

## CHAPTER 8

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# Researching Entrepreneurial Decision Making

## INTRODUCTION

Entrepreneurship scholars have dedicated substantial time to exploring how and why entrepreneurs think differently from both non-entrepreneurs (e.g., Busenitz & Barney, 1997; Mitchell, 1994; Mitchell et al., 2002) and other entrepreneurs (e.g., Baron, 2004, 2006; Mitchell et al., 2007). Studies have also emphasized that the entrepreneurial context is characterized by high uncertainty, ambiguity, time pressure, emotional intensity, and high risk, which can have substantial impact on how entrepreneurs evaluate specific situations and make decisions (e.g., Baron, 2008; Busenitz & Barney, 1997; Mullins & Forlani, 2005). This literature on entrepreneurial decision making is important because the strategic decisions firm leaders make have a major impact on the firm's future direction and performance (Carpenter, Geletkanycz, & Sanders, 2004; Hambrick & Mason, 1984).

However, despite the theoretical progress in understanding how entrepreneurs make different types of decisions and decisions in different contexts, including, for example, the decision to become an entrepreneur (Bates, 1995; Douglas & Shepherd, 2000; Robinson & Sexton, 1994), opportunity exploitation decisions (e.g., Choi & Shepherd, 2004; Shepherd, Patzelt, & Baron, 2013), alliance decisions (Patzelt, Shepherd, Deeds, & Bradley, 2008), internationalization decisions (e.g., Domurath & Patzelt,

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This chapter is based on Shepherd (2011) and Shepherd, Williams, and Patzelt (2015).

2016; Williams & Grégoire, 2014), and exit decisions for both entrepreneurial ventures (e.g., DeTienne, 2010; Shepherd, Wiklund, & Haynie, 2009; Wennberg & DeTienne, 2014; Wennberg, Wiklund, DeTienne, & Cardon, 2010) and projects (e.g., Behrens & Patzelt, 2017; Shepherd & Cardon, 2009; Shepherd, Patzelt, Williams, & Warnecke, 2014; Shepherd, Patzelt, & Wolfe, 2011), the existing literature is far from fully capturing the complexity and dynamics of entrepreneurial decisions (Shepherd, Williams, & Patzelt, 2015). In this chapter, our aim is to make several contributions to advance an agenda for research on entrepreneurial decision making.

First, entrepreneurial decision-making research has explored how individual experiences (e.g., entrepreneurial experience [Baron & Ensley, 2006; Ucbasaran et al., 2009] and failure experience [Behrens & Patzelt, 2017]) and characteristics (e.g., entrepreneurial self-efficacy [Shepherd et al., 2013] and emotions [Klaukien, Shepherd, & Patzelt, 2013; Mitchell & Shepherd, 2010]) impact entrepreneurs' decision policies. By emphasizing the dynamic nature of entrepreneurial contexts and entrepreneurial decision making, we hope to open up new research avenues that acknowledge how the experiences and characteristics of individuals as well as their ventures and external contexts (e.g., industries, technologies) change over time, which likely has a substantial impact on how entrepreneurs make decisions. Such a dynamic perspective addresses the call for more research on the inter-relationship between the entrepreneur and the (changing) social context in the development of entrepreneurial opportunities and ventures (see Chap. 2 and Shepherd, 2015).

Second, research on decision making in entrepreneurship has often focused on decision cues based on established theoretical concepts (e.g., characteristics of venture resources [Mitchell & Shepherd, 2010] or types of environmental uncertainty [McKelvie et al., 2010]) and known players of the entrepreneurial process (e.g., entrepreneurs, venture capitalists, and bankers). However, with quickly changing technologies in a global world, new phenomena not well captured by existing theoretical concepts (e.g., crowdfunding) and new players (e.g., crowd investors) play an increasingly important role in entrepreneurship. We discuss several ways future studies can advance entrepreneurship theory by exploring the impact of new phenomena on entrepreneurial decision making.

Finally, a considerable part of decision-making research in entrepreneurship has been based on experimental methodology, specifically conjoint analysis (Shepherd & Zacharakis, 1997; for a review, see Lohrke, Holloway, & Woolley, 2010), which creates hierarchically nested data—

namely, multiple decisions made by the same individual. Although the nested nature in these studies has been exploited in existing research to some extent, we suggest a number of novel ways that multi-level analyses can further enhance our understanding of entrepreneurial decision making.

In the next section, we begin by outlining the types of entrepreneurial decisions and then investigate the role of context in the entrepreneurial decision-making process.

## TYPES OF ENTREPRENEURIAL DECISIONS

### *Opportunity-Assessment Decisions*

Central to entrepreneurship is the identification and pursuit of opportunities (Shane & Venkataraman, 2000; a point also made throughout this book, at least in terms of “potential” opportunities). Before an individual pursues or acts upon a potential opportunity, he or she must assess it (Bakker & Shepherd, 2017; McMullen & Shepherd, 2006). There are numerous research opportunities to build on our current knowledge of entrepreneurial thinking to make important contributions to the field.

**The impact of changes in the individual on entrepreneurial decision making.** Although prior research has provided insights into the ways entrepreneurs assess opportunities and make opportunity-related decisions (Choi & Shepherd, 2004; Haynie, Shepherd, & McMullen, 2009; Mitchell & Shepherd, 2010; Westhead, Ucbasaran, Wright, & Binks, 2005), thus far, researchers have tended to take a static view, largely disregarding the possibility that entrepreneurs’ opportunity-related decision policies could vary over time. Studies have shown, for instance, novice entrepreneurs’ opportunity-related assessments and decisions are different than those of more experienced entrepreneurs (Baron & Ensley, 2006; Westhead et al., 2005). Nevertheless, we know little about *how* changes in the individual over time influence the nature of the decisions they make. Specifically, by acting entrepreneurially, an individual may increase his or her knowledge, skills, and experience, which may in turn impact entrepreneurial self-efficacy. How do these changes in the decision maker influence assessments of subsequent potential opportunities vis-à-vis the previous (or first) opportunity assessment? Indeed, research on effectuation (Sarasvathy, 2001) proposes that the development and pursuit of a potential opportunity depend on the entrepreneur’s assessment of “who

I am,” “what I know,” and “whom I know.” However, entrepreneurial action itself could lead to a change in one, two, or all of these inputs such that not only does the environment, venture, and opportunity change but so too does the individual making the assessments and taking the actions. This notion suggests an even more dynamic decision-making process than has been investigated to date. Research that explores the type, amount, and rate of change in decision-making inputs and the corresponding change in the type, amount, and rate of change in decision policies (and their effects) is likely to provide important new insights into our understanding of opportunity assessment.

**The role of non-financial decision criteria.** The majority of entrepreneurship studies have focused on the financial aspects of entrepreneurs’ assessments of potential opportunities, including whether a potential opportunity is likely to provide the entrepreneur’s firm a sustainable competitive advantage (Choi & Shepherd, 2004; Haynie et al., 2009). Research on social and environmental entrepreneurship, however, has shown that non-economic motivations drive many entrepreneurs, yet research has not adequately investigated whether and how economic and non-economic (e.g., social and environmental) factors influence opportunity-related decisions and whether there are tradeoffs between the two. For instance, if an opportunity’s positive social or environmental effect is large, will the entrepreneur be more willing to accept lower financial return (or greater uncertainty, potential downside loss, and/or personal toll)? Perhaps there are other factors that lower the performance threshold for starting a sustainable development venture (consistent with the notion of a lower performance threshold that encourages persistence [Gimeno, Folta, Cooper, & Woo, 1997]). Indeed, in Chap. 5, we described how knowledge of the natural or communal environment likely increases the identification of potential sustainable development opportunities, but perhaps this knowledge (and/or the act of identifying an opportunity) lowers the financial desirability necessary for opportunity exploitation. This simple illustration highlights the need for future research to gain a deep understanding of the inter-relationship between the financial and non-financial inputs to opportunity assessments and the ways these different decision policies manifest themselves in financial and non-financial development outcomes.

**User innovation and entrepreneurial action.** Some research has revealed that users (i.e., entrepreneurs who commercialize a product and are also users of that product) are a significant source of entrepreneurship.

However, more work is needed on this topic. How do these *user entrepreneurs* (Shah & Tripsas, 2007) identify, assess, and decide to act on an opportunity stemming from a product they invented for their own personal use? What effect does the user entrepreneur's human and social capital (e.g., knowledge of and participation in user communities, knowledge of and interaction with markets) have in this process? At what point do users choose to share their idea with others and then decide to obtain economic income from their idea (alone or with others from the user community), and what prompts them to take such action? The answers to these questions likely depend on the characteristics of the specific opportunity and the user community. For instance, perhaps users who invented a product to solve their own medical problem are more likely to share their invention with others compared to users who invented a product with a lower social impact. Do those who invent medical products have different opportunity decision policies than others? For example, perhaps such individuals focus less on their own economic gains and more on the potential benefits for others who suffer more.

### *Entrepreneurial Career Decisions*

Entrepreneurship scholars have long explored people's decision to become self-employed (Bates, 1995; Douglas & Shepherd, 2000; Robinson & Sexton, 1994) and to create a new organization (Gartner, 1985; Katz & Gartner, 1988; Shaver & Scott, 1991). Future research can build on this body of literature to make important contributions to the field.

**How entrepreneurial action impacts individual attributes.** Although research has increased our understanding of how an individual's attributes (e.g., attitudes [Douglas & Shepherd, 2002], aspirations [Herron & Sapienza, 1992], and human capital [Davidsson and Honig]) explain his or her decision to become an entrepreneur, there is considerably less research on how the decision to become an entrepreneur impacts the individual (in terms of the same types of attributes). Perhaps acting entrepreneurially "clarifies" the individual's perception of him- or herself. Alternatively, entrepreneurial action may lead to learning something new about oneself, thus increasing self-knowledge (see Cardon, Wincent, Shih, & Drnovsek, 2009; Wilson, Marlino, & Kickul, 2004), which may inform subsequent decisions, including, perhaps, exiting an entrepreneurial career, "doubling down" on the current venture's course of action, or refining (or substantially changing) the nature of the opportunity underlying the venture.

How is self-knowledge built, and what impact does its changes have on subsequent entrepreneurial decisions? Importantly, learning that enhances individuals' self-knowledge may lead to the conclusion that an entrepreneurial career is not for them. This could have implications for research on entrepreneurship education. Specifically, rather than aspiring to increase students' entrepreneurial knowledge and then motivating them to pursue an entrepreneurial career, as educators, we may need to focus on educational tools that build self-knowledge in the entrepreneurial context that informs and motivates career decisions, which may be careers that are not entrepreneurial. Perhaps ironically, for some students, an entrepreneurship course that builds self-knowledge such that they are deterred from pursuing an entrepreneurial career could be considered successful. We need more research on this topic before we can make such determinations.

**Entrepreneurial careers as a series of steps.** Studies of entrepreneurial careers often have an implicit assumption that an entrepreneurial career is a destination for some individuals—an optimal outcome (e.g., Douglas & Shepherd, 2000; Eisenhauer, 1995; Kolvareid & Isaksen, 2006). Instead of seeing self-employment as a one-time decision, scholars should investigate this career option in the context of *a series of career decisions*. Viewing self-employment as a series of career decisions, we begin to gain some insight into re-entry (e.g., Carroll & Mosakowski, 1987), including more knowledge on serial entrepreneurs (Westhead & Wright, 1998; Westhead et al., 2005) and multiple exits. How is the “one-time” decision perspective different from the focal decision in the context of thinking about careers as a series of decisions? Such research is critical, especially as we consider the changes in people over their life course (Levesque & Minniti, 2006; Levesque, Shepherd, & Douglas, 2002) and especially given the aging population (Lévesque & Minniti, 2011). How are the decision policies for a graduating student different from a mid-career employee or someone nearing retirement? It seems that we know quite a lot about the first, a little bit about the second, and not much about the third. We believe (hope) that this will soon be rectified.

**Progression along the steps of an entrepreneurial career.** Related to the previous point, there is a considerable literature about how competences (Davidsson & Honig, 2003), beliefs (Shaver & Scott, 1991), and motivations (Herron & Sapienza, 1992) influence the decision to start of a new venture, but in many ways, the creation of a new venture involves a series of activities (e.g., Lichtenstein, Dooley, & Lumpkin, 2006) that themselves require a series of decisions (perhaps as a sequence of nested

decisions). What are these decision points, and how are these decisions made? Consistent with the notion that individuals can change as a result of acting entrepreneurially, the decision-making process of new venture emergence is likely highly dynamic. Although quite a challenge, researchers can make an important contribution to the field by exploring how progression through the nascent steps toward venture emergence presents choices among alternatives in the context of a changing environment that is internal in terms of the entrepreneurs' self-knowledge and the extent of venture emergence and external in terms of the market and industry. Some individuals, for instance, remain nascent entrepreneurs for long periods of time, engaging in numerous preparations to start their venture but eventually choosing not to. How and why do various motivations related to the venture-creation decision change throughout the nascent phase? As nascent entrepreneurs learn increasingly more about the different tasks and demands that go along with starting and running a venture, their views of their own skills and abilities are likely to change. In turn, these changes may affect their ultimate desire to continue or cease their venture. As individuals decide to start a new venture, does their confidence in their ability to complete some tasks (e.g., find customers) make up for their lack of confidence in their ability to complete other tasks (e.g., find investors)? Since motivation focuses attention on specific elements of available information (Ocasio, 1997; Shepherd, McMullen, & Ocasio, 2016), how do the various motivations (e.g., economic, prosocial, autonomy, and intrinsic) of nascent entrepreneurs influence the attention they pay to and the way they interpret information in venture-creation decisions? Moreover, failure occurs often in entrepreneurial undertakings and has been shown to result in both sensemaking and negative emotions (Shepherd, 2003; Shepherd et al., 2011), both of which affect motivation and decision making. How do previous failures alter entrepreneurs' perceptions of themselves and the environment and their use of decision-making tools when deciding to start a new venture?

**Deciding to exit an entrepreneurial venture.** Recent research has begun to complement the substantial literature on entry by exploring the decision to exit a business (DeTienne, 2010; Shepherd et al., 2009; Wennberg & DeTienne, 2014; Wennberg et al., 2010) and the decision to exit a project (Shepherd & Cardon, 2009; Shepherd et al., 2011, 2014). We have already discussed future research opportunities related to exit in terms of advancing knowledge on stage gates (Chap. 4) and the emotional antecedents and consequences of the termination of a project or a firm

(Chap. 3). Here, we focus on an entrepreneur's decision to voluntarily exit his or her business and the process of assessing and choosing between sources of exit. For instance, what decision-making process does the entrepreneur go through when deciding whether to exit a successful venture? It is likely that venture success and other venture traits (e.g., number of employees, benefits created for other stakeholders, links to personal identity, and presence of a family member successor) impact the exit mode. Furthermore, entrepreneurs likely have diverse reasons for deciding to exit as well as different career/lifestyle possibilities after exit, both of which could influence their likelihood of exit, their timing for doing so, and/or their exit mode. Researchers could also explore the emotional outcomes (i.e., type and intensity of emotions) associated with the various modes of entrepreneurial exit. What emotional outcomes come from a successful exit? Does the entrepreneur experience positive emotions (which he or she likely assumes will occur) and/or negative emotions from ending a (successful) business? Do emotional reactions after exit vary in intensity, and if so, does such variance effect later outcomes (e.g., decisions to start another venture, and enter corporate life)? Perhaps feelings of grief are more intense for those who exit successful businesses as opposed to failing businesses or for those who had more control over when to exit than those with less control. We hope researchers further investigate these important relationships.

### *Decisions on Funding Entrepreneurial Actions*

Although entrepreneurship has a long tradition of investigating the decision making of venture capitalists (Fried & Hisrich, 1994; Shepherd, 1999; Zacharakis & Shepherd, 2001) and to a lesser extent the decision making of business angels (Maula, Autio, & Arenius, 2005; Maxwell, Jeffrey, & Leveque, 2011), recent research on funding entrepreneurial endeavors has begun to focus on crowdfunding (e.g., Belleflamme, Lambert, & Schwienbacher, 2014; Mollick, 2014). According to Mollick (2014, p. 1), "crowdfunding allows founders of for-profit, artistic, and cultural ventures to fund their efforts by drawing on relatively small contributions from a relatively large number of individuals using the internet, without standard financial intermediaries." Although crowdfunding research could be a new fad, we doubt it—we think it has "legs." We believe that the phenomenon of crowdfunding itself will rapidly change over the next few years, but future research that moves beyond descriptive statements of



crowdfunding is likely to still make a contribution that has longevity by deeply theorizing on the topic.

**Crowdfunding as a source of entrepreneurial capital.** Researchers can add to our understanding of entrepreneurial decision making by exploring entrepreneurs' consideration of crowdfunding as a possible capital source. When do individuals prefer crowdfunding over more customary equity (or even debt) funding sources? While it seems likely that entrepreneurs who are younger, more computer literate, and more connected will find crowdfunding attractive, the nature of entrepreneurs' networks is also likely to be an important factor in funding decisions. More specifically, entrepreneurs who have larger virtual networks through their social media presence are better able to evaluate the crowd needed for funding and are more likely to take on the risks inherent in this funding source compared to those with weaker virtual networks or those with stronger "traditional" networks. In addition, researchers can investigate how obtaining crowdfunding influences later entrepreneurial decision making. For instance, completing a successful crowdfunding campaign may affect the entrepreneur's future funding decisions, including how much money can be raised and how quickly, which could be biased by the entrepreneur's positive but relatively limited prior experience. Prior crowdfunding success may also influence the entrepreneur's perceptions of the appeal of starting a new venture and decisions regarding what type of venture to pursue based on his or her knowledge of the crowd's interests. In turn, these choices could impact the individual's decision to become a portfolio or serial entrepreneur. On the one hand, the speed of crowdfunding, for instance, may foster a faster type of serial entrepreneurship or alter the scope and configuration of individuals' entrepreneurial business portfolios. On the other hand, does unsuccessful crowdfunding experience influence entrepreneurial decision making? In this context, the entrepreneur may choose to focus on traditional funding sources or to use negative input from the crowd to inform his or her decision to end the venture or to reconfigure the potential opportunity. Further still, certain conventional considerations, including the amount of, timing of, and control "given away" through fundraising, are likely to have different effects for crowdfunding. However, not all the changes occur on the entrepreneur's side—how does the crowd change as a result of different campaigns? This is an exciting new area with many opportunities for future research.

**Bootstrapping entrepreneurial ventures.** Given that the entrepreneurship literature has acknowledged the importance of resourcefulness

(e.g., Baker & Nelson, 2005; Powell & Baker, 2015; Shepherd & Williams, 2014), it is somewhat surprising that so little research has investigated the role of bootstrapping in new and otherwise entrepreneurial firms. Entrepreneurs use bootstrapping, which refers to “finding creative ways to avoid the need for external financing through reducing overall cost of operation, improving cash flow, or using financial sources internal to the company” (Ebben & Johnson, 2006, p. 851), as another funding source. However, research on the decision making associated with tapping into bootstrapping as a source of resources is scarce (for exceptions, see Harrison, Mason, & Girling, 2004; Jonsson & Lindbergh, 2013). Future studies can investigate why and how entrepreneurs choose to pursue bootstrapping instead of external funding sources as well as what decision making is involved in lessening operation costs, enhancing cash flow, and generating other internal funding sources. We believe that accounting scholars are particularly well qualified to address these questions and, more importantly, to begin to ask additional questions about entrepreneurial firms’ internal funding.

**The role of business plans in funding entrepreneurial ventures.** A discussion of funding decisions would be incomplete without also considering the business plan. Although the pros and cons of strategic planning have been well litigated (Brinckmann, Grichnik, & Kapsa, 2010; Chwolka & Raith, 2012; Karlsson & Honig, 2009) and somewhat settled, the discussion of the benefits of business plans and business planning still generates a lot of heat. This indicates that people hold opposing views and hold those views strongly. Although it is difficult to challenge people’s strongly held views, we suspect that future research will be able to reconcile these previously contrasting perspectives. For example, researchers can build on the idea that planning is an important activity regardless of whether the venture has a formal business plan. However, some planning processes may be better than others. For instance, planning that is more comprehensive may lead to more in-depth thinking and more educated decisions. However, such intense planning could also result in the planning fallacy or drawn-out decision making, in which case windows of opportunity may close or entrepreneurs may be discouraged from changing their decision making. These latter possibilities are likely to be especially harmful in environments that are highly dynamic, such as the micro-computer industry in the early 1990s and social media over the last decade.

**Balancing financial and social missions.** Recent research has begun to explore the role of hybrid organizations—those “organizations that

combine institutional logics in unprecedented ways” (Battilana & Dorado, 2010, p. 1419; see also Battilana & Lee, 2014)—particularly those pursuing both an economic and social mission. For instance, research has frequently stressed the need for socially motivated entrepreneurs to offset their venture’s financial needs with their desire to help others. However, we know less about how these entrepreneurs balance financial and social concerns in the decision-making process (e.g., for decisions on what market to enter, which products or services to develop, which employees to bring onboard). Additionally, it is likely that organizational context influences entrepreneurs’ decisions to “do good.” For example, what effect do firms’ economic performance, organizational members’ culture and norms, and organizational structure have on entrepreneurs’ decisions to do good? Further, how does venture environment impact entrepreneurs’ decisions to do good? It could be that entrepreneurs in hostile and dynamic environments feel greater managerial burden and experience less resource slack and are therefore less likely to engage in social entrepreneurship than those in benign or stable environments. Lastly, do these effects vary over time (e.g., after the entrepreneur gains more venture or industry experience or when the venture becomes older), and if so, how do they change? We believe that theories and existing research on prosocial motivation (Grant, 2007; Grant & Mayer, 2009) and values disengagement (Bandura, 1999; Shepherd et al., 2013) can contribute to this research stream.

## BIASES AND HEURISTICS IN ENTREPRENEURIAL DECISION MAKING

The literature clearly indicates that entrepreneurs, as all people, have biased decision making (Busenitz & Barney, 1997; e.g., Hayward, Shepherd, & Griffin, 2006; Simon, Houghton, & Aquino, 2000), especially under conditions consistent with the entrepreneurial context (Baron, 1998). This body of knowledge becomes particularly useful if future research further investigates when these biases are beneficial and when they are particularly detrimental. We normally refer to the positive side of mental shortcuts (i.e., those that also lead to biases) as heuristics. Heuristics are “efficient cognitive processes, conscious or unconscious, that ignore part of the information” (Gigerenzer & Gaissmaier, 2011, p. 451). It is important that future research details the type (based on content) of entrepreneurs’ heuristics; the way in which they are formed, updated, and triggered; and

the benefits arising from their use. For instance, researchers can examine the ways heuristics impact decision-making speed and the circumstances under which speed is vital (perhaps even more so than accuracy). If future research is able to uncover benefits arising from the use of heuristics, we can be less concerned about biases and concentrate more on when to utilize heuristics and how individuals can learn, develop, alter, and communicate heuristics. Moreover, future research could also explore the benefits resulting from biases while also recognizing their costs. After business failure, for example, an individual's over-confidence may have ego-protective effects and may foster initial sensemaking efforts and emotional recovery, all of which could outweigh the costs of being over-confident.

In terms of eliminating bias or otherwise reducing its negative effects, future research can begin by exploring heterogeneity across individuals. Why are some individuals less susceptible to biases than others? Perhaps there is something about an entrepreneur's experiences that makes him or her less susceptible to a particular bias. For instance, recent experience with a project failure may reduce over-confidence with other venture-related decisions. It could be that the entrepreneur (with less bias) engages metacognition when facing a novel environment, which improves his or her adaptation to a dynamic environment. Perhaps those who can withhold their expectations of a situation or can take another's perspective of the situation are less likely to be biased. The nature of the context is also likely to make the focal individual more or less biased. How can entrepreneurs recognize and perhaps adjust their context or thinking to diminish their biases? Decision aids may serve as an important tool. We realize that given the nature of the entrepreneurial task, there is considerable difficulty in creating such decision aids, but the difficulty is likely more than offset by the benefits from somewhat de-biasing specific decisions. For example, educators could develop training on the circumstances under which individuals are more vulnerable to a bias; on the creation and use of decision aids; on team participation in the decision-making process (however, we acknowledge that the team environment can create different biases); and/or on ways to capture, interpret, and communicate decision input.

Above, we explored the content of research opportunities to advance the field of entrepreneurship. We now turn to how this can be done in the hope that it might help scholars methodologically open up new conceptual domains. The next section proceeds as follows: First, using findings from multi-level research on decisions, we explain how individuals make choices while completing an entrepreneurial task (i.e., weighting

specific criteria of a decision or evaluation). Second, we investigate other potential paths for cross-level research that explains variation in people's decision policies resulting from individual differences. Third, in line with the conceptualization of interactions across three levels of analysis, we explore potential research avenues that could connect the levels of the decision, the individual, and the context in which they are situated. Finally, we examine whether and how various situational contexts explain within-individual (i.e., intra-individual) variation in decision policies.

## ENTREPRENEURS' DECISION POLICIES

### *Entrepreneurs' Common Decision Policy*

In this section, our goal is to build on multi-level decision-making research in the entrepreneurial context to suggest future contributions to this research stream. The majority of studies in this research stream have used conjoint analysis, which involves participants' evaluating a series of profiles and making judgments in order to capture their decision processes and decompose them into their underlying structure (Shepherd & Zacharakis, 1997). Metric conjoint analysis and policy capturing are the most common forms of conjoint analysis (for a review of the types of conjoint analysis, see Priem & Harrison, 1994).<sup>1</sup> By design, conjoint analysis necessitates that each respondent within a sample make a series of decisions. As such, subsequent data analysis must consider that these decisions are not independent of one another across the entire sample. Mitchell and Shepherd (2010), for instance, explored 1936 decisions about hypothetical entrepreneurial opportunities made by 121 high-tech firm executives (each executive made 16 decisions).

Random coefficient modeling (e.g., hierarchical linear modeling software package) enables researchers to empirically determine which criteria participants use most often in the decisions they make when completing entrepreneurial tasks. That is, by accounting for variance between respondents, researchers can develop and test a decision policy for the entire sample (i.e., based on the commonality among the decision policies of all the individuals in the sample). For instance, Choi and Shepherd (2004) studied entrepreneurs with ventures within incubators, finding that entrepreneurs are more likely to act upon opportunities when they feel there is more information about customer demand, the required technology is developed enough, and there is strong managerial capabilities and

stakeholder support. Further, they revealed that these positive relationships are stronger when the new product's anticipated lead time is longer. Numerous opportunities exist for researchers to explore common decision policies among individuals in the entrepreneurial context. Studies in this area could explore the decision policies entrepreneurs use during various nascent activities that eventually lead to firm emergence, the onboarding of key employees, the selection of venture capitalists and other important stakeholders, the identification of early adopters, and the development of reputation-building strategies. Research could also expand the corporate entrepreneurship and organization literatures to gain deeper insights into internal entrepreneurs' decision policies. For instance, researchers could theorize on and empirically test how organizational members' evaluations of the corporate environment inform their decisions regarding the level of commitment they will dedicate to entrepreneurial initiatives, how team members evaluate product champions and exit champions, and how product champions judge mentors within the organization (and vice versa).

While there is a strong body of knowledge on venture capitalists' decision making (e.g., Muzyka, Birley, & Leleux, 1996; Shepherd, 1999; Zacharakis & Meyer, 2000), additional entrepreneurial research opportunities exist to explore the decision making of other individuals immersed in or influenced by the entrepreneurial process. For instance, how do managers evaluate their alliances' entrepreneurial actions, how do employees evaluate the challenges stemming from rapid firm growth, and how do entrepreneurs' spouses feel about their partner's work-life balance? These questions represent the most basic form of multi-level research—namely, controlling for one level (i.e., individual differences) while exploring a different level (i.e., the decision). However, we are likely to gain a deeper understanding of entrepreneurial phenomena by studying the various decisions that serve as inputs to or outputs of the entrepreneurial process and help explain heterogeneity across groups of people.

### *Individual Differences in Entrepreneurs' Decision Policies*

While the decision policies among individuals in a particular sample are likely to have similarities, variance is also likely to exist. In other words, there is likely variance in the weights individuals assign to certain criteria when making choices in an entrepreneurial task. Researchers have begun to explore and theorize on these individual differences to delineate variance in people's decision policies. DeTienne, Shepherd, and De Castro (2008),

for instance, built on escalation of commitment theory and the literature on motivation to explain variance in the decision policies of entrepreneurs who persist in poorly performing ventures. Their theoretical model first hypothesized a common decision policy and then hypothesized the moderating role of an individual's extrinsic motivation on that decision policy. The authors revealed that extrinsic motivation has a moderating effect on the negative relationships between dynamism and persistence, complexity and persistence, and personal opportunities and persistence. That is, entrepreneurs with high extrinsic motivation weight these criteria less when making venture-persistence decisions compared to those with low extrinsic motivation. The study also showed that extrinsic motivation has a moderating effect on the positive relationship between personal sunk costs and persistence. In other words, entrepreneurs with high extrinsic motivation weight this particular criterion (i.e., the amount of sunk costs) more when making venture-persistence decisions compared to those with low extrinsic motivation.

The theoretical and empirical exploration of individual variance in decision policies opens up some interesting pathways for future research.

**Building on existing studies of common decision policies from a new theoretical perspective.** Researchers could focus theory, hypotheses, and analyses to explain variance in decision policies across individuals using results from existing conjoint studies capturing individuals' decision policies during entrepreneurial tasks. This approach is advantageous because the initial conjoint studies have already theoretically and empirically established the importance of the decision policies, thus enabling subsequent research to dig deeper into the decision by exploring why certain individuals (and not others) are likely to weight specific criteria more or less heavily. For example, the following moderators could aid in explaining variance in individuals' decision policies to act upon an opportunity: (1) positions toward the various errors stemming from decision making in highly uncertain environments (e.g., informed by regret theory [Zeelenberg, 1999] and/or norm theory [Zeelenberg, Van Dijk, Van Den Bos, & Pieters, 2002]); (2) the level of positive affect, negative affect, and a combination of both (e.g., informed by the psychology literature related to emotion and cognition [Izard, 2009]); (3) the intrinsic motivation to take action (e.g., informed by self-determination theory [Deci & Ryan, 2000; Ryan & Deci, 2000]); (4) the level of previous knowledge (e.g., informed by the literatures on Austrian economics [Shane, 2000], opportunity identification [Baron & Ensley, 2006; Grégoire, Barr, & Shepherd,

2010], or entrepreneurial action [McMullen & Shepherd, 2006]); (5) perceptions of how the world operates, the nature of people, and the nature of oneself (e.g., informed by the literatures on values [Schwartz, 1994; for an example, see Holland & Shepherd, 2013], resilience [Bonanno, 2004; Sutcliffe & Vogus, 2003], and identity [Brewer, 1991; Tajfel & Turner, 1979]); and (6) links to the business and social communities (e.g., informed by literatures on social networks [Granovetter, 1995] and social capital [Walker, Kogut, & Shan, 1997]). Furthermore, future research could extend entrepreneurship research on the influence of gender (Brush, Carter, Gatewood, Greene, & Hart, 2006) to explore whether and how gender explains variation in individuals' decision policies.

**Investigating moderators by theoretically sampling groups.** For instance, Zacharakis, McMullen, and Shepherd (2007) proposed that institutional differences would result in variation in venture capitalists' evaluations of entrepreneurial ventures. The authors analyzed 119 venture capitalists' decision policies across three countries representing unique economic institutions: the USA, which represents a mature market economy; South Korea, which represents an emerging economy; and China, which represents a transitional economy. The study revealed that venture capitalists in rules-based market economies depend on market information more heavily than those in emerging economies and that venture capitalists in China weight human capital factors more heavily than their US or Korean counterparts. Differences in decision policies are also likely to occur between, for example, entrepreneurs and venture capitalists; between entrepreneurs from the USA and those from China, India, and Sweden; and between entrepreneurs from high-tech companies and those from low-tech companies as well as across stakeholder groups.

**Building on individual difference constructs to explore variation in decisions.** For instances, researchers have shown that extrinsic motivation explains variation in entrepreneurs' decisions to persist with poorly performing firms (DeTienne et al., 2008), that human capital can explain variation in decisions regarding the allocation of small business loans (Bruns, Holland, Shepherd, & Wiklund, 2008), and that fear of failure can explain variation in individuals' opportunity-assessment policies (Mitchell & Shepherd, 2010). It could be that extrinsic motivation, human capital, and fear of failure are all individual difference constructs that serve as important moderators (depending on theory) for other decisions within the entrepreneurial process (e.g., those outlined throughout this chapter). Again, using recognized decision-policy moderators could



enable researchers to accrue knowledge across the numerous decisions in the entrepreneurial process. For instance, studies independently exploring human capital's moderating effect on the decision to pursue an opportunity, on nascent activities aimed at starting a venture, on firm-growth strategies, and on the termination of a poorly performing firm are likely to contribute to our understanding of the role human capital plays in the different tasks of the entrepreneurial process.

Finally, researchers have the opportunity to contribute to this line of research by combining the above ideas—that is, by investigating decisions for entrepreneurial tasks that have not been explored yet and to explain variation in those decision policies with moderators that have not been explored yet.

### *Decisions of Individual Entrepreneurs Within Contexts*

In the previous section, we outlined a multi- and cross-level model of individual differences to explain variance in decisions. However, individuals are also likely to be embedded in particular contexts, (e.g., entrepreneurs embedded in different countries, such as the USA, China, India, and Sweden). Additionally, there are likely to be individual differences within each group that help explain variance in decisions (e.g., entrepreneurial experience). Theorizing about entrepreneurial tasks at three levels—for instance, decisions (Level 1), individual experience (Level 2), and country (Level 3)—leads to fascinating research questions. Continuing with the previous example, for instance, research could explore the relationships described above beyond focusing exclusively on shared decision policies or explaining individual differences in those decision policies.

**Within-Context Variance.** First, does the entrepreneur's nationality explain variance in his or her decision policies, and if so, to what extent? In light of institutional theory (North, 2005) and the literature on national cultures (Hofstede, 1980), we may assume that entrepreneurs from certain countries weight the criteria for evaluating an opportunity differently compared to entrepreneurs from other countries. For instance, weak intellectual property protection in China could lead Chinese entrepreneurs to focus less on patenting their ideas than entrepreneurs from the UK, a country with strong intellectual property rights. Perhaps entrepreneurs from risk-averse countries emphasize the possible downside loss of opportunity exploitation (i.e., the costs of being wrong), but entrepreneurs from less risk-averse countries empha-

size the upside of opportunity exploitation (i.e., the benefits of being right). Researchers could test these relationships (and others) by controlling for individual differences, such as experience.

Second, nationality can also be included in this three-level model to explain variance in how individuals' entrepreneurial experience impacts decision policies. For example, during an entrepreneurial task, a more experienced entrepreneur may emphasize competition more when evaluating an opportunity's attractiveness compared to a less experienced entrepreneur, but this difference will likely be stronger in economies that are less regulated. This scenario characterizes a three-way interaction that involves all three levels. Finally, nationality may also explain entrepreneurs' propensity to find opportunities more or less attractive beyond the information they have about each of the decision criteria and the effects of entrepreneurial experience.

**Within-Individual Variance.** In the previous section, we highlighted the potential of considering the context in which an individual is embedded when he or she makes decisions in an entrepreneurial task. However, the same individual is likely to be presented with a variety of situations at different points in time that impact his or her decision policies in entrepreneurial tasks. Again, these tasks have a nested data structure with three levels of analysis: in this case, decisions (Level 1), situations/time (Level 2), and the individual (Level 3). Researchers have the opportunity to gain deeper insights into within-individual (i.e., intra-individual) variance by exploring situational differences. For instance, an individual's decision policy for evaluating an opportunity's appeal may vary when he or she has a promotion focus compared to a prevention focus, when he or she is in a gain situation compared to a loss situation, when he or she is in a positive emotional state compared to a negative emotional state, when there is great time pressure compared to minimal time pressure, and so on.

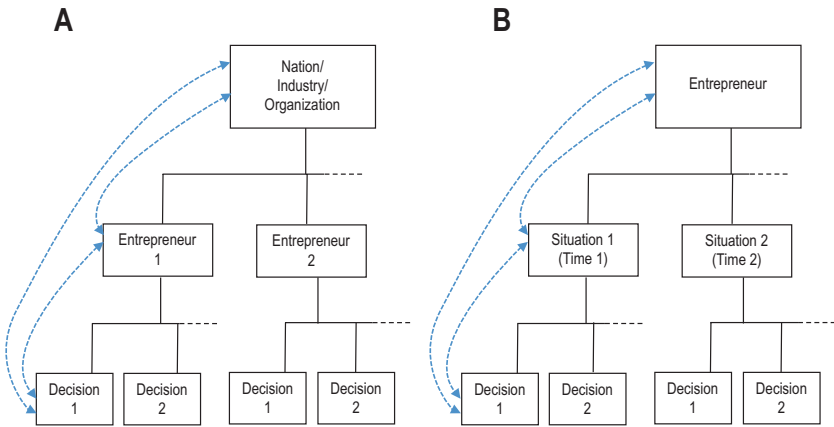
First, using the strong established literature on decision making in general and entrepreneurial decision making in particular, researchers can build models of within-individual variation in decision policies as well as develop valid situational contexts. Such studies will likely contribute substantially to the literatures on entrepreneurship, management, and decision making by providing a greater understanding of the influence situational contexts have on decision making. For instance, studies have shown that researchers sometimes manipulate situations to prime a regulatory focus (Halamish, Liberman, Higgins, & Idson, 2008), emotion

(Bradley & Lang, 1999), and feedback (Leung & Trotman, 2008). Do situational contexts like these also impact entrepreneurs' decision policies? If they do, in what ways?

Second, researchers also have the opportunity to study the role individual differences play in explaining variance in the way situational contexts affect decision policies. While experience, knowledge, and motivation all likely help explain variance in situational contexts' influence on decision policies, numerous opportunities exist for researchers to learn more about this element of decision making in entrepreneurial tasks. For instance, compared to those with low emotional intelligence, differences in the decision policy regarding opportunity appeal across emotional states (i.e., high negative versus low negative) may not be as substantial for individuals high in emotional intelligence. It could be that differences in individuals' decision policies to try again (e.g., act upon a later opportunity) across feedback conditions (e.g., success with a prior opportunity vs. failure) are not as strong for highly resilient people or those with extensive coping skills compared to less resilient individuals or those with weaker coping skills.

Finally, future research can explore situational contexts' role in the decision-making process. For example, in highly positive emotional states, entrepreneurs may consider opportunities to be more attractive compared to when they are in more negative emotional states (keeping the nature of the opportunity and individual differences constant).

**Summary.** Figure 8.1 offers a sketch of hierarchically nested concepts that researchers can use to explore entrepreneurial decision making. In Fig. A, individual entrepreneurs are nested within different contexts (i.e., nation, industry, organization), and there are several decisions each entrepreneur must make as part of his or her experimental tasks. Hierarchical linear modeling analysis of such nested data allows researchers to focus on one level while controlling for influences of all other levels (e.g., explaining decision-level variance while controlling for the characteristics of the entrepreneur and his or her industry). Alternatively, researchers can explore effects covering multiple levels of analysis (e.g., explaining how industry influences decisions while controlling for the characteristics of the entrepreneur). In Fig. B, decisions are nested within different situations/time points, which are nested within entrepreneurs. In such settings, researchers can explore, for example, how decisions vary over different time points while controlling for (or testing the moderating effects of) the characteristics of the entrepreneur.



**Fig. 8.1** A sketch of a model of the nested nature of data captured by conjoint analysis (and other experimental techniques); cross-level effects in dashed arrows

## DISCUSSION AND CONCLUSION

Although there is a substantial body of research on entrepreneurial decision making (for a review, see Shepherd et al., 2015), in this chapter, we offered multiple ways to tap into unknown territory. First, we discussed several ways to explore different types of entrepreneurial decisions as well as biases and heuristics in these decisions. To pursue some of these research opportunities and find others that advance our understanding of entrepreneurial decision making will likely require us, as scholars, to be more entrepreneurial in our methods. For example, adopting new methods to explore new empirical terrain can help trigger theorizing about entrepreneurial decision making and lead to interesting contributions. By combining established methods in new ways, we can also stimulate new theorizing. For example, we expect future research will begin to more frequently combine surveys with experiments, experiments with secondary data, inductive content analysis of secondary data to create panel datasets, and so on. Not only do we hope scholars are entrepreneurial in using methods to generate new insights, but we also hope that reviewers and editors are “open” to this sort of novelty because this is where (we believe) the greatest future contributions will come on the entrepreneurial decision-making topic. These contributions will not only be to the entre-

preneurship and management literatures but will be more far-reaching. Because the context in which entrepreneurial decisions are made is so extreme in a number of ways (e.g., high consequences, emotional anticipation and reactions, time pressures, and ambiguity), this provides us the opportunity to extend the boundaries of current theories of decision making and thus make a more general contribution to the psychology and behavioral economics literatures. In particular, conjoint analysis allows entrepreneurship researchers to explore and empirically test multi-level decision-making studies.

Second, we hope we have opened up some stimulating pathways for future research by conceptualizing decision making in entrepreneurial tasks using a hierarchical multi-level framework. By theorizing on and empirically testing cross-level models of decision making in entrepreneurial tasks, research in this area can add significantly to the literature on entrepreneurship. Regardless of whether studies use conjoint analysis to explore decision making or use another method to explore a different topic, multi-level research has the potential to make substantial contributions to the entrepreneurship field.

In conclusion, we are convinced that while prior studies have created a strong body of knowledge on entrepreneurial decision making, these studies have only paved the ground for more work on this important subject. We hope that this chapter inspires scholars to advance this important stream of literature in the multiple ways described here and beyond.

## NOTE

1. There are several differences between metric conjoint analysis and policy capturing, including (but not limited to) the following: First, metric conjoint analysis generally represents attributes at two (i.e., high and low) or three (i.e., high, medium, and low) discrete levels. Policy capturing, on the other hand, generally presents attributes along a continuum. Second, metric conjoint analysis employs experimental designs to reveal the attribute combinations for each profile in a sample as well as the number of total profiles, and it usually entails completely duplicating the initial set of profiles. Policy capturing generally does not use an experimental design and only duplicates a small subset of the original profiles.

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