



ENTREPRENEURSHIP: THE COGNITIVE RELATION

Mrs. Sheeba K H

Asst. Professor, Department of Business Administration, M E S College, Marampally, Alwaye, Kerala, India.

Abstract

The personality traits and demographic variables that differentiate entrepreneurs from non-entrepreneurs were the initial focus of interest. These lines of analysis allowed us to identify significant relations between certain personality traits and demographic characteristics and individuals showing entrepreneurial behaviour. Nonetheless, some authors have criticized these approaches for their methodological and conceptual limitations and for their limited predictive capability. A new line of analysis, the cognition, has emerged as an important theoretical perspective for understanding and explaining entrepreneurial behaviour

Keywords: *Entrepreneur, Business, Personality, Cognitive, Intentions, Variables.*

1. INTRODUCTION

The impact of entrepreneurial activity and the creation of new businesses on the economic growth of a country and the generation of jobs are recognized worldwide. The degree to which a society stimulates entrepreneurial activity, as opposed to stimulating an individual to select a career as an employee, varies among nations, and within the different social groups of a nation. Accordingly, the study of the relation between individual's socio demographic and psychological variables with the desire to follow an independent career in the future, what I call "entrepreneurial intention", is considered pertinent. Therefore, one of the objectives of the chapter is to determine the antecedents of the entrepreneurial intentions of undergraduates. A second objective is to assess the degree to which the cognitive processes contribute, beyond the student country and socioeconomic condition, to students' entrepreneurial intentions.

The variables used to study entrepreneurs have gradually changed over the years (Sánchez, 2011a). The personality traits and demographic variables that differentiate entrepreneurs from non-entrepreneurs were the initial focus of interest. These lines of analysis allowed me to identify significant relations between certain personality traits and demographic characteristics and individuals showing entrepreneurial behaviour. Nonetheless, some authors have criticized these approaches for their methodological and conceptual limitations and for their limited predictive capability (Robinson et al., 1991).

A new line of analysis, the cognition, has emerged as an important theoretical perspective for understanding and explaining entrepreneurial behaviour (Goodwin & Wofford, 1990; Sánchez, 2011b). Neisser (1967) defines cognition as "all processes by which sensory input is transformed, reduced, elaborated, stored, recovered, and used". Mitchell et al. (2002) consider that "entrepreneurial cognitions are the knowledge structures that people use to make assessments, judgments, or decisions involving opportunity evaluation, venture creation, and growth" (p.97). From this perspective, since the decision to become an entrepreneur is considered to be both conscious and voluntary (Krueger, 2000), it seems reasonable to analyze how that decision is taken. The analysis of cognition thus contributes significantly to the study of entrepreneurship (Allinson et al., 2000; Mitchell et al., 2002). Indeed, some authors suggest that the future of entrepreneurship research should be focused on the study of cognitive social categories (Sánchez, 2011b).

Thus, entrepreneurship can be viewed as a way of thinking, a way of thinking that emphasizes opportunities over threats (Krueger, 2000), a process (opportunity identification) that takes place over time (Carrier & Kyrö, 2005). The opportunity identification process is clearly an intentional process, and, therefore, entrepreneurial intentions clearly merit our attention. The entrepreneurial intention has been considered as the key element to understand the new-firm creation process (Bird, 1988), as a prior and determinant element in the performance of entrepreneurial behaviours (Fayolle & Gailly, 2004). In cognitive psychology, intention is the cognitive state immediately prior to performing behaviour (Krueger, 2003). Essentially, behaviour is intentional if it is not the result of a stimulus-response relation, and any planned behaviour is intentional. From this last institutional approach, some entrepreneurial models with a cognitive basis emerged to explain this phenomenon: the Entrepreneurial Event Theory (Shapiro & Sokol, 1982) and the Theory of Planned Behaviour (Ajzen, 1991) appeared as the main theory-driver models. They have been widely adopted by entrepreneurial intention research to analyze new venture creation. There is, however, little variation among the different approaches taken from these models (Krueger, 2000) and some authors have even tried to integrate them into a single model (Kolvereid & Lakovleva, 2009). These models use two critical antecedents of intentions that can be classified (give or take some obvious terminological differences) as perceived feasibility and perceived desirability. Now then, if the intentions depend on personal beliefs and attitudes, then researchers interested in entrepreneurial behaviour should also explore the sources of these antecedents.



Cognitive science has demonstrated how attitudes and beliefs that are expressed on the surface have their origins in deeper structures, in how I represent knowledge and how that knowledge is interrelated. That is, that knowledge does not exist as discrete “data” but rather is interconnected. To analyze these deeper structures, cognitive science has used methods such as causal maps, schemes and scripts. In this paper I take into consideration cognitive scripts.

As its name suggests, a script is “a cognitive mechanism that comprises the key elements in a situation decision and the likely ordering of events” (Krueger, 2003, p. 128-29), a “highly developed, sequentially ordered knowledge” that forms “an action-based knowledge structure (Mitchell et al., 2000 p.975). In the field of entrepreneurship the underlying assumption in this respect is that entrepreneurs possess a thought structure in relation to entrepreneurship that is significantly better than that of non-entrepreneurs (Lord & Maher, 1990).

Script analysis has been considered primarily from the theory of expert information processing in order to examine differences between entrepreneurs and non-entrepreneurs as regards decision-making and is rooted in the following idea: entrepreneurs develop unique knowledge structures and they process (transform, store, recover and use) information differently from non-entrepreneurs (e.g., Mitchell, 1994; Mitchell et al., 2000). Thus, according to the theory of expert information processing, entrepreneurs are experts in the field of entrepreneurship and through deliberate practice (e.g., Baron & Henry, 2006; Mitchell, 2005) can acquire entrepreneurial cognitions; that is, scripts or knowledge structures that allow them to use the information significantly better than non-expert entrepreneurs.

Although it has been shown that scripts are antecedent to the venture creation decision, little has been done in the way of analyzing how these scripts affect entrepreneurial intention. In our opinion it is reasonable to expect that these same entrepreneurial scripts are also antecedent to other previous steps in the process of business venture creation, such as the entrepreneurial intention. I thus suggest that there is a relation between scripts and entrepreneurial intention. The reasoning behind these expectations is consistent with the fact that those who have an entrepreneurial intention may not perceive starting a business as a risk, since what may be perceived as a risk by some individuals is not perceived as such by others (Simon et al., 2000). Thus, I suggest that scripts affect entrepreneurial intention. Given that individuals who work in specialized fields have unique knowledge, it is logical to expect that among a broad range of demographic groupings (e.g., age, culture, gender, etc.), the individuals who score high in these dimensions of cognitive scripts probably have similar thought patterns in regard to entrepreneurship and to this extent they can be differentiated from those who do not have an entrepreneurial intention.

Although it is well accepted that cultural values are an antecedent of human behaviour, they are also thought to affect the perceptions that precede that behaviour (Mitchell et al., 2000, 2002). Since each culture can have unique values and norms concerning the creation and running of business ventures, I can expect that entrepreneurial scripts may be culturally specific in their effects on entrepreneurial intention, given the differences in perception that emerge in the processes of engaging in creating an enterprise. Thus, I expect that, to the extent that there are cultural differences between countries, the effects of entrepreneurial scripts on entrepreneurial intention may be country-specific, and therefore I suggest that the effects of the scripts on entrepreneurial intention vary by country.

In this context, the main objective of this paper is to identify some of the cognitive elements that may explain differences in start-up intentions. The paper proceeds in the following manner. First, I have discussed the central research question to further enable entrepreneurial cognition inquiry. Second, I present the conceptual background and several representative approaches to entrepreneurial cognition research that form the context for this question. Third, I introduce the empirical analysis carried out to examine the relationships between cognitive scripts and intention, by comparing diverse sociocultural background. Finally, I offer the results and conclusions concerning the challenges facing the next generation of entrepreneurial cognition and intention. Thus, this paper seeks to contribute toward redressing this gap in our knowledge by empirically testing a model that draws on the theory of planned behaviour to examine the cognitive antecedents of entrepreneurial intentions among students.

2. ENTREPRENEURIAL INTENTION

Psychologists have claimed that assessment of intentions is the most obvious way of predicting the behaviour (eg. Ajzen, 1991). In various situations, intentions have been considered as the most effective predictor of behaviours, such as job search activities and career choice (Kolvereid, 1996). In the entrepreneurship context, behaviours as new ventures, creation of new values are outcomes of entrepreneurial intentions (Bird, 1988). Thus, the entrepreneurial intention has been considered as the key element to understand the new-firm creation process. In this sense, entrepreneurial research has been conducted following two main lines: the personal characteristics or traits of the entrepreneur (eg. Zhao et al, 2005); and the influence of

contextual factors (e.g. political and social context, markets, industry opportunities, and financial support, Franke & Luthje, 2003) in entrepreneurship (Robinson et al. 1991).

However, these lines have a limited understanding of the processes through which entrepreneurial intentions develop and come into existence (Markman et al., 2002). Fini et al. (2009) identified several explanations a) the research in this area has an empirical orientation with scant theoretical contribution; and b) many studies have considered isolated variables, often without a clear theoretical rationale, as drivers of entrepreneurial intentions (Zhao et al., 2005). That is, predicting entrepreneurial intentions by modelling only individual or contextual factors as isolated domains usually resulted in disappointingly small explanatory power and even smaller predictive validity (Krueger, 2000). To address these limitations, some authors have undertaken a multi-disciplinary approach, adopting the so-called process models (or intention models). Historically, the first widely accepted model was the theory of reasoned action (TRA, Ajzen & Fishbein, 1980). Later, was called the theory of planned behaviour (TPB). Thus, according to Ajzen, intentions are explained by: a) subject's attitudes (perceptions of personal desirability of performing the behaviour); b) social norms (the approval or disapproval that important referent individuals -or groups- have in relation to the enactment of a given behaviour); and c) perceived behavioural control (the perception that the target behaviour is within the decision maker's control). According to the theory, attitudes, subjective norms and perceived control predict intentions, while intentions and perceived control predict behaviour. The TPB (Figure 1) is the most used model of the human intentions to this day (Ajzen, 1987, 2002).

Another Ill recognized model is the Shapero's entrepreneurial event model (SEE), that is conceptually similar to Ajzen's theory of planned behaviour. In this model, entrepreneurial intentions depend on three elements: a) the perception of the desirability; b) the perception of feasibility; and c) the propensity to act (Shapero, 1982; Shapero and Sokol 1982). The perceived desirability is defined as the attractiveness of starting a business, perceived feasibility as the degree to which the individual feels capable of starting a business, and propensity to act as the personal disposition to act one one's decisions.

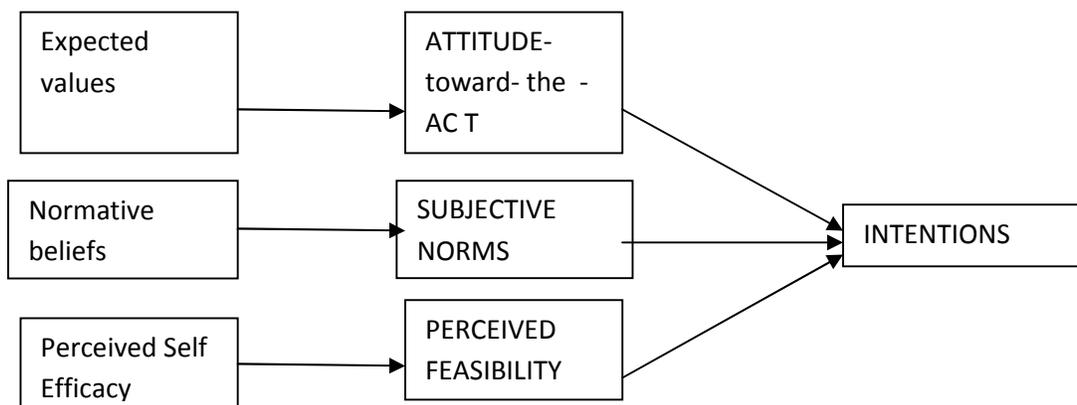


Fig. 1. Ajzen's Theory of Planned Behaviour

While the SEE model was developed to understand entrepreneurial intention and behaviour, Ajzen's TPB was developed to explain individual behaviour in general. According to the TPB attitudes, subjective norms and perceived behavioural control determine intentions. Intentions, in turn, along with perceived behavioural control determine actual behaviour. Empirical testing of entrepreneurial intentions among students has found support for both the SEE model and the TPB (Kolvereid, 1996; Krueger, 2000). Krueger (1993) argued that attitude in the TPB encompasses the notion of perceived desirability in the SEE model. He also argued that subjective norm overlaps with the notion of desirability and feasibility, and that feasibility overlaps with perceived behavioural control. Bagozzi (1992) suggested that attitudes may first be translated into desweres, which then develop into intentions to act, which dwerect action. Armitage & Conner (2001) speculated that desweres would inform intentions, upon which behavioural self-predictions are partly based. They argued, however, that further work is needed to test the causal relationship between desweres, intentions, and self-predictions.

Another model of intentions was developed by Bird (1988) which considers that entrepreneurial intentions are based on a combination of both personal and contextual factors. Further development of the Bird's model was made by Boyd & Vozikis (1994) to include the concept of self-efficacy taken from the social learning theory. Another model was proposed by Davidsson (1995), which suggested that entrepreneurial intentions can be influenced by: conviction, defined by general



attitudes (change, compete, money, achievement, and autonomy) and domain attitudes (payoff, societal contribution and know how); conviction, in turn, is related to personal variables including age, gender, education, vicarious experience and radical change experience.

3. THE COGNITIVE APPROACH

The cognitive approach uses the cognitive aspects of entrepreneurs to study and even to explain their behaviour, which is related to the identification of opportunities for the creation of businesses and business growth. In fact the term "cognitive style" is used to characterize certain ways of processing information related to entrepreneurial behaviour. Two main lines can be differentiated within the cognitive literature: the study of cognitive structures and the study of cognitive processes (Sánchez et al., 2011). This perspective suggests that entrepreneurs think and process information differently from non-entrepreneurs and such differences may help to distinguish people who create or aim to establish businesses (entrepreneurs) from people who do not create and will not create companies (non entrepreneurs). Thus, some authors have coined the term "cognitive style" to characterize certain ways of processing information related to entrepreneurial behaviour (Baron, 2004; Boucknooghe et al., 2005).

Cognitive psychology is not only an aid to understanding individuals and their behaviour, considering their mental processes when they interact with other people, but also addresses the environment in which these mental processes and interactions take place (Mitchell et al., 2002). The Theory of Social Cognition introduces the idea of knowledge structure; i.e. the mental models (cognitions) that are used to achieve personal effectiveness in certain situations. Thus, since entrepreneurship is defined as relating to individuals or teams that create products/services for other people, Cognitive Psychology is increasingly useful to help establish the phenomena associated with entrepreneurship (Sánchez, 2011b). In this sense, experts insist on the possibility of explaining a large part of entrepreneurial behaviour and its origin from both cognitive structural and process variables (e.g., Busenitz & Lau, 1996).

3.1 Self-efficacy

Originally defined by Bandura (1994, p. 72) as "one's beliefs in their abilities to perform a certain level of performance or deserved outcomes that influence situations that affect their lives", self-efficacy has become an important variable considered in the cognitive study of entrepreneurial behaviour. Shane et al. (2003) emphasize self-efficacy as a robust predictor of individual outcome in a given activity and its validity to explain why people with equal skills may act differently. Thus, research on self-efficacy in entrepreneurial behaviour has been characterized by making distinctions between entrepreneurs and non-entrepreneurs (Chen et al., 1998; Markman et al., 2005). In a given situation, entrepreneurs perceive more opportunities than those who have low levels of entrepreneurial self-efficacy, who perceive the same situation to have more costs and greater risks (Cooper & Lucas, 2005; Vecchio, 2003). People who have a higher level of self-efficacy also feel more competent to overcome perceived obstacles and they anticipate more positive results (Vecchio, 2003) and persist in the effective search and organization of activities in the midst of uncertainty (Trevelyan, 2009).

3.2 Scripts

The area of scripts has expanded considerably and has provided fruitful results in the field of entrepreneurship, mainly thanks to Ron Mitchell and colleagues. Like Fiske & Taylor (1991), I define a script (schema) as a cognitive structure of beliefs and standards concerning a given domain of stimulus, which provides the individual with a reference point from which to represent his or her environment and provides guidelines for action and decision making. This cognitive structure represents the organized knowledge that a person has about a particular concept and contains information about the attributes of this concept and about the relationships between such attributes (Busenitz & Lau, 1996).

Within the context of entrepreneurship, scripts are considered to refer to the knowledge structures that entrepreneurs use to make assessments, judgments or decisions regarding the assessment of opportunities, enterprise creation and business growth. In other words, research on entrepreneurial scripts refers to the study of how entrepreneurs use simplified mental models to link previously unconnected information that will help them to identify or invent new products or services and the necessary resources to start up and cultivate a business (Mitchell et al., 2002). Thus, scripts in the field of entrepreneurship are knowledge structures that individuals have concerning the actions themselves to be undertaken (Busenitz & Lau, 1996). The main contribution of these studies suggests that expert entrepreneurs think differently from novices. The way in which entrepreneurial experts become experts is reflected in the development of an expert script. Experts have knowledge structures or scripts about a particular domain that allow them to perform better in their environment than non-experts, who neither have nor use structured knowledge (Mitchell et al., 2000; Westhead et al., 2009). This contribution extends to the intercultural level.

3.3 Cognitive Styles

Cognitive style is defined as the way people perceive environmental stimuli, and how they organize and use information from their environment to guide their actions. In their study, Boucknooghe et al. (2005) raised the following questions: "What is the cognitive style of entrepreneurs?" Is the way they perceive, organize and use environmental information different from the way non-entrepreneurs do? The results of that investigation confirmed the notion that entrepreneurs differ in their cognitive styles.

In addition, other research has shown that entrepreneurs collect process and evaluate information in a more intuitive manner than managers, middle managers and initiates. Senior managers have cognitive styles similar to those of entrepreneurs (Allison et al., 2000). Recently, Lindblom et al. (2008) have found differences in the cognitive style of the different types of entrepreneurs. Those authors investigated the cognitive style of retail entrepreneurs with respect to marketing decisions. The results revealed that the cognitive style of retail entrepreneurs is more consistent with the style of employees than with that of other entrepreneurs.

3.4 Decision making: Heuristics and Errors

Research on heuristics has afforded important results in our understanding of the cognitive functioning of human beings in general and of entrepreneurs in particular. Heuristics are simplifying strategies that individuals use to manage information and reduce uncertainty in decision making (Khaneman & Tversky, 1973).

Research has shown that entrepreneurs with a logic based on heuristics are able to make sense of complex and ambiguous situations more quickly and take more orthodox approaches in making decisions (Mittchel et al. 2009). However, other studies (Baron & Markman, 1999) have shown that the use of certain cognitive heuristics leads to biases and errors, as discussed below.

- Counterfactual thinking.
- The planning fallacy.
- Overconfidence.
- Over optimism.

This has important implications and applications for the workplace, and suggests that the inclusion of over-confident workers in the company will have beneficial effects on work climate, self-efficacy, performance, etc.

In conclusion, the relationship between different heuristics is established: overconfidence, as defined above, leads to incorrect estimates of the risks that an entrepreneur has to face, but the estimates could go in two directions: either being too pessimistic or too favourable, depending on whether the estimate is positively or negatively biased. However, it is quite possible that people who are optimistic enough to start a business show a tendency towards the overconfidence bias in the directions of underestimating the risk they face. Similarly, the belief in the law of small quantities can lead to overconfidence if the small sample used is biased in a positive direction. The anchor could lead to over optimism about the creation and progress of a company, in cases where the expectations based on indications of the progress made so far are too optimistic.

4. THE STUDY

In the field of entrepreneurship, three types of entrepreneurial scripts have gradually been defined: arrangements, willingness, and ability scripts (e.g., Mitchell, 1994; Mitchell et al., 2000, 2002). Arrangements scripts are the knowledge structures that individuals have about the contacts, relations, resources, and assets that are needed for economic relations. Willingness scripts are the knowledge structures underlying the idea of engaging in an economic relation. Ability scripts are the knowledge structures that individuals have about the capabilities, skills, knowledge, norms, and attitudes needed to create a business venture.

Consistent with previous research (Mitchel et al., 2000), I argue that people who are able to: a) use arrangements scripts most suitably in relation to the idea of protection, resource possession, venture networks, and venture specific skills; b) possess more developed willingness scripts with respect to their opportunity seeking focus, opportunity motivation, and risk tolerance; and c) trust in their ability scripts to diagnose the conditions and potential to create business ventures, see the need and create value and apply the lessons learned to a variety of experiences (Abelson & Leddo, 1986) will have a higher entrepreneurial intention.

The reasoning behind these expectations is consistent with the fact that those who have an entrepreneurial intention may not perceive starting a business as a risk, since what may be perceived as a risk by some individuals is not perceived as such by

others (Simon et al., 2000). Thus, I suggest that scripts affect entrepreneurial intention. Given that individuals who work in specialized fields have unique knowledge, it is logical to expect that among a broad range of demographic groupings (e.g., age, culture, gender, etc.), the individuals who score high in these dimensions of cognitive scripts probably have similar thought patterns in regard to entrepreneurship and to this extent they can be differentiated from those who do not have an entrepreneurial intention. In short, I expect to find that: High scores in arrangements, willingness, and ability scripts are positively related to high scores in entrepreneurial intention (proposal 1).

However, I also accept that, in some cases, the variance in the expected relation is not completely explained solely by inter-group analysis; there are often intra-group differences that can explain additional variance in this relation (Keppel, 1991). In the study of this relationship there are arguments that suggest the possibility of intra-group variance. I expect that, to the extent that there are cultural differences between countries, the effects of entrepreneurial scripts on entrepreneurial intention may be country-specific, and therefore I suggest that: The effects of the arrangements, willingness, and ability scripts on entrepreneurial intention vary by country (proposal 2).

The data Were collected from a sample of 726 university students, 266 of them from Mexico, 252 from Italy, and 208 from Spain. Approximately 64.2% of the surveyed participants Were women. Participants' ages ranged between 19 and 24, with a mean age of 21.24 (Sd=3.32) in the Mexican sample, 21.9 (Sd=3.09) in the Italian sample, and 21.09 (Sd=2.90) in the Spanish sample. No differences Were found among the participants from Mexico, Italy or Spain regarding age and sex. The level of formal education was also similar among the different countries. Although education is not theoretically linked to entrepreneurial cognition or intention (Fischer & Reuber, 1994) it can limit the clarity of the variance explained by the cognitive scripts and was thus entered as a control variable when examining the proposals.

4.1 Measures

The participants responded to 4 items concerning intentions to start their own business (dependent variable). The responses Were categorized on a 0 (very unlikely) to 5 (very likely) point Likert-type scale. An index of intention to become self-employed was created by averaging the four item-scores. Our data confirmed the reliability of the scale ($\alpha = 0.75$), which exceeds the Nunnally (1978) criterion of .70 for scale reliability in exploratory research. The scales used to measure scripts (independent variables) Were adopted from Mitchell et al. (2000; 2002). Items from the original scales Were translated into Spanish and Italian using a translation/back-translation procedure (Behling & Law, 2000).

4.2 Data analysis

Before testing the proposals, and following the recommendations of Mitchell et al. (2000; 2002), a factor analysis was run (principle components analysis, using an eigenvalue of 1 and varimax rotation) to confirm the dimensionality of each of the script constructs. Proposal 1 was tested using analysis of co-variance (ANCOVA), with education and country of origin as the co-variants. Proposal 2 was tested using multivariate analysis of variance (MANOVA) and hierarchical regression analysis. Since ANCOVA requires categorical variables, the scales used to measure arrangements, willingness, and ability Were recorded in three categories of approximately the same size - low, intermediate, and high (each category contained at least 20% of the participants surveyed). The mean values of each scale Were assigned to the intermediate category and at least two values for each of the low and high categories. These three categories Were chosen to minimize the loss of explanatory power in the categorization processes, maintaining groups of sufficient size to fulfill the analytical suppositions. To test proposal 2 I used the original independent variables (interval scale) in the hierarchical regression analysis. Hierarchical regression analysis checks the ANCOVA results using the information provided by the measures.

4.3 Results

Support was found for the dimensions conceptualized in the work of Mitchell et al. (2000; 2002) regarding scripts. Although some items showed high loadings on several factors they Were not eliminated from the analysis and Were assigned to the factor most related to the theoretical content of the subscale. The items assigned to each factor Were averaged to obtain the score of the participants in each of the script subscales. After controlling for the effects of the education and country of origin variables, ANCOVA (Table 1a), showed that arrangements, willingness, and ability scripts explained 39% of the variance in entrepreneurial intention and these cognitive constructs explained 22% of the total variance when the effects of the education and country of origin variables Were not taken into account. The main effects Were all significant, thus confirming our first hypothesis: arrangements, willingness, and ability scripts are related to the level of entrepreneurial intention despite the participants' country of origin and level of education. Similar results Were found using hierarchical regression To test our second proposal I performed a MANOVA (Table 1b). The results of this analysis indicate that the mean values of arrangements, willingness, and ability scripts Were significantly different according to the countries studied. I found differences in arrangements and willingness between Spain/Italy and Mexico and in ability between Spain and Mexico. The



rest of the comparisons were not found to be significant. These findings suggest that there may be some differences in scripts according to country, but that there can also be some similarities (e.g., between Spain and Italy). A regression analysis (Table 1c) was run in an attempt to understand the differential effects of the scripts on entrepreneurial intention.

After controlling for the effects of the education and country of origin variables, ANCOVA (Table 1a), showed that arrangements, willingness, and ability scripts explained 39% of the variance in entrepreneurial intention and these cognitive constructs explained 22% of the total variance when the effects of the education and country of origin variables were not taken into account. The main effects were all significant, thus confirming our first hypothesis: arrangements, willingness, and ability scripts are related to the level of entrepreneurial intention despite the participants' country of origin and level of education. Similar results were found using hierarchical regression.

The results of this analysis indicate that the mean values of the arrangements, willingness and ability scripts were significantly different according to the countries under study. Post hoc analyses showed differences between Spain/Italy and Mexico in Arrangement and Willingness scripts and between Spain and Mexico in Ability. No differences were found between Spain and Italy in any of the cognitive scripts. These results suggest that country differences exist in the content of entrepreneurial scripts, but that there are also similarities. I therefore performed a hierarchical regression analysis to understand the potential effects of the scripts on entrepreneurial intention.

The Chow Test turned out to be significant, and thus there are significant differences between the models at country level and the overall model. No script was significant in the sample of Spanish participants, whereas they were all significant for the sample of Italian participants. The results of the MANOVA and the regression analysis indicate that although the arrangements, willingness, and ability scripts are related to entrepreneurial intention, there are nevertheless certain differences between the countries. To analyze these differences I examined the relation between the attributes of the cognitive scripts and entrepreneurial intention, performing a post hoc hierarchical regression and considering the attributes of the scripts within each country. The arrangements scripts block of variables were significant for Spain, Italy and Mexico, explaining, respectively, 7%, 16%, and 14% more of the variance in entrepreneurial intention. All of the subscales were significant in the three countries. The willingness scripts block of variables is significantly related to entrepreneurial intention in all three countries, explaining, respectively, 5%, 2%, and 6% more of the variance in entrepreneurial intention than the base model, education. Seeking focus was significant for Italy and Mexico. Risk tolerance was significant for Spain and Mexico whereas Opportunity motivation was not significant in any of the countries. The ability script block was only significant for Mexico, explaining 3% more of the variance than the base model (education). The total effects of the script constructs were examined in a stepwise regression in order to identify the most salient scripts in each country. Resource possession (arrangement) and venture specific skills (arrangement) were significantly related to entrepreneurial intention in all three countries. Protectable idea (arrangement) was significant ($p < .01$) in the Spanish and Italian models but not in the Mexican one. Venture work (arrangement), seeking-focus scripts (willingness), and venture situational know-how (ability) were significant in the Italian and Mexican models, but not in the Spanish one, and risk tolerance was significant in the Spanish and Mexican models, but not in the Italian one.

These results support the idea that there are similarities and differences between the countries as far as the content of the entrepreneurial scripts is concerned. The theory of social cognition suggests that interactions among the arrangements, willingness, and ability scripts can be crucial for representing the script, since representation requires a configuration of forces of both entry scripts and action scripts (Fiske & Taylor, 1991). Arrangements scripts are necessary for carrying out the subsequent steps in the creation of value, but alone are probably not sufficient. Without the willingness scripts, there may not be enough motivation to constitute the arrangements scripts. Without the ability scripts, there may not exist sufficient capability to enact the arrangements scripts.

Willingness scripts without ability scripts may not give rise to the following steps in the creation of value sequence. These potential interaction effects were explored using post hoc ANCOVA (controlling for the effects of country and education). None of the two-way interaction effects were significant, but the three-way interaction among arrangements, willingness, and ability scripts was significant ($p < .05$) beyond the significant principal effects, which is consistent with the theory of social cognition and entrepreneurial cognition that the arrangements, willingness, and ability scripts all combine to influence entrepreneurial intention.

5. CONCLUSION

The aim of this chapter has been twofold: first, to extend the theoretical development of the research on entrepreneurial



Cognition beyond the level of individuals, and second, to increase the usefulness of previous work regarding entrepreneurial intention. To meet these two objectives I posited two basic proposals.

The results of our study suggest that individuals with high scores in the dimensions of the cognitive scripts considered have higher levels of entrepreneurial intention, regardless of the country of origin and educational level of the participants, thus confirming our first proposal. Our results also show that the effects of the scripts on entrepreneurial intention vary according to country. There are differences in the scripts according to the different countries, but I also found similarities between some of the countries studied as regards some of the contents.

Our first observation of the results is related to the similarity among the participants of the three countries. On the one hand, the participants seem to have important scripts in common: in all three countries, resource possession and venture specific skills are significantly related to entrepreneurial intention. Our second observation has to do with the differences among the countries studied. I feel that an understanding of these differences may be the key to a better understanding the entrepreneurial intention process. Thirdly, I can point out that the risk tolerance scripts are positively significant only for the Mexican participants. One of the explanations for this greater risk tolerance in the Mexican students may be necessity (being unemployed, seeking an alternative way to work, etc.). The literature two types of entrepreneurs have been differentiated: those who become entrepreneurs through necessity and those who do so through opportunity.

These results must be considered in relation to the limitations of the study. First, this study is exploratory in nature since it applies a relatively new theory in relation to entrepreneurial intention and examines relatively new constructs in the context of entrepreneurship research that are still in the early stages of development. Second, in this study I used an intended sample. Nonetheless, I believe that this did not affect the results, since those surveyed in each country Were demographically similar in regard to educational level, age, and so on.

Third, the “cognitive situation” was collected at a specific moment in time, making it necessary to use the same instrument to measure both the independent and dependent variables. To mitigate potential problems I used a combination of self-reported measures and more objective measures, employing different scales and asking questions related to the dependent variable before asking about the entrepreneurial scripts.

REFERENCES

1. Abelson, R. P. & Leddo, J. (1986). The nature of explanations, In: Knowledge Structures, J. A.
2. Galambos, R. P. Abelson, & J. B. Black (Eds.), , pp.(103-122), Hillsdale NJ Lawrence Erlbaum & Associates, Inc., New Jersey.
3. Davidsson, P. (1995). Determinants of entrepreneurial intentions. Paper presented at the annual meeting of the Rent IX Workshop, Piacenza, Italy (November).
4. Evans, M., & Krueger, J. (2004). If you don't want to be late, enumerate: Unpacking reduces the planning fallacy. *Journal of Experimental Social Psychology*, Vol. 40, No.5, pp. (586- 598) .
5. Fayolle, A., & Gailly, B. (2004). Using the theory of planned behavior to assess entrepreneurship teaching programs: A first experimentation. *Proceedings of the Internationalizing Entrepreneurship Education and Training Conference*, Naples, Edizioni Scientifiche Italiane.
6. Fini, R., Grimaldi, R., Marzocchi, G.L., Sobrero, M. (2009). The foundation of entrepreneurial intention. Electronic copy available at: <http://ssrn.com/abstract=1313225>.
7. Mintzberg, H. (1994). *The rise and fall of strategic planning*. Prentice Hall.
8. Britain. Mitchell, R. K., Smith, J. B., Morse, E. A., Seawright, K. W., Peredo, A. M., & McKenzie, B.(2002). Are entrepreneurial cognitions universal? Assessing entrepreneurial cognitions across cultures. *Entrepreneurship Theory & Practice*, Vol. 26, N°4, pp.(9-32)
9. Smith, J. B., Mitchell, J. R., & Mitchell, R. K. (2009). Entrepreneurial scripts and the new transaction commitment mindset: Extending the expert information processing theory approach to entrepreneurial cognition research. *Entrepreneurship Theory & Practice*, Vol.33, N°4, pp.(815-844).
10. Vecchio, R.P. (2003). Entrepreneurship and leadership: Common trends and common threads. *Human Resource Management Review*, Vol. 13, No. 2, pp. (303-327).
11. Wadson, N. (2006). Cognitive aspects of entrepreneurship: Decisionmaking and attitudes to risk. In Casson et al. (Eds.), *Oxford Handbook of Entrepreneurship*, (pp. 91-113).
12. Oxford University Press.
13. Lick, K.E. (1995). *Sensemaking in organizations*. Sage Publications, Thousand Oaks.