

**THE ECLIPSE AND NEW DAWN OF INDIVIDUAL DIFFERENCES RESEARCH  
(CHARTING A PATH FORWARD)**

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**ABSTRACT**

Individual differences research in entrepreneurship theory has enjoyed a remarkable renaissance over the past few decades. Times have not always been so good. In this chapter, I discuss the factors that led to the initial demise of the individual differences perspective in the traits literature, and how, in the wreckage of this literature, lay the seeds for the revival of the individual differences perspective in the entrepreneur cognition literature. However, despite the remarkable revitalization of the individual differences perspective in the entrepreneurship literature, I highlight several fault lines in prevailing theoretical logics that conspire to once again undermine the contribution of the individual differences perspective to entrepreneurship theory. To address these challenges, I propose that a closer link between emerging theory on entrepreneurial agency with the individual differences literature marks the next stage on the conceptual evolution of individual-level entrepreneurship research.

**DEDICATION:** This chapter is dedicated to Lowell Busenitz, Alan Carsrud, Norris Krueger, and Ron Mitchell – good friends and mentors. Thanks to you all for your decades of leadership in the field of individual-level entrepreneurship research. I hope the work of my generation honors your many substantial contributions to the field. David.

## INTRODUCTION

Over the past two decades, significant advances have been made in exploring the role of individual differences in entrepreneurial phenomena (Mitchell *et al.* 2007). Times have not always been so good. Early in the 20<sup>th</sup> Century, many scholars posited that entrepreneurs possessed unique and systematic differences (i.e., the entrepreneurial personality) that distinguished them from other economic actors such as corporate managers. For several decades these theoretical musings motivated a sizable stream of individual-level entrepreneurship research. However, despite the intuitive appeal of this line of reasoning, empirical support for these perspectives was mixed (e.g., Brockhaus, 1982; Gasse, 1982; Martin, 1984; Sexton & Bowman, 1985; Gartner, 1988; Low & MacMillan, 1988) leading some scholars to declare that the entrepreneurial personality was a myth (Gartner, 1988). So instead of searching for systematic psychological differences among entrepreneurs, a growing volume of critical research contended that researchers should look for systematic similarities in the actions/behaviors of entrepreneurs and not for the individual-level differences between entrepreneurs and other actors (Gartner, 1988). As a result, throughout much of the 1980s until the early 1990s, individual level research was eclipsed in the entrepreneurship journals by new perspectives based in the core disciplines of the social sciences (e.g., sociology—Reynolds, 1991; Low & Abrahamson, 1997; Thornton, 1999; economics—Kirzner, 1979; Casson, 2003).

This is not the end of the story, however. Though exiled from the commanding heights of entrepreneurship theory during the lost decade, individual differences proved to be a powerfully alluring theoretical narrative. So instead of foretelling the end of individual differences research, the allure of the individual differences perspective combined with the empirical failure of the traits literature germinated a new, more robust theory of entrepreneurship grounded in a cognitive perspective. According to this perspective, entrepreneurial action and phenomena are a simultaneous function of mental states/cognitive processes and situational factors (Shaver & Scott, 1991). Fundamentally, this literature contends that entrepreneurs differ from other socio-economic actors in the way that they think and act in the world (Busenitz & Barney, 1997; Shaver & Scott, 1991).

By any measure, the emergence of the cognitive perspective in entrepreneurship research has proven to be an enormous success as numerous articles, dissertations, books, book chapters, cases, etc. have been published over the past two decades, exploring and revealing a robust link between entrepreneurial cognitions and entrepreneurship phenomena (Mitchell *et al.*, 2007). Thus, the individual differences perspective has enjoyed a long, new renaissance in the entrepreneur cognition literature. However, despite the past success of the entrepreneurial cognition literature in revitalizing individual differences research, questions remain as to the success of the overall literature in constructing a coherent and cohesive body of knowledge (Mitchell *et al.*, 2007). In this chapter, I will highlight several issues which I believe are at the heart of these questions—namely, the concatenation of rational choice logics with psychological reductionism leaves too many important questions under-explored thereby leaving gaping epistemological holes in our theories of entrepreneurship.

In my view, a way forward to create a more coherent and cohesive body of knowledge lies in linking the individual differences literature with a robust theory of human agency. Motivating my argument is a fundamental belief that a fundamental link between a theory of entrepreneurial agency and prior literature on individual differences provides a coherent path

forward for entrepreneurship theory that simultaneously capitalizes on a rich legacy of prior research while also providing a unique voice within entrepreneurship theory.

In doing so, I recognize that I run the risk of over-emphasizing my own interests and research programme by re-interpreting and re-positioning the rich body of work conducted by my peers, especially where they had different research questions and objectives in mind. Furthermore, I recognize that I am largely ignoring a perceived, fundamental tension between individual difference research based in psychological theory and perspectives on human agency advanced in social theory. In my defense, I note that these disciplinary boundaries have been transcended before (e.g., Bandura, 2001; 2006) and that in our specific domain of research, perhaps we have no real need to perpetuate these boundaries in our future research. However, where my argument fails to convince the reader of a new path forward, my hope is that I can, at the very least, provoke some discussion.

## INDIVIDUAL DIFFERENCES AND ENTREPRENEUR COGNITION

### Historical Background of Individual Differences in Entrepreneurship Research

Historically, researchers explored the role of individual differences in entrepreneurship phenomena by exploring derivations of the “entrepreneurial difference” question – *why do some individuals but not others become entrepreneurs?* (Gartner, 1988; Baron, 2004).<sup>1</sup> For example, Schumpeter theorized that entrepreneurs display a “will to compete” or a “delight in ventures” which serves as a psychological impetus for introducing radical innovations that reset the business cycle (Schumpeter, 1934: 93). Knight posited in his seminal book on risk and uncertainty that entrepreneurs differ from other economic actors through their “disposition to act” and “to venture” in the face of irreducible uncertainty (Knight, 1921: 269). Since other actors do not possess such a disposition, the willingness of entrepreneurs to bear uncertainty enables them to create economic profits (Knight, 1921). Kirzner (1979) builds on the legacy of subjectivism in Austrian economics and contends that some entrepreneurs are more alert to opportunities in the external environment because of differences in their “prior knowledge” (Shane, 2000). McClelland (1967) posits that in an achievement-oriented society, entrepreneurs, motivated by their “need for achievement,” drive economic progress. Based on these theoretical perspectives, the fundamental assumption was that entrepreneurs differ from other economic actors based on their need for achievement and their willingness to take on extraordinary risk to realize these achievements. Throughout much of the 20<sup>th</sup> Century, individual-level psychology-based research in entrepreneurship was galvanized with an almost singular focus on confirming these relationships.

Despite the intuitive appeal of this particular line of reasoning, empirical support for the link between these individual differences and entrepreneurial action was at best equivocal (e.g., Brockhaus, 1982; Gasse, 1982; Martin, 1984; Sexton & Bowman, 1985; Gartner, 1988; Low & MacMillan, 1988). Gartner (1988) expressed much of the collective frustration among entrepreneurship scholars over these equivocal results in a provocative article arguing that entrepreneurship researchers were looking for the “entrepreneurial difference” in the wrong

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<sup>1</sup> Other research questions include *why do some individuals but not others recognize profit-generating opportunities* and *why are some entrepreneurs more successful than others?* (Baron, 2004a).

place using the wrong theoretical perspectives and methodologies. Specifically, he argues that the “entrepreneurial personality” is probably a myth, so instead of searching for systematic individual psychological differences among entrepreneurs, researchers should shift their focus to the studying the processes of firm emergence (Gartner, 1988). This article combined with a growing number of critical review articles signified the end of the trait-based individual differences literature in entrepreneurship theory. In its stead, a growing number of articles appeared in the entrepreneurship literature exploring the processes of firm emergence and growth using theories and concepts drawn from other academic fields such as organizational sociology (e.g., Aldrich & Martinez, 1994; Thornton, 1996) leading to what some scholars have termed the “missing decade” in individual-level entrepreneurship research (Townsend et al., 2009).

### **The Re-emergence of Individual Differences in the Entrepreneurial Cognition Literature**

While progress in research on the role of individual differences in entrepreneurship research was largely halted during the “missing decade” (from 1980s to mid 1990s), a couple of important articles emerged in the literature that presaged the emergence of a revitalized and refocused individual differences literature. First, Bird (1988) discussed the role and importance of entrepreneurial intentions in shaping entrepreneurial behaviors thereby theorizing a direct link between the mental states of entrepreneurs and their subsequent actions. So although she is careful to differentiate the intentions approach from the traits-based approach, Bird (1988) is clear that the psychological antecedents of the processes of firm emergence and growth still represent a viable avenue of research. As a result, the entrepreneurial intentions literature emerged as a key sub-field within the domain of individual-level entrepreneurship research (Krueger & Carsrud, 1993; Krueger, Reilly, & Carsrud, 2000).

Next, regarding the failure of the traits literature, Shaver and Scott (1991) posited that perhaps the equivocal findings from prior research (especially risk-taking propensities) might stem from the fact that entrepreneurs might not perceive the same level of risk in undertaking a new venture, as would an outside observer. This perspective is later supported by Palich & Bagby (1995) who used categorization theory to show that entrepreneurs were more likely to frame trends in the external environment more positively as opportunities than a comparable sample of non-entrepreneurs. In other words, the phenomenology of entrepreneurship might differ from normative models of entrepreneurial decision-making (i.e., the entrepreneur is a not a *rational* risk-taker – Kihlstrom & Laffont, 1979; Rather because of cognitive biases and other psychological factors, entrepreneurs simply do not perceive risk in the same manner in which other economic actors might perceive it – Busenitz, 1999). Secondly, Shaver and Scott (1991) contend that prior trait-based research might have yielded equivocal results because it ignored an important perspective that individual-level action is ultimately a function of *both* situation and person variables rather than exclusively a result of individual differences. In doing so, Shaver and Scott (1991) rejects a purely reductionist approach that explains entrepreneurial action with individual-level variables exclusively. Overall, the central theme that emerged from these transitional articles was that the individual differences literature in entrepreneurship theory needed to adopt theories and methodologies that would allow researchers to account for both situational variables and individual differences (e.g., intentions, motivations, and cognitions) to build models of entrepreneurial action without adopting a hyper-reductionist approach.

## The Emergence of the Entrepreneur Cognition Literature

Building on these theoretical perspectives, the emergence of the entrepreneur cognition literature revitalized individual differences research in entrepreneurship theory. According to Mitchell *et al.* (2007), four major streams emerged in the entrepreneur cognition literature: biases and heuristics (e.g., Busenitz & Barney, 1997; Baron, 1998), entrepreneurial expertise (e.g., Mitchell *et al.*, 2000), entrepreneurial alertness (e.g., Gaglio & Katz, 2001), and the literature on effectuation (Sarasvathy, 2001; 2004). In the following paragraphs, I provide a brief overview of each of these perspectives, highlighting how each perspective utilizes individual differences to link entrepreneur mental states/decision-making processes with entrepreneurial action.

First, early work on the role of biases and heuristics re-invigorated the “entrepreneurial difference” question by demonstrating the higher propensity of entrepreneurs to utilize cognitive “short-cuts” when making decisions than corporate managers typically would utilize (Busenitz & Barney, 1997). According to Busenitz and Barney (1997), entrepreneurs are more likely to utilize these decision-making processes because these cognitive shortcuts enable entrepreneurs to act decisively under irreducible uncertainty (Busenitz & Barney, 1997; Baron, 1998). So whether the use of heuristics leads entrepreneurs to choose certain operating environments (e.g., pursuing opportunities characterized by a high degree of uncertainty), or simply enables entrepreneurs to operate effectively in uncertain environments because of an innate propensity to use mental shortcuts, the cognitive processes utilized by entrepreneurs is well-matched to the environments in which they typically operate. In subsequent empirical research, both of these perspectives received qualified support (Forbes, 2005) and reflect Knight’s (1921) central argument that entrepreneurs possess the psychological capacity to operate under conditions of extreme uncertainty.

Second, the expertise approach to entrepreneur cognition is based on the idea that that experts outperform novices in particular domains based on the differences in their respective knowledge structures (Ericsson, Krampe, & Tesch-Romer, 1993; Glaser, 1984; Leddo & Abelson, 1986; Lord & Maher, 1990; Read, 1987). These individual differences in the knowledge structures are found in a variety of domains including chess (Chase & Simon, 1972), computer programming (McKeithen, Reitman, Reuter, & Hirtle, 1981), physics (Chi, Glaser, & Rees, 1982), and more directly among entrepreneurs (Mitchell, 1994; Mitchell *et al.*, 2000). These individual differences are primarily the result of differences in prior experience/deliberate practice (Charness, Krampe & Mayr, 1996) in the domain of entrepreneurship (Mitchell & Chesteen, 1995) and can be used to differentiate both entrepreneurs from non-entrepreneurs, and expert entrepreneurs from novice entrepreneurs.

Third, the concept of entrepreneurial alertness emerged based on the work of Israel Kirzner (e.g., Kirzner, 1973; 1979; 1997). Originally, the concept was developed to counter conventional economic theory by offering a subjectivist view of entrepreneurial action. Specifically, differences among entrepreneurs who by unique positioning and/or knowledge recognize disequilibrium in external markets and formulate plans for action while others fail to act (Kirzner, 1979). Fundamentally, Kirzner’s perspective on entrepreneurial alertness is based on the notion that information is not evenly distributed among all market participants (Shane, 2000).

To explain both how information might be unevenly distributed and why some economic actors might be more willing than others or act on some knowledge, work by Gaglio and Katz

(2001) among others linked alertness with social cognition theory and provided a strong psychological underpinning for the process. Specifically, alert entrepreneurs are thought to possess “expert schema” which allows them to recognize unique opportunities in external markets (Gaglio & Katz, 2001). Recent work builds on this approach and proposes that entrepreneurial alertness is comprised of three dimensions: scanning and search; association and connection; and evaluation and judgment (Tang, Kacmar, & Busenitz, 2012). Thus, entrepreneurial alertness involves the process by which external markets stimulate action by individuals who possess both the knowledge (e.g., expert schema) and propensity to act.

Fourth, Mitchell and colleagues (2007) identify the emerging literature on effectuation as an additional research stream within the domain of the entrepreneur cognition literature. In effectuation theory, non-linear decision-making processes are posited as being optimal for unstructured environments where reliable information is hard to come by (e.g., new industries) (Sarasvathy, 2004). In such environments, individual differences between expert and non-expert entrepreneurs invoke an emergent process where the specific means of innovation (e.g., resources, etc.) dictate a set of desired outcomes (Sarasvathy, 2001). Unlike causal forms of reasoning, expert entrepreneurs do not begin with a specific objective in mind, but rather a set of possible outcomes emerge as information in the environment diffuses (e.g., consumer preferences for certain features of a new product are revealed – Sarasvathy, 2001). Similar to several of the other perspectives highlighted above, the information environment surrounding the venture and the individual differences between entrepreneurs are posited to play a decisive role in the emerging focus of venture.

## **INDIVIDUAL DIFFERENCES AND ENTREPRENEURIAL AGENCY**

Despite the robustness of the entrepreneur cognition literature and its considerable contribution to entrepreneurship theory overall the past few decades, the emergence of several fault lines in the extant literature suggests several fundamental challenges must be addressed. Specifically, in my view, the concatenation of rational choice logics and methodological reductionism with an absence of a rigorous phenomenological approach leave far too many important questions under-explored. By concatenation, I mean that not only do these individual factors present fundamental challenges to the individual differences literature in entrepreneurship theory, but that these factors are mutually constitutive and mutually reinforcing thereby creating a vicious circularity that stifles theoretical progress. As a result, the individual differences literature still lacks a coherent framework upon which to address critical phenomena and still lacks a coherent voice with which to contribute new insights to entrepreneurship theory.

### **Fault Lines in the Entrepreneur Cognition Literature**

In my view, among the central causes of the fractured voice of the individual differences literature are several conceptual relics imported into entrepreneurship theory during the past few decades. First, although numerous studies confirm the propensity of entrepreneurs to use a heuristics in decision-making (e.g., Busenitz, 1999; Simon, Houghton & Aquino, 2000; Simon & Houghton, 2002; Simon, Houghton, & Savelli, 2003), recent work takes a much more negative view of the use of heuristics in entrepreneur decision-making (Hayward et al., 2006; Lowe & Ziedonis, 2006). Specifically, where the use of heuristics reflects sub-optimal information processing strategies by entrepreneurs thereby decreasing the entrepreneur’s odds of creating a successful venture (Hayward et al., 2006). In doing so, this debate reflects a broader debate

regarding the “rationality” of heuristics in fast-changing, dynamic environments (e.g., see Stanovich & West, 2000; Goldstein & Gigerenzer, 2002).

The challenge, however, with a purely a negative view of heuristics based largely in a rational choice paradigm is that such a perspective suggests that success of entrepreneurial action is derived solely from the ability of entrepreneurs to develop a “correct” view of an objective environment. Furthermore, since heuristics inherently involve mental shortcuts (e.g., Tversky & Kahneman, 1974), a legitimate question is whether strategies formed through heuristic-based decision processes are objectively rational? In the heuristics and biases literature, much of the research investigating the role of overconfidence in entrepreneurial judgment (e.g., Busenitz & Barney, 1997; Simon et al., 2000; Hayward et al., 2006) suggests that a lack of calibration between an entrepreneur’s confidence regarding potential outcomes and the inherent riskiness of a venture may contribute to inflated new venture mortality rates (Hayward et al., 2006). In other words, more overconfident entrepreneurs are likely to make decisions detrimental to the probability of creating a successful venture. Yet, the challenge of a wholesale adoption of the rational choice paradigm where incentives, social structures, and related external environmental artifacts wholly determine the outcomes of entrepreneurial action, how do we account for the influence the action of the entrepreneur has on the external environment? Specifically, if entrepreneurship entails the creation of new firms (Gartner, 1988), resources (Baker & Nelson, 2005), or even opportunities (Alvarez & Barney, 2007), the objectivist bias limits the application of rational choice paradigms to entrepreneurship theory since artifacts such as firms, resources, and opportunities do not always exist prior to the actions of the entrepreneur.

Compounding these issues with a rational choice paradigm is the widespread use of methodological reductionism in prior individual differences research. Certainly, in some fields methodological reductionism yields valuable insights into the factors shaping relevant phenomena (Webster, 1973). In similar fashion, prior research exploring the role of individual differences in shaping entrepreneurial phenomena continues to yield impressive insights into how factors such as mental states, personality traits, and cognitive/decision-making processes influence entrepreneurial action. Yet, not all entrepreneurial phenomena can be causally reduced solely to psychological factors (Gartner, 1988). Webster (1973) criticizes the notion of “psychological reductionism,” arguing that not all social artifacts can be causally reduced to psychological factors. Instead, he differentiates methodological individualism whereby social theories are constructed with individuals as the central “unit of analysis” versus psychological reductionism whereby all social phenomena can be causally reduced to individual psychological factors (Webster, 1973: 259).

The key question for the individual differences literature is whether social artifacts such as firms, opportunities, markets, and industries can be causally reduced to just psychological factors? Clearly, the majority of prior research exploring the role of individual differences acknowledges the role of social structures, economic incentives, and other external factors in shaping entrepreneurial phenomena. However, given the widespread use of statistical methods built upon correlations coupled with the development of weak theoretical paradigms, the danger for the individual differences literature is our research engages in psychological reductionism and over-emphasizes the role individual difference variables with group-, firm-, or even market-based outcomes without fully specifying the immediate causal mechanism.

In my view, nearly every study published utilizing individual differences variables to predict firm or higher level outcomes could provide much more clarity regarding the exact causal

mechanisms mediating the relationship between mental states, cognitive variables, etc. and the outcome of interest. For example, in a prior study examining the role of ability and outcomes expectancies predicting the probability that an entrepreneur would start a firm, several colleagues and I reported strong support for our central argument that a nascent entrepreneur's belief in his or her abilities is a strong, robust predictor of start-up activities (Townsend et al., 2010). However, while many social processes are invoked when individual entrepreneurs start firms and social artifacts such as firms, opportunities, markets, etc. retain their own ontological status which transcends the mental states of individual entrepreneurs, our study does not explicitly explore and/or acknowledge these factors as complementary determinants of the startup process. Thus while we present solid empirical evidence for the link between the ability expectancies of entrepreneurs and the decision to start a new venture, the causal link between these cognitions of the entrepreneurs and the actual process of creating a firm is underspecified.

Although daunting individually, in my view, the concatenation of the difficulties in applying a rational choice paradigm with the tendency to engage in psychological reductionism creates substantial barriers to progress in the individual differences literature in entrepreneurship theory. Furthermore, for the four streams of research in the entrepreneur cognition literature, the tendency of recent work to take a much more negative view of the use of non-linear, contingent, intuitive decision-making processes (Hayward et al., 2006; Lowe & Ziedonis, 2006), the standard "therapy" of proscribing more rational planning processes despite the weak correlations between these processes and the eventual success of the firm creates many challenges for the development of entrepreneurship theory. Through concerted action, the activities of entrepreneurs constantly shift the odds of failure and success. Until our theories and methods can capture such dynamism, our understanding of entrepreneurial phenomena will always be limited and contingent.

### **Human Agency and Individual Differences**

To address these issues, in prior research, I advocate the development of a more robust theory of entrepreneurial agency within the individual differences literature. More specifically, rather than simply viewing entrepreneurs as mechanical information processors, "the core features of agency enable people to play a part in their self-development, adaptation, self-renewal with changing times" (Bandura, 2001: 2). In the context of entrepreneurship research such a perspective is undoubtedly important as human agency is a fundamental part of "real-world" entrepreneurship.

According to Bandura, four key concepts underlie the psychology of human agency: intentionality, forethought, self-reactiveness, and self-reflectiveness (Bandura, 2001; 2006). Building from a broader literature in philosophy (e.g., for example see Coleman, 1964), Bandura defines an intention as "a representation of a future course of action to be performed" (Bandura, 2001: 6). Thus, intentionality is an attribute of human action where "people form intentions that include action plans and strategies for realizing them" (Bandura, 2006: 164).

Against the backdrop of intentionality, human action, according to Bandura (2001), utilizes forethought to guide and motivate the pursuit of fulfillment of goals and aspirations. Specifically, forethought occurs where "people set themselves goals and anticipate likely outcomes of prospective actions to guide and motivate their efforts" (Bandura, 2006: 164). One particularly interesting consequence of forethought is that it "enables people to transcend the

dictates of their immediate environment and to shape and regulate the present to fit a desired future” (Bandura, 2001: 7).

A theory of agency must also account for the ability of individuals to shape and regulate their actions. Specifically, self-reactiveness involves “...the ability to construct appropriate courses of action and to motivate and regulate their execution” (Bandura, 2006: 165). To this point, Bandura notes that self-reactiveness is essential to a theory of agency, because once a specific goal or plan is created; individuals cannot simply sit back and wait for it to unfold (2001). Rather through deliberate action, individuals execute their plans.

Lastly, self-reflectiveness forms the final psychological component of human agency. According to Bandura (2006), “the metacognitive ability to reflect upon oneself and the adequacy of one’s thoughts and actions is the most distinctly human core property of agency” (Bandura, 2006: 165). Specifically, this metacognitive ability allows individuals to “judge the correctness of their predictive and operative thinking against the outcomes of their actions, the effects that other people’s actions produce, what others believe, deductions from established knowledge and what necessarily follows from it” (Bandura, 2001: 10). This metacognitive component of agency allows individuals to adapt to changes in their environment caused by their own actions or the actions of others.

Applying these concepts to the four key perspectives in the entrepreneur cognition literature, the link between a robust theory of human agency and the individual differences literature provides several avenues for rising above the challenges highlighted above. First, in the biases and heuristics literature, a potential avenue for future research would be to examine the link between the use of these mental shortcuts and the extent to which the actions of the entrepreneur influence the external environment. I am not arguing here that the an agency perspective somehow legitimizes all heuristic-based decision processes as optimal; rather, the inclusion of an agency perspective simply allows the investigation to extend to including the ability of the entrepreneur to affect external change.

For example, in the overconfidence literature, the specific emergence of a cognitive bias emerges where outcome predictions exceed related base rates of failure (Bazerman, 2006). So, based on this property of the overconfidence bias, should we consider all entrepreneurs who predict a higher chance of success than 50% (if 50% of new ventures fail within two years) as being overconfident? Rather, an agency perspective should encourage us to consider the extent to which an entrepreneur increases/decreases the given base rates of failure through individual effort.

Also, given the emerging theoretical perspective that the influence of certain decision biases during the start-up phase contributes to inflated new venture mortality rates (e.g., Hayward et al., 2006), the self-reactiveness and self-reflectiveness components of the psychology of agency should encourage future researchers to consider the extent to which entrepreneurs adjust their aspirations to match both evolving internal goals and external conditions.

For the literature on entrepreneurial expertise, the potential of expertise-framed research in entrepreneurial cognition arises from the idea that a person, having agency, can deliberately create the knowledge structures/scripts that they can then rely upon when goal initiators (Leddo and Abelson, 1986) present themselves (e.g., opportunities). This possibility opens up an arena of rigorously derived explanations for how people become entrepreneurial (e.g., understanding

the individual entrepreneur) and how entrepreneurship works (e.g., why entrepreneurs do the things they do). From the perspective of becoming entrepreneurial, Sarasvathy (2004) notes that future research in entrepreneurship should understand the barriers of entrepreneurship; by explicitly investigating what is deliberate (Ericsson, Krampe, & Tesch-Romer, 1993; Charness et al., 1996) about entrepreneurial expertise acquisition, we are better in a position to understand what prevents such acquisition. And as Sarasvathy notes, “sometimes the removal of barriers may foster more and better entrepreneurship than any incentives” (2004: 709). A promising area of research as it relates to how entrepreneurship works, particularly given an agentic perspective of entrepreneurial expertise, is that of outcome-directed expertise development. Specifically, an increased understanding of the systematic elements of the basic transaction (Mitchell, 2001) implies the existence of—which can lead to an increased understanding of—the expert systems required to create new transactions.

An increased understanding of entrepreneurial agency, particularly as it relates to self-reactiveness, also suggests a need for further research to investigate the dynamic nature of expertise-based knowledge structures (e.g., Mitchell, Friga, & Mitchell, 2005). This calls for a broadening of research that focuses on both expertise acquisition (e.g., Ericsson, Krampe, & Tesch-Romer, 1993) as well as expertise adaptation. Lastly, the notion of agentic self-reflectiveness highlights the promise of work on metacognition (Jost, Kruglanski, & Nelson, 1998; Schraw & Dennison, 1994) for entrepreneurial cognition research in general (e.g., Haynie, Gegoire and Shepherd, 2005), and knowledge structure/script development (e.g., Mitchell, Gustavsson, Smith, Davidsson, & Mitchell, 2005), in particular. For example, such research can facilitate an understanding of how entrepreneurs’ knowledge structures/scripts develop *and change* as a result of environmental feedback.

Regarding the impact of the application of a theory of entrepreneurial agency on the alertness literature, new avenues for exploring the process by which entrepreneurs restore equilibrium in focal markets can be explored. The central issue here is not whether an entrepreneur creates an actual system-wide equilibrium; rather our focus can now move towards charting the effects of alert entrepreneurs on external markets. Specifically, the role information externalities generated by arbitraging activities in shaping industry wide outcomes is an interesting area not widely explored in the alertness literature.

Related to this first point, the linkage between expert schema and the outcome of entrepreneurial actions is not well-established in entrepreneurship research. As a result, the alertness framework is most applicable in more developed markets where action on opportunities is thought to move markets closer to an equilibrium point (rather than the process of creating new markets). The extent to which “expert entrepreneurs” are capable of instituting change in evolving markets is an under explored, but a promising area for future research.

With respect to effectuation theory, the contribution of an agency perspective is quite interesting. First, an agency perspective provides a counter hypothesis to the notion that in truly nascent markets, entrepreneurs should not utilize inferential judgment to establish a course of strategic action. Instead, an agency perspective suggests that the goals/aspirations of the entrepreneur may in fact be utilized as a foundation for an emerging information structure for the environment. Moreover, where both supply and demand are created by the actions of the entrepreneur, an agency perspective suggests the entrepreneur may be able to establish a significant imprint on the newly created market.

Also, with an agency perspective, entrepreneurs recognize the ultimate success of the venture is contingent both on external trends and the ability to shape these trends in ways favorable for the venture. As such, a viable course of future research would be to investigate how entrepreneurs operating in nascent markets may be able to influence the evolution of the industry through intentional strategic actions. Here again, the specific goals and aspirations of the entrepreneur may play a decisive role in the emergence of the industry.

## **CONCLUSION**

The goal in this chapter is to highlight both the emergence and evolution of the individual differences literature in entrepreneurship theory and the potential contribution of the emerging literature on human agency resolve several key fault lines in the current literature. Accordingly, in this chapter, I discuss the factors that led to the initial demise of the individual differences perspective in the traits literature, and how, in the wreckage of this literature, lay the seeds for the revival of the individual differences perspective in the entrepreneur cognition literature. Despite the remarkable revitalization of the individual differences perspective in the entrepreneurship literature, I also highlight several fault lines in prevailing theoretical logics that conspire to once again undermine the contribution of the individual differences perspective to entrepreneurship theory. To resolve these challenges, I propose that a closer link between emerging theory on entrepreneurial agency with the individual differences literature marks the next stage on the conceptual evolution of individual-level entrepreneurship research. Overall, I believe that individual differences research leveraging an emerging theory of human agency area holds great promise for generating robust, predictive models of entrepreneurial action.

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