectuation literature has been controversially discussing the relationship between effectuation and individual-level variables (Goel & Karri, 2006; Sarasvathy & Dew, 2008). However, thus far, it did not offer a clear answer to question about what individual dispositional and cognitive differences drive a effectuation-based logic (Mitchell et al., 2007). With this work, I hope to have taken a first step towards clarifying this question.

Second, this work contributes to the literature on decision-making by underlining the utility of fsQCA in studies on decision-making logics and providing thereby a fresh insight in this domain. While the first empirical initiatives in the study of effectuation have usually been qualitative and experimental (Sarasvathy, 1998), later studies empirically modelled and tested effectuation and causation in large sample quantitative studies (Brettel, et al., 2011; Chandler et al., 2009; Harms & Schiele, 2012), using
multiple regression analysis. However, multiple regression analysis might not be the best method to investigate decision-making logics, since it can only prove the presence of monotonically increasing and decreasing relationships between two variables. Nevertheless, net effects do not reproduce all features of reality since, in any data, exclusively negative or positive relation between the variables are not backed by all cases (Woodside, 2013). This is even less the case for the study of decision-making processes, where people weight in different evaluations at the same time when they engage in decision-making. Therefore, the use of fsQCA, which looks at combinations of causal relations, and not independent effects, can give us a deeper insight into how decisions are being made. Following fsQCA method, this study offers recipes that associate with high membership scores in the two outcome conditions, effectuation and causation.

6. Conclusion

The current study set out to investigate individual-focused determinants of the application of causation and effectuation by nascent entrepreneurs. This work relies on recent research showing that unexperienced entrepreneurs use effectual decision processes as well, and tries to shed light on the individual-level factors that might replace the function of expertise in affecting the choice of decision-making logic.

This study illustrates the potential of a configurational perspective in understanding the antecedents of different decision-making logics. Our results suggest that, considering the complexity of decision-making, scholars wishing to understand entrepreneurs’ use of causation versus effectuation might yield an advantage from trading linear measurement models consisting of relationships between solely two variables, with investigations of different combination of causal conditions and the outcome.

We demonstrate that, to achieve a better understanding of individual psychological factors that affect entrepreneurial decision making, established concepts need to be theorized and studied in new ways.
References


