

Passive, non-systematic search as an alternative to systematic search in opportunity discovery

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Abstract

This paper summarizes the results of a multiple-case study conducted to shed light into the question of how business opportunities are recognized by examining two theoretical propositions related to two topics: 1) the role of prior knowledge in the discovery of opportunities, and 2) whether opportunities are noticed without deliberate search or can be the object of a constrained, systematic search. We studied five Spanish companies and eight business opportunities. All the opportunities of the multiple-case study were recognized thanks to the prior knowledge of the entrepreneurs. In addition, the entrepreneurs only discovered opportunities related to their prior knowledge. None of the opportunities was discovered by noticing without search, as the alertness perspective contends. Some of them were the result of a systematic search constrained to the entrepreneur's prior knowledge, but most of them were discovered by searching passively and non-systematically within the knowledge domain of the entrepreneur. This result suggests the passive, non-systematic search as an alternative to the systematic search.

Key words

Business opportunities; prior knowledge; entrepreneurial alertness; pattern recognition; systematic search; passive, non-systematic search.

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1. Introduction

Business opportunities, defined as the match between an unfulfilled market need and a solution that satisfies the need (O'Connor & Rice, 2001), are identified by specific persons and not others. The reason why some persons and not others recognize particular opportunities (Baron, 2004) has to do with the fact that information is not evenly distributed (Shane & Venkataraman, 2000; Minniti, 2004). According to these authors, opportunities exist because there are asymmetries of information. Distribution of information across the population and thus asymmetries of information gives rise to a prominent role of the entrepreneur's prior knowledge in the discovery of opportunities. Venkataraman (1997), Shane (2000), Shane and Venkataraman (2000), and McMullen and Shepherd (2006) claim that idiosyncratic prior knowledge determines who recognizes opportunities and who does not.

However, the entrepreneurial alertness perspective (Kirzner, 1979; Kaish & Gilad, 1991) contends that opportunities are noticed without deliberate search, by accident, involving surprise, and that the entrepreneur's prior knowledge is not relevant. In line with the alertness perspective, Shane (2000) and Baron (2006) say that entrepreneurs recognize opportunities without actively searching for them, but they differ with entrepreneurial alertness in the role of prior knowledge: entrepreneurs only discover opportunities related to their idiosyncratic prior knowledge (Shane, 2000) and they use cognitive frameworks developed through their previous life and work experience (Baron, 2006).

Finally, while the alertness perspective argues that opportunities cannot be the object of systematic search (Kirzner, 1997), the constrained, systematic search perspective states that entrepreneurs can systematically search for opportunities, and that their prior knowledge circumscribes the domain within which to search (Fiet, 2007).

The literature we have reviewed is not conclusive on two topics: 1) the relevance of prior knowledge in the identification of opportunities, and 2) whether opportunities are noticed without deliberate search or can be the object of a constrained, systematic search. Hence, the role of prior knowledge and the potentiality of a systematic search merit further research efforts. The mentioned two topics relate to the broader question of how business opportunities are recognized. In turn, we may expect that answers to this research question will provide with new insights into the question of why some persons and not others recognize particular opportunities.

The case study was chosen as the research methodology. We studied five Spanish companies and eight business opportunities. Two theoretical propositions were drawn from the literature review to guide data collection and analysis.

The paper is organized in the following sections: theoretical background, methodology and theoretical propositions, multiple-case study, results, discussion and conclusions.

2. Theoretical framework

In this section, we summarize the literature review, covering several topics related to opportunity recognition: the role of prior knowledge, the entrepreneurial alertness perspective, the process of pattern recognition and the constrained, systematic search, a perspective alternative to entrepreneurial alertness.

The mentioned constructs are interrelated, as suggested by George et al. (2016). They review literature on how individuals recognize entrepreneurial opportunities published in the last three decades and classify existing contributions into six influential factors: prior knowledge, social capital, cognition/personality traits, environmental conditions, alertness, and systematic search.

2.1 Idiosyncratic prior knowledge

Why some persons and not others recognize particular opportunities (Baron, 2004) is a recurring question in the relevant literature. An entrepreneur's prior knowledge and experience play a critical role in his ability to identify and exploit entrepreneurial opportunities (Arentz, Sautet, & Storr, 2013). Venkataraman (1997) argues that each person's idiosyncratic prior knowledge creates a knowledge corridor that allows her to recognize certain opportunities, but not others. Shane and Venkataraman (2000) state that recognition depends on two factors, the possession of the prior information necessary to identify the opportunity and the cognitive properties necessary to value it. McMullen and Shepherd (2006) say that an opportunity is only an opportunity for those possessing the necessary knowledge. Guided by insights from cognitive theories, Ucbasaran, Westhead, and Wright (2009) explore the links between entrepreneurs' prior business ownership experience and their opportunity identification behavior. They conclude that experienced entrepreneurs identify more opportunities and exploit opportunities with greater wealth creation potential. Gruber, MacMillan, and Thompson (2008) find that serial entrepreneurs learn through prior start-up experience to generate a "choice set" of alternative market opportunities before deciding which one to pursue in their new firm creation. However, Gruber, MacMillan, and Thompson (2013) find that founding teams with more diverse industry experience and more diverse external knowledge sourcing relationships identify a larger number and more varied market opportunities.

Fuentes et al. (2010) analyze the effects of prior knowledge and social networks on the exploitation of entrepreneurial opportunities. In their study, the prior knowledge considered is associated with the successes and failures experienced in the entrepreneurial trajectory and, therefore, derived from the exploitation of prior opportunities. They show that the number of previous opportunities successfully exploited and the strength of entrepreneurial social networks positively influence the number of opportunities developed and exploited.

Arentz, Sautet, and Storr (2013) show that participants in a laboratory experiment with prior knowledge that oriented them toward an opportunity were significantly more likely to discover the opportunity than participants with prior knowledge that oriented them away from the opportunity.

Hajizadeh and Zali (2016) offer a comprehensive framework of key effective factors that explain the role of prior knowledge and cognitive characteristics of entrepreneurial alertness and learning in opportunity recognition. Moreover, they demonstrate that both entrepreneurial alertness and learning partially mediate the relationship between prior knowledge and opportunity recognition.

Shane (2000) claims that entrepreneurs recognize opportunities related to the information they already possess. More concisely, they recognize opportunities without actively searching for them, but only those opportunities related to their idiosyncratic prior knowledge. He remarks that the sources of idiosyncratic prior knowledge are education, work experience and personal event. Marvel and Lumpkin (2007) investigate how the experience, education, and prior knowledge of technology entrepreneurs relate to innovation radicalness. They suggest that general and specific human capital are both vital to innovation outcomes. Innovation radicalness was positively associated with formal education and prior knowledge of technology, but negatively associated with prior knowledge of ways to serve markets, a counterintuitive conclusion—the less technology entrepreneurs know about ways to serve a market, the greater their chances of using technology knowledge to create breakthrough innovations within it.

In sum, idiosyncratic prior knowledge determines who recognizes opportunities and who does not, assuming beforehand that information is not evenly distributed and thus opportunities exist because there are asymmetries of information (Shane & Venkataraman, 2000; Minniti, 2004).
Entrepreneurial alertness

Kirzner (1979) defines entrepreneurial alertness as the ability to notice opportunities without search. Kaish and Gilad (1991) say that opportunities are discovered without a deliberate search, and simply when encountered. Kirzner (1997) states that opportunities cannot be the object of systematic search because individuals do not know what do not know. Opportunities are discovered by accident and discovery involves surprise. Therefore, entrepreneurial alertness contends that entrepreneurs are receptive to opportunities but do not engage in a formal, systematic search for them.

Kaish and Gilad (1991) confront general alertness to directed and rational search, and hypothesize that, in comparison with managers, entrepreneurs exhibit general alertness by spending more non-business time searching for opportunities, and are less likely to use obvious business sources and to rely on conventional analyses, and more likely to rely on subjective impressions.

Tang, Kacmar, and Busenitz (2012) suggest that personal disposition, prior experience, and experiential learning (Corbett, 2005; Lumpkin and Lichtenstein, 2005) enhance alertness, a capability that can be learned and improved with formal training or constant reminders. The authors detail three dimensions of alertness: systematically or non-systematically searching for new information; connecting disparate pieces of information; and evaluating whether the new information represents an opportunity.

Gaglio and Katz (2001) refer to the difference between alert and non-alert individuals. Alert individuals are sensitive to signals of market disequilibrium, while non-alert individuals do not detect or ignore or discount them.

There is a relationship between entrepreneurial alertness and prior knowledge. Ardichvili, Cardozo, & Ray (2003) identify entrepreneur's personality traits, social networks, and prior knowledge as antecedents of entrepreneurial alertness to business opportunities, and say that entrepreneurial alertness is a necessary condition for the success of the opportunity identification triad: recognition, development, and evaluation. Sambasivan, Abdul, and Yusop (2009) study the role of personal qualities, management skills, and opportunity recognition skills of entrepreneurs in influencing the venture performance, and show that that alertness mediate the relationship between personal qualities and venture performance, and that alertness and prior knowledge mediate the relationship between management skills and venture performance.

Puhakka (2011) uses a creative-cognitive perspective to explore alertness to business opportunities. The entrepreneur's creative cognitive process, internal creative qualities, and environmental conditions supporting or hindering creativity are elements of a model of business opportunity recognition and have a significant impact on the innovativeness of the business opportunity. The aim of the model is clarifying why some entrepreneurs create novel ideas while others just copy the old and used ones.

Valliere (2013a, 2013b) uses theoretical approaches from cognitive psychology to examine how entrepreneurial alertness leads the individual to pay attention to new opportunities, and develops a model to show how entrepreneurial alertness and attention work together to support the recognition of opportunities. In this model, entrepreneurial alertness is seen to be the application of unique schemata that allow the entrepreneur to impute meaning to environmental change. The alertness that allows entrepreneurs to see opportunities where others do not arise from differences in schematic richness, schematic association, and schematic priming.

Jiao et al. (2014) claim that knowledge acquisition through social networks with suppliers, manufacturers and distributors has a positive effect on entrepreneurial alertness to business ideas. Moreover, entrepreneurial alertness plays a mediating role between sources of knowledge acquisition and entrepreneurs' innovativeness.

Lim and Xavier (2015) study the potential effect of entrepreneurial alertness, prior knowledge and social network on opportunity recognition and, ultimately, on reaping the rewards of superior business performance.

Li, Wang, and Liang (2015) examine the influence of entrepreneurial experience, alertness and prior knowledge on opportunity recognition using the novice–experienced entrepreneurs contrast paradigm. They conclude that entrepreneurial alertness significantly and directly predicts opportunity recognition, whereas prior knowledge significantly and indirectly affects opportunity recognition through its impact on entrepreneurial alertness. The entrepreneurial alertness of novice entrepreneurs significantly influences their opportunity recognition; in contrast, the prior knowledge of experienced entrepreneurs greatly influences their opportunity recognition.

Miao and Liu (2010) show that individual psychological factors such as entrepreneurial alertness and prior knowledge are the antecedents of entrepreneurial opportunity recognition and influence entrepreneurial decision-making.

Lee Lim, Lee, and Ramasamy (2014) examine the role of entrepreneurial alertness as a mediator to personality traits, prior knowledge and social capital in influencing the potential of entrepreneurial intention, and conclude that there are significant relationships between the three variables—prior knowledge, social capital and personality traits—with the entrepreneurial intention which is mediated by entrepreneurial alertness.

Brockman (2014) presents a model to extend the contributions of Tang, Kacmar, and Busenitz (2012) and Valliere (2013), by further delineating the components and antecedents of entrepreneurial alertness, connecting the construct to opportunity identification and opportunity development, and introducing entrepreneurial intention as a moderating factor.

Adomako et al. (2018) hypothesize that variations in new venture performance are a function of levels of entrepreneurial alertness and networking capabilities, and find that increases in the levels of entrepreneurial alertness are related to increases in new venture performance. Additionally, they find that, under conditions of increased use of social and business networking capabilities, the power of entrepreneurial alertness as a driver of new venture success is amplified.

Roundy et al. (2018) explore the role of entrepreneurial alertness in the identification and creation of opportunities in mature organizations that are responding to an environmental disruption, and find a direct effect of entrepreneurial alertness on strategic change decisions and organizational performance.

Shane (2000) concurs with entrepreneurial alertness in that individuals discover opportunities without actively searching for them, but differs in that they only discover opportunities related to their idiosyncratic prior knowledge, while entrepreneurial alertness claims that prior knowledge is no relevant.

2.2 Pattern recognition

Baron (2006) claims that opportunities can be noticed by individuals who are not actively searching for them by using their cognitive frameworks, developed through their previous life and work experience, to connect the dots, perceive links between seemingly unrelated trends, changes and events. The patterns are only perceived by those equipped with these frameworks and are the basis for identifying opportunities. Baron (2004) suggests that individuals compare ideas for new products with their cognitive framework for “business opportunity;” then, a close match means a potential opportunity identified. Because individuals have unique life and work experiences, their cognitive frameworks are also different in content (Baron & Ensley, 2006). That is the reason why some persons and not others recognize opportunities (Baron, 2004).

Pattern recognition requires information processing. In this vein, Vaghely and Julien (2010) develop a model of human information processing which provides a frame to help understand the entrepreneur’s use of information to identify opportunities. Their model integrates an algorithmic or pattern type of information processing and a heuristic or trial and error type of information

processing into a pragmatic frame of the entrepreneur's opportunity recognition-construction mechanism.

Pattern recognition also requires a mental leap. Grégoire and Shepherd (2012) study the effects that differences among opportunities may have on their identification. Relying on cognitive science research on the use of similarity comparisons in making creative mental leaps, they develop a model of opportunity identification that includes both the independent effects of an opportunity idea's similarity characteristics and the interaction of these characteristics with an individual's knowledge and motivation. They conclude that the similarities of technology-market combinations impact the formation of opportunity beliefs and that individual differences in prior knowledge and entrepreneurial intent moderate these relationships.

2.3 Constrained, systematic search

The constrained, systematic search is a perspective alternative to entrepreneurial alertness. Fiet and Patel (2006) claim that discovery depends on an overlap between an entrepreneur's idiosyncratic prior knowledge and the knowledge domain of a particular venture idea. In contrast to the alertness perspective, which considers the role of prior knowledge as not relevant because discoveries occur accidentally, Fiet (2007) argues that prior experience circumscribes the domain within which to search, and that entrepreneurs are not equally competent to discover every venture idea because knowledge derived from experience is idiosyncratic. Specific knowledge prequalifies entrepreneurs to discover ideas within their domain, and allows them to search more effectively than if they were scanning outside their domain, or random scanning, or not-looking-at-all, or having the whole world to search (Fiet, Piskounov, and Patel, 2005).

The authors of the constrained, systematic search perspective say that repeat entrepreneurs, those who have a successful track record, limit their search to their prior knowledge (Fiet et al., 2006), or to domains in which they have experience and competence (Fiet, Norton, and Clouse, 2007), or to known domains (Fiet and Patel, 2008). Fiet, Norton, and Clouse (2013) present evidence of the use of Fiet's model of constrained, systematic search by repeatedly successful entrepreneurs. The model offers a prescriptive alternative to the advice of remaining alert and provides guidance on how to improve search effectiveness. On the basis of assumptions from information economics, Fiet et al. (2015) find that repeat entrepreneurs rely more on knowledge specific to a prospective new venture—as opposed to knowledge acquired through education—than discontinued entrepreneurs.

Patel and Fiet (2011) say that differences in knowledge structures and combinative capabilities provide family firms with distinct advantages over nonfamily firms in identifying opportunities and use the constrained, systematic search framework to explore how noneconomic goals and family relations enhance searching for opportunities. Differences in knowledge combinations and the long-term orientation of family firm managers explain differences in finding opportunities between family and nonfamily firms. Furthermore, they suggest that family firms are more likely to improve their search routines over time. In particular, fewer endgame scenarios in family firms allow the refinement of search routines.

There is a relationship between prior knowledge and information search. According to a research by Ucbasaran, Westhead, and Wright (2008), entrepreneurs with specific (i.e. business ownership experience) rather than general (i.e. education and work experience) human capital identify and pursue more business opportunities. Also, entrepreneurs reporting higher information search intensity identify more business opportunities. Finally, the use of publications as a source of information was positively associated with the probability of identifying more opportunities, while information emanating from personal, professional and business networks was not.

3. Methodology and theoretical propositions

The literature review focused on two topics: 1) the role of prior knowledge in the recognition of opportunities, and 2) whether opportunities can be the object of a systematic search or are noticed without search by alert entrepreneurs. They relate to the broader question of how business opportunities are recognized. The case study was chosen as the research methodology because the research question starts with a “how” (Yin, 2017) and the purpose of the research is to understand a specific phenomenon and to build theory from qualitative evidence, rather than to test hypothesis and generalize findings. We studied five Spanish companies (AUSA, Atrápalo.com, Naturhouse, Buff and Paellador), and eight business opportunities (AUSA mini cars, AUSA dumpers, AUSA EcoSite, Atrápalo.com theater tickets, Atrápalo.com flights and hotel rooms, Naturhouse, Buff and Paellador). In this research, the unit of analysis was the opportunity, not the legal entity or firm. We interviewed 5 managers (1 founder, 4 managers) from AUSA (total duration of the recordings: 9 hours), 3 founders-managers from Atrápalo.com (total duration of the recordings: 4 hours), and 5 managers (2 founders, 3 managers) from Naturhouse (total duration of the recordings: 6 hours). AUSA and Naturhouse are family firms while Atrápalo.com is owned by the four founders and a venture capital.

Two theoretical propositions were drawn from the literature review:

Proposition 1: idiosyncratic prior knowledge determines who discovers opportunities and who does not.

Proposition 2: alertness determines who discovers opportunities and who does not. Prior knowledge is not relevant.

Rival proposition of proposition 2: opportunities can be the object of a constrained, systematic search. Prior knowledge circumscribes the domain within which to search.

They guided data collection and analysis and were used as a template with which to compare the empirical results.

Primary data was collected through semi-structured interviews with the founders and managers of the five companies. Although the interviews were open, a questionnaire based on the literature review was prepared to guide the interviews and keep the focus on the research question. The informants were asked to provide a detailed account of the opportunities identified. One of the limitations of the research is the fact that the accounts had to be necessarily retrospective. All the

interviews were recorded, transcribed, and coded. Secondary data came from archival documents, including website information, newspaper clippings, interviews in media, business plans, presentations to investors, public reports, and internal documents. This secondary data was used to corroborate the interviewees' verbal accounts.

4. Multiple-case study

AUSA was established to manufacture and sell mini cars in the decade of 1950, and nowadays designs, manufactures, and sells dumpers and other vehicles for the construction industry. Recently, the company has developed and marketed a service to help construction companies dispose their waste in recycling plants. Thanks to visiting construction works in which their vehicles were utilized, AUSA managers realized that construction companies were paying high fares to dispose their waste because it was mixed. AUSA developed a set of procedures to manage the waste in the works, dispose it classified in the recycling plants, and obtain costs reductions. The construction companies share the savings with AUSA. Within AUSA three opportunities were analyzed: AUSA mini cars (small cars designed and manufactured during the 50s), AUSA dumpers (dumpers, forklifts and other vehicles for the construction industry, designed and manufactured since the 60s to date), and AUSA EcoSite (a service offered to construction companies to help them manage the waste in the works). While there were several manufacturers of mini cars in Spain in the 50s, dumpers did not exist in the Spanish construction industry of the 60's.

Atrápalo.com is an Internet portal to book flights, hotel rooms, and theater tickets. In selling flights and reserving hotel rooms through a website, Atrápalo.com and other similar portals replicated online the activity of travel agencies. They attracted customers from the traditional business by adding convenience to the process of booking a flight or a hotel room. In reserving theater tickets, Atrápalo.com tried to satisfy two market needs, the need of theaters to occupy their full capacity from Tuesday to Thursday and the need of some aficionados to get theater tickets at lower prices. The founders recognized the opportunity by realizing that "theatres were empty from Tuesday to Thursday." They also applied the analogy from the airline industry that fares for a given flight depend on the date of the booking and dynamically vary with demand, and relied on a previous job experience of one of the founders in a project to promote the sale of unsold cinema seats through the Internet. Within Atrápalo.com two opportunities were analyzed: Atrápalo.com flights and hotel rooms and Atrápalo.com theater tickets. When Atrápalo.com was established there were some other online travel agencies in Spain.

Naturhouse helps people to lose excess weight. The business consists of selling dietary supplements directly to consumers through a retail chain, skipping the traditional distribution channel. The inception of Naturhouse was triggered by some industry shocks [a liberalization process, an increase in the market power of retailers and an intensification of competition] and a growing trend in other industries towards skipping the intermediaries by reaching directly the consumers through retail chains (i.e., the fashion industry). Before Naturhouse, many methods existed to help people to lose excess weight, and the Naturhouse method is a combination of some of them: a qualified dietician prescribes a diet and dietary supplements, and makes the patients

stay motivated and committed by exerting some sort of psychological pressure on them; the interaction takes place in well-located and convenient shops with the same privacy as a doctor's office. The Naturehouse business model (a retail chain to sell dietary supplements to help consumers lose excess weight) was a novelty in Spain when the company was established in the 90's.

Buff designs, manufactures, and sells buffs, seamless, tubular garments made of microfiber and suitable to protect the neck from cold and wind when practicing sports in winter. The company had been a manufacturer of pullovers. Forced by the decline of the traditional textile industry, the owner recovered an old machine that manufactured woolen neck warmers for the army to manufacture an adaptation and improvement of the original military product. The buff product category did not exist before its invention by the founder of the company.

Paellador is a franchise that sells precooked and frozen paellas through bars and restaurants. The idea was originated in a brainstorming session. The product did not exist. Before Paellador, eating a paella meant cooking it at home or going to a restaurant. The founder and his team did some product tests in bars, restaurants and grocery stores. They started selling the precooked and frozen paellas to supermarkets, but many logistic problems arose. In addition, the consumer was reluctant to buy the product in supermarkets. Then, they continued testing the product in bars and restaurants and created a business based on franchising. They supplied bars and restaurants with an oven and an inventory of precooked and frozen paellas in consignment. After a cooking of 12 minutes in the oven, the paella was ready to be eaten and could be sold for the price of a pizza. The quality was not that of a paella cooked at home or in a specialized restaurant, but they sacrificed quality for convenience. Paellador was the first company selling precooked and frozen paellas in Spain, and remains almost the only player in this product category.

5. Results

5.1 Examining proposition 1

The opportunity of the AUSA mini cars was recognized thanks to the prior knowledge of "some friends passionate about engineering and motor racing." The opportunity of the AUSA dumpers was recognized thanks to the AUSA prior knowledge of the manufacture of mini cars. The manufacture of dumpers benefited from the know-how acquired in the manufacture of mini cars. The opportunity of AUSA EcoSite was recognized thanks to visiting the construction works in which AUSA dumpers were utilized. Prior knowledge of engineering and motor racing, prior knowledge of the manufacture of mini cars, and prior knowledge of the utilization of dumpers in construction works determined the recognition of AUSA opportunities. Prior knowledge in a previous business helped the founders-managers of AUSA recognize the subsequent opportunity.

The Atrápalo.com opportunities were recognized thanks to the founders' prior knowledge of Internet businesses. The opportunity of reserving theater tickets was recognized, in addition, thanks to a previous job experience of one of the founders in a project to promote the sale of unsold cinema seats through the Internet. The founders' prior knowledge of Internet businesses,

as well as a previous job experience, determined the recognition of the Atrápalo.com opportunities. Prior knowledge in previous Internet businesses helped the founders-managers of Atrápalo.com recognize the opportunity.

The Naturhouse opportunity of selling dietary supplements directly to consumers through a retail chain, skipping the traditional distribution channel, is based on similar businesses observed by the founder in the USA and was initially tried at Dietisa, a company he managed before establishing Naturhouse. Naturhouse benefited from the experience acquired by the founder at Dietisa. The success of Naturhouse cannot be understood without the founder's prior knowledge, which inspired many parts of the business model (i.e., Dietisa group therapies inspired Naturhouse method to motivate patients to follow a diet and make them stay committed). The founder's prior knowledge of the dietetics industry, and especially his work experience at Dietisa, determined the recognition of the Naturhouse opportunity. Prior knowledge of the dietetics industry helped the founder of Naturhouse recognize the opportunity.

The Buff opportunity was recognized thanks to the founder's prior knowledge of the textile industry, as well as his personal experience as a skier and biker and in the army. During his military service he used a woolen neck warmer to protect from cold and wind. He connected three dots (Baron, 2006) to identify and address an unfulfilled market need. His prior knowledge of the textile industry (first dot) and his personal experience as a skier and biker (second dot) and in the army (third dot) determined the recognition of the buff opportunity. The opportunity remained merely a potential until the entrepreneur connected the dots (Baron & Ward, 2004). Prior knowledge of the textile industry, combined with two personal experiences, helped the founder of Buff recognize the opportunity.

Before establishing the company, the founder of Paellador had owned and managed a snack business. Prior knowledge supplying bars and restaurants with snacks helped him recognize the opportunity.

Evidence related to this proposition was obtained through the interviews and corroborated whenever was possible with secondary data.

5.2 Examining proposition 2

None of the opportunities of the multiple-case study was recognized by noticing without search (Kirzner, 1979). There is evidence of a systematic search in the sense of Fiet (2007) and Fiet and Patel (2006) in the AUSA opportunities only. In the remaining opportunities, some sort of search was conducted, but there is no evidence it was systematic in the sense of Fiet (2007) and Fiet and Patel (2006).

The recognition of the AUSA opportunities (dumpers and EcoSite) was the result of a systematic search constrained to their prior knowledge. Systematically searching for an opportunity, and constraining their search within the confines of their knowledge domain, helped AUSA founders recognize the opportunities. They recognized the dumpers opportunity when they systematically

searched for an opportunity that became an alternative to the manufacture of mini cars and leveraged their accumulated know-how in engineering, and saw a prototype in a trade fair in Germany. They recognized the EcoSite opportunity when they systematically searched for an opportunity to widen the scope of their business. They constrained their search to the utilization of dumpers in construction works. AUSA managers were alert entrepreneurs who noticed at first sight the potentiality of a solution to satisfy an unfulfilled market need, but the alertness they exhibited has to do more with being attentive than with noticing without search (Kirzner, 1979). The opportunities were not recognized serendipitously, by chance, involving surprise, as the alertness perspective contends. In both cases, being in the right place at the right time (Fiet & Patel, 2006) allowed them to identify the opportunities. Despite the informants referred to innovation as a “selective and organized search leading to products that do not exist,” despite they said that identification of opportunities “comes from market observation, from a systematic analysis of the market changes,” a statement that proves their commitment to the constrained, systematic search approach, there is no evidence of the use of formal procedures to conduct the systematic search.

Before creating Atrápalo.com, the founders made a list of potential Internet businesses and examined some business plans, but there is no evidence of a systematic search constrained to their prior knowledge of Internet businesses. The Naturhouse founder possessed prior knowledge of the dietetics industry, but there is no evidence of a systematic search constrained to his prior knowledge. The Buff founder identified the opportunity by connecting the dots (Baron, 2006), rather than by noticing without search (Kirzner, 1979). The opportunity of selling precooked and frozen paellas was identified after a brainstorming session conducted by the Paellador founding team. In neither of the Buff and Paellador cases there is evidence of a systematic search leading to products that did not exist in the market.

Evidence related to this proposition was obtained through the interviews and corroborated whenever was possible with secondary data.

6. Discussion

6.1 With regard to proposition 1

All the opportunities of the multiple-case study were recognized thanks to the prior knowledge of the entrepreneurs. Relevant prior knowledge seems to determine the recognition of the opportunities and to be a precondition for the recognition. This result confirms proposition 1.

The relationship between prior knowledge and the discovery of opportunities has been claimed by several authors (Venkataraman, 1997; Shane, 2000; Shane & Venkataraman, 2000; McMullen & Shepherd, 2006). The prior knowledge of the founders and managers of AUSA, Atrápalo.com, Naturhouse and Buff created the Venkataraman’s (1997) knowledge corridors that allowed them to recognize the respective opportunities. They possessed both the prior information necessary to identify the opportunities and the cognitive properties necessary to value them (Shane & Venkataraman, 2000). The opportunities were opportunities only for them, because they possessed the necessary knowledge (McMullen & Shepherd, 2006). Finally, all the opportunities

relate to the information they already possessed (Shane, 2000). For instance, AUSA has only discovered opportunities related to engineering and to the utilization of their vehicles, Naturhouse has only discovered opportunities related to the dietetics industry, and Buff has only discovered opportunities related to the textile industry.

In all the opportunities of the multiple-case study, prior knowledge resulted from work experience, and Shane (2000) and Fiet (2007) say that knowledge derived from experience is idiosyncratic. In some of the opportunities, prior knowledge was truly idiosyncratic, only possessed by the individuals involved in the work experience itself and, hence, personal and almost non-transferable. In contrast, in the other opportunities, prior knowledge was generic and could be possessed by anybody exposed to a similar personal, educational or occupational experience, or anybody familiar with the respective industry. In Table 1, manufacture of mini cars, utilization of dumpers in construction works, cinema seats project and Dietisa are considered idiosyncratic prior knowledge because of their uniqueness. The rest are considered generic prior knowledge because they are derived from common, ordinary work experience in the respective industry.

Table 1

Opportunities and prior knowledge, generic and idiosyncratic

Opportunities	Prior knowledge	Generic or idiosyncratic
AUSA mini cars	Engineering and motor racing	Generic
AUSA dumpers	Manufacture of mini cars	Idiosyncratic
AUSA EcoSite	Utilization of dumpers in construction works	Idiosyncratic
Atrápalo.com flights and hotel rooms	Internet businesses	Generic
Atrápalo.com theater tickets	Internet businesses / Cinema seats project	Generic / Idiosyncratic
Naturhouse	Dietetics industry / Dietisa	Generic / Idiosyncratic
Buff	Textile industry, skier and biker, army	Generic
Paellador	Snacks industry	Generic

Source: Own elaboration.

The distinction between generic and idiosyncratic prior knowledge shown in Table 1 is relevant and claims a further research effort to refine proposition 1 and to shed light into the question of which

type of prior knowledge, whether generic or idiosyncratic, determines who discovers opportunities and who does not.

Possession of prior knowledge is a necessary but not sufficient condition for the discovery of opportunities. Not to possess the necessary prior knowledge hinders the discovery, but its possession does not ensure it. The entrepreneurs associated with an industry usually possess the necessary prior knowledge to discover opportunities within that industry, but they may or may not discover them depending on whether they possess or not the cognitive properties necessary to value them (Shane & Venkataraman, 2000). All the entrepreneurs of the multiple-case study were associated with the respective industries and, hence, possessed the necessary prior knowledge. But they became aware of the opportunities because they also possessed the cognitive properties necessary to value them.

Prior knowledge of the respective industries helped the entrepreneurs of the multiple-case study know where to search. They took into consideration what they knew and used their prior knowledge to circumscribe the domain within which to search (Fiet, 2007).

In sum, due to the role of prior knowledge, the opportunities of the multiple-case study were identified by these individuals and not others (Baron, 2004); and they were more competent to discover them than to recognize opportunities unrelated to their knowledge domain (Fiet, 2007).

6.2 With regard to proposition 2

None of the opportunities of the multiple-case study was recognized by noticing without search (Kirzner, 1979), without a deliberate search, and simply when encountered (Kaish & Gilad, 1991). None of the opportunities was the result of random scanning (Fiet, 2007), or not-looking-at-all (Fiet, 2007), or having the whole world to search (Fiet, Piskounow, & Patel, 2005), or searching randomly (Fiet, Norton, & Clouse, 2007), or not knowing what to look for (Kirzner, 1997), or scanning the horizon at all times (Kirzner, 1997). None of them occurred fortuitously, accidentally, involving surprise (Kirzner, 1997). Consequently, there is no evidence in the multiple-case study in support of proposition 2.

The recognition of the AUSA opportunities (dumpers and EcoSite) was the result of a systematic search constrained to the entrepreneur's specific knowledge (Fiet, 2007). Then, AUSA provides us with evidence in support of the rival proposition of proposition 2. However, there is no evidence of the use of formal procedures to conduct the systematic search.

The type of search of AUSA managers is a "directed, rational search, which takes place in appropriate time (e.g., during work hours) and expected places (usually at the immediate business environment) where managerial search is more likely to occur" and not the type of search of general alertness, a "continuous 'search' for information, through broad and undirected scanning that will take place at unconventional times and places" (Kaish & Gilad, 1991, p. 49). AUSA managers did not explore non-obvious opportunities (Busenitz, 1996) and, hence, their search pattern does not fit the concept of alertness, as we have argued at the beginning of the section.

As far as the remaining opportunities are concerned, there is no evidence of a systematic search constrained to the founders' prior knowledge that supported the rival proposition of proposition 2. The founders of Atrápalo.com, Naturhouse and Paellador could have conducted some sort of search, albeit non-systematic. These opportunities challenge both proposition 2 and its rival proposition. They were discovered neither by noticing without search nor as a result of a systematic, constrained search. This result shows that opportunities can be discovered by searching within the knowledge domain of the entrepreneur, but passively and non-systematically.

About the informal nature of the searches conducted, it seems that the discoveries were "highly dependent on individual initiative and capacity, rather than routine practices and procedures of the firm" (O'Connor & Rice, 2001, p. 103), and none of the firms had implemented "a sustained, comprehensive, and disciplined approach" (O'Connor & Rice, 2001, p. 99).

All but AUSA opportunities were discovered without actively searching for them, but the entrepreneurs only discovered opportunities related to their idiosyncratic prior knowledge, as claimed by Shane (2000). In all the discoveries an overlap between the entrepreneur's idiosyncratic prior knowledge and the knowledge domain of the venture idea occurred (Fiet & Patel, 2006). All the opportunities belong to the knowledge domain of the entrepreneurs, circumscribed by their prior experience (Fiet, 2007).

As repeat entrepreneurs do, the founders of the businesses of the multiple-case study limited their search to their prior knowledge (Fiet et al., 2006), to domains in which they had experience and competence (Fiet, Norton, & Clouse, 2007), and to known domains (Fiet & Patel, 2008).

The behavior of the entrepreneurs of the multiple-case study fits Gaglio and Katz's (2001) description of alert individuals, those who are more sensitive to signals of market disequilibrium. Their behavior also fits Gaglio's (2004, p. 535) description of alert individuals, who are "extremely sagacious about change: they are quicker to detect its signals; more accurate in sizing up its true significance; quicker to infer the full scope of its implications; and most important, more accurate in uncovering its commercial potential." Gaglio's (2004) alert individuals are the AUSA attentive managers who became aware of an opportunity when they visited a trade fair in Germany or construction works in which dumpers were utilized.

7. Conclusions and discussion

All the opportunities of the multiple-case study were recognized thanks to the prior knowledge of the entrepreneurs. It determined their recognition and was a precondition for their recognition. Had the entrepreneurs not possessed the relevant prior knowledge, they would not have recognized the opportunities examined in this research. In addition, the entrepreneurs in the multiple-case study only discovered opportunities related to their prior knowledge.

We have shown that prior knowledge mostly comes from work experience. It can be truly idiosyncratic, only possessed by the individuals involved in the work experience itself and, hence,

personal and almost non-transferable, or generic, derived from common, ordinary work experience in the respective industry.

None of the opportunities of the multiple-case study was discovered by noticing without search, as the alertness perspective contends. Only the AUSA opportunities were the result of a systematic search constrained to the entrepreneur's prior knowledge, but there is no evidence of the use of formal procedures to conduct this systematic search. All but AUSA opportunities were discovered by searching passively and non-systematically within the knowledge domain of the entrepreneur. This result shows that opportunities can be discovered by searching systematically or non-systematically, and suggests the passive, non-systematic search as an alternative to the systematic search. In both cases, search is constrained to the entrepreneur's prior knowledge.

8. References

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