

## **THE INDIVIDUALITY OF OPPORTUNITY RECOGNITION: A CRITICAL REVIEW AND EXTENSION**

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### **ABSTRACT**

This paper reviews the literature on opportunity recognition, critiquing the current attempts to attribute the discovery of opportunities to particular individual characteristics. It further suggests three venues for expanding the theoretical scope and precision of current research: elaborating on the nature of opportunities, incorporating the effects of context, and elaborating on the nature of individual characteristics.

### **INTRODUCTION**

Understanding the emergence and exploitation of opportunities represent central questions in entrepreneurship research (Shane & Venkataraman, 2000; Stevenson & Jarillo-Mossi, 1990; Timmons, Muzyka, Stevenson & Bygrave, 1987; Venkataraman, 1997). To a large extent the focus of this research is on the “entrepreneur,” i.e., the person discovering an opportunity and deciding to pursue it (Casson, 1982; Kirzner, 1979; Schumpeter, 1934). The individuality of opportunity recognition is reflected in the question of why some people and not others recognize certain opportunities. In addressing this question, however, yielding to our fundamental attribution biases, researchers continue to ascribe the recognition of opportunities to particular individual characteristics and then make it a central focus of research to identify and elaborate on these characteristics. Although explaining entrepreneurship in terms of the traits of particular individuals has not enjoyed particular research success and has thus been criticised accordingly (Gartner, 1989), individuals nevertheless represent a potent force in the process through the cognitive influence they exert on their surrounding environment (Shaver & Scott, 1991) and through the specific knowledge

they accumulate (Shane, 2000). To better understand this force, however, we need to go beyond the sole focus on the “who” question and see it as intertwined with the questions of “what” and “where.” In doing this we will follow the experience of the theories on leadership and human behavior in general in seeing opportunity recognition as an interaction between individual and context.

The purpose of this paper is to critically review the current literature on opportunity recognition and suggest three ways to improve our theoretical precision on this topic. In reviewing the literature I have focused on identifying unstated assumptions and alternative explanations that suggest ways to improve the coherence of the theories. Specifically, these ways deal with the nature of opportunities and their emergence, the role of context, and the nature of individual factors involved in opportunity recognition.

In looking at the growing number of studies in the “opportunity recognition” stream, it is useful to distinguish between two main questions that pertain to the nexus of individuals and opportunities: how opportunities are recognised and why some people and not others recognise certain opportunities. While there have been three streams of answers to the “how” question identified in previous reviews – creative insight, motivated search, and entrepreneurial alertness (Gaglio, 1997) – there has been no distinction between event- and outcome-driven explanations of opportunity recognition (Aldrich, 2001; Van de Ven & Engleman, forthcoming). Such a distinction is important as these two research orientations provide different insights into opportunity recognition and, accordingly, necessitate different research approaches. While, event-driven explanations are built forward, from observed events to their outcomes, outcome-driven explanations are built backward, from recording outcomes of interest to identifying significant prior causes (Aldrich, 2001). As a result, event-driven explanations focus on describing a sequence of events in the realisation of a particular outcome, while outcome-driven explanations focus on the statistical association between a set

of independent and dependent variables (Van de Ven & Engleman, forthcoming). When relating these research orientations to the study of opportunity recognition, it is clear that they pertain to two different research questions that can be pursued in this study. Event orientation seeks to describe the sequential steps inherent to the opportunity recognition and essentially answers the question of “how” opportunity recognition occurs. On the other hand, an outcome orientation focuses on the factors that contribute to or deter opportunity recognition and essentially seek to understand “why” some people and not other recognise opportunities. With this distinction in mind, it would be useful to organise the extant literature on opportunity recognition based on whether it is event- or outcome-driven.

### **EVENT-DRIVEN STUDIES**

The main concern within this stream of studies has been to retrace the steps of opportunity finders, from before their ideas occurred to the moment these ideas were conceived. There have been several aspects in which this process has been examined. The first looks at opportunity recognition as a creative process. The second examines the role of active information search in opportunity recognition. Finally, the third aspect deals with behavioural and cognitive manifestations of entrepreneurial alertness.

#### **Creativity**

Because of the significant analogy between opportunity conception and creativity, there have been several attempts to apply a creativity process framework to opportunity recognition. Long and McMullan (1984) applied the seminal creativity-process framework proposed by Wallas (1926) to the process of opportunity recognition, and sought to determine whether entrepreneurs indeed followed the 5 stages in the process – preparation, incubation, insight, evaluation, and elaboration. They used a small-scale exploratory study to provide support and propose a 4-stage model including pre-vision, point of vision, opportunity elaboration, and decision to proceed. This as well as subsequent studies that have applied the

same framework (Hills, Shrader & Lumpkin, 1999) essentially use a design that relies on the recollection and self-reporting of entrepreneurs on the origin and elements of the opportunity recognition process. For example, Hills et al. (1999) asked 187 business owners / entrepreneurs about the degree to which they agreed with 31 statements about the opportunity recognition process. Using factor analysis, they showed that there was good consistency with the model proposed by Wallace (1926), and also extended that model by suggesting that the creative process was a staged one, involving feedback loops between the stages of preparation, incubation, and insight. As a result of these methodologies, there has been no elaboration on the types of opportunities discovered and on how these may relate to the particular entrepreneurs that discover them. More recent references to opportunity recognition as a creative process stress the role of creative cognition, specifically the usage of conceptual combination, analogy, and initial problem formulation in conceiving of opportunities (Ward, forthcoming). Although there has been an attempt to examine differences across individuals in regard to the number of opportunities they pursue (Hills et al., 1999), this research approach has generally been more focused on describing the process of opportunity recognition rather than on inter-personal differences in regard to identification and pursuit of opportunities.

## **Search**

The study of how prospective entrepreneurs decide to search for opportunities has essentially build on the ideas of Cyert and March (1963) on problemistic search, i.e. search driven by the perception that particular expectations have not been met. The motivated search model proposed by Herron and Sapienza (1992) applies problemistic search to the context of entrepreneurship by specifying the conditions that propel individuals towards searching for business opportunities. Specifically, they suggested that individuals engage in problemistic search when their current performance is below their aspiration level. In an empirical setting,

consistent with the above predictions, Sine and David (2003) showed that environmental jolts shook the institutional logic of incumbent organizations and induced search for new logic, which represented an environment of increased opportunity.

Motivated search, however, is one of several possible ways for the initiation of opportunity recognition to occur. Bhave (1994) proposed a model for the venture creation process, which suggested two separate paths leading to opportunity recognition. In the first path, the process initiates with a decision to start a business, while in the second it starts with a recognized need to which a solution is developed. Another distinction made among the search processes is that of directed search and chance occurrences. For example, Long and McMullan (1984) found that the path to opportunity vision could lead through either deliberate search or serendipity. The distinction between search and serendipity is also reflected in other early work on this subject (Koller, 1988). More recently, there has been active interest in developing more formal classifications of search processes. Chandler, Dahlqvist, and Davidsson (2002) develop a taxonomy of the opportunity recognition processes by examining emerging business initiatives of 136 Swedish ventures. They identify three distinct processes: proactive search, reactive search, and fortuitous discovery. Proactive search is exploratory in nature and capitalizes on unique knowledge; reactive search was triggered by poor performance, consistent with Heron and Sapienza's model above; fortuitous discovery pertained to unexpected events involving no search. Similarly, Chandler, DeTienne, and Lyon (2003) developed a typology of opportunity detection / development process based on a survey of accomplished entrepreneurs. They identified three distinct processes: opportunity as a solution to a specific personal problem, opportunity as a solution to a market problem, and opportunity as created. Although all three processes involved active search and fortuitous discovery, they were distinct in the way the process of opportunity recognition was triggered. Overall, where studies have sought to examine the relative

prevalence of these search approaches, the empirical results show there is no dominance of one approach over the other (Hills & Shrader, 1998; Kaish & Gilad, 1991; Zietsma, 1999).

In addition to the type of search employed by entrepreneurs, researchers have also examined the intensity of search, determining the amount of information sought. Cooper, Folta, and Woo (1995) found that the intensity of search was negatively related to prior entrepreneurial experience, domain differences, and confidence. Finally, several studies have looked directly at the sources of opportunities that entrepreneurs have employed. Vesper (1979) argued that all sources are in one way or another related to entrepreneurs' prior experience and undertaken action. This argument is consistent with the findings by Long and Graham (1989) that most often opportunities originated from the founders. In a survey of 483 small businesses, Peterson (1988) found that spontaneous thoughts had the highest frequency (24%), followed by competitor imitation (18%) and scanning of business periodicals (11%). In a more systematic study, Cooper et al. (1995) distinguished between professional and personal sources of information and related their usage to the prior experience of entrepreneurs. They found that the use of professional sources was positively related to domain similarity, while the use of personal sources was negatively related to prior entrepreneurial experience and domain similarity, and positively related to domain differences.

### **Behavioural manifestations of alertness**

The majority of studies within the process stream have built on Kirzner's (1979) model of the entrepreneurial process, which sees the discovery of opportunities in the application of new ends-means frameworks derived from new knowledge. It provides the most detailed account of the opportunity recognition process and stresses both its individuality and epistemological nature. However, most of the applications and extensions of Kirzner's theory have focused not on the opportunity recognition process itself, but on the

concept of alertness as a distinguishing characteristic of entrepreneurs. Thus, the research has focused on identifying the distinguishing characteristics of entrepreneurs as compared to non-entrepreneurs in terms of behavioural or cognitive manifestations of alertness. Alertness is not a simple possession of knowledge, but rather involves knowing where to obtain and deploy information. Fundamentally, it is the quality (or state of mind) necessary for the discovery of hitherto unknown profit opportunities: it is the “motivated propensity of man to formulate an image of the future” (Kirzner, 1985, p. 56). It is considered a personal trait and is assigned a “primordial role” in the Austrian approach (Kirzner 1979; 1985). One set of studies have looked for differences in behaviour that can be attributed to differences in alertness. In a much cited early study of entrepreneurial alertness, Kaish and Gilad (1991) found differences between entrepreneurs and executives in terms of time spent on information search and scanning, sources of information used, and attention to risk cues. However, a wider scale replication of this study by Busenitz (1996) failed to re-confirm these results and suggested that the self-reporting scales used by Kaish and Gilad (1991) had low reliability. Subsequent studies within this stream have reported that there are no individual differences in self-perceived alertness (Hills & Shrader, 1998) as well as in the proportions of sought and triggered opportunities (Zietsma, 1999). All this work suggests that protruding, stable differences between entrepreneurs and non-entrepreneurs are hard to find, much in line with critiques of the trait approach to studying entrepreneurship (Gartner, 1989; Shaver, 1995).

### **Cognitive manifestations of alertness**

Another set of studies have sought to capture alertness in terms of distinct cognitive processes. In tone with the increased popularity of cognitive psychology, there has been a re-orientation of individual-level studies from traits to understanding how external environments are represented in the minds of the entrepreneurs (Shaver & Scott, 1991). This has naturally

led to employment of theoretical tools and findings of cognitive psychology in the study of opportunity recognition. The increasing popularity of this approach has led to a strong convergence of this stream under the rubric “entrepreneurial cognition” (Mitchell, Busenitz, Lant, McDougall, Morse & Smith, 2002; Ucbasaran, Wright, Westhead & Busenitz, 2002), signifying the distinguishing characteristic of entrepreneurs. As the latest special issue on entrepreneurial cognition and information processing states, “entrepreneurial cognitions are the knowledge structures that people use to make assessments, judgments, or decisions involving opportunity evaluation, venture creation, and growth” (Mitchell et al., 2002:97). The research on entrepreneurial cognition is “about understanding how entrepreneurs use simplifying mental models to piece together previously unconnected information that helps them to identify and invent new products or services, and to assemble the necessary resources to start and grow businesses” (Mitchell et al., 2002:97).

The application of the cognitive perspective to the domain of opportunity recognition has focused on how particular cognitive approaches give advantages to entrepreneurs over non-entrepreneurs in recognising opportunities. Essentially, these approaches seek to give alertness more “flesh” in terms of observable or measurable aspects of human cognition. Given the recent establishment of this domain, most of the work on cognitive approaches to opportunity recognition has been theoretical. Ucbasaran et al. (2002) define strong entrepreneurial cognition as using heuristics, higher-level learning, and off-line evaluation. In terms of the usage of heuristics, empirical studies have drawn from the findings of the cognitive psychology literature on decision making, pioneered by Kahneman and Tversky (see Kahneman, Slovic & Tversky, 1982), on representativeness heuristic, framing, and overconfidence. They have thus shown that entrepreneurs use more heuristics than managers (Busenitz & Barney, 1997; Simon, Houghton & Acquino, 1999). In expanding on this work,



Alvarez and Busenitz (2001) argue that it is this heuristic-based thinking that gives entrepreneurs the distinct capability to discover opportunities.

Higher-level learning pertains to the achievement of new understanding and interpretations (Ucbasaran et al., 2002). One conceptualisation of this process has been through the usage of mental schemas, representing an individual's understanding of how the external world works (Gaglio, 1997). In this context, entrepreneurial alertness is conceptualised as a particular schema that is of higher complexity and flexibility, and involves heightened sensitivity to market disequilibrium signals (Gaglio & Katz, 2001). Finally, off-line evaluation is related to the concepts of mental simulations and counterfactual thinking, which pertain to reflection over past and future events (Baron, 1999; Gaglio, forthcoming). Such reflection is proposed as a distinctive feature of opportunity finders (Gaglio, forthcoming). In an attempt to further focus the application of concepts and findings from cognitive science to the study of opportunity recognition Baron (forthcoming) argues that perception, schemas, and self-regulation of behaviour all provide valuable insight into the opportunity recognition process. Empirical testing of these theoretical arguments is yet to follow.

### **Critique**

Although the process studies described above provide valuable details on the nature of information processing and decision making involved in the recognition of opportunities, there are less equipped for understanding why some people and not others recognize opportunities. The reason for this comes from the nature of research methodologies used as well as from the weaknesses in the employed theoretical perspectives. The first methodological peculiarity is that research designs rely predominantly on comparing entrepreneurs to non-entrepreneurs or experienced entrepreneurs to novice entrepreneurs, with any differences in favour of (more experienced) entrepreneurs used as support for the

superiority of their opportunity-finding cognition. This is particularly the case with heuristic type thinking (Alvarez & Busenitz, 2001; Busenitz & Barney, 1997). Yet, it is not clear why, other than by definition, entrepreneurs use more heuristic thinking in the first place. It is not rare that before becoming an entrepreneur a person has had experience as a manager. This could suggest that the thinking employed may not be a stable characteristic of the person, but rather a best response to the situation at hand. Perhaps the linear, factual thinking employed by managers is simply a reflection of the organisation's system for accountability and rewards. Alternatively, the dynamic environment faced by entrepreneurs is conducive to using heuristic thinking. Thus, the line between entrepreneurs and managers appears to be drawn between functions rather than concrete people.

The second methodological peculiarity has to do with the usage of recollection accounts of the opportunity recognition process. People's inability to recollect past events with sufficient detail and tendency to *post-hoc* rationalise their actions create apparent biases in such studies. Because *ex post* a lot of the uncertainty pertaining to the original opportunity has been resolved, respondents may not be able to re-create the initial context of uncertainty. In addition, because the initial business ideas often change in the process of exploitation, the opportunities explored at the time of a study may bear little resemblance to the opportunities that triggered the entrepreneurial action. This methodological feature of event-driven studies of opportunity recognition runs counter to the forward-looking nature of event-driven studies in general.

There are two weaknesses to the cognitive perspective in regard to whether it can outline interpersonal differences in opportunity recognition. The first relates to the general ignorance for individual differences in cognitive psychology (Sternberg & Lubart, 1999). Because of its interest in describing cognitive processes that apply normatively across people, researchers within this perspective have paid less attention to the ways in which individuals

may differ. The second weakness of the cognitive perspective, again due to its descriptive focus, is that its focus is generally on how things are represented and utilized and not on why they are represented or utilized in a certain way (Deepphouse & Wiseman, 2000; Einhorn & Hogarth, 1981). This suggests that, while this perspective is instrumental for understanding how opportunities become recognised, it is less useful in understanding why some people and not others recognise certain opportunities. Without understanding why some people use particular heuristics or mental schemas there can be no sufficient understanding of interpersonal differences in opportunity recognition. Thus, despite some arguments on the suitability of the cognitive perspective for answering “why” questions (Baron, forthcoming), it should be noted that such questions are generally outside the theoretical scope of this perspective.

The final aspect of the criticism of the process studies deals with the lack of attention paid to the nature of opportunities. Although they are implicitly considered part of the objective reality, it is not clear why particular cognitive processes are generally better for recognising opportunities. None of the discussed approaches differentiates among opportunities – does a certain heuristic or schema lead to the recognition of any opportunity or a certain opportunity? Is it enough to say that it leads to the recognition of an opportunity? In addition, there is no explicit account of the moment of opportunity recognition. On the one hand, this is largely because of the implicit objectiveness of opportunity in these theoretical discourses. For example, Gaglio (forthcoming:3) defines opportunity as “the chance to introduce imitative goods, services, or processes to an industry or economic marketplace”. It is thus not clear whether this “chance” is uncovered or construed. On the other hand, the fuzziness of the moment of opportunity recognition is due to the unbalanced capitalization on Kirzner’s early theory. Despite Kirzner’s (1979) extensive exposition on the subjective nature of knowledge and on the nature of entrepreneurial opportunities as based on knowledge yet

unknown but about to become known, it has been the concept of “alertness” as unique characteristic of entrepreneurs that has dominated the attention of subsequent theoretical development. Perhaps the appeal itself of looking for distinct entrepreneurial characteristics is a schema that researchers need to become aware of and gradually modify.

### **OUTCOME-DRIVEN STUDIES**

Rather than focus on the process intricacies of opportunity recognition, outcome oriented studies have focused on the factors that have positive or negative associations with the occurrence of opportunity recognition. Thus, they are less concerned with “how” questions and more concerned with “who” and “why” questions. There are three groups of studies identified in this section. The first examines the factors contributing to one's entry into the opportunity recognition process. The second examines the role of prior knowledge in opportunity recognition. Finally, the third group examines the role of individual's context in opportunity recognition.

#### **Entry**

From a population ecology perspective, Stuart and Sorenson (2003) focus on the geographical dispersion of opportunities and show that because of the need to mobilize resources when pursuing opportunities, entrepreneurs need a concentration of similar firms in their area. This explains the clustering effect of new venture formation and is consistent with prior studies that have examined the clustered nature of new business formations (Sorenson & Audia, 2001; Reynolds, Miller & Maki, 1995).

At the micro level, McMullen and Shepherd (2002) examine the motivational factors behind acting on opportunities. They use regulatory focus theory (Crowe & Higgins, 1997), which distinguishes between prevention and promotion focus as two motivational strategies for achieving end states. In an experiment involving 142 undergraduate seniors, they show that entrepreneurial intention increases both when opportunities are lucrative and one is in

promotion focus, and when inaction is costly and one is in prevention focus. While this paper provides great insight into what propels people into pursuing opportunities, it treats opportunities as given and thus does not specifically explore their recognition per se.

### **Prior knowledge**

The ideas of Kirzner's (1979) on entrepreneurial alertness have also been explored in this outcome-based perspective through his extensive exposition on the subjective nature of knowledge and on the nature of entrepreneurial opportunities as based on knowledge yet unknown but about to become known. Key to this approach is Hayek's (1945) idea on the dispersed nature of knowledge and on the importance of local knowledge for action in particular economic domains. Prior knowledge has thus been conjectured as contributing to one's alertness. Opportunity recognition is thus seen as related to one's prior experience. Prior experience is a source not only of idiosyncratic knowledge (Venkataraman, 1997), but also of different absorptive capacity (Cohen & Levinthal, 1990) in regard to new market information. Another role of specific prior experience is related to the uncovering of possibilities that could not be seen without undergoing the experience, i.e., the *corridor principle* (Ronstadt, 1988).

Several empirical studies have provided support for a positive relationship between prior knowledge and opportunity recognition. Shane (2000) argued that knowledge of markets, of how to serve markets, and of customer problems influences both opportunity recognition and opportunity exploitation processes. His detailed, qualitative analysis of 8 different opportunities based on the same MIT technology invention establishes that the way different individuals respond to the same innovation stimulus is related to their particular knowledge and understanding of the processes they are currently involved in. Shepherd and DeTienne (2002) sought to replicate Shane's (2000) findings on the positive effect of prior knowledge of customer problems in an experimental design with 78 MBA students. They

manipulated the amount of prior knowledge participants possessed through varying the amount of information they received and affecting their ability to recall this information. Their results show that prior knowledge has a positive effect on both the number of opportunities identified and the innovativeness of those opportunities. Ucbasaran, Westhead, and Wright (2003), surveying a representative sample of 631 UK entrepreneurs, show that human capital, in terms of prior business ownership experience, is positively related to the number of identified opportunities within the previous five years.

There have been several studies, however, that have established that the relationship between human capital and opportunity recognition is not a direct one, but is rather moderated by learning or cognitive skills. In a study of 380 technology entrepreneurs, Corbett (2002) found that the effect of prior knowledge was moderated by the way individuals learn from experience, as measured by Kolb's (1984) Learning Style Inventory. Specifically, for individuals who use apprehension in learning from experience, there was no relationship between specific human capital and the number of identified opportunities; conversely, for individuals who use comprehension in learning from experience, there was a positive relationship between specific human capital and the number of identified opportunities. Similarly, Ko and Butler (2003) found that the effects of alertness (prior knowledge) on opportunity recognition was mediated by individuals' bisociative thinking ability.

### **Context**

In regard to the effects of one's context on opportunity recognition, there have been studies of the effects of situational pressures as well as social networks. Baron (1998) argued that, given the paucity of discovered motivational and dispositional differences between entrepreneurs and non-entrepreneurs, the differential nature of opportunity recognition is due to the different situational pressures faced by entrepreneurs and non-entrepreneurs. Such contextual influences create conditions that lead to cognitive biases among the people

exposed to such conditions. Among the conditions suggested are information overload, uncertainty, novelty, emotions, time pressure, and fatigue (Baron, 1998). These in turn make people more prone to employ counterfactual thinking, regret, affect infusion, self-serving bias, planning fallacy, and self-justification. Despite the theoretical relevance of these arguments, they are yet to be empirically tested.

Finally, there have also been arguments that one's intensity of opportunity recognition reflects the nature of the individual's social network (Singh, 2001). Findings have shown that the number of social network contacts as well as the number of weak ties in a network are positively related to both the number of venture ideas identified and the number of opportunities recognised (Singh, Hills, Hybels & Lumpkin, 1999).

### **Critique**

Although outcome-oriented studies have established the importance of motivation, prior knowledge, and social context for opportunity recognition, there are several aspects in which these findings need to be solidified. First, there is no differentiation among opportunities - the typical dependent variable in these studies has been number of opportunities identified. Survey participants have typically indicated how many opportunities they have identified over a particular period of time. It is clear that by focusing on the number of opportunities the research necessarily ignores the qualitative differences among identified opportunities - some may be grounded in imagination or wishful thinking, while others may be backed by strong beliefs and propel action. Without verifying that the nature of identified opportunities is consistent across individuals and that individuals are indeed willing to pursue the identified opportunities, it is doubtful that such a measure captures the most relevant aspect of opportunity recognition, its initiation of an entrepreneurial process.

Second, heeding Shane's (2000) call for further understanding the interaction between prior knowledge and opportunity discovery, two points deserve further clarification in this

regard. First, is an individual's stock of knowledge enough to account for differences in opportunity recognition? Because individuals typically represent a profession, they may not be unique in the stock of knowledge they possess. This suggests that knowledge by itself may not be enough, especially in the context of recent findings that the effect of prior knowledge on opportunity recognition may not be a direct one (Corbett, 2002; Ko & Butler, 2003). We therefore need to examine not only the amount of knowledge that has been acquired, but also the way in which this knowledge has been stored and can be retrieved when facing particular situations. Understand how knowledge is created from experience is a question posed by Hayek (1937) as the empirical question of economics. In this regard, some classification of prior experience and knowledge is necessary in order to systematically understand interpersonal differences in the application of knowledge. This remark brings us to the second point of clarification. Since opportunity recognition involves the application of prior knowledge to a particular context (Shane, 2000), we should examine contextual in addition to individual factors. These contextual factors may determine what parts of an individual's knowledge stock may be activated and extended.

Finally, from a methodological point of view, outcome-driven studies are liable for their backward focus (Aldrich, 2001). In focusing on occurrences of an outcome (i.e. opportunity recognition), they necessarily sample on the dependent variable and create a sample selection bias, stemming from the fact that not everyone at the risk of experiencing this event has been considered for the study (Aldrich, 2001). Thus, although we may be aware of people that have recognised opportunities, we do not know of their contemporaneous counterparts that could or wanted but did not recognise opportunities. Without accounting for these, our confidence in any factors outlined as significant would be greatly diminished.

#### **AVENUES FOR EXTENSION**



There are several theoretical conclusions that emerge from this review of the opportunity recognition literature to date and that represent avenues for further developing the research rigour of this topic. The first deals with the nature of opportunities. The second pertains to the importance of context in explaining particular individual behaviour. The third deals with the nature of stable characteristics that may be relevant to the opportunity recognition process, and particularly their interrelationship with particular contexts. I will now elaborate on each of these in more detail.

### **The nature of opportunities**

Because our implicit understanding of the nature of opportunities drives our conception of the role of individuals in the process of opportunity emergence, before talking about how opportunities emerge or how they are recognised it is necessary to discuss what opportunities are (Gartner, Carter & Hills, 2003). Defining what opportunities are and how they are conceived is not an easy task. This difficulty may explain the paucity of formal definitions out there as well as the lack of agreed definition that would spur a more precise, theory-driven research. A possible reason for researchers' having overlooked this definitional issue may be the necessity to state one's underlying philosophical assumptions, which would in turn prevent the ignition of a philosophical discourse over the objective vs. subjective nature of opportunities. These assumptions are implicit in a researchers' understanding of opportunity and in their objectives for the study of opportunities (McMullen & Corbett, 2003).

If we are to study individual involvement in opportunity recognition, then opportunities should be defined and examined at an individual, micro level. Surprisingly, given the importance of opportunities to the field of entrepreneurship, no existing definition of opportunity captures an entrepreneur's view of it. Most of the views of opportunities, grounded in mainstream economic theory, take a birds-eye view of the economic forces at

work and see opportunities as particular configurations of elements in the economic systems that yield pure profits. Essential in this line of thinking is the context of equilibrium, which eliminates pure profit possibilities through the equality of prices across alternative uses. Opportunities essentially represent those configurations that capitalise on the lack of equilibrium, i.e. on the inequality of prices of products or services across various uses. The two major views within this framework deal with whether equilibrium is the initial or ending condition for economic opportunities. Schumpeter (1934) views opportunities as created through the introduction of innovations that destroy the existing “circular flow” and thus lead to pure profit. Kirzner (1979) builds on Hayek’s critical insights on the dispersed nature of economic knowledge (Hayek, 1945) and presents the entrepreneurial process as a series of trial and error, with opportunities representing discoveries and corrections of prior errors as the economic system moves towards equilibrium. In Kirzner’s (1979:116) argument “the existence of opportunities is signalled by profit opportunities in the form of price differentials”. The ideas of Schumpeter and Kirzner on the place of entrepreneurs and opportunities in the economic process have exerted significant influence on the more recent conceptions of opportunities, represented in the works of Shane and Venkataraman (Shane, 2000; Shane & Venkataraman, 2000; Venkataraman, 1997). The definition of opportunities proposed by Shane and Venkataraman (2000:200) is unequivocal about the ontological nature of opportunities:

"entrepreneurial opportunities are those situations in which goods, services, raw materials, and organising methods can be introduced and sold at greater than their cost of production (Casson, 1982). Although recognition of entrepreneurial opportunities is a subjective process, the opportunities themselves are objective phenomena that are not known to all parties at all times."

These views of opportunities are grounded in ontological realism and are united by their conduct of analysis at a macro (system) level. In addition, these views eliminate uncertainty by bringing in criteria pertaining to end results (e.g., "introduced and sold at

greater than their cost of production"), and are therefore usable only in an *ex post*, i.e., backward-looking context. At the macro level and in an *ex post* context, human action is a necessary abstraction that keeps the economic system running. From such a perspective, the research focus is on the functional role of entrepreneurs and not on their particular identities. In order to examine closer the differences between people in regard to their participation in the entrepreneurial process, it is necessary to lower our theoretical lenses to the level of individual actors and examine how the elements of economic reality are represented in their own picture of reality. This necessarily takes us to the realm of epistemological relativism (Mir & Watson, 2000). This perspective is compatible with ontological realism in that it does not make any claims on whether objective reality exists or not; rather it changes the focus to how reality becomes known.

Because opportunities pertain to action that is directed towards the future, they necessarily pertain to states of the world that cannot be known in advance. Epistemological views of opportunities focus on the perceptions of and expectations about these future states of reality and on the *ex ante* heterogeneity of beliefs and expectations about their nature. From within the stream of economic thought, the exploration of this epistemological heterogeneity has been reflected in a line of thought termed "radical subjectivism." It essentially purports the idea that the future is unknown and indeterminate at the point of making decisions about it, which underlies the notion of the market as a creative process (Buchanan & Vanberg, 1991). This notion essentially sees the future as created by actors as they pursue the choices they make. One representative of this line of thought, Shackle (1955), views enterprise as action in pursuit of imagination and thus links the heterogeneity of expectations to heterogeneity of imagination among economic actors. Although the radical subjectivist ideas have remained somewhat disconnected from the mainstream thought on opportunities, the link between the ontological and epistemological views on opportunities is

implied in the argument by Eckhardt and Shane (2003:337) that "for entrepreneurial opportunities to exist, people must not agree on the value of resources at a given point in time". Disagreement, a multiplicity of views on the economic reality, is thus essential for the emergence of opportunities. In order to gain a deeper understanding of how these different views emerge, it is necessary to shift our analysis to the epistemological dimension of opportunities, at the level of the individual making sense of the economic reality. Further, because the workings of actors' imaginations necessarily fall beyond the scope of system-level research inherent to economic thought, in examining the epistemological views of opportunities we have to leave the realm of economic theories and enter the realm of individuals' interpretative processes.

Although the study of interpretative processes has been mostly done in organizational contexts, there are important features of opportunities that have emerged from these studies. In one view, opportunities are perceptual categories or schemas, associated with potential gain and perceived control, that assist in the interpretation of environmental stimuli (Dutton & Jackson, 1988). In a similar view, opportunities are interpretations of environmental stimuli that serve as prospective justifications for action (Starbuck, 1983). Coupling these views with some of the recent qualitative research on entrepreneurs' views of opportunities would make a fruitful ground for further theoretical elaboration. Studying the emergence of opportunities in a grounded context, De Koning's (2000) showed that opportunities were formed rather than discovered or recognised. Similarly, Gartner and Shaver (2003) found that entrepreneurs tend to make internal attributions of opportunities, i.e., opportunities are part of the reality that the individual commands.

A major implication from the above discussion is that opportunity recognition may be conceptually inseparable from the opportunity itself, given their contemporaneous emergence. To the extent that the conception of a possibility is prospective in nature, i.e., it

pertains to action space that only exists in one's imagination, an opportunity is *enacted*, whereby the individual interprets the world in a particular way and acts on this interpretation (Abolafia & Kilduff, 1988; Weick, 1979). An enacted opportunity therefore relates to a particular individual at particular space and time. This captures the essence of the epistemological relativism suggested as a guiding framework. The enacted opportunity combines the individual's attention and action in the context of ambiguous experience (Smircich & Stubbart, 1985).

In order to scientifically study enacted opportunities, it is also necessary to separate purely imagined possibilities (i.e., arm-chair entrepreneurship) from opportunities. In doing this, we may apply a pragmatic approach, arguing that a possibility constitutes an opportunity as long as it induces the individual to take action in its verification or pursuit. This is also consistent with epistemological relativism in the sense that the individual beliefs that comprise opportunities are not subjected to universal appraisal - they are valid as long as individuals act on them. Employing this pragmatic criterion helps us distinguish opportunities from insights or other creative outcomes. Although in their cognitive essence opportunities resemble insights, they take on the additional role of being acted upon. This suggested view is consistent with Kirzner's (1979:169) view of profit opportunities: "only ideas that are acted upon are deemed to have been perceived as profit opportunities". One should note, however, that our interest in enactment can only be limited to the initiation of action and not to its ultimate outcome. This is due to the prospective nature of opportunities, i.e. to their orientations toward the future. *Ex ante*, it is impossible to determine the performance of something that is yet to occur.

### **The importance of context**

Because the enactment of opportunities represents an individual's structuring of an ambiguous environment (Smircich & Stubbart, 1985), the nature of the individual's

immediate environment will affect the enactment of opportunities. The contexts in which individuals find themselves exert demands that may direct the enactment process (Abolafia & Kilduff, 1988; Weick, 1979). More generally, the idea that context influences individual behaviour is a fundamental one in social psychology (Funder & Colvin, 1991; Mischel & Peake, 1982) and has also been incorporated in the leadership literature in response to the low predictive power of traits alone (Yukl, 1989). In the opportunity recognition literature, theoretical accounts of situational influences have been few and far apart (e.g., Baron, 1999), and the inclusion of situational variables in empirical research has been rare. Therefore, the ignorance of context that researchers of opportunity recognition have exhibited so far is on one hand a significant oversight, but on the other hand represents a fruitful avenue for expanding the theoretical precision of the research.

There are several ways in which context may influence opportunity recognition. First, when we separate opportunity recognition from the motivation to become an entrepreneur (Gaglio, 1997), it is clear that an individual's immediate context may affect whether such motivation exists or lacks (see for example Heron & Sapienza, 1992). Second, particular situational pressures may impact the way individuals process information and make decision (Baron, 1999). Finally, the effect of context may have to do with the type of information that it provides to the entrepreneur. While all three factors deserve research attention, I will focus in greater detail on the last one because of its consistency with the idea that dispersed knowledge underlies variability in opportunity recognition (Shane, 2000). Yet, it also pushes this view further by focusing on particular individuals rather than on general actors in a system. The idea that contexts provide different information is reflected in several attempts to distinguish between types of opportunities as they relate to the individuals conceiving them, particularly their knowledge and beliefs. Sarasvathy, Dew, Velamuri, and Venkataraman (2002) divide human beliefs about the future into three categories: predictable, unpredictable

but driven by an independent environment, and unpredictable but driven by human agency. They further argue that each of these beliefs would be associated with a pursuit of opportunities associated with more or less clear sources of demand and supply. Under beliefs about the predictability of the future, entrepreneurs would pursue opportunities involving clear sources of supply and demand. Under beliefs in an unpredictable future resulting from an independent environment, entrepreneurs would pursue opportunities involving a clear source of either demand or supply. Finally, under beliefs in an unpredictable future resulting from human agency, entrepreneurs would pursue opportunities with no clear sources of demand and supply. Using a similar logic of demand and supply knowledge, Ardichvili, Cardozo, and Ray (2003) present a typology of opportunities based on their origin (value sought) and degree of development (value creation capability). They categorise value sought as unidentified and identified, and value creation capability as undefined and defined. Their main argument in relation to this typology is that the more established the value sought and value creation capability the higher the likelihood that a venture pursuing this opportunity will succeed. Finally, Dimov (2003) proposes a classification of opportunity contexts on the basis of the information available to the prospective entrepreneur prior to the conception of opportunity. A *demand-driven* context pertains to awareness of currently unsatisfied customer needs, which allows for new products to be introduced. A *supply-driven* context pertains to awareness of products, which allows for new customer demands to be perceived. Finally, a *replication-driven* context pertains to awareness of both products and customer needs and allows for identifying new economic contexts in which to exploit them. The importance of this classification is that each context interacts differently with the knowledge and learning skills of individuals as these individuals enact opportunities (Dimov, 2003).

There is an obvious similarity in the above micro classifications in regard to the importance of knowledge (or lack thereof) of products and customers as preceding

opportunity recognition. This knowledge may come from individuals' social networks (Singh et al., 1999), from individuals' prior experience (Shane, 2000; Venkataraman, 1997) or from the individual's direct involvement in an immediate context. What is important here is that the context provides cues which individuals then transform into opportunities. This notion is consistent with Pasteur's famous quote "chance favour the prepared mind." One of the recent ideas on insight, the opportunistic-assimilation hypothesis, has elaborated on this idea in greater detail, arguing that individuals internalize problem-solving impasses which in turn enable them to react quickly to chance encounters with external cues (Seifert, Meyer, Davidson, Patalano & Yaniv, 1995). Some of the findings in opportunity recognition research have indeed pointed to the importance of prior knowledge of customer problems (Shane, 2000). The nature of these codings, whether expressed in terms of beliefs, prior knowledge or knowledge creation strategy is then as important to examine as the actual contexts that make these codings fruitful. What this discussion suggests is that knowledge stock in itself may not be sufficient to explain opportunity recognition - we need to account for both the context in which the knowledge is applied and the way in which the knowledge is applied. This is consistent with the view of tension between knowledge and creativity (Weisberg, 1999). To overcome this tension, it is necessary to account for how knowledge is extended in particular contexts. This necessarily takes us to the realm of experiential learning, wherein persistence in individual-context interactions creates stability in learning approaches (Kolb, 1984). Therefore, contexts become important not only through the information they provide but also through their congruence with the learning skills with which individuals interact with the context.

### **Individual characteristics**

While individual characteristics are undoubtedly important in opportunity recognition, it would be useful to elaborate on the possible nature of these characteristics, especially when



tackling the question of why some individuals and not others recognize certain opportunities. This is particularly important in the context of the growing popularity of the idea that opportunity recognition is driven by distinct cognitive processes or entrepreneurial cognition (Baron, 1998; Gaglio & Katz, 2001; Mitchell et al., 2002). To the extent that studies within the domain of social cognition employ a process orientation (Fiske & Taylor, 1984) and are less concerned with individual differences (Sternberg & Lubart, 1999), there is greater care needed in presenting particular cognitive processes as better or more used by particular individuals. Thus, in using insights from the cognitive perspective to inform the theoretical predictions of outcome studies, it is important to account for the origin of particular cognitive processes, and particularly for why people may use them differently. In addition, given the sources of such differences, it is necessary to elaborate on whether these sources are inherently stable or whether they change throughout a person's life. The implication of whether information processing characteristics are stable versus changing has to do with whether people should be selected or can be trained to perform particular functions.

The duality of stable versus changing characteristics has been captured by the constructs of cognitive style (Allinson & Hayes, 1996; Kirton, 1989; Messick, 1984; Riding, 1991) and learning style (Kolb, 1984). Cognitive style pertains to consistent individual differences in organising and processing information (Messick, 1984), while a learning style reflects stable patterns of interaction between individuals and environments (Kolb, 1984). Whereas cognitive style captures a personality, i.e., stable, dimension, learning style reflects to the interaction of this stable dimension with the learning context (Curry, 1983; Sadler-Smith, 2001a). Although referring to the stability of learning approaches as “style” has raised criticisms in regard to its trait connotation (DeCiantis & Kirton, 1996; Sadler-Smith, 2001a), it is clear from Kolb's (1984) theoretical discussion of learning style that it does not subsume the features of cognitive style. Empirical research has shown that the

two are indeed distinct (Sadler-Smith, 2001b). Learning style is influenced by personality characteristics (Kolb, 1984) and this has been reflected in the empirical correlations between learning styles and personality measures (Furnham, 1992; Kolb, 1984). In attempt to avoid this confusion of terminology, Sadler-Smith (2001a) has referred to the stability of learning behaviour as “learning strategy.” In addition, “learning style” can also be conceptualised as an orientation, i.e., a term of medium specificity and higher action proximity than personality variables (Frese & Fay, 2001). In their discussion of orientations as antecedents to personal initiative, Frese and Fay (2001) argue that orientations are influenced by personality, knowledge, cognitive abilities, and environmental factors, which is in line with Kolb’s (1984) conceptualisation of the antecedents of learning style. All this suggests that learning style can only be regarded as a stable trait over a specific period of time, one in which the pattern of interaction between an individual and environment is relatively stable.

This conceptual distinction between cognitive style and learning style holds important theoretical implications for studying differences in opportunity recognition. Given the now accepted view that experience and prior knowledge matter, should we conceive of one's information processing approach as independent of one's knowledge and experience? Studies comparing experienced and novice entrepreneurs as well as entrepreneurs and managers suggest that there are important differences between these groups in how information is processed (Baron & Ensley, 2003; Busenitz & Barney, 1997; Ucbasaran et al., 2002). If we conceive of such differences as stemming from traits (i.e., cognitive style), then the actual experience and occupational position of these individuals should be irrelevant. This is, however, inconsistent with current findings. Therefore, to ensure theoretical coherence, it is necessary to conceive of individual differences as stemming from adaptive strategies, developed in interactions with past contexts and representing tendencies to respond to new contexts in particular ways. This approach would also allow us to establish a systematic

account of the process through which prior experience affects opportunity recognition. Knowledge and adaptive strategies would thus represent the content and relational aspects of prior experience.

### **Methodological implications**

Implementing the theoretical extensions discussed above will also require changes in the current methodological approaches. There are two main recommendations that emerge in this regard. First, it is not necessary to limit one's research sample only to accomplished entrepreneurs or to compare accomplished entrepreneurs with non-entrepreneurs unless there is specific theoretical reason to do so. To the extent that theoretical models do not contain prior entrepreneurial behaviour as either necessary or sufficient component of opportunity recognition, we should not discard studies of non-entrepreneurs as lacking validity. This is especially relevant when considering that the primary goal of research on opportunity recognition is to study entrepreneurs *before* they have become such. Thus, although one may claim that existing entrepreneurs may be more adept at finding opportunities, this claim in no way precludes the possibility that current non-entrepreneurs may soon become entrepreneurs.

The second methodological recommendation is that recollection accounts of opportunity recognition do not necessarily capture the *ex ante* nature of opportunity recognition. Because opportunities are directed towards an uncertain future, the only way to capture the uncertainty, as reflected in the minds of individual decision makers, is to study their opportunity recognition decisions “live,” as they occur. Although this would greatly restrict the possible choices of research designs, it would enable one to capture crucial aspects to individuals' recognition of opportunities and eliminate sample selection bias. Among the possible research methods are verbal protocol analysis and experiments, both of which have been successfully used in entrepreneurship research (Sarasvathy, Simon & Lave, 1998; Shepherd & DeTienne, 2002).

## **CONCLUDING COMMENTS**

In conclusion, there is a long-lasting tension in entrepreneurship research between the relative merits of individuals and environments in explaining entrepreneurship phenomena. That the two are somehow interlinked is an intuitive and implicitly accepted idea that often becomes overwhelmed as particular research designs seek to highlight the importance of one to the ignorance of the other. So far, opportunity recognition research has predominantly focused on identifying unique personal characteristics of entrepreneurs that enable them to recognize opportunities that other people do not. Balancing this quest with acknowledging the influence of context and the enacting power of individuals stands to significantly enhance the theoretical and empirical rigour of this research stream.

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