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Anja Svetina Nabergoj

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A RESOURCE-BASED VIEW OF ENTREPRENEURIAL CREATIVITY AND ITS IMPLICATIONS TO ENTREPRENEURSHIP EDUCATION

JING LIN¹

ANJA SVETINA NABERGOJ²

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ABSTRACT: *For entrepreneurs creative problem solving and innovation are key capabilities that can be built through experience and entrepreneurial learning. Unfortunately entrepreneurial education has received increased criticism over the past decade suggesting that entrepreneurship courses do not sufficiently emphasize development of creative capabilities. Although several scholars and educators emphasize the need for nurturing creativity in entrepreneurial education it remains unclear how to efficiently stimulate the creativity pertinent to entrepreneurial contexts. The aim of our study is to show how the logics of RBV theory can be used to explain the creative behaviours of entrepreneurs in which EC is manifested in resource construction. The contribution of this paper is that it initiates the analysis of EC from a resource-based view and provides a foundation for building the corresponding pedagogy for nurturing creativity specific to the entrepreneurial process to effectively introduce EC training in EE.*

Keywords: *entrepreneurial creativity, resource-based view, entrepreneurship education*

JEL Classification: L26

1. INTRODUCTION

Over the past decade the stream of research on entrepreneurial education (EE) has received increased attention in the entrepreneurship literature due to criticism, such as: (a) methods taught seldom support what entrepreneurs actually need to know and do (Collins et al., 2004), (b) entrepreneurship education programs do not improve students' cognitive entrepreneurial skills (Huber et al., 2012), and (c) entrepreneurship courses do not sufficiently emphasize developing right-brain creative capabilities (Kirby, 2004, Gibb, 2011a, Daniel Yar et al., 2008). Accordingly, we have witnessed a reassessment of educational methods and approaches used in EE at higher educational institutions (Gibb, 2002, Kuratko, 2005). As (Boyle, 2007) explains there have been multiple calls for educators at

1 Jing Lin, Guangdong University of Finance, China, e-mail: jing.lin@gdof.edu.cn

2 University of Ljubljana, Faculty of Economics, Ljubljana, Slovenia, e-mail: anja.svetina@ef.uni-lj.si

all levels to recognize the challenges and opportunities in today's economy and make the necessary changes to educational programs to ensure that students develop "21st century" skills and abilities including: capabilities in problem solving, innovation and creativity, self-direction and initiative, flexibility and adaptability, critical thinking, and communication and collaboration skills.

The importance of developing students' creativity in entrepreneurial education (EE) has been explored by several scholars (Ko and Butler, 2007, Lourenço and Jayawarna, 2011, Gibb, 2011a). Ko and Butler (2007) draw from their empirical research about entrepreneurial creativity and suggest that in order to increase the capacity of entrepreneurial creativity in EE, students should perform the task of connecting the stored information in memory to identify opportunity. Gibb (2011a), one of the key scholars in EE, advocates the education of enterprising individuals who have the capacity to innovate, create, cope with uncertainty and complexity, and think of new ways of doing things. Lourenço (2011) argues that it is an imperative of entrepreneurial education to develop creative thinking for those who lack this particular enterprising skill, which is in line with some of the leading thinkers in the area of creativity in education (Winograd, 2008, Seelig, 2012a, Kelly, 2013). At the policy making level, the European Commission (2008, 2012) suggested educating the entrepreneurial mind-set to help "young people to be creative in whatever they undertake." The aforementioned studies emphasize the need for nurturing creativity in EE, but the question of how to efficiently stimulate the creativity pertinent to entrepreneurial contexts yet remains unanswered.

The biggest shortcoming of current entrepreneurial pedagogies with creativity training elements is that they usually focus on a certain entrepreneurial context like business opportunities ideation (Luoto et al., 2009), opportunity discovery (e.g. DeTienne and Chandler, 2004), or the understanding of entrepreneurship (e.g. Carayannis et al., 2003). Creativity and entrepreneurship are closely connected, as the ability to think creatively supports decisions in uncertain business situations (Lourenço and Jayawarna, 2011). Creativity is present in every phase of the entrepreneurial process. As Shackle (1970) already stressed the process of business planning cannot be directed at the knowledge of what is to come, but towards our imagination of how events are likely to unfold. Accordingly, creativity and imagination become crucial elements of the entrepreneurial process that are characterized by limited resources and high levels of uncertainty. As the literature suggests entrepreneurs are not only creative in coming up with new ideas for unique and useful products or services –in the opportunity exploitation phase –they also need to identify an untapped market niche to promote them, develop creative ways to produce and deliver them to the market, and have the unnoticed means to obtain the resources to do all the above (Amabile, 1997, Shane and Cable, 2002, Shepherd et al., 2000, Foss, 2011).

Given the complexity of the entrepreneurial process and the diversity of contexts in which an entrepreneur needs to be creative, it is no surprise that several authors suggest the concept of entrepreneurial creativity (EC) to note the unique, context specific creative abilities of entrepreneurs. Entrepreneurial creativity was defined by Amabile (1997, p.20) as "the generation and implementation of novel, appropriate ideas to establish a new business or

new program to deliver products or services.” Entrepreneur-like creativity, or alternatively, entrepreneurial creativity is not a special ability inherent to entrepreneurs, but rather the emergence of an ability in human beings under the given contexts (entrepreneurial contexts in this case), which are conducive to it (Watson, 2013a). In this sense, EC can be seen as the creative ability acquired and developed in entrepreneurial processes, and characterized by some conditions and contexts that the non-entrepreneur would not have the chance to experience.

For entrepreneurs creative problem solving and innovation are key capabilities (Sarasvathy and Venkataraman, 2011) and many educators are starting to introduce creativity training in their existing curricula. Due to lack of appropriate tools to nurture creativity, that is specific to the entrepreneurial context, they mostly resort to methods and techniques aimed to increase general creativity, like for example symbolic card methods to stimulate intuitive and innovative thinking (Carayannis et al., 2003), creativity SEEC method (the skills of Securing, Expanding, Exposing, and Challenging) to generate creative business ideas in entrepreneurial classes (DeTienne and Chandler, 2004), semiotic structuration approach in a pre-incubation setting course to facilitate the generation of more innovative ideas and identification of business opportunities (Luoto et al., 2009), and creativity stimulating art forms like drama and drawing to cultivate creativity in EE suggested by Gibb (2011b). Given the context specific nature of EC suggested by Amabile (1997) it is important for educators not just to nurture general creativity in entrepreneurship students, but to also focus on developing student creativity in a real or simulated entrepreneurial contexts so that they can learn from contextualised experiences that are relevant for entrepreneurs. However, complex entrepreneurial realities are difficult to capture and replicate in the classroom, and so most educators resort to established practices of building the general creative abilities of their students (Carayannis et al., 2003, DeTienne and Chandler, 2004, Luoto et al., 2009). In this respect EE is lagging behind in introducing pedagogies that would support students in nurturing creativity pertinent to entrepreneurial contexts (Kirby, 2004). The aim of this paper is to propose a theoretical framework that comprehensively captures the way in which EC manifests itself throughout the entrepreneurial process and explains the resource-constructing behaviors of entrepreneurs in the context of limited resources.

Resources play a vital role in the development of an entrepreneurial venture (Desa and Basu, 2013), however due to resource constraints entrepreneurs need to creatively solve the resource shortage issue throughout the entrepreneurial process (Senyard et al., 2011a). This led us to a resource-based view of the firm (RBV hereinafter), which states that the competitive advantage of the firm lies primarily in the application of a bundle of valuable, tangible, or intangible resources at the firm’s disposal (Barney, 2001). We use the RBV as theoretical ground for developing arguments that explain creative process of entrepreneurs. Our proposal is based on the literature that indicates substantial creative behaviours of entrepreneurs in constructing their resources base, overcoming resource constraints, and exploiting opportunities (Shane and Venkataraman, 2000, Shane, 2012, Senyard et al., 2011b, Ames and Runco, 2005). The implication of this paper is to help build the corresponding pedagogy for nurturing creativity specific to the entrepreneurial process

and contexts in order to lead to enhanced EC of students and to effectively introduce EC training in EE.

We address two research questions:

- (a) Why do we need to nurture contextualised EC in entrepreneurial education?
- (b) How does EC manifest in the entrepreneurial process?

With this study we contribute to the current literature by initiating the analysis of EC from a resource-based view to facilitate an overall understanding of EC, and provides a foundation for the design of a corresponding pedagogy.

We begin by discussing the importance of emphasizing creativity training in EE. Then, we discuss the problems of the existing creativity training in EE. We analyse the contextualized nature of EC and introduce the RBV to explicate EC, develop a set of propositions, and discuss the role of EC in resource (re)construction. Finally, we discuss the implications for entrepreneurial education and pedagogies to cultivate EC in EE. We conclude the paper with recommendations for future research and implications for entrepreneurial educators and policy makers.

2. CREATIVITY IN ENTREPRENEURSHIP EDUCATION

Creativity can be defined as an ability that enables the production of novel (i.e. original, unexpected) and appropriate (i.e. useful, adaptive to task constraints) solutions (Sternberg, 1988, Sternberg et al., 2005, Sternberg and Lubart, 1999). Sternberg (Sternberg, 2006) identified several mainstream approaches to interpret creativity in social sciences, including personality or traits, environment or context, motivation, and cognitive ability (e.g. creative problem solving). The connection between creativity and entrepreneurship can be dated back to Schumpeter's (1942) understanding of an entrepreneur as one who combines, or recombines, vital resources to meet the market's needs, and "creatively" destroys the pre-existing economic order. This so-called "creative destruction" process centres around the continuous product and process innovation mechanisms characterized by new production units replacing out-dated ones. Contemporary empirical studies have shown abundant connections between creativity and entrepreneurs. Creativity has been widely linked with the opportunity identification ability and entrepreneurial intention (Krueger, 1998, DeTienne and Chandler, 2004). Feldman and Bolino (2000) found that individuals with a strong creativity anchor were motivated to become self-employed. Zampetakis and Moustakis (2006) also proved that individuals with positive attitudes of their own creativity are more likely to have high entrepreneurial intentions. Ko and Butler (2007) interviewed entrepreneurs in Hong Kong's high-tech industries who indicated that creativity plays a critical role in the entrepreneurial process. This study shows that entrepreneurs are creative in discovering the relation of the seemingly unrelated information, thus they are able to identify the opportunity. In conclusion, all this mounting evidence proves the existence of a strong link between creativity and an entrepreneur, thus serving to legitimate creativity training in EE.

Pedagogies that aim at building creativity are being developed and used at leading universities including: Stanford University (Winograd, 2008), Rotman School of Management in Toronto (Dunne and Martin, 2006), HPI School of Design Thinking in Potsdam, Germany (Plattner et al., 2009), Darden School of Business (Liedtka, 2011), and UC Berkeley (Sidhu et al., 2014). The need and inspiration for those pedagogical approaches came mainly from practice, and their focus is on building creative confidence in students and professionals outside of the artistic and design domains. Some of those pedagogies focus on entrepreneurship (Seelig, 2012b, Seelig, 2009) and social entrepreneurship (Perloth, 2013) but there is a lack of theoretical understanding of questions, such as why and how creativity related pedagogies fit into entrepreneurial education, and how they can be adopted to nurture the creativity pertinent to the entrepreneurial process and corresponding contexts.

In the literature, there have been very few empirical studies evaluating the effects of creativity training in EE. Despite a lack of empirical research showing the effects of creativity training in EE, it is very common in EE practice to see most of the business schools having business plan and project competitions, or business ideas development modules (Katz, 2007). These can also be seen as a form of creativity training, as the students have to come up with ideas in analysing the current status and the presupposed future of an organization or entrepreneurial initiatives (Benson, 2004). But several scholars have criticized business plan approach, stating that it prescribes a pathway to entrepreneurship and focuses on the technical aspects of enterprising, thus putting constraints on student creativity (Luoto et al., 2009, Lautenschläger and Haase, 2011). Some investigations have even shown that plagiarism via online resources or mass media to copy and borrow ideas is quite common in business ideas development courses/projects, especially in EE (Lahm, 2007). All these criticisms raise several questions whether this approach in its current form is the best approach to stimulate EC in EE.

The review of business plan writing and other existing creativity pedagogies in entrepreneurship education shows that they mainly focus on creativity training in the opportunity discovery stage, but ignore the opportunity exploitation stage (Neck and Greene, 2011, Luoto et al., 2009). Specifically, they place too much emphasis on generating novel ideas for business and venture opportunities, and conduct a status analysis, like SWOT or breakeven, to legitimate the feasibility and viability of their business ideas (Kuehn et al., 2009). Basically, this teaching method mostly focuses on the opportunity discovery stage (see the work of Shane and Venkataraman, 2000), or similarly the opportunity ideation and conception stage (see the work of Luoto et al., 2009). However, in other entrepreneurial contexts for example in the opportunity exploitation stage, entrepreneurs are supposed to come up with creative ways of producing and delivering products to market, and unnoticed are the means of obtaining the necessary resources to make this happen (Shepherd et al., 2000, Foss, 2011, Shane, 2012). The context here can be referred to the interrelated conditions in which something or some undertakings exist or occur (Mish, 1997). In other words, the creativity for business ideas or the ideation process to discover opportunities is actually not enough in the venture creation process if we consider that entrepreneurs have to create new means and relationships by creatively re-combining resources to exploit the opportunity (Shane and Venkataraman, 2000, Shane, 2012). These behaviours

to recombine and construct resources can be seen more as coming up with novel solutions to the resources-constraints problems which entrepreneurs usually encounter (Ames and Runco, 2005, Senyard et al., 2011b). Indeed, in EE practice, we are calling for these kind of creative problem solving skills in the opportunity exploitation stage or context, and not just the ideation skill for business opportunity in the opportunity discovery stage or context alone. As Sarasvathy and Venkataraman (2011) have advocated, in EE the students are to be equipped with a set of problem solving skills which entrepreneurs employ in several phases of venture creation process.

In conclusion, EC is present in a broader entrepreneurial context, e.g. opportunity exploitation and resources construction, than the opportunity discovery and business idea ideation stage. The present practices of incorporating creativity training elements in EE, such as opportunity identification and business planning teaching, still leave much to be desired. In the case of the widely spread business plan approach (Delmar and Scott, 2003) creativity is required in different phases of the process, but is rarely systematically nurtured and stimulated among students as they go through the process of opportunity recognition to developing a business plan (Neck and Greene, 2011, Luoto et al., 2009). We believe that it is very important to nurture EC by simulating a broader context, which involves creative problem solving skills, particularly in the resources construction process, instead of just focusing on the context of business idea creation. The entrepreneurial context is an important consideration not only in solving the problems of the creativity training in EE, but also in understanding the nature of EC, and hence nurturing it. We address the role of entrepreneurship context below.

3. THE CONTEXTUALIZED ENTREPRENEURIAL CREATIVITY

The pioneering attempt to define EC was by Amabile (1997), who states that entrepreneurship is a particular form of innovation and entrepreneurial creativity is a successful implementation of creative novel ideas to produce a new business or a new initiative within an existing venture. In this paper we follow Amabile's (1997) definition. She explicitly stresses that the novelty does not need to be found in the product itself, but it can exist in identifying a market for the products or services, in new ways of producing and delivering the products or services, or in ways of obtaining resources to produce or deliver to the customers (Amabile, 1997). She elaborated three main components of EC as: domain knowledge, creativity skills, and task motivation. The domain knowledge involves expertise in the target work domain, creativity skills dealing with creative thinking skills, and task motivation that centers on to what extent one's desire to obtain a goal and interest in the work. The effect of domain knowledge on EC is already supported by the Gemmill's et al. (2012) empirical study which reveals that entrepreneurs produce the most ideational productivity primarily in the area of their technology and/or market specialization. Despite that, Amabile's work is not a conceptualization of EC and she did not explain the connection between general creativity and EC, however she and other authors have clearly pointed to the contextual nature of creativity (Montuori and Purser, 1995) and more specifically contextual nature of entrepreneurial creativity (Watson, 2013b).

Given the attempts of several educators to nurture creativity in EE it is important to understand the contextual nature of EC in order to nurture EC in the educational setting. Many prominent creativity scholars (e.g. Plucker and Beghetto, 2004, Runco, 2007b, Silvia et al., 2009) have revealed that creativity has a contextual nature, and that people are at their creative best in the context that they are most familiar. Also, their creativity skills are shaped from relevant experiences. It can also be assumed that when compared to general creativity, EC is characterized by some conditions and contexts, which the non-entrepreneur does not have the chance to experience. We consider the context of EC to be a very important component of EC. Actually, this domain context feature of creativity is present among all populations of different professions and backgrounds, such as the creativity of artists, architects, writers, businessmen, mathematicians, and so on (Mace, 1997, Runco, 2007a). As such, it can be inferred that as compared to general creativity, an entrepreneur's creativity derives from the entrepreneurial contexts and is subject to conditions frequently occurring to entrepreneurs.

A recent study by Watson (2013a) has further advanced our understanding of the contexts of EC. He proposed that entrepreneurs, like other human beings, continuously face different circumstances and contexts, and need to come up with creative solutions for the problems they face. In this sense, EC is a "situated creativity" or ability that any kind of person (not just entrepreneurs) will mobilize in the entrepreneurial contexts that they encounter. In other words, once situated in entrepreneurial contexts, people's general creativity will manifest in different ways and thus produce different effects than in non-entrepreneurial contexts. General creativity is present in all populations, but EC is the "situated" and contextualized creative ability acquired and developed through entrepreneurial processes and experiences (Watson, 2013a).

Thus far we have discussed that the main differences between general creativity and EC lies in the fact that EC is derived from its own context, i.e. the entrepreneurial context. We have also shown the importance of entrepreneurial contexts in the formation of EC. That said, applying creativity training to nurture general creativity does not necessarily lead to the enhancement of EC. Most entrepreneurship classes teach students basic idea generation techniques like brainstorming, or introduce creative techniques like improvisation (Stanford University, 2010), which are undoubtedly great for stimulating creativity. But since EC is highly contextual and derived from entrepreneurial contexts (Runco, 2007, Watson, 2013) nurturing EC in EE should be based on a simulated entrepreneurial context (Sidhu et al, 2014), which most of the current creativity training lacks (Gibb, 2011).

EC, as a creative ability, is not an inborn trait, but rather is an ability that develops from entrepreneurial contexts and experiences. Then there comes another question; since EC is developed in entrepreneurial contexts and experiences, does it mean that everybody could develop their EC when put in entrepreneurial contexts or when undertaking actions to become an entrepreneur? Simply put, can EC be nurtured? Drawing from existing findings by Kelly and Kelly (Kelly, 2013) and Seelig (Seelig, 2012a), the answer is affirmative. Actually, entrepreneurs are not necessarily more creative (in terms of general creativity) than non-entrepreneurs, and they are not a certain kind of person with special and extraordinary creativity. As Johansson (2011) stated, an entrepreneurial endeavor is not a heroic achievement,

and an entrepreneur using creativity is not a radically innovative activity, for the most part. It is the everyday, human activity of socializing with people and organizing resources. In doing this, entrepreneurs eventually create a new way of life and new identity, i.e. the entrepreneur. In other words, becoming an entrepreneur is not the process of becoming a special group of brilliant people with outstanding creativity. There are definitely some brilliant entrepreneurs with extraordinary creativity who have created very successful enterprises, but there are still a bigger number of so-called 'mundane entrepreneurs' without a very high level of creativity who still turn out successful because they were able to creatively organize resources in the entrepreneurial process (Johannisson, 2011). That said, the nurturing of EC in people, particularly students in EE, becomes possible and promising for educators as the aim of EE has expanded from creating new venture and economic value to installing an entrepreneurial spirit and skills in one's everyday practice (Blenker et al., 2011). In other words, EE doesn't aim to stimulate a special creativity in students to become entrepreneurs, but rather to nurture the specific creative ability and skills to deal with problems in the entrepreneurial process, and even in their everyday practice. This line of thinking is also shared by Sarasvathy and Venkataraman (2011), who consider entrepreneurship as a method to "unleash the potential of human nature." They also suggested that entrepreneurship can be taught as skills applicable to all populations, regardless of their backgrounds and personal endowments, e.g. creativity level (Sarasvathy and Venkataraman, 2011).

We have argued that creativity training modules in EE, like opportunity identification and business planning teaching, have not systematically integrated the nurturing of EC in a broader entrepreneurial context. In most cases creativity training in entrepreneurial education has not been systematically based in entrepreneurial contexts. Entrepreneurial creativity does not refer solely to creativity in coming up with novel ideas for products or services, but rather refers to creativity needed throughout the entrepreneurial process in which an entrepreneur needs to creatively solve resource constraints problems. We argue that EC develops from entrepreneurial experiences. Once people start to get involved in entrepreneurial undertakings they will have to employ their creativity to deal with problems in the entrepreneurial processes, and thus their EC could be shaped and formed in their entrepreneurial experiences. As such, educators can design an entrepreneurial, context-based pedagogy to nurture EC in students.

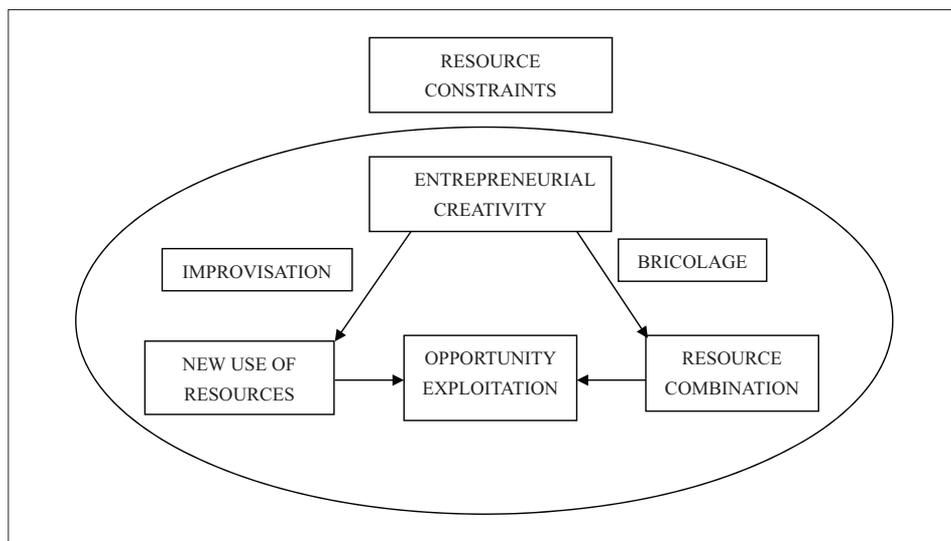
In this paper we employ the resource perspective as a theoretical lens to come to a generalized understanding of EC that is concerned with the resource-constructing behaviors of the entrepreneurs. In the next chapter, we integrate RBV perspective with entrepreneurial contexts from which EC derives and develops. We explain why EC plays an important role in the entrepreneurial process and why we should nurture EC by simulating the resource construct context.

4. THE FRAMEWORK FOR ENTREPRENEURIAL CREATIVITY

The resource-based view (RBV) was originally put forward by several scholars (like Wernerfelt, 1984, Barney, 1986, Rumelt, 1991) to differentiate a firm by the resources it pos-

esses, and it was mainly discussed in the field of strategic management. RBV has become a very important theory in strategic management to investigate the firm's competitive advantage such as 'core competence and dynamic capability (Akio, 2005). RBV scholars found out that a firm's performance is determined more by its internal resources than the external competitive environment, and hence the resources differentiating them from competitors become their competitive advantage (Alvarez and Busenitz, 2001). The pioneering work of applying RBV in the entrepreneurship field was done by Mosakowski (1998), whose empirical research showed that one's tendency to participate in the creative process will affect an entrepreneur's decision process in utilizing resources. Thus, one can expect that resource acquisition or utilization is a creative process and requires entrepreneurs to mobilize their creative ability to deal with many entrepreneurial problems in this process. Similar to Mosakowski, several studies connecting RVB and entrepreneurial resources also emphasize the role of creativity in the resources acquisition process (Shane, 2012). Some scholars like Sarasvathy (2001) and Pacheco (2012) consider entrepreneurs usually start the entrepreneurial process from the resources that they have at hand and in their control, rather than from the industry or via market analysis. Also, Johannisson (2011) considered the entrepreneurial process as a constructional and creative one of putting existing resources and practices in a new/creative relational pattern in a certain entrepreneurial context. Foss (2011) defined the exploitation of opportunities as assembling and deploying resources, such as complementary assets concerning production, sales, and marketing.

Figure 1:



Source: own

These arguments have shown that the whole entrepreneurial process involves numerous resource construction contexts, and creativity is essential in dealing with resource-related situations. As such, entrepreneurship education can nurture EC by simulating the reso-

urce construction context and expose students to specific situations in which they build their EC. Without assuming that all entrepreneurial contexts have to be connected with resource construction, we believe that based on previous literature (Foss, 2011, Alvarez and Busenitz, 2001) resource construction is a key part of the entrepreneurial process, and particularly as entrepreneurs exploit opportunities by creatively recombining and constructing resources (Shane, 2012).

The rationale behind the application of the RBV leads us to the question: what are the entrepreneurial contexts that would involve the creative behaviors of entrepreneurs in the construction of resources? In the literature, we identify two creative processes or behaviours that help to construct resources on the part of the entrepreneur, namely 'bricolage' (combing resources at hand to deal with new problems and exploit opportunities, Baker et al., 2003) and improvisation, which means (improvise new solutions different from the ones in the previous norms and practices, Moorman and Miner, 1998). We demonstrate in the following paragraphs how these two processes creatively construct an entrepreneur's resource base. Additionally, another entrepreneurial context that we could not ignore is the resources environment that EC and entrepreneurs are set in. In the literature, one important stream in researching creativity is to analyse the environment in which creativity occurs or has environmental influences (Sternberg et al., 2005). Meanwhile, Baker's study (2007) posited that the resource environment helps us to understand how entrepreneurs creatively construct resources combinations in highly constrained environments, or in the resource constraints context.

4.1. Resource constraints and creativity

Nascent entrepreneurs usually face resource constraints, like capital (Shane and Cable, 2002), advice (Batjargal and Liu, 2004) and personnel (Bratkovic et al., 2009) to exploit an opportunity. To overcome these constraints, creativity is crucial for entrepreneurs who have to come up with new ways to mobilize and activate the resources either possessed by or not under the control of the entrepreneur (Kirzner, 2009). Ciabuschi's (2012) findings suggest that entrepreneurs have to think across its business boundary to have access to unique resources, and discover the link between different resource owners to create a novel functional resources interface. Senyard (2011b) empirically concluded that innovations in sourcing, production, and promotion enable entrepreneurs to utilize limited resources to produce a desirable outcome in nascent and young firms. In a word, these seemingly detrimental resource constraints can be beneficial for entrepreneurs who tend to think creatively and out of the box, free from the constraints of organizational rules, formality, and culture (Ames and Runco, 2005).

Proposition 1: Resource constraints facilitate the emergence of entrepreneurial creativity.

4.2. Bricolage, creativity, and resource combination

An entrepreneur's bricolage is described as creatively combining the resources at hand for novel solutions and product/service from common inputs (Baker et al., 2003). This

behaviour can also be seen as the process where a successful entrepreneur “makes do” with the controllable resources at hand (see the work of Sarasvathy, 2001, 2010). In this vein, some scholars consider an entrepreneur as the individual who combines or bundles limited resources in a novel way, eventually coming up with a creative product, production method, or a market (Alvarez and Busenitz, 2001). Others believe that in order to acquire some resources not available to an entrepreneur, they have to discover the link with other entrepreneurs or between different resources owners to create a new, functional resources interface (Ciabuschi et al., 2012). Baker’s field study (2005) revealed many examples where entrepreneurs create new products or services by combining physical inputs and expertise that other firms rejected or considered useless. Then, how is creativity needed in the resources combination? Combining resources is not a simple addition of existing resources, it requires the resource owners to have a creative perspective on the synergy of the complementarities of resources (Baker, 2007). Wiklund and Shepherd’s (2009) investigation also shows that an entrepreneur’s resource combination behaviour involves the creativity to combine their resources with partner resources in novel ways to create new added values to the resources. From the above analysis, we propose:

Proposition 2: EC is associated with entrepreneurial bricolage.

Proposition 3: EC is associated with new combinations of existing resources.

4.3. Improvisation, creativity, and renew use of resources

Improvisation has been seen as an important enterprising behaviour to cope with an ambiguous and resource-constrained environment (Johannisson, 2011, Hmieleski and Corbett, 2008). Confronted with resource constraints, or new or emergent situations, entrepreneurs compose and implement novel ideas different from prior practice and norms (i.e., improvisation) (Moorman and Miner, 1998). Improvisation and bricolage differ in that in the former planning and implementation converge in time, while in the latter planning can precede implementation (Baker & Nelson, 2005). Also, improvisation usually occurs in the unexpected or turbulent environment (Moorman & Miner, 1998a). Entrepreneurs have limited resources (like time and personnel) to have strategic planning, thus improvised actions are to be taken to deal with the ever-changing entrepreneurial environment.

Then why is improvisation needed in creating the new usage of resources? What creates the new usage of resources? As the prominent RBV entrepreneurship scholars Alvarez and Busenitz (2001) put it, entrepreneurs are able to discover an “alternative use” of resources and transform them into a competitive advantage of the firm they establish. Thus, the creation of the new usage of resources can be seen as discovering an “alternative use” of the resources. We argue that improvisation has two roles in creating the new usage of resources. Firstly, when certain kinds of resources are lacking in order to exploit an opportunity, entrepreneurs have to improvise to employ other resources originally intended for other purposes. Secondly, they can improvise some solutions or redesign the produce/service

which can be independent of the resources in short (Mosakowski, 2002). In this vein, improvisation can be seen as a creative behaviour, since the improvisational creativity involved corresponds to new and unfamiliar challenges and generating novel and unplanned responses with little or no time to prepare (Fisher and Amabile, 2009). This is different from the creativity that occurs in the course of strategic planning when information, time, and other resources are abundant (Baker et al., 2003). Based on this analysis, we make the following proposition:

Proposition 4: Entrepreneurial creativity is associated with entrepreneur's improvisational behaviour.

5. IMPLICATIONS FOR ENTREPRENEURIAL PEDAGOGY

The aim of our study was to introduce RBV as a theoretical framework to explain the creative behaviours of entrepreneurs in which EC is manifested through resource construction behaviour. The contribution of this paper is the initiation of the analysis of entrepreneurial creativity from a resource-based view to facilitate an overall understanding of entrepreneurial creativity, and to provide a foundation for building the corresponding pedagogy for nurturing creativity specific to the entrepreneurial context and to effectively introduce EC training in EE

Creativity is highly contextual (Montuori and Purser, 1995) Amabile, 1997, (Watson, 2013b) and if we are to understand the EC, we need to understand the context in which it appears. Entrepreneurial context is characterized by resource constraints (Baker and Nelson, 2005) and based on our propositions, EC is framed in this study as embedded in creating new uses and combinations of resources in the form of two behaviours – improvisation and bricolage that entrepreneurs use to deal with the resource constraint throughout the process of their venture development. We argue that when an opportunity is identified, an entrepreneur has to consider if the resources available support the exploitation of this opportunity (Shane, 2012, Shane and Venkataraman, 2000), otherwise they have to give it up (see Figure 1). In light of the resource constraints environment, an entrepreneur's creativity has to focus on how to make the best use of the limited resources by creatively solving the resource challenge and thinking of a new use of those resources, and by creatively combining the available resources. The former is usually embedded in the form of an important entrepreneurial behaviour – improvisation – and the latter in bricolage.

If we aim to nurture EC in EE then we need to do it in relations to these two behaviours: bricolage and improvisation. Based on our four propositions, we are proposing to nurture EC by creating a pedagogy that embraces the RBV and uses the model presented in Figure 1 to create simulations of resource constraints that will encourage students to create new combinations of resources and generate new usage of resources in the form of two entrepreneurial behaviours respectively, i.e. bricolage and improvisation (see Figure 1). In this process, students are to unleash their creativity and exploit their creativity skills. Specifically, in light of the resource constraints environment, students have to focus on how

to make the best use of the limited resources by thinking of a new use of those resources (improvisation), and by creatively combining his/her own resources at hand or combining with another's resources (bricolage).

The basic idea is when the students have identified an entrepreneurial opportunity, they have to consider how to mobilise their own resources at hand or the ones that can be obtained from others to support the exploitation of this opportunity (Shane, 2012, Shane and Venkataraman, 2000). To illustrate, we present two vignettes from the EE practice. For example, if one student identifies the opportunity of selling something refreshing during a hot summer, she may want to sell a herbal iced tea made of herbs that grow in her home's garden (the resources at hand), and she may also come up with the idea of selling this herbal tea after a tennis course taught by one of her friends (combining with other's resource). Later on, she may want to purchase glass containers to bottle the tea, but then realizes that the bottles available on the market in small batches are too expensive to buy (resources constrains). Then she comes up with an idea that since her uncle runs a beer brewing factory, she can potentially get discounted bottles from her uncle who buys them in large quantities. She can fill the bottles with the herbal tea (improvising the new usage of resource) and sell it in larger quantities and in a variety of locations.

We propose an experiential pedagogy (Itin, 1999) approach that would offer creativity training in a highly contextualised way, embracing the entrepreneurial reality in terms of the process and the contexts that entrepreneurs most likely experience in their endeavours. While current entrepreneurial pedagogies lead students through all the major phases from opportunity identification to the business plan, the pedagogical approaches are rarely experiential and combine the intellectual side of business plan writing with creativity training in a contextualised way. The proposed pedagogy would complement it with simulations of the entrepreneurial context of resource constraint, making the creative problem solving more explicit and practical for students, and more supported by techniques and exercises that unleash the creative potential of students. In order to come up with creative solutions for bricolage, resource combination, and improvisation, students need to be exposed to situations that reflect reality, like for example simulations and games (Sidhu et al., 2014), and at the same time need to be taught different creativity enhancing exercises like for example structured brainstorming, analogous brainstorming, brainstorming with constraints, and alike (University, 2010).

Based on the resource-based model of EC as presented in Figure 1, the traditional entrepreneurial pedagogy should be rethought (revised) to foster student creativity in relation to two behaviours, bricolage and improvisation. We find experiential learning as a suitable method to design such pedagogy. Experiential pedagogy has been very extensively applied and proven to be effective in enterprise education (Gibson et al., 2009, Knotts, 2011), which was developed from Kolb's (1984) well-known, reflective learning cycles, and was defined as the "knowledge and skills that result from the combination of grasping and transforming experience." In all, this approach gives students a "feel like real" feeling and converts the simulated experience into knowledge and skills, thus shaping empathy for the entrepreneur and attaining the desired learning and teaching outcome (Gibb, 2011a, Tun-

stall and Lynch, 2010, Politis, 2008). In our case, when students are involved in simulated entrepreneurial contexts and are faced with resource constraints, they learn to creatively construct their resource base by using bricolage or improvisation.

Specifically, we suggest that in order to nurture EC educators need to simulate the entrepreneurial contexts using experiential pedagogy, involving the following steps. Firstly, students are given certain entrepreneurial tasks, e.g. to identify an entrepreneurial opportunity, develop a start-up initiative, and solve entrepreneurship-related problems. Then, the educator should provide a context in which all activities have to be confined. In other words, the students have to carry out the entrepreneurial task under the constraint of limited resources, and have to employ two skills, i.e., bricolage and improvisation to solve the resource constraint problems in order to exploit the opportunity they have discovered. Specifically, the contexts may come in the form of lacking personnel, funds, expertise, or other relevant resources (resource constraints), seeking useful information regarding untapped resources, or looking for opportunities to combine resources by socializing with other teams (bricolage), and improvising solutions or the new use of resources under a sudden change of circumstance (improvisation). The pedagogy can be seen as a combination of simulation (simulated entrepreneurial context) and experiential learning (learning through experience in resource acquisition in the entrepreneurial process) approaches. Students are expected to experience and learn how to improvise novel solutions and combine resources to support their simulated entrepreneurial tasks.

Since simulated entrepreneurial behaviours as a pedagogical approach to develop entrepreneurial mind sets has proven successful in entrepreneurial education, as proven with the Berkeley Method of Entrepreneurship (Sidhu et al., 2014) and Pittaway and Cope's (2007) empirical work, we believe that the pedagogy that we propose will contribute to the development of student EC and develop their ability to solve resource constraints problems in entrepreneurial undertakings. We see the proposed pedagogy as potentially including some of the existing experiential methods for creative problem solving like, design thinking adapted to reflect the entrepreneurial reality of resource constraints. The proposed pedagogy will serve as a complimentary process that engages students in experiential creative practice needed in entrepreneurship, but then their solutions feed into a more traditional business plan.

6. DISCUSSION AND IMPLICATIONS

The EU 2020 strategy (2010) has recognized EE as an important tool in its Flagship Initiative 'Innovation Union,' which calls for EE in various levels to develop an innovative and creative spirit among students for the development of European entrepreneurial and innovative capabilities. Following this trend and the call for the creativity development in higher education, and more specifically EE (Gibb, 2011a), this paper aims to address the challenge of incorporating creativity training in entrepreneurial courses and designing a pedagogy to nurture the creativity pertinent to the entrepreneurial context. It should be well noted that an overall understanding of EC has to precede the design of an en-

trepreneurial pedagogy. Following the definition of EC by Amabile, we introduce the RBV to explain the creative process of entrepreneurs with regard to resource constraints, and propose bricolage, resource combination, and improvisation as crucial entrepreneurial behaviours that are associated with EE.

This paper begins by explaining the specificities of EC, and concludes that EC is a situated creativity that emerges from experiences that reflect the entrepreneurial process and corresponding contexts in which entrepreneurs operate. It is the creative ability that can be formed when students are exposed to real or simulated entrepreneurial experiences and contexts. We argue that the role of creativity has to be elaborated holistically in a broad entrepreneurial context, from opportunity discovery to exploitation. A single lens is essential to comprehensively capture and represent all the various contexts in which entrepreneurs operate. A RBV perspective is adopted in this paper to explain how EC manifests itself in constructing the resources. This is also the main contribution of this paper. As far as the pedagogy to nurture EC is concerned, whichever type of creativity training is to be introduced into EE, it has to be connected with real entrepreneurial behaviours and practices so as to provide the opportunity for experiential learning of students. Our study contributes to this by emphasizing two entrepreneurial behaviours - bricolage and improvisation as the creativity-stimulating modules in the pedagogy so that students have the chance to approach entrepreneurial problems creatively and receive experiential training that equips them with the right tools, skills, and mind-sets that are pertinent, not just to general creative problem solving, but more specifically to build their EC.

This paper has two main practical implications for EE. For educators who wish to incorporate creativity training in entrepreneurial courses, this paper has presented arguments that creativity training should be based on entrepreneurial contexts and designed specially to nurture EC. Specifically, this paper provides the inspiration for educators to encourage students to deal with resource constraint situations by employing the resource constructing means, i.e. bricolage and improvisation. Last but not the least, for educational policy makers in educational institutions at various levels who are to enact educational initiatives to foster creativity in EE, also need to provide relevant trainings and workshops for educators to discuss and practice how to appropriately simulate the entrepreneurial contexts to nurture EC.

This paper also has strong implications for future research. Particularly, there are plenty of creativity training methods in creativity literature that could be incorporated in the pedagogy to nurture EC, like the Parnes Program, Purdue's Creative Thinking Program, the Creative Problem Solving Program, and so on. Moreover, nurturing creative problem solving skills could become an important element in pedagogy if we consider that entrepreneurs are creatively dealing with resource constraint problems at various stages of entrepreneurial process. We believe that a careful consideration, selection, and inclusion of these creativity training programs will make the pedagogy more effective in nurturing EC.

Finally, we would like to highlight some limitations of our paper. This paper only theoretically proposes a model of EC, which could be used to design a pedagogy to stimulate

it. However, there is a need to put this pedagogy in practice and test its effectiveness in enhancing creativity before and after the course. In this sense, there is a need for defining the measured for this construct and a method to measure EC, which, however, is still lacking in the literature. What's more alternative teaching methods other than experiential learning could also be considered in designing the pedagogy.

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