Individual Commitment to Entrepreneurial Opportunities within Firms:

Does Intuition – Based Behavior Matter?

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Jean-Michel DEGEORGE(*) (**)

Assistant professor - Groupe INSEEC Lyon 19 place Tolozan 69001 Lyon FRANCE

Tel : 33 (0)4 78 29 80 28- Fax : 33 (0)4 78 29 30 20- E-mail: jmdegeorge@groupeinseec.com

Alain FAYOLLE

Professor, Director of Research Centre - EM Lyon Business School

23, avenue Guy de Collongue F-69134 Ecully cedex

Tel: +33 (0) 4 78 33 78 00 - Fax: +33 (0) 4 78 33 79 27- E-mail: fayolle@em-lyon.com

Kathleen RANDERSON

Teaching & Research Fellow - Université de Grenoble CERAG-UMR CNRS UPMF-CNRS

150, rue de la Chimie, BP 47 - 38040 GRENOBLE cedex 9

Tél. +33 (0) 4 76 63 53 65- Fax : +33 (0) 4 76 54 60 68- E-mail: kathleenranderson@yahoo.fr

*The authors contributed equally to this work, the order is alphabetical

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ABSTRACT:

The aim of this qualitative study is to identify how the perceptions of the entrepreneur on the nature of the opportunity (objective reality / social construction) and his/her cognitive style (analytical / intuitive) influence the process of commitment to opportunity (analytic process / intuition-based process). Our findings indicate that entrepreneurs with previous opportunity exploitation experience perceive systematically opportunities as social constructions. The individual commitment process to entrepreneurial opportunities perceived as objective realities is analytical, while this process to opportunities perceived as social constructions can be intuition-based, analytical, or mixed. Size and industry seem to have a strong influence on the choice of process type.

INTRODUCTION

The aim of this study is to improve our understanding of the individual behaviors that lead to commitment to an entrepreneurial opportunity in an organizational setting. Our literature review identifies key indicators playing a role in this commitment process which are the individual's cognitive styles and the perceptions individuals may have of the nature of opportunities (objective reality or social construction).

"*Entrepreneurial behavior as an academic interest is the study of human behavior involved in finding and exploiting entrepreneurial opportunity through creating and developing new venture organizations*" (Bird & Schjoedt, 2009:327).The process leading to the identification and pursuit of an entrepreneurial opportunity constitutes an object of research opening the door to a better understanding of one of the key aspects of the entrepreneurial process (Kirzner, 1979; Schumpeter, 1935; Bygrave & Hoffer, 1991; Shane & Venkataraman, 2000), during the new venture creation, but also in the development of existing firms. Stevenson and Jarillo (1990:23) define entrepreneurship as "*a process by which individuals – either on their own or inside organizations—pursue opportunities without regard to the resources they currently control"*. They posit that opportunities for the firm must be identified and pursued by the individuals composing it, in doing so, these individuals behave entrepreneurially. For the purpose of this study, the terms "entrepreneur", top manager", and "individual" are synonymous, as we interviewed top managers about an opportunity that they were currently committing to for their organization. Several authors consider the entrepreneurial phenomena as planned (Bird, 1988; Krueger & Carsrud, 1993; Krueger et al., 2000; Shepherd & Krueger, 2002). An individual acts in a given environment and context, elaborating an entrepreneurial vision and intention. Here, the entrepreneur is considered as a being that decides and acts rationally. Often, this rationality is associated with an analytical reasoning which is one of the systems composing the architecture of human cognition (Kickul et al. 2009; Barbosa et al. 2007). Analytical reasoning is rational, as it is based on logical connections, with efforts of analysis. Research, in particular in psychology and more recently in entrepreneurship, has also suggested that rationality, as seen by economists, is to a certain extent an illusion (Sarasvathy, 2001; Chandler et al., 2011; Gabrielsson & Politis, 2011; McKelvie et al., 2011). An individual's decisions or actions are not only and simply the fruit of a teleological process based upon an explicit vision of the future. Decisions and actions can be guided by intuition and affect (passion, notably) that the entrepreneur can invest in his/her project (Cardon, et al, 2009; Baron, 2008; Goss, 2007). As the process unfolds, the individual will go through different phases of perceptions that will affect his/her choices (Baron, 2008).

The individual – opportunity nexus (Shane, 2003) is multidimensional, varying according to the type of entrepreneurial opportunity and the cognitive framework of the individual, proper to each context. In the literature, opportunities have been seen as objective realities (Kirzner, 1979; Shane & Venkataraman, 2000; Shane, 2000). The opportunity notion has also been conceptualized as a social construction (Sarasvathy, 2001; Ardichvilli et al., 2003; Saranson et al., 2006). There is much debate between scholars about the true nature of opportunities. Interestingly enough, Short et al. (2010:54) suggest, and it is also our point of view in this work, that some opportunities are made, others found, and underscore the interest of such debate for further research.

Entrepreneurial opportunities, depending on the situation, can be made or found and entrepreneurs may perceive them as either objective realities or social constructions. Does the manner in which an individual perceives the opportunity (objective reality or social construction) impact the process of commitment to the opportunity? What could be the role and the importance of their cognitive styles (analytic versus intuitive) to the commitment processes to these entrepreneurial opportunities? The commitment to an entrepreneurial process will depend upon the individual's perception of the ontological nature of the opportunity and his/her cognitive style. The current literature does not address these key questions. While research addresses (in a broad sense) how opportunities may be identified or constructed looks at the role of entrepreneurial cognition, in particular in the context of new venture creation, little research could be located at the crossroads of both streams. Furthermore, there is very little research addressing such concepts in an organizational context (Vaghely & Julien, 2010).

We have chosen to investigate this question in an organizational setting because from our point of view it presents a rich context for learning about the phenomenon. As intuition is, as we will see, function of previous experience, an organizational context is probably more appropriate to study the impact of the entrepreneur's cognitive style on opportunity identification and / or creation. Consequently, we have studied eight cases of organizational commitment processes to capture the role and importance of entrepreneur's cognitive style and those of entrepreneur's perceptions on the nature of opportunities. By 'commitment' we mean that key individuals and their organizations are strongly engaged in the process of either identifying or creating entrepreneurial opportunities.

We find that, for two of our entrepreneurs, commitment to opportunities seen as objective realities takes the form of an analytical process. The six other entrepreneurs perceived opportunities as social construction; commitment to opportunity can take the form either of an intuitive process, an analytical process, or a process mixing intuition and analysis.

This article is structured as follows. We will begin by examining the entrepreneurial opportunity: views and ontological nature. In the second section we will study entrepreneurial cognitions, before looking at the commitment process to entrepreneurial activities (section 3). We will then present our research methodology; before presenting our findings in the fifth section. Finally, we will discuss our findings (section 6).

THE ENTREPRENEURIAL OPPORTUNITY

Although initial entrepreneurship research focused more on the entrepreneur and his/her characteristics, the concept of opportunity has become central (Short et al, 2010). Intuitively, the notion of opportunity is inherent to entrepreneurship. It is a pervasive theme in entrepreneurship research articles, and is often found in the field's seminal works (Kirzner, 1979; Venkataraman, 1997, Shane & Venkataraman, 2000). But what is really an entrepreneurial opportunity? What is its profound nature?

Views on entrepreneurial opportunity

Several perspectives have been adopted to study the concept of opportunity (McMullen et al., 2007; see Short et al., 2010 for a full review of the literature). Nevertheless, no consensus has been found on the definition of opportunity, and operationalization is problematic (Hansen & Lumpkin, 2009).

Opportunities can be Shumpeterian or Kirznerian (Shane, 2003:19). The first are disequilibrating, require new information, are very innovative, rare, and involve creation; the latter are equilibrating, do not require new information, are less innovative, more common, and are limited to discovery. The two authors disagreed essentially on "whether the existence of entrepreneurial opportunities involves the introduction of new information or just differential access to existing information" (Shane, 2003:20). As a consequence, the individual or personal factors needed to discover and exploit these types of opportunities are different. For example, Schumpeterian opportunities require people who are willing to make decisions with very little evidence (characteristic of overconfident people or those who make decisions intuitively). Kirzner describes the entrepreneur with a particular quality: alertness. While some scholars posit that these two types of opportunity exist independently (Schumpeter, 1935; Kirzner, 1979), others argue that they can be simultaneously present in an economy (Shane & Venkatraman, 2000).

Opportunity has been seen as an idea (Davidsson, 2004), an unexploited project (Casson & Wadeson, 2007), a project to start a business (DeTienne & Chandler, 2007). Casson (1982) defines opportunities as chances to introduce new products, or services, raw materials or organizational methods which can be presented and sold at a price higher than the production costs. Here, opportunity rimes with newness. For McMullen and Shepherd (2006), a change in the environment is also seen as a source of opportunity to develop a business. Other viewpoints accord a larger portion to the subjectivity of individuals. Stevenson and Gumpert (1985:86) define an opportunity as a situation deemed desirable and feasible. For Bygrave and Hoffer (1991:14), "*the entrepreneurial process involves all the functions, activities and actions associated with the perceiving of opportunities and the creation of organizations to pursue them*". They insist upon two dimensions of the entrepreneurial process: the dynamic aspect (time plays an important role, projects and the environment evolve over time), and the holistic aspect (the evolution is the result of a system of variables in interaction). Shane (2003:18) defines an entrepreneurial opportunity as "a situation in which a person can create a new ends-means framework for recombining resources that the entrepreneur believes will yield a profit". This perspective places the individual and his/her aspirations at the heart of the entrepreneurial phenomena.

There seems to be no academic consensus on the definition of opportunity. This is not an issue, as long as scholars take a stance and define what is, for him/her, what an opportunity is or is not (McMullen et al., 2007 : 279).

Entrepreneurial opportunity: objective reality or social construction?

The debate over the ontological nature of the entrepreneurial opportunity divides the scientific community. Two conceptualizations coexist. On one side, opportunity is an objective reality, identifiable as such (recognized/ identified), and on the other opportunity is a social construction emerging from the interactions and confrontations between the individual and his/her environment (created / constructed) (Alvarez & Barney, 2007). The first is rooted in cognitive psychology and the second in social constructionism or developmental psychology (Vaghely & Julien, 2010).

Some see opportunity as a natural occurrence pre-existing its discovery by alert entrepreneurs endowed with the competencies needed to exploit it (Kirzner, 1979; Shane & Venkataraman, 2000). Opportunities are salient characteristics of the economic environment and all one needs is the capacity to recognize them to appropriate them and transform them into economic realities: « *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* » (Shane & Venkataraman, 2000: 220). Opportunity is a situation : « *entrepreneurial opportunities are those situations in which new goods, services, raw materials, and organizing methods can be introduced and sold at a greater price that their cost of production*" (Casson, 1982). In this case, the entrepreneur needs to discover and exploit them. The fundamental issue in market opportunity recognition is that the entrepreneur does not know *a priori* what (s)he is looking for. According to Shane (2000), opportunities are discovered. For Baron (2004, 2006, 2008) opportunities are recognized. Opportunity discovery can result from deliberate research or be fortuitous (« serendipitous ») (Gaglio & Katz, 2001; Alvarez & Barney, 2007).

Others deem that opportunity should be conceptualized in the context of the entrepreneur in an environment depending mainly upon his/her imagination and actions (Berglund, 2007; Dimov, 2010). Here, the entrepreneur is at the center of a social process of creation. The opportunity is constructed during the process; it is not the point of departure. In the same vein, objective facts exist, but these facts interact and are constantly modeled by the observer. From a constructivist perspective, an opportunity is constructed over the long term and cannot simply be identified by an alert owner-manager. For Sarasvathy (2001), opportunity is also part of the construction of the action, thus, the future can be controlled without being predictable. Opportunity is not the fruit of a precise idea of the top manager or the flash inspiration of a would-be entrepreneur, but rather the fruit of a process that should be considered in any empirical study. The top manager, but also the organization, taken in a given context (considering the temporal aspect of the evolution of perceptions and knowledge, but also the evolutions of the environment), must be taken into account. For Ardichvili et al. (2003: 106) "opportunities are made, not found." Gartner et al (1992) see opportunity through the lens of emergence and enactment through retrospective sense making (Gartner, 2007). Saranson et al. (2006), adopting a structuration view, see opportunities as socially constructed, whereas Krueger (2000, 2003) finds that they are constructed and intentionally perceived. Short et al., (2010:54) suggest that some opportunities are made, others found, and underscore the interest of this question for further research.

ENTREPRENEURIAL COGNITION: INTUITION AND ANALYSIS

Cognitive aspects (see Kozhevnikov, 2007 for a recent review of the literature) are increasingly considered by scholars as essential in explaining and understanding organizational behavior in general, and entrepreneurial behavior in particular (e.g. special issues of ET&P on entrepreneurial cognitions). Cognitive styles can be defined as "heuristics an individual uses to process information about his or her environment" (Kozhevnikov, 2007:477). Entrepreneurship scholars, when examining entrepreneurial intuition, usually recur to the analytical-intuitive cognitive style (Allinson & Hayes, 1996:122) that these authors conceptualize as "judgment based on mental reasoning and a focus on detail" (analysis), and as "immediate judgment based on feeling and the adoption of a global perspective" (intuition). Here, analysis and intuition are at the two polar ends of a continuum. Other scholars (Epstein et al. 1996) argue that the analytical and intuitive cognitive systems are independent, as a consequence they are not exclusive, and are best assessed by using separate, unipolar scales (e.g., Hodgkinson & Sadler-Smith, 2003, Sinclair & Ashkanasy, 2005, Kickull et al., 2009).

Independently of the perspective (exclusive or not), empirical studies have demonstrated the relevance and preference of intuitive cognitive styles of entrepreneurs. Allinson et al. (2000) reported that the styles of successful entrepreneurs were significantly more intuitive than those of the non-owner managers in their sample. Sinclair and Ashklanasy (2005) find that entrepreneurs use both intuitive and analytical cognitive styles. Krueger and Kickull (2006), found that for University students, the perceived desirability of starting a businesses is more positively associated with the intent to start a business among students with intuitive versus analytic cognitive styles. Dutta and Crossan (2005) and Dutta and Thornhill (2008) reported in their qualitative study that the entrepreneurs with a more intuitive style ('holistic') are more apt than those with analytic styles to revise their growth intentions in response to changes in the perceived hostility levels of their firms' environments. Kickul et al (2009) empirically demonstrated that the cognitive style directs a person's attention during the different steps of the process: attracting attention during steps that require his/her preferred style, distracting attention for the steps that require a different style.

If Allinson and Hayes (1996) stress that an individual's cognitive style is stable over time, Kozhevnikov (2007:477) indicates that it evolves according to environmental circumstances, intellectual abilities, experience, habits, and personality traits. For Mitchell (2005:664) entrepreneurial intuition must be conceptualized as a dynamic process, because it is used to understand questions that aim to understand the individual's role in the entrepreneurial process. If it was conceptualized as a static property, intuition would take scholars back to research on attribute-based questions.

When faced with a decision to make, an entrepreneur is often in a very complex situation where rationality cannot be of sufficient support and where time imposes an additional pressure (Allinson et al., 2000). Here, decisions are taken instantaneously, in the heart of action, without recurring to conscious analytical reflection; they are intuitive as opposed to rational reactions.

There are several definitions of intuition; many possible antecedents have been identified: the organization of the brain, the structure of knowledge, observing experts, the physical and social environment, decisional ambiguity (Mitchell et al., 2005). For the purpose of this work we adopt Mitchell et al.'s (2007:24) definition : « *The dynamic process by which entrepreneurial alertness cognitions interact with domain competence (e.g. culture, industry, specific circumstances, technology …) to bring to consciousness an opportunity to create new value* ». Intuition 1) originates beyond conscious thought, (2) includes holistic associations, and (3) results in affectively charged judgments (Blume & Covin, 2011).

Generally, intuition is opposed to analysis (Allinson & Hayes, 1996). Intuitive individuals behave with little patience for details, dislike routines and come quickly to conclusions (Behling & Eckel, 1991). Conversely, for Simon (1987), intuition and judgment are simply analysis based on habit and on the capacity to respond quickly through recognition of a specific situation or environment. In the same vein, for other scholars (Epstein et al., 1996, Sinclair & Ashkanasy, 2005), intuition and analysis are described as two distinct bases for decision-making that ideally work in concert (Hayashi, 2001; Sauter, 1999). This conceptualization of intuition makes it learnable, and implies that it develops with experience (Behling & Eckel, 1991).

THE COMMITMENT PROCESS TO ENTREPRENEURIAL OPPORTUNITIES

Entrepreneurial opportunities are not all identical and differ mainly according to the individual (entrepreneur). Indeed, differences between entrepreneurs can affect their perceptions and thus their actions towards entrepreneurial processes (Mitchell & Shepherd, 2010).

For intention scholars (Bird, 1988), action follows intention. Intention is a necessary, but insufficient condition for action. Here, intuition plays a moderating role, influencing the vision the entrepreneur has of the future venture (Bird & Jelinek, 1988:24), "in a sort of mental rehearsal" (of actions to come). Among the premises of the works of intention scholars, we note that 1) intention precedes action, and 2) actions are planned and reflect a linear, rational process (Bird, 1988; Bird, 1992).

Effectuation scholars lean upon the premise that, on the contrary, intention may follow action. Sarasvathy (2001) notes that entrepreneurs see a set of means and wonder what can be done with them; they do not have a goal and seek the means to achieve it. Gartner et al. (1992) points out the consequences of "acting as if": behavior can induce opportunity, leading to emergence. The process of opportunity formation and commitment to opportunity is not (necessarily) linear, actions can lead to intentions and behavior can induce opportunity.

More recently a step towards conciliating the two schools has been made: linearity of time is questioned, reciprocity across time implies that an estimated or envisioned future can cause actions in the present (Bird,1997:8). The entrepreneurial process is dynamic, and includes two phenomena: the individual entrepreneur and the entrepreneurial opportunity (Venkataraman, 1997, Shane, 2003). Research in entrepreneurship studying the link between the individual and the opportunity leads to greater understanding of the role of opportunity and its impact on the entrepreneurial process. Following Smith et al. (2009), hereto we focus on the different dimensions of the process related to the entrepreneurial opportunity. In fact, « *variation in opportunities themselves can account for at least some of the observed patterns in entrepreneurial activity*" (Shane, 2003: 18). We posit that the commitment process will be function of the nature of the opportunity (objective/created), but also of the entrepreneur's cognitive style.

The commitment process and the nature of the opportunity

Brannback & Carsrud (2008: 67) differentiate Kirznerian opportunities form Schumpeterian opportunities. Individuals with a rational /economic approach (Knight, 1921) will be better equipped for the identification of Kirznerian opportunities, involving the recognition of opportunity through discovery processes (Shane, 2003:22). Shumpeterian opportunities involve the creation of new knowledge, as well as its recognition (Shane, 2003:22). The uniqueness of this type of opportunity makes information accumulation and collection of evidence difficult. Intuitive individuals, overconfident people, those willing to make decisions on little evidence are more prone to identify Schumpeterian opportunities.

Without adopting a dualistic and deterministic perspective (Fletcher, 2006), we note that these two logics meet on a continuum corresponding to objective versus subjective perspectives (Alsos & Kaikkonen, 2005; Murphy, 2010). Some reconcile the two perspectives (Long & McMullan, 1984; Lumpkin, et al., 2004); Berglund (2007) posits that entrepreneurs have a multi-facet vision of opportunity. They see it as existing or as having been created, according to the context and ambitions in which it took place. These two visions (objective reality or construction) are not necessarily irreconcilable since they are not necessarily addressing the same object; they are not situated in the same time frame. Table 1 summarizes our thoughts and our first research propositions.

Table 1: Possible effects of perceptions on the nature of the opportunity on the commitment process

Insert Table 1 Here

The main characteristics of the rational process are as follows: formal and planned, materialized through an intense cognitive effort, conscious and rather long. Formal planning and resource control are sufficient when the access, the reliability, and the quantity of information is rising (Brinckmann et al., 2010). It is important to consider planning as a process; this planning should be constantly revised and adjusted. In this sense, the steps of opportunity construction can impact the initial plans. Intuitive processes are characterized by pre-conscious, holistic, and quick action.

Based on the previous development we elaborate our first research propositions.

Research proposition 1: The commitment to opportunities, perceived as objective realities, will be more likely follow an analytical process.

Research proposition 2: The commitment to opportunities, perceived as social constructions, will be more likely follow an intuitive process.

The commitment process and the influence of cognitive style

Intuition refers to the subconscious ability to recognize patterns among events, data, and experiences (Covin, 2002, Dane & Pratt, 2007). Baron (2004, 2006) suggests that, in order to identify an opportunity, entrepreneurs use a cognitive framework previously acquired, and underscores the « *potential role of pattern recognition in opportunity recognition* ». According to Crossan et al. (1999, p. 526) “Entrepreneurs are able to make these novel connections, perceive new or emergent relationships, and discern possibilities that have not been previously identified.” A person’s cognitive framework comes from his/her perception and interpretation of evolutions in the external environment (technological, market…) and from his/her knowledge and experience (Lieberman, 2000; Myers, 2002). Thus, intuition is the activation of a cognitive schema adapted to a certain situation.

According to Shapiro and Spence (1997), intuition is a holistic process, unconscious, during which judgments are made without understanding the rules or knowledge used to make it, and can therefor induce a feeling of certainty, despite the impossibility to justify the reason. The intuitive decision making process implies the feeling of certitude without rational and conscious reasoning. In this case, the problem is that it is difficult to evaluate the effects of intuition before the results become manifest.

The use of intuition varies as a function of the nature of the problem to be solved (Dane & Pratt, 2007; Simon, 1987; Brigham et al.,2007: 31). The use of intuition is appropriate when (a) there is a high level of uncertainty in the environment; (b) there is little previous precedent for action in the face of new emerging trends; (c) there are limited or no facts; and (d) there are several plausible alternative solutions to choose from with good factual support for each option (Agor, 1990). Intuition can shorten the process; cutting the time lags between environmental change and when information about the change is received by the entrepreneur, between the receipt of that information and when a decision is made, and between decision and action; (Bird, 1988:447). Contrary to a largely accepted idea, Khatri (2000) suggests that intuition is more appropriate for important, non-routine decisions, mainly in uncertain environments. Simon uses two synonymous concepts: intuition and judgment: « *Intuition and judgment, at least good judgment, are simply analyses frozen into habit and into the capacity for rapid response through recognition* » (Simon, 1987: 63).

Therefore, we suggest the following combinations (Table 2)

Table 2: Possible combinations of cognitive styles and commitment processes

Insert Table 2 Here

If quadrants 1 and 4 reflect the stability of the dominant cognitive style of an individual, where (s)he acts according to his/her preferred mode (Kickul et al. 2009), quadrants 2 and 3 reflect the possibility of either a process combining intuition and analysis (an individual can confirm his/her intuition through rational planning and analysis), or the learning capacity of the individual (although his/her preferred mode is rational, (s)he develops through learning and experience intuition, upon which (s)he relies in certain contexts). In fact, the literature points out the importance and impact of experience and learning on developing intuition (Crossan et al.,1999; Covin, 2002; Dane & Pratt, 2007; Baron & Ward, 2004; Baron, 2006) , as well as the growing complexity and ever increasing rate of the economic pace (Allinson et al., 2000) : entrepreneurs, to adopt, rely more and more on intuition than on analysis, based on (limited) rationality and reputedly longer. Therefore, we suggest our third research proposition.

Research proposition 3: intuitive and analytical mechanisms should not be opposed. Consequently, an individual can orient his/her first choices with intuition, then rationally implement. (S)he can, on the contrary, sense intuitively other ends-means relationships of rationally planned actions or develop a capacity to base decision-making on intuition.

In light of these developments, we can expect that intuition is probably an important cognitive style for socially creating opportunities but also for some phases of entrepreneurial processes where opportunity is much more seen as an objective reality. Such mechanisms depend upon situations inducing intuitive or analytical behaviors, or combining the two. The conjugation of intuitive and analytical mechanisms will lead to a more satisfying decision or action. One need not choose between an intuitive or analytical mode, they are complementary, one more or less conscious a priori and the other giving rise to planning actions. In these conditions, it is of the first importance to understand the sequences in the process combining intuitive and analytic mechanisms and relate them to given tasks or activities.

METHODOLOGY

We base this study on eight case studies, for which we have reconstituted the processes through which individuals committed to opportunity for the firm. A brief presentation of these cases and of the method used to collect data follows.

Research methodology

Our study is based on eight cases of firms having exploited or in the means of exploiting an opportunity. Case studies are particularly pertinent to analyze an organizational process (Eisenhardt, 1989; Gartner, 2007) and they take the reflexivity of the actor into consideration (Fletcher, 2006). Therefore, the firms were chosen according to the exploitation of entrepreneurial opportunities, i.e. according to actions undertaken (McMullen & Shepherd, 2006; Dimov, 2010).

As noted previously, « *Opportunity identification/recognition is a multistage process in which entrepreneurs play active roles* » (Ardichvili et al., 2000: 121). This encouraged us to center our research on the individual entrepreneur, in an organizational setting, at the heart of the process linked to entrepreneurial opportunities.

We identified *ex ante* firms that had recently identified and exploited opportunities. Empirically speaking, this was a challenge because these firms showed no external differences from other companies. Therefore, we selected firms for which we had a sufficient amount of information concerning their development over the past two years. The firms were chosen because they illustrate the process of opportunity formation and the potential development of the conceptual framework pertinent for these types of processes (Eisenhardt & Graebner, 2007; Yin, 2003). We are aware of the limitations this perspective can bear, namely for the generalizability of our results, but our aim is more to induce the proposition of a framework from this qualitative data than to come to generalizable results.

Data collection

We drew on three primary data sources 1) semi structured interviews, 2) student reports on the firm, coupled with in-firm observation, and 3) secondary data.

The process of sampling is simple. As we have previously mentioned, eight firms were included in the present study. We initially had a sample of 22 companies that had recently (within the past year, at the most) exploited an opportunity. Thirteen firms accepted to participate; we finally selected eight cases because they seemed to reflect the right degree of diversity.

The firms selected were drawn from a group of firms known to the study authors. Such firms had varying levels of interaction with the business schools in which the authors are based. Some were firms that had welcomed students as interns for their final training period (six months), firms with which we were in contact (from previous experiences) and entrepreneurs with whom we had organized conferences in our institution. Once we had finished the interviews, we chose to eliminate three firms from the sample because:

- The opportunity pursued was not qualified as entrepreneurial (no new ends/means relationships, no new combinations of resources)
- Our interview was not sufficient to fully grasp information concerning the opportunity (what information was available, consciously or not, to the entrepreneur compared to the potential market or accessible resources?

Data was collected by semi-directive interviews, enabling to reconstitute the process linked to the opportunity and the cognitive style employed. The interviews took place between March 2010 and September 2010. Data was collected through a detailed survey instrument and in depth interviews (Rice, 2002).

The interviewees, owners or top managers, were chosen according to their implication in the process. We conducted a semi-directive interview with each top manager. Although interviewing several members of the organization would have reduced the limitations inherent to this research methodology, interviewing the top manager enables a fuller comprehension of his/her cognitive style, that largely affect the processes under study.

For five cases, we relied on students who followed the process longitudinally, as they were trainees in the firm(s) during the concerned time frame. This immersion facilitated the reconstruction of the process according to their observation and their tasks. We also based our work on visits to the firm when meeting with students during the training period. This non-systematic observation enabled us to collect precious information.

We also collected secondary data on the markets or industries of the firms in our sample, to grasp a better understanding of the way they operate and how they evolve (level of intervention in the sector, growth rate, competitive advantages, market share and its evolution…). Data collection was completed by the notes taken during the interviews (observations), web sites, financial statements: balance sheet, economic and financial returns…; and notes from previous studies (of the students: Master's thesis, internship reports, interviews with students, meetings with the firm in other contexts…)

These three types of data collection largely enriched the data; the diverse sources of information were quite useful, as they contributed to diminishing the bias related to the individual's memory capacities, the bias related to the concentration on a unique specific dimension linked to opportunity development, as well as the rationalization *a posteriori* by the top manager.

The interviews lasted, on an average, 1h30; they were recorded and transcribed by theme: entrepreneurial opportunity (the definition of opportunity is not unique, we let our interlocutors express freely on what we had defined previously as entrepreneurial opportunity), the person's cognitive style and the cognitive framework, the intuitive and/or analytical process used, as well as characteristics of the environment.

In order to reinforce the validity of this research, each interview covered the same themes, in the same order, and with the same method of introduction and reformulation.

Operationalizing the concepts

As we have embraced a process perspective, we will concentrate on the succession of the stages and the perceptions of individuals over time. We do not endeavor to understand the variables, but to explain the interactions and evolutions during opportunity formation, representing hereto the entrepreneurial process.

We selected firms which adopted a process linked to opportunity. These opportunities are entrepreneurial in the acceptation given by Baumol (1996), Shane and Venkatraman (2000) and Sarasvathy and Venkatraman (2002), inasmuch as the opportunity is not directed towards maximizing resource allocation (Stevenson & Gumpert, 1985), but on the contrary is directed towards the questioning and creation of ends-means relationships (Eckhardt & Shane, 2003: 336).

Hereto, we adopt Smith et al.'s definition (Smith et al, 2009:40) « *new means-end relationships* », this relates to new and under-exploited opportunities (Plummer et al., 2007) and Kirzner's (1997): « *imprecisely-defined market need, or un- or under-employed resources or capabilities*" to qualify opportunity.

The following table (Table 3) resumes the dimensions found in the literature dedicated to the cognitive process people use.

Table 3: The dimensions of intuitive and analytical cognitive processes

Insert Table 3 here

We tried to control certain variables in our study. The top manager's experience (in the organization and in entrepreneurship) was taken into consideration: seniority in his/her position in the company, how many opportunities he/she exploited…We also checked for eventual influences of industry and its evolution: this can have a considerable impact on the quantity of opportunities identified and/or developed. The intensity of competition, technological evolutions, and changes in the market were also moderated because they can lead to the emergence of entrepreneurial opportunities (Ireland et al., 2009).

Data analysis

We started the analysis by constructing the different phases of the process according to what the entrepreneurs had said; this led us to suggest the first constructs inherent to the process. Thus, each analysis was centered on the way the opportunity was developed. Next, a cross analysis of the cases brought us to formulate explanations for the nature of the opportunity and for the process that lead to its development (Yin, 2003). Explicative schemas were elaborated which founded the separation of our sample into groups. We based our analysis on a grid of analysis destined to show the forms (modalities) of the process.

The unit of analysis is one of the themes of the interview. The level of analysis is both the entrepreneur and the environment (Lumpkin & Lichtensten, 2005; Hansen & Lumpkin, 2009; Vaghely & Julien, 2010).

In case of poor comprehension or imprecision, we called the interviewee by telephone to clarify details. Once all of the interviews were transcribed, they were grouped by units of analysis[1] (Giorgi, 1985). Then, once the units of analysis established, we assembled them in categories stemming from the literature and our research question. There were no disagreements between the units of analysis adopted and our work on the literature.

We present our findings in the following section.

FINDINGS

The sample: eight cases

We concluded eight interviews with top managers (owners or not). Our sample is composed of firms that drove a process linked to opportunity, consciously or unconsciously. This constitutes the main difference compared to an opportunity that could be exploited by a newly created firm. Table 4 presents synthetically our sample of firms.

Table 4: our sample

Insert Table 4 Here

The nature of the opportunity

Our first analysis was to identify the opportunity as new ends-means relationships, and specify the nature of the opportunity as perceived by the entrepreneur. A synthesis figures in table 5.

Table 5: The entrepreneurial opportunity as perceived by the entrepreneur

Insert Table 5 Here

[1] A unit of analysis is an expression of signification (unlimited to a rule of syntax: sentence…) and that indicates a change in the meaning of the text.

Our field study confirms some of the characteristics found in the literature (c.f. Table 1). It appears that opportunity, seen as an objective reality, is the fruit of a rather long and formal commitment process, implying cognitive efforts; it is conscious and formal. In the cases where opportunity is perceived as a social construction, the process of commitment is often inductive, effectual; the top manager's perceptions bring him/her to see the commitment process in a holistic manner.

Other dimensions do not appear clearly in our results. First, the opportunity seen as social construction is not the fruit of intuition only. (F1,F7). The motor of the commitment is often mentioned as intention, and can precede action (F1,F2,F4, and F7). Also, this comprehension of the entrepreneurial opportunity can also emanate from a formal process (F1 and F4).

Our next task was to identify the commitment process and its salient traits, according to the nature of the opportunity. Table 6 summarizes our findings.

Table 6: The process of committing to entrepreneurial opportunity according to the perceived nature of the opportunity

Insert Table 6 here

We note that two of the entrepreneurs in our sample perceived the opportunity as objective; the remaining six as socially constructed. In our research proposition 1, we expected that opportunities perceived as objective emanated from an analytical process, this is confirmed in our study (F3,F5). It appears that when the opportunity is perceived by the entrepreneur as an objective reality, (s)he commits to that opportunity through a rational-analytical style. Following his/her perceptions and planning activities, (s)he adopts a deductive perspective where his/her rationality serves to identify and to commitment to opportunity.

Our research proposition 2 suggests that socially constructed opportunities are the fruit of an intuitive process: this is also confirmed (F6, F8).

Our research proposition 3 indicates that processes can be mixed. This is the case for F2 and F7 – the opportunity perceived as social construction was first constructed according to an intuitive process, then an analytical one. Intuitive processes are only present in opportunity construction in our sample. Opportunity construction can be based on intuition, but this intuition can then 'verified' through a more analytical process, before the complete construction of the opportunity.

What is unexpected and quite interesting is that in our sample, two entrepreneurs indicated that the opportunity (F1 and F4), perceived as social construction, gave way to an analytical commitment process. We met firms where the will to construct an opportunity gets translated into a conscious, analytical, and planned process. For the firm 1, the analytical process is compulsory. "*A lot of information comes in. It is disjointed. We need to analyze them with sophisticated studies before launching any project. The decision then becomes natural. Information is the same for everybody in our industry. So, we need to appropriate it to be able to build our own products. For this, we set up a pipeline system with gates (1 to 7) through which ideas or new information must go. Each gate must be crossed with precise steps. It is rather formal, there are gate process meetings, with representatives of each pillar (Production, R&D, marketing,)*". Then he confirms his perception: "*it's much easier to make mistakes with feelings, instinct!*" The F4, also, relies upon the analytical process to improve reliability. « *We do meetings frequently to find projects and then to shape them up. It's to invest as much pertinence as possible in the choices we make. That is how we were able to set* *up the production in question.* » He, too, justifies the analytical approach by the distinctive features of his industry: «*Organization and innovation don't get along very well. We are in a technical trade. Technology must follow or we will not move forward. We must combine an organization to serve technology with meetings…we even created a marketing department to get new opportunities!* ».

The top manager's cognitive style

The cognitive style was determined based on the individual's representations, their will to develop new opportunities, their alertness, and reference to past experiences. It appears that the entrepreneur's will is essentially manifested through the vision they have of their activity and of their environment (firms 1,2,4,6, and 7): « *We have a precise vision of what we want to do* ». Only firm 8 declares having an explicit will about new opportunities, without a clear vision of the future evolutions of the environment. Companies 3 and 5 have a declared desire to develop, without preparing this development (« *we don't know how to set up actions* » - E3). Only the identification of an opportunity, by an external displacement constrained them to become aware of the opportunity and the need to set up actions (« *Yes, we just became aware of the risks related to our industry* » - E5). Finally, certain firms reflect upon the idea, in order to be able to create their own representations of the environment. (« *We thought about our know-how. It is a clearly stated choice and we will find the means to construct our development*» - E6 ; « *The structure is organized around projects*» - E1 ; « *We use our knowledge of the trade mixed with intuition and analysis* » - E2).

The intuitive process

We can see that the intuitive process comes essentially from past experiences (« *We are based on our knowledge* » - E2) even if can be completed by a more analytical and conscious process (« *We trust our intuition, market studies are confirmatory* » - E2). The intuitive process is generally driven by an entrepreneur who sees himself/herself as intuitive (« *I am very intuitive. Intuition is fundamental. It is shorter, but to it one should add experimentation.* » - E7). For others, intuition is related to knowledge and entrepreneurial experience (« *It's in my head, it is my first intuition, it's the consequence of experience* » - E6). Unconsciousness also appears to be a characteristic of intuition (« *We start with an idea, which leads to an intuitive decision* » - E8) as well as confidence in the orientation (« *Conscious argumentation is only for communication (for oneself and for others)* » - E8 ; «*There is no proper behavior without intuition* » - E7).

The analytical process

The analytical perspective is characterized by a conscious process, relatively long, formal and entailing a strong cognitive effort. It intervenes either directly or following an intuition that needs confirmation (« *It is to put the most pertinence in the choices that are made* » - E4 ; « *It cannot be only intuition. I don't have the talent to be an intuitive genius* » - E2 – « *I like mixing intuition and analysis. I analyze the past to decide.* » - E7). It is often conscious, organized, and formal (« *Every team is involved in order to make ideas germinate. We analyze team by team and we synthesize all of the information…We deduce a strategy from the vision and elaborate an action plan*» - E2). Analysis is seen as a tool to support decision making. It allows a better comprehension of a given environment (« *The decision becomes natural after studies*» - E1). The goal is to reduce uncertainty coming from the environment.

The process is rather long, and comprises a real cognitive effort (« *A lot of things come in (ideas, projects…) We have a pipeline with phases that must be accomplished (seven phases in all)* » - E1).

Processes mixing intuition and analysis

We examined the relationship between the intuitive commitment process and the nature of the entrepreneurial opportunity. Our findings are resumed in the table 6, highlighting the nature of the opportunity (objective or constructed) in respect of the process of commitment (intuitive or analytical).

For example, F2 indicates that market studies are purely confirmatory: « *We rely, first of all, on our intuition and our ideas that come from our experience. It is very difficult to evaluate the market because we are generators of ideas and markets. So, we make prototypes out of our ideas that we offer first to our internal customers and we do market studies only before launching them concretely on the market. But the process is already well started at this stage.* ***If we started with a market study, very often we wouldn't go any further, because our ideas create the market which wouldn't exist without us.***" The perspective is slightly different for F7. The process seems reversed: « *I like to mix intuition and analysis. I analyze the past to decide intuitively*".

We underscore that the construction of the entrepreneurial opportunity is function of the top manager's representations and actions. Here, the process is not necessarily conscious but, little by little, actions attract new means which enable the construction of the opportunity. We adopt the subjective aspect of opportunity, related to and constructed by a specific organization. In table 7 figures the perceived nature of the opportunity, along with internal factors (firm size, source of the opportunity, and commitment process for this opportunity) and factors related to environmental turbulence (controllable or not, calculable or not, predictable or not).

Table 7: Opportunity, process, firm size, and environmental uncertainty

Insert Table 7 Here

We observe that the source of the opportunity for F3 and F5, the firms in our sample that perceived the opportunity as objective, was external displacement. They are both SMEs, and the process of commitment was analytical, post identification. They are both sub-contractors and as such are highly dependent on the industry to which they belong (automotive and aeronautical sub-contracting) and therefore powerful customers. As a consequence, even if they have previously committed to opportunity (customer diversification, external growth), they have always had an objective perception of opportunity. They have never adopted an effectual and proactive behavior of construction, independently of the context (e.g. environmental change). For these two cases, we analyzed in depth the process of commitment, which we qualified as 'post-identification'. A major event modified their environment, which led them to perceive an opportunity. This initial perception only took the shape of an opportunity *a posteriori*. In fact, the firms began an analytical, causal, and formal processes (identification of phases of analysis: studies) as soon as the change took place (new information, new context). This allowed them to qualify the consequences of the initial displacement as an opportunity; they were able to engage in this new ends-means relationship.

The other six firms identified the source of their opportunity as intention. Two firms engaged in an intuitive process to commit to an opportunity perceived as social construction (our research proposition 2). Two firms perceived the opportunity as constructed but emanating from an analytical process (F1 and F4); both of these firms are in the medical industry. Two firms perceived the opportunity as constructed, undertook commitment through an intuitive process, then switched to an analytical one (F2 and F7); both of these firms are in distribution, and are the largest firms in our sample.

The opportunity can be identified following an event coming solely from the firm's environment. This is the case for firm 3 where, without manifesting the will to do so, and without a precise vision, identified an opportunity due to a positive external displacement (proposition from a pole of competitiveness to take over a license to exploit it) and a negative external displacement (the current economic crisis compels the firm to find new sources of development). Despite the consciousness of the need to find new sources of development in order to face the environmental incertitude, no action had been considered before the displacement (« *we were not aware of the actions to be set up* »).

DISCUSSION

The purpose of this study was to better understand the relationships between the perceptions of the nature of an entrepreneurial opportunity, the cognitive style of the entrepreneur, and the process of committing to the opportunity. The differences among entrepreneurs brought them to different perceptions, on a continuum going from the objective to subjective perspective (Alsos & Kaikkonen, 2005; Murphy, 2010), and thus to different chains of actions (Mitchell & Shepherd, 2010).

Empirical implications Our findings indicate that the entrepreneurs in our sample who perceived the opportunity as objective reality committed to that opportunity mainly through an analytical process. This is consistent with the literature (Shane, 2003; Brinckmann et al., 2010). It is to note that these two individuals were the only ones in our sample to perceive opportunity as objective. We can link this perception to the fact that they are General Directors or CEOs of firms that are sub-contractors to the mechanical industry: as sub-contractors, they are highly dependent on the evolution of the market and do not adopt processes that will allow them, little by little, to construct new opportunities (Sarasvathy, 2001; Sarasvathy & Venkatraman, 2002). Their past experiences, when they exist and as they are perceived, are also the result of an analytical process to identify an existing opportunity (new ends-means relationship). Our literature review showed the impact of experience the intuitive cognitive style (Simon, 1987; Mitchell, 2005; Kozhevnikov, 2007): intuition is developed through experience; experience influences the capacity to adopt an intuitive commitment process to opportunity. Lacking this experience as a constructive process, these two entrepreneurs perceived the opportunity as objective, and committed through an analytical process. They follow formal processes where intuition cannot develop.

Two of the entrepreneurs in our sample perceived the opportunity as a social construction, and committed to the opportunity through an intuitive process. This is consistent with the literature (Short, 2003). These findings concur with those of Allinson et al. (2000); it appears that entrepreneurs who construct opportunities for their firm use more often an intuitive cognitive style.

In our sample, two of the entrepreneurs, to commit to an opportunity perceived as a social construction, based their commitment first on intuition, then on analysis. This demonstrates the combination of intuition and analysis, an important implication of this work. Previous studies have shown the independence of the two styles or processes (Epstein et al., 1996; Hodgkinson & Sadler-Smith, 2003, Sinclair & Ashkanasy, 2005, Kickul et al., 2009), this study demonstrates that they can operate together during the commitment process (compare with Long & McMullan, 1984; Lumpkin, et al., 2004). As previously highlighted (c.f. results), these two firms are in retailing, and are the largest firms in our sample. In one case, analysis is used to confirm the intuition in the other intuition is based on the analysis of the past. We add that size is also an important factor: larger companies are more bureaucratic than smaller ones (Stevenson & Gumpert, 1985).

Finally, the last two entrepreneurs of our sample used analytical processes to commit to an opportunity that they perceived as social construction, function of their own capacities. They consider the information that they get is abundant and imprecise (they are on global markets). They both operate in the medical industry, characterized by several activities, large and deep product ranges, high added value, highly competitive, and highly codified. They are unable to extract specific information about the market that would let them see opportunity as an objective reality (it has happened, but rarely: very high end sport equipment). They therefore set up an organization, often formal, very analytical, to help them extract the information (e.g. the gate process) construct ideas that will eventually transform into opportunities by clear decisions based on predefined criteria. To resume, their perception is that a clearly analytical reasoning enables them to be proactive, to construct their opportunity (that doesn't exist previously on the market).

Our results show that the intuitive process *does not correspond to* an uncertain environment. It is not utilized to replace a default conscious analytical process.

Implications for practice

First, in a context where entrepreneurship is taught more and more often (Dimov, 2007), deeper knowledge of the processes and of the context linked to opportunity could encourage students to follow their minds. Here, the challenge is less to select the good ideas, but to develop the generation of multiple ideas.

Next, according to a commonly accepted idea, top managers seek total rationality in decision-making, based on concrete facts. The literature, and our results, put into perspective the role of intuition in this process. It is not a subjective component to oppose to the logic of reasoning or planning.

Third, as demonstrated by Baron and Ensley (2006), experience contributes to the construction of an individual's cognitive frame. Hence, previous experience of opportunity identification can lead him/her to relate certain events ("connect the dots") in an entrepreneurial perspective. As a consequence, people can be trained to be more efficient in opportunity identification « *A pattern recognition perspective suggests that in fact, this is a very feasible goal …* » (Baron, 2006: 116). This opens new perspectives for research in entrepreneurship education and training, as well as professionals who accompany new venture creation.

Finally, for the professionals that accompany entrepreneurs or successors-to-be, incubators and other structures have, up to now, set the accent on following potential entrepreneurs through planning and rationalization (in a certain manner) of the entrepreneurial process. This work puts into a new perspective the weight of different variables used, function of a certain illusion of rationality and planning. Total rationality and intense planning are pure illusion.

Limitations and suggestions for further research

This work has its limitations. The small size of our sample brings us to suggest other qualitative studies before carrying out quantitative studies on larger samples. Another limit, methodological, concerns the interviewees. We chose to set the accent in the individual, over the organization. This can lead to a bias (in addition to the bias of reconstruction of the past, inherent to a posteriori research) in that we do not have a large vision of the perceptions of the members of the organization. We interviewed the top managers: interviewing a larger population (employees, shareholders, external stockholders…) would allow a comprehension of the complexity of the organization.

Our study also suffers from a sample bias (Davidsson & Honig, 2003): we studied only firms who had successfully exploited an opportunity, through identification or creation. During the process of exploitation, individual behaviors brought opportunity to existence; in other instances, can entrepreneurial behaviors lead to unsuccessful outcomes? As a consequence, can some behaviors be more successful than others to exploit opportunity?

Finally, a last limitation relates to the theoretical constructs employed. We borrowed them from research on decision-making processes, and used them to study the entrepreneurial process centered on opportunity. As we have seen, this process is constructed over time and rarely equates to a decision isolatable in time. Thus, it seems difficult to separate the process that leads to action in opportunity construction from a specific decision that can be identified in time and space.

We conclude this discussion with suggestions for further research: first, consolidate the concepts used. The results of this research confirm the need to operationalize the notions used by integrating, in a holistic perspective of the process, conscious analytical variables and variables indicating an intuitive, unconscious process. Next, quantitative studies could contribute to better understanding of interactions between the processes under study. Moreover further research could study the relationship between our two independent variables (entrepreneur's perceptions of opportunities and cognitive styles) and commitment processes lead by the two logics (causal and effectual) conceptualized by Sarasvathy (2001).

It would be of great interest to pursue research on the impact of the industry (e.g. medical) or that of the size of the firm on commitment processes and its sequences.

Elucidating the influence of experience on the perceived nature of the opportunity (objective reality or social construction) would be of value: first other studies on smaller samples, then large-scale studies.

Finally, our research focused on how the perception of the entrepreneur of the nature of the opportunity and his/her cognitive style influenced the commitment to opportunity. Further research could identify the impact of such commitment processes on firm performance.

CONCLUSION

In this research we shed light on a key question in relation to the way entrepreneurs commit to entrepreneurial opportunities. The commitment processes we have identified and observed highlight diversity and give in some cases a key role to intuition-based behavior. These processes can be mainly analytical or intuitive-based, but we show they can also be characterized by a particular sequence of analytical and intuitive-based behaviors. This opens the perspective to new and challenging research to identify the different possible sequences, the conditions under which they appear, and their consequences on firm performance.

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Table 1: Possible effects of perceptions on the nature of the opportunity on the commitment process

Nature of the opportunity	Objective reality	Social construction
Dominant cognitive style	Analytical	Intuitive
Usual decision-making mode / process for commitment to opportunity	Rational : formal, planned, long, strenuous cognitive effort	Holistic : informal, unconscious, quick,
Type of opportunity	Kirznerian: equilibrating, do not require new information, are less innovative, more common, are limited to discovery	Schumpeterian: disequilibrating, require new information, are very innovative, rare, involve creation
Time sequence	Intention precedes action / linear / sequential	Action can precede intention / nonlinear / holistic
How the opportunity comes to be	Identification / recognition / causation	Creation / enactment / emergence / effectuation
Type of process	Conscious / willing/ deductive / analytical	Unconscious / inductive / intuitive

Table 2: Possible combinations of cognitive styles and commitment processes

1. Intuitive cognitive style / Intuitive process	2. Analytical cognitive style / Intuitive process
3. Intuitive cognitive style / Analytical process	4. Analytical cognitive style / Analytical process

Table 3: The dimensions of intuitive and analytical cognitive processes

Process	**Analytical**	**Intuitive**
Preparation	Longer processing	More rapid processing
Unwinding	Sequential	Holistic
Conscience	Conscious, experienced actively and consciously	Not conscious, experienced passively and pre-consciously
Confidence	Reason oriented, analysis and logical connections	Feeling of certitude and trust
Speed of action	Long, oriented towards delayed action	Oriented towards immediate action
Context	Evaluation of alternatives	Much information, complex
Required competencies	Information and appropriation capacities	Synthesize
Antecedents	New situations Causal relationships	Experience

Table 4: our sample

Firm	Industry	N° of employees	N° of plants/sites	Entrepreneur - interviewee	Seniority of interviewee (years)	Capital or firm structure	Opportunity developed
1	Medical	400	2	General Director	22	Stock exchange	Product innovation (technological and

							usage)
2	Products for sports	conception office 30 people (out of 40000)	3 and 433	Director of development	10	Association	Product innovation (usage)
3	Sub-contracting - mechanics	40	1	General Director	40	Family firm	Creation of new own products
4	Medical	370	5	Industrial Director (operations)	20	Family firm	Diversification of a range of products (complementary)
5	Sub-contracting - mechanics	63	1	CEO	12	Family firm	Diversification customers' sector of activity (chemistry)
6	Mechanical engineering	25	1	CEO	30	Family firm	Complete action (downstream – conception and fabrication of sub-sets)
7	Industrial supplies	1500	150	General Director	20	split	External horizontal growth
8	Industrial supplies	22	2	General Director	25	Belongs to a family group	Extension of range by adjunction

Table 5: The entrepreneurial opportunity as perceived by the entrepreneur

Firm	New end-means relationship (Baumol, 1996 ; Stevenson & Gumpert, 1985; Sarasvathy & Venkatraman,2002)	Objective reality (main characteristics)	Social construction (main characteristics)
1	Conception of a new product for a new market (innovation)		Intentional, new information, innovative, creation, weight of R&D, inductive, formal
2	New product for existing market, new usage		Intuitive, informal yet intentional, long, effectual, inductive
3	New product on a new market with a new technology	Planning, formal, new information, conscious and conscious and causal process	

4	New range of products with new usage		Holistic, formal, based on intention and action
5	New activity with new product	Formal, rational, planned, long process, great cognitive effort	
6	Integration in the range : new service with new technology		Intuition, informal, effectuation, inductive
7	New geographical market		Intention, Intuition then planning, formal
8	New market with new products and new sales methods		Idea, new perception, short and effectual process

Table 6: The process of committing to entrepreneurial opportunity according to the perceived nature of the opportunity

Firm	**Nature of the opportunity**	**Analytical process (AP) and/or intuitive process (IP)**	**Process**	**Results**
1	Constructed	AP	Preparation	Long
			Process	Sequential
			Conscience	Conscious
			Confidence	Logical connection
			Speed of action	Long
			Context	Evaluation of alternatives
			Required competencies	Synthesize
			Antecedents	Causal relationship
2	Constructed	IP then AP	Preparation	Long
			Process	Holistic
			Conscience	Conscious
			Confidence	Trust
			Speed of action	Oriented toward action
			Context	Complex
			Required competencies	Synthetize
			Antecedents	Experience
3	Objective reality	AP post identification	Preparation	Long
			Process	Sequential
			Conscience	Conscious
			Confidence	Logical connections
			Speed of action	Long
			Context	No perceived alternative
			Required competencies	Appropriation information

			Antecedents	Causal relationships / new situation
4	Constructed	AP	Preparation	Long, holistic
			Process	Holistic
			Conscience	Conscious
			Confidence	Analysis
			Speed of action	Long
			Context	Complex
			Required competencies	Appropriation capacities
			Antecedents	Experience
5	Objective reality	AP post identification	Preparation	Long
			Process	Sequential
			Conscience	Conscious
			Confidence	Reason oriented
			Speed of action	Long
			Context	Complex
			Required competencies	Information and appropriation capacities
			Antecedents	Causal relationships / new situation
6	Constructed	IP	Preparation	Long
			Process	Holistic
			Conscience	Experienced passively and pre-consciously
			Confidence	Trust but reason oriented
			Speed of action	Oriented immediate action
			Context	Complex
			Required competencies	Synthetize
			Antecedents	Experience
7	Constructed	IP then AP	Preparation	More rapid then long
			Process	Holistic
			Conscience	Experienced actively and consciously
			Confidence	Feeling of certitude
			Speed of action	Oriented toward action
			Context	Much information
			Required competencies	Synthetize
			Antecedents	Experience
8	Constructed	IP	Preparation	Long
			Process	Sequential

			Conscience	Experienced actively
			Confidence	Feeling of certitude
			Speed of action	Oriented toward immediate action
			Context	Much information
			Required competencies	Appropriation capacities
			Antecedents	experience

Table 7: Opportunity, process, firm size, and environmental uncertainty

Firm	Type of opportunity : objective reality (OR) or construction (C)	Source of the opportunity intention (I) of «positive or negative external displacement (ED + or -)	Firm size*	Analytical process (AP) and/or intuitive process (IP)	Environmental uncertainty : controllable or not (C or ~~C~~), calculable or not (Ca or ~~Ca~~), predictable or not (P or ~~P~~)
1	C	I	C	AP	~~C,~~ CA, P
2	C	I	D	IP then AP	C, ~~CA~~, P
3	OR	ED+ et ED-	B	AP post identification	~~C~~, CA, P
4	C	I	C	AP	~~C~~, CA, P
5	OR	ED-	B	AP post identification	~~C~~, CA, P
6	C	I	B	IP	~~C, CA, P~~
7	C	I	C	IP then AP	C, CA, P
8	C	I et ED-	B	IP	C, CA, P

*: A : 0 to 9 employees, B : 10 to 249 employees, C : 250 to 2000 employees, D : > 2000 employees