

Facilitating entrepreneurial behavior development through learning

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Karen Williams Middleton

Div. Management of Organizational Renewal and Entrepreneurship

Chalmers University of Technology, Gothenburg, Sweden

karen.williams@chalmers.se

Abstract

Emphasis on developing new entrepreneurs is marked by the continued growth of entrepreneurial education programs (Finkle & Deeds, 2001; Katz, 2003; McMullan & Long, 1987; Solomon, 2007). While learning may be the dynamic process which enables entrepreneurial behavior to be enacted (Rae & Carswell, 2001), it is complex (Nicolini & Mesnar, 1995), and programs can have different objectives, methods and associated results (Kickul & Fayolle, 2007), with not all leading to the development of individuals capable of acting entrepreneurially.

A review of entrepreneurship education literature (Mwasalwiba, 2010) draws distinctions between education conducted *for*, *about*, *in* or *through* entrepreneurship. Many scholars agree that entrepreneurial education has to have an experiential learning perspective together with interactive pedagogy in order to enhance learning and innovative capacity (Barrett & Peterson, 2000; Collins, Smith, & Hannon, 2006; Hjorth & Johannisson, 2007; Honig, 2004; Johannisson, Landstrom, & Rosenberg, 1998; Vinton & Alcock, 2004; Yballe & O'Connor, 2000). I propose there is a potential to change or develop entrepreneurial behavior through learning building upon learning through social interaction. Based on a review of learning concepts, I argue that 'learning by doing' combined with mentoring processes can facilitate a decision cycle for testing hypotheses, providing feedback through physical engagement, and through reaction from a surrounding role-set. I describe this as learning through interaction. Interaction with a set of key stakeholders, called a role-set, facilitates "generative learning" (Barrett & Peterson, 2000; Gibb, 1997) providing insights into potential future action, including abilities to see possibilities beyond problem barriers. Learning through interaction involves experiential learning including reflection-in-action (Schön, 1984) and generative learning based upon cycles of hypothesis testing and feedback between the nascent entrepreneur and her role-set.

Keywords: entrepreneurial behavior, venture creation, university, interaction, facilitation, pre-emptive action, self-efficacy, entrepreneurial education

INTRODUCTION

The continued growth of entrepreneurial education programs can be seen to mark the importance of developing new entrepreneurs (Finkle & Deeds, 2001; Katz, 2003; McMullan & Long, 1987; Solomon, 2007), capable of building new ventures, or reinventing old ones, as stimuli to economic growth. However, the majority of these programs still emphasize learning *about* or *in* entrepreneurship (Mwasalwiba, 2010), with the most common methods utilized including business plan writing, lectures, some case studies and reading programs (Solomon, Duffy, & Tarabishy, 2002). These types of programs may indirectly facilitate capacity development in new entrepreneurs through knowledge about entrepreneurship (a ‘teaching about’ approach), but increasing emphasis is placed on action-based methods (Mwasalwiba, 2010) which instead impart knowledge how to achieve entrepreneurship (a ‘learning through’ approach).

Neck and Greene (2011) recommend entrepreneurial education that allows for students to practice entrepreneurship, including starting a business as coursework, simulating entrepreneurial activities, design-based thinking and reflective practice. Kyrö (2008) introduces action pedagogy involving stages of confusion, action and risk in order to develop emotional and affective learning, and Souitaris et al (2007) argue that programs including emotional elements have the most influence on increasing attitude and intention. However, these pedagogy do not necessarily address learning how to continually engage in entrepreneurial action, or clarify the behaviors that are learned through the action taken.

In order to investigate how entrepreneurial behavior can be facilitated through learning, I begin with the description of entrepreneurial behavior given by Gartner and Carter, stating that it is “an individual level phenomenon, which occurs over time (is a process), and results in an organization as the primary outcome of these activities” (2003, p 196). Entrepreneurial behavior is seen as an individual phenomenon, in contrast to an understanding of the behavior of a firm, involving discrete units of actions which can be observed (Bird & Schjoedt, 2009). It is behavior related to entrepreneurship seen as a process of emergence (Bhave, 1994; Gartner, Bird, & Starr, 1992; Reynolds & Miller, 1992), the outcome of which is the creation of a new venture (Gartner, 1988). Thus, for this paper, entrepreneurial behavior is initially defined as behavior of individuals engaging in a process of creating new ventures, where the process includes units of actions which can be observed by others.

The purpose of the paper is to explore the application of social learning theory to the process of entrepreneurship in order to address how behavior development could be facilitated through entrepreneurial education. As an emphasis on social learning theory recognizes a view of behavior as developed in relation to both the individual and her environment and through a process of creating a new venture, I pose the following questions:

RQ1: What entrepreneurial behaviors can be learned through interaction?

RQ2: How can an education facilitate learning entrepreneurial behaviors through interaction?

I use four terms to demarcate how I intend to relate to entrepreneurial behavior development and facilitation for the purpose of this paper – nascent, venture creation, opportunity-based, and university. My intention is to describe my area of study as associated to entrepreneurship taking place at the university, often building upon an opportunity with the potential for intellectual

property protection. The entrepreneurial process, intending to result in a venture is driven by individuals who do not have prior experience in creating and incorporating a venture, often termed nascent. The paper proceeds by first discussing existing literature regarding nascent entrepreneurial behavior, both from the perspective of sets of actions and as part of a process, in order to suggest entrepreneurial behaviors to be learned. Next, learning theories are discussed to illustrate a relationship to developing and shaping behavior, both independent and applied to new venture creation. Building upon literature and theories presented, I propose a model for learning entrepreneurial behavior, presented in Figure 2. Finally, I discuss the facilitation of the model in an educational environment and the potential benefits of learning through interaction.

ENTREPRENEURIAL BEHAVIOR

Sets or combinations of activities associated to creating new ventures have been described as both lists of activities (for a review of previous studies, see Gartner, Carter, & Reynolds, 2004a) or articulated as actions or skills linked to certain phases of a process (for example see Baron, 2002). These actions are sometimes categorized into sets of actions, such as implementing a productive process, establishing firm presence and creating organizational and financial structures (Reynolds, 2007), which have been found to be important to the creation of a new venture and can thus be initially proposed as potential entrepreneurial behaviors.

Start-up activities

Nascent entrepreneurship, also known as firm gestation or organizational emergence, start-up, founding, etc. (Aldrich, 1999; Carter, Gartner, & Reynolds, 1996). A growing stream of research is attempting to investigate and better understand nascent entrepreneurship as it occurs, through large scale studies. These studies, such as the Panel Studies of Entrepreneurial Dynamics (PSED) I and II (Gartner, Shaver, Carter, & Reynolds, 2004b; Reynolds, 2000, 2007; Reynolds, Carter, Gartner, & Greene, 2004), generally attempt to identify individuals that have initiated engagement in the process of entrepreneurship (defined as new firm creation) and investigate factors of the entrepreneurial process that might influence their engagement in becoming nascent entrepreneurs. Findings from these studies state that, in general, it is the actions taken by the individual(s), and not their characteristics, that impacts new venture creation.

Gartner, Carter and Reynolds (2004a) select a specific set of questions from the PSED I data that they associate to start-up activities, and perhaps more importantly for the purpose of this paper, refer to as behaviors, based on a line of argumentation built from previous studies. They analyze data to determine the weighted frequency of the activities taken by the nascent entrepreneurs. The activities (behaviors), frequency (listed instead as a rank, with the highest frequency receiving rank 1, the next highest receiving rank 2 and so on), and reference ID to the PSED I question are presented in Table 1. The first and last columns are taken from a study by Liao and Welsch (2008), who also utilize the PSED I question/data, and establish four categories of activities, which I in turn term entrepreneurial behaviors, based on the definition of entrepreneurial behavior as discrete units of actions carried out through a process in which a new venture is the outcome, and relating back to how Gartner, Carter and Reynolds reference the same activities as behaviors in their study. The categories are seen to also align with the general behaviors taken from Reynolds (2007), where establishing legitimacy relates to establishing firm presence and the other categories relate to creating organizational and financial structures.

Table 1. Entrepreneurial behaviors associated to start-up activities

Entrepreneurial Behaviors	Start-up Activities (behaviors)	Gartner Freq. Rank	PSED I ID	Liao & Welsch ID
<i>Planning Activities</i>	Spent time thinking about a business	1	109	A
	Taken classes or workshops regarding starting a business	2	167	T
	Saving money to invest in the business	3	139	K
	Business plan prepared	8	111	B
	Start-up team organized	9	116	C
	Arranged for child care/help	12	150	O
	Developed projected financial statements	17	137	J
<i>Establishing Legitimacy</i>	Filed an income tax return	14	179	Y
	Opened a bank account exclusive to the new business	18	160	R
	Created a telephone listing	22	171	U
	Paid social security taxes	22	177	X
	Created a phone line	24		V
	Paid unemployment insurance tax	26	175	W
	Listed with Dun and Bradstreet	26	185	Z
<i>Resource Combination</i>	Have invested own money in the business	4	143	L
	Purchased raw materials, inventory, supplies or components	7	128	G
	Purchase, lease or rent of equipment, facilities or property	10	131	H
	Established credit	13	149	N
	Begun to devote full time (35+ hours per week)	15	153	P
	Application for patent, copyright, trademark submitted	16	124	F
	Asked financial institutions/others for funds	20	145	M
	Hired (for pay) employees or managers	21	155	Q
<i>Market Behavior</i>	Developing of product or service	5	120	D
	Effort to define the market opportunity	6	134	I
	Marketing or promotional efforts started for product/service	11	122	E
	Received money, income or fees from sales of goods/services	19	162	S
	Monthly revenue exceeds monthly expenses	24	163	

Large scale studies have, however, faced some challenges regarding definitions of entry and exit, heterogeneity of populations, various biases, and under-coverage. Maintaining a focus on entrepreneurial behaviors (as associated to activities), one attempt to resolve challenges regarding definition of entry and exit is to look at how activities are presented from a process perspective.

The Process of Entrepreneurship

Researchers have addressed the process of creating a new venture by asking questions such as ‘how does the organization come into existence?’ (Herbert & Link, 1982; Shapero & Sokol, 1982) only to find that a process of entrepreneurship does not follow one distinct sequence of events (Alsos & Kolvereid, 1998; Carter et al., 1996; Gartner & Carter, 2003). A review of literature results in various conceptual models of the entrepreneurial process, three of which I relate to directly in this paper (Baron, 2002; Bygrave, [1989] 2002; Reynolds et al., 2004). In addition, exploring models of the entrepreneurship process in association to the context of the university, I also relate to Rothaermel et al. (2007) to include processes of incubation and technology transfer. By relating selected different models and descriptions to one another, including the incubation (Hackett & Dilts, 2004) and technology transfer (Harmon et al., 1997) process descriptions, a synthesis of the models related to new venture creation in the university environment can be generated, designating a main transition point of incorporation (also referred to as launch, birth, etc.) (Williams Middleton, 2010). This allows for allocation of activities from the various models to two main phases: pre-incorporation and post-incorporation.

Table 2. Categorizing actions associated to entrepreneurship process models

Entrepreneurial Behaviors	Actions associated to pre-incorporation	Actions associated to post-incorporation
<i>Planning Activities</i>	Search for opportunity ^{a,d} , identify funding sources ^{a,c} , diagnose business needs ^c	Sales and business development strategies ^a , communication with staff and stakeholders ^a
<i>Establishing Legitimacy</i>	Determine legal form ^a , determine individual role (title) ^{b,c,d}	Leadership ^a , communication with staff, customers and stakeholders ^a , conflict management ^a , pay taxes ^e
<i>Resource Combination</i>	Technology development ^d , protect/secure intellectual property (patenting) ^{a,d} , secure funding sources ^{a,c} , secure network ^c , product or service development ^c	Staffing ^a , product or service distribution ^c , communication with customers, partners, suppliers and distributors ^{a,c}
<i>Market Behavior</i>	Identify opportunity ^{a,d} , select application and business model ^{c,d} , secure suppliers and distributors ^c , compete ^b	Compete ^b , marketing and sales ^a , communication with customers, partners, suppliers and distributors ^{a,c}

a Baron (2002); b Bygrave ([1989] 2002); c Hackett and Dilts (2004); d Harmon et al. (1997); e Reynolds et al. (2004)

The activities identified by Baron (2002), Bygrave ([1989] 2002), and Reynolds et al. (2004) as well as actions outlined in association to incubation (Hackett & Dilts, 2004) and technology transfer¹ (Harmon et al., 1997) processes, are designated as pre-incorporation and post-incorporation. These are compared to the 26 activities of Liao and Welsch (2008) in order to designate the activities as relative to categories of entrepreneurial behavior. This is summarized in Table 2. Subscript letters are used to designate the reference for each action listed.

Both Table 1 and Table 2 have been correlated to the Liao and Welsch (2008) categories, presenting entrepreneurial activities (also referred to by some as behaviors) from independent authors. When looking at tables in comparison, the following may be recognized. First, many of the activities are common to both tables, such as technology development, secure funding source, and paying taxes. However, in Table 1, most of the activities are described from the perspective of the entrepreneur, which is of course in line with the nature of the study from which the activities were taken. In Table 2, the activities are described in association to the process, which illustrates that actions are identified as conducted in interaction with others, for example conflict management and communication with customers, partners, suppliers and distributors. Furthermore, actions indicating interaction are associated to the post-incorporation phase, even though these actions are still consistent with those presented in Table 1. As the activities in both tables can be seen as comparable to one another, I first argue for entrepreneurial behaviors as those associated to sets of actions regarding planning, establishing legitimacy, combining resources and marketing; and that such behaviors may be shaped by engagement in the process of new venture creation and involving social interaction. Relating to the actions and behaviors associated to the process, I will next address how the development of entrepreneurial behavior in the nascent entrepreneur is a function of the individual and her environment, in order to illustrate how entrepreneurial learning specifically around action and behavior can take place.

BEHAVIOR AND LEARNING

Most learning theories and entrepreneurial education structures propose ways in which entrepreneurial ‘behaviors’ can be taught and transferred to individuals. Various educational structures focus upon changing attitudes about entrepreneurship or even intentions to act entrepreneurially (Mwasalwiba, 2010), building upon theories of planned behavior (Fishbein & Ajzen, 1975), instead of direct impact upon taking action. Research regarding environmental impact on behavior has mainly focused on intention to act (Autio, Keeley, Klofsten, Parker, & Hay, 2001; Lüthje & Franke, 2003), and not actual observed behavior. As programs have different objectives, methods and associated results (Kickul & Fayolle, 2007), there are still some gaps in understanding how the process and of new venture creation shapes entrepreneurial behavior, and how this can be learned.

Social Learning Theory

As a part of Social Learning Theory (1977), Albert Bandura argues that human behavior is developed in relation to one’s environment (see Figure 1), in combination with personal variables (cognitive, affective and biological events), through observational learning (1977) and reciprocal determinism (1978). While individuals can influence what they do, they are not the sole determiners of what happens to them, and thus human agency operates within a network of

¹ Diagnosis of business needs, selection and application of business services, financing and network access, and technology development and patenting.

sociostructural influences (Bandura, 1997). It is important to note that determinism is not counter to freedom to exert control. Individuals with abilities to enact options and aware of their own motivations will have greater freedom to make things happen. These abilities relate to an individual's expectations of their ability to successfully perform a task – a concept called self-efficacy (Bandura, 1982). Levels of self-efficacy equate to the individual's expectation of their contribution to a given setting, and stem from their foresight and proficiency of understanding their beliefs and motivations – processes which can be learned.

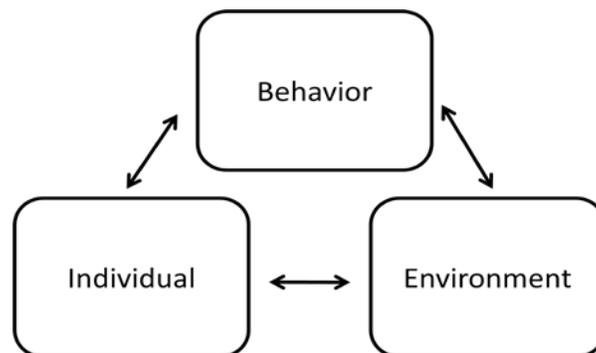


Figure 1. Behavior as a function of individual and environment

Both individual and collective efficacy (a group-level belief built from group dynamics) contribute to human adaptation, and thus individual and social change are complementary (Bandura, 1997). Behavior is learned not only through observation of others, but then through practicing the actions required to perform the behavior (Bratton, Sawchuk, Forshaw, Callinan, & Corbett, 2010, p 169). These processes include observational learning, imitation, and social modeling. Individuals observe and take note of the behavior of others, perceived as knowledgeable or credible, and then practice the behavior and experience the consequences of the behavior. The extent to which the individual succeeds or fails in promoting emotional and practical skills shapes self-perception and perception by others.

Bandura's theories relate to Vygotsky's Principle which states that behavior is developed both on a social level and on an individual level (Vygotsky, 1978, p 57), initiating with the social level, such that behaviors "originate as actual relationships between individuals." Expanding upon Vygotsky, the focus on the contribution of the others in the social interaction can be understood as a mentor-mentee relationship where the less skilled mentee attempts to accomplish a task, supported by the mentor. If the mentee cannot perform the task to completion, the mentor helps to accomplish the task, in a way that the mentee can observe and copy the mentor's actions for future tasks (Harré & van Langenhove, 1999).

Positioning Theory

Harré and Langenhove state "positioning can be understood as the discursive construction of personal stories that make a person's actions intelligible and relatively determinate as social acts..." (1999, p 18). This recognizes the act of positioning as a communicated process that clarifies the particular 'role' (role is the static description) or interactive relation between those involved. Positioning can allow for mutual determination for interaction or can instigate a dialogue or several dialogues in which the 'roles' presented are negotiated and redefined. I see this concept as important to understand the process of developing entrepreneurial behavior

because it emphasizes the social interaction that can affect the actions taken by the nascent entrepreneur. Applying the concept of negotiated rights and duties allows for exploration of how relationships are formed and developed over time, including understanding of relationship formation and change (Bullough & Draper, 2004).

Relating to the field of entrepreneurship, Carsrud and Johnson's (1989) propose that entrepreneurial behavior is determined by social context and situations, including role-sets (Aldrich & Zimmer, 1986) and patterns of social interaction leading to entrepreneurial self-efficacy (Pruett, Shinnar, Toney, Llopis, & Fox, 2009) in relation to specific resources. I propose a role-set definition that not only includes the family members, financiers, partners and distributors suggested by Carsrud and Johnson (1989), but also includes other advisors and coaches, such as faculty, alumni and board members. Thus, positioning theory provides a perspective upon how learning can be facilitated through interaction with a role-set. Conversations between the nascent entrepreneur and her role-set allow for discussion and negotiation of rights and duties regarding the expectations of a role, and the associated actions that can therefore be taken. The nascent entrepreneurs observe, imitate and model actors in the role-set in balance with testing and promoting their own beliefs and motivations. Through positioning, behaviors are perceived and promoted as acceptable or not, which can influence self-efficacy.

Effectuation

Engaging in the entrepreneurial process is considered critical to import some of the knowledge, skill and attitude of an entrepreneur (Fletcher & Watson, 2007; Garavan & O'Cinneide, 1994; Rae, 2005; Rasmussen & Sorheim, 2006; Solomon, 2007; Souitaris et al., 2007). Behavior is learned through experimental and experiential engagement in the process (Deakins & Freel, 1998), and utilizing interpretation and feedback from surrounding factors is part of the decision to act in one particular way or another (Anderson, 2000). Behavior learned through engagement and experience of having achieved entrepreneurial success is the basis of effectuation (Sarasvathy, 2008). Sarasvathy clarifies that effectuation is not a logic of 'anything goes', intuition, passion, and fearlessness in the face of risk. Effectuation is a process of logical reasoning, just like causal determinism. It is just that the reasoning takes place in an 'effectual problem space' which consists of three elements: uncertainty (the impossibility to calculate the probability for future consequences), goal ambiguity (preferences are not given or prioritized), and isotropy (lack of clarity about which elements of the environment to pay attention to) (Sarasvathy, 2008, p 70). Effectuation is the logic an individual utilizes in the face of the effectual problem space in order to make decisions, involving personal observation with induction and building and shaping consensus with stakeholder partnership in order to control and shape the future. Effectuation suggests that new venture creation is largely driven by the relationships the entrepreneur has with her stakeholders, and the ability to manage and utilize the stakeholders to develop contingencies that the new venture can leverage into profitable opportunities (Sarasvathy, 2008, p 239).

A SYSTEMS PERSPECTIVE

Exploring *inter*-action influencing entrepreneurial behavior development requires a perspective that accommodates the interconnectivity or interdependency of various parts. I describe this as a

systems perspective², exploring various relationships and interdependent parts such that this perspective recognizes that the interactions of the various actors and components are collectively contributing to the empirical setting. While recognizing entrepreneurial behavior as an individual phenomenon, the systems perspective attempts to capture the structured context, illustrating that the individual does not act independently in a vacuum, but rather is inter-dependent in relation to other actors, components or a combination thereof when involved in the process of new venture creation. This can be seen as analogous with the concept of embeddedness. “The concept of embeddedness expresses the notion that social actors exist within relational, institutional, and cultural contexts and cannot be seen as atomized decision-makers maximizing their own utilities. Embeddedness approaches prioritize the different conditions within which social action takes place.” (Ghezzi & Mingione, 2007, p 11). A systems perspective does not intend to explain or depict relationships, but simply to communicate different ‘levels’ impacting the nascent entrepreneur and the way in which behavior is being developed in that individual within the ‘organizing context’. The ‘organizing context’ can be represented as including different levels, each of which includes actors and components potentially influencing, shaping and developing entrepreneurial behavior due to the way in which they affect interaction with the nascent entrepreneur. The nascent entrepreneur is the focal point of the interdependent action.

LEARNING THROUGH INTERACTION

Entrepreneurial behavior is recognized in this paper as an individual phenomenon developed through social interaction as part of a process of emergence, where behavior is understood as observable action. Interaction includes not only experiential and experimental learning while engaging in the entrepreneurial process, but also the questioning, provoking, stimulating and reacting between the individual and the role-set. Thus, while entrepreneurial behavior development is an individual phenomenon, the process in which the development takes place includes collaborative action based on critical relationships with other actors (Karatas-Özkan & Murphy, 2006), impacting how the behavior is received and affirmed (or not) as it is enacted by the nascent entrepreneur.

Social interactions are then used to facilitate learning related to the development of entrepreneurial behavior. Each interaction signifies a change in understanding and action, and a potential for change in behavior, which opens or restricts the ways of making sense about the interaction (Bouwen & Steyaert, 1990). The ‘individual as nascent entrepreneur’, i.e. the position, is accepted, rejected, improved upon and/or in other ways socially determined through the interplay of actors. Rights and duties given, developed, claimed, and championed within conversations in relation to others illustrates the social influence of, for example, the role-set and the various behavioral strategies that are utilized as the individual attempts to fill the aspired role of entrepreneur. Building upon the social learning theory, as framed in Figure 1, positioning theory is translated into a conceptual model, emphasizing social interactions between the nascent

² A systems perspective is not to be confused with system theory; the intention is not to describe the process or the empirical setting as a system. Actors of the role-set are not necessarily employees of the empirical setting, and may have other professional roles, thus being only be associated to, or even independent of the empirical setting or organizing context. Similarly, different structural components, designs, routines, etc. may be either common to the entire empirical setting, or specific to certain parts. The empirical setting may be better understood as an ecosystem of actors, structures and procedures that interact as part of a learning process in order to develop meaning and identity.

entrepreneur and the role-set, highlighting communication of rights and actions in relation to one another. Rights, duties, and actions taken can constitute individual and collective adaptation and efficacy. This is conceptually illustrated in Figure 2, where the interactions are expanded to include an illustration of the negotiated rights and duties that occur through interaction between the nascent entrepreneur and the role-set. This is presented within the context of new venture creation, and as the behavior is being shaped as part of the process of new venture creation, it is considered entrepreneurial behavior.

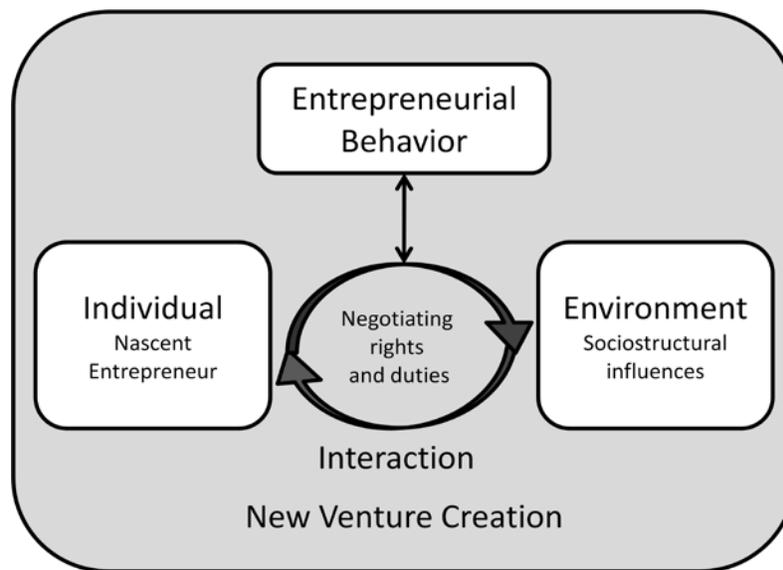


Figure 2. A model for facilitating development of entrepreneurial behavior

The model in Figure 2 proposes that entrepreneurial behavior, behavior shaped when creating a new venture, is developed through a process of learning through interaction, in particular, with the associated role-set. But, returning to my first research question, RQ1: What entrepreneurial behaviors can be learned through interaction? Stating that behavior associated to the process of creating a new venture is not a satisfactory answer, so I will start by returning to the entrepreneurial behaviors I identified stemming from existing literature, namely planning activities, establishing legitimacy, resource combination and market behavior. I would argue that planning activities, resource combination and market behavior are actually all behaviors associated to effectuation logic. The activities associated to these three categories, both in Table 1 and Table 2, involve the nascent entrepreneur's ability to manage and utilize stakeholders to develop contingencies and/or opportunities. These stakeholders facilitate access to networks which allow for investment, or may even be included in the investing actors. Sarasvathy communicates this as the integration of faces and wallets (Sarasvathy, 2008, p 238). Ultimately, the nascent entrepreneur is behaving to reduce the uncertainty and ambiguity of the effectual problem space, in combination with causal logic, in order to make decisions and act upon them.

Establishing legitimacy is slightly different, as this behavior is associated to a perception or assumption about, in the case of a nascent entrepreneur, a role. Suchman defines legitimacy as “a generalized perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms, values, beliefs and definitions”

(1995, p 574). Establishing legitimacy behaviors are the actions the nascent entrepreneur is taking to claim the rights and duties associated to the role of entrepreneur in the process of creating a new venture. Referring again to the Tables, this is illustrated as actions either directly associated to the role (ex. creation of legal entity, leadership), or actions appropriate to the social norms expected of the role (ex. payment of taxes).

Thus, I propose that entrepreneurial behaviors that can be learned through interaction can be described as two ‘meta-behaviors’: establishing legitimacy and reducing uncertainty and ambiguity. Learning through interaction can be seen as taking place in the moment, relative to a particular event or incident. However, while the experiential learning gained in each interaction is unique, it is not independent. Building upon learning concepts, I argue that interaction with the role-set also facilitates “generative learning” (Barrett & Peterson, 2000; Gibb, 1997) providing insights into potential future action, including abilities to see possibilities beyond problem barriers. Mentoring and positioning processes facilitate discussion between nascent and the role-set in effectual problem space. Building upon the already gained effectual reasoning of expert entrepreneurs [actors in the role-set] (Sarasvathy, 2008), allows for a cycle for testing hypotheses which includes feedback as well as ability to emulate behavior (social learning). As the role-set is also the stakeholder network of the nascent entrepreneur, the nascent entrepreneur also develops of effectuation logic while engaged in the process of venture creation. I collectively describe the learning processes as learning through interaction. Learning through interaction thus involves experiential learning including reflection-in-action (Schön, 1984) and generative learning based upon cycles of hypothesis testing and feedback between the nascent entrepreneur and her role-set and allows for development of effectual logic and self-efficacy.

Finally I argue that the establishment of legitimacy and reduction of uncertainty/ambiguity is not only affected by cycles of interaction between the nascent entrepreneur and her role-set. In an educational setting, this behavior development can be facilitated by introducing actions associated post-incorporation into the pre-incorporation phase – described as pre-emptive action. This leads to a discussion relating to RQ2: How can an education facilitate learning entrepreneurial behaviors through interaction?

INTERACTION FACILITATING ENTREPRENEURIAL BEHAVIOR

The creation of a learning space (Kolb & Kolb, 2005), which includes the elements of the effectual problem space (Sarasvathy, 2008), can be facilitated through an educational framework that includes new venture creation as a primary function of the process – often communicated as action-based entrepreneurial education (Rasmussen & Sorheim, 2006) or education which allows for practicing entrepreneurship (Neck & Greene, 2011). However, in order to benefit from learning through interaction, it is important that the learning space provided also include social and support networks, such as a role-set. Not only can these networks enhance new venture survival as they help to overcome the liability of underdeveloped social ties between new ventures and their external stakeholders (Stinchcombe, 1965; Stuart, Hoang, & Hybels, 1999), but they are fundament to the development of effectual logic and social learning, as discussed previously in the paper.

The nascent entrepreneur engaging in such an environment can be seen as developing behavior towards future entrepreneurial actions by practicing in interaction with the role-set. This can be seen as developing behavior which can reduce uncertainty and ambiguity, as learning regarding future actions can be gained while in the pre-incorporation phase. The actions normally attributed to post-incorporation can be practiced in a pre-incorporation phase in order to inform decisions that will be necessary in the later stages of venture development. Ambiguity about how to act can be seen as reduced, as the feedback loop informs the nascent entrepreneur how better to act in order to achieve the objective of starting a new firm. Taking this 'pre-emptive action' also allows for legitimizing behavior in the role of entrepreneur even before the legal form of the business is in place through interaction with the role-set, in which rights and duties claimed by the nascent entrepreneur are negotiated, challenged, recognized or rejected. West and Wilson (1995) find that ventures often fail because nascent entrepreneurs do not properly monitor information and opportunities, because their perspectives are limited to their previous experience. Pre-emptive action, particularly in combination with learning through interaction with the role-set, can allow the testing of potential future scenarios by the nascent entrepreneur, and is particularly beneficial if the factors of the environment facilitate some protection from failure consequences.

When 'pre-emptive' action is facilitated, the nascent entrepreneurs, in interaction with their role-set, are not just talking 'as if' (Gartner et al., 1992), but engaging in practicing and carrying out actions 'as if' they were already business owners and their firms were already established as incorporated firms. Facilitation of pre-emptive action allows for informing and making decisions based on hypothesis testing which can build confirmation of actions and develop self-efficacy. Actions associated to post-incorporation, such as staffing, marketing, sales strategies, conflict management, leadership, communication with staff, customers, and stakeholders, introduced into the design of an educational environment can facilitate development of behavior towards future entrepreneurial activity related to planning, marketing and resource combination. In some cases, these post-incorporation actions can be integrated with pre-incorporation actions.

CONCLUSIONS

Nascent entrepreneurs need to develop behavior to establish legitimacy and reduce uncertainty and ambiguity, which can potentially decrease failure associated to liability of newness, liability of underdeveloped social ties between new ventures and their external stakeholders, or lack of self-efficacy. These behaviors can be developed through social interaction with a key set of actors, the role-set. Behaviors are developed through learning, including cycles of interaction where nascent entrepreneurs not only observe, imitate and model mentors and role models with experiential or expert knowledge, but also engage in testing hypotheses and negotiating actions and positions while engaging in creating a new venture. The learning is facilitated through both organic interactions that naturally occur between the nascent and the role-set while undergoing the venture creation, but can also be triggered through designed interactions, where communication is facilitated and feedback stimulates reflection in action and negotiation. Interaction can also be triggered through introducing and integrating actions which are associated to future expected actions or needs of the venture during the pre-incorporation phase, allowing for testing of hypotheses and feedback.

Pre-emptive action allows the nascent entrepreneur to practice future action, developing better understanding of expectations based on behavior, thus increasing self-efficacy. Interaction and

pre-emptive action develops the behavior of reducing uncertainty/ambiguity as the nascent entrepreneur, in counsel with others, gathers, tests, analyzes and determines information to shape or inform decisions, either through establishing predetermined outcomes where none existed (reduction of uncertainty), or improving information about the likelihood of predetermined outcomes (reduction of ambiguity). Interaction and pre-emptive action can be facilitated through the creation of a learning space (Kolb & Kolb, 2005), particularly when involving a role-set. The framework of a learning space is facilitated by a multitude of environmental factors on different systemic levels.

Increased legitimacy and reduced uncertainty/ambiguity can be seen as affecting self-efficacy in the nascent entrepreneur, as she feels more confident in the expected outcome of her actions. Although beyond the purpose of the current paper, increased self-efficacy of actions can also be understood as impacting the way in which the nascent entrepreneur interacts and negotiates with the environment, potentially influencing change in environmental factors, such as the proposition of new policies, or introduction of new social norms and values, thus increasing self-efficacy about engaging in the process of venture creation. Individuals interested in careers in entrepreneurship can seek out learning spaces capable of facilitating interacting with entrepreneurial communities or designed role-sets, as these allow for development of entrepreneurial behavior. As the behavior is developed through a learning process while the venture is created, prior to the 'success' or 'failure' of the venture, it is proposed that the behavior developed is not specifically contingent on the venture success.

REFERENCES

- Aldrich, H. E. 1999. **Organizations Evolving**. Newbury Park, CA: Sage Publications.
- Aldrich, H. E., & Zimmer, C. 1986. Entrepreneurship through social networks. In D. Sexton, & R. Smilor (Eds.), **The Art and Science of Entrepreneurship**: 3-23. Cambridge, MA: Ballinger.
- Alsos, G. A., & Kolvereid, L. 1998. The business gestation process of novice, serial and parallel business founders. **Entrepreneurship Theory and Practice**, 22(4): 101-114.
- Anderson, A. R. 2000. Paradox in the periphery: an entrepreneurial reconstruction? **Entrepreneurship and Regional Development**, 12(2): 91-109.
- Autio, E., Keeley, R. H., Klofsten, M., Parker, G. G. C., & Hay, M. 2001. Entrepreneurial Intent among Students in Scandinavia and in the USA. **Enterprise & Innovation Management Studies**, 2(2): 145-160.
- Bandura, A. 1977. **Social Learning Theory**. New York, NY: General Learning Press.
- Bandura, A. 1978. The self system in reciprocal determinism. **American Psychologist**, 33: 344-358.
- Bandura, A. 1982. Self-efficacy mechanism in human agency. **American Psychologist**, 37: 122-147.
- Bandura, A. 1997. **Self-efficacy: the exercise of control**. New York, NY, USA: W. H. Freeman and Company.
- Baron, R. A. 2002. OB and entrepreneurship: The reciprocal benefits of closer conceptual links. **Research in Organizational Behavior**, 24: 225-269.
- Barrett, F. J., & Peterson, R. 2000. Appreciative Learning Cultures: Developing Competencies for Global Organizing. **Organizational Development Journal**, 18(2): 10-21.
- Bhave, M. P. 1994. A process model of entrepreneurial venture creation. **Journal of Business Venturing**, 9(3): 223-242.
- Bird, B., & Schjoedt, L. 2009. Entrepreneurial Behavior: Its Nature, Scope, Recent Research, and Agenda for Future Research. In A. L. Carsrud, & M. Brännback (Eds.), **Understanding the Entrepreneurial Mind: Opening the Black Box**: 327-358. New York, NY: Springer.
- Bouwen, R., & Steyaert, C. 1990. Construing organizational texture in young entrepreneurial firms. **Journal of Management Studies**, 27(6): 637-649.
- Bratton, J., Sawchuk, P., Forshaw, C., Callinan, M., & Corbett, M. 2010. **Work and Organizational Behaviour** (2nd ed.). Basingstoke, UK: Palgrave Macmillan.
- Bullough, R. V., Jr., & Draper, R. J. 2004. Making Sense of a Failed Triad: mentors, university supervisors, and positioning theory. **Journal of Teacher Education**, 55(5): 407-420.
- Bygrave, W. D. [1989] 2002. The Entrepreneurship Paradigm (I): A Philosophical Look at Its Research Methodologies. In N. F. Krueger (Ed.), **Entrepreneurship: Critical Perspectives on Business and Management**, Vol. 3: 415-437. London: Routledge.
- Carsrud, A. L., & Johnson, W. R. 1989. Entrepreneurship: a social psychological perspective. **Entrepreneurship and Regional Development**, 1(1): 21-31.
- Carter, N. M., Gartner, W. B., & Reynolds, P. D. 1996. Exploring start-up event sequences. **Journal of Business Venturing**, 11(3): 151-166.
- Collins, L., Smith, A., & Hannon, P. 2006. Applying a synergistic learning approach in entrepreneurship education. **Management Learning**, 37(3): 335-354.
- Deakins, D., & Freel, M. 1998. Entrepreneurial learning and the growth process in SMEs. **The Learning Organization**, 5(3): 144-155.
- Finkle, T. A., & Deeds, D. 2001. Trends in the market for entrepreneurship faculty, 1989-1998. **Journal of Business Venturing**, 16(6): 613-630.
- Fishbein, M., & Ajzen, I. 1975. **Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research**. Reading, MA, USA: Addison-Wesley Publishing Company.

- Fletcher, D. E., & Watson, T. M. 2007. Entrepreneurship, Management Learning and Negotiated Narratives: 'Making it Otherwise for Us - Otherwise for Them'. *Management Learning*, 38(1): 9-26.
- Garavan, T. N., & O'Connell, B. 1994. Entrepreneurship Education and Training Programmes: A Review and Evaluation - Part 1. *Journal of European Industrial Training*, 18(8): 3-12.
- Gartner, W. B. 1988. "Who is an Entrepreneur?" Is the Wrong Question. *American Journal of Small Business*, 12(4): 11-32.
- Gartner, W. B., Bird, B. J., & Starr, J. A. 1992. Acting As If: Differentiating Entrepreneurial From Organizational Behavior. *Entrepreneurship: Theory & Practice*, 16(3): 13-31.
- Gartner, W. B., & Carter, N. M. 2003. Entrepreneurial behavior and firm organising processes. In Z. J. Acs, & D. B. Audretsch (Eds.), *Handbook of Entrepreneurship Research*: 195-221. Dordrecht, NL: Kluwer.
- Gartner, W. B., Carter, N. M., & Reynolds, P. D. 2004a. Business start-up activities. In W. B. Gartner, K. G. Shaver, N. M. Carter, & P. D. Reynolds (Eds.), *Handbook of Entrepreneurial Dynamics: The Process of Business Creation*: 285-298. Thousand Oakes: Sage.
- Gartner, W. B., Shaver, K. G., Carter, N. M., & Reynolds, P. D. 2004b. *Handbook of Entrepreneurial Dynamics: The Process of Business Creation*. Thousand Oaks, CA: Sage.
- Ghezzi, S., & Mingione, E. 2007. Embeddedness, Path Dependency and Social Institutions: An Economic Sociology Approach. *Current Sociology*, 55(1): 11-23.
- Gibb, A. A. 1997. Small firms' training and competitiveness. Building on the small business as a learning organisation. *International Small Business Journal*, 15(3): 13-29.
- Hackett, S. M., & Dilts, D. M. 2004. A Systematic Review of Business Incubation Research. *Journal of Technology Transfer*, 29: 55-82.
- Harmon, B., Ardishvili, A., Cardozo, R., Elder, T., Leuthold, J., Parshall, J., Raghian, M., & Smith, D. 1997. Mapping the university technology transfer process. *Journal of Business Venturing*, 12(6): 423-434.
- Harré, R., & van Langenhove, L. 1999. *Positioning Theory*. Oxford, UK: Blackwell Publishers Ltd.
- Herbert, R. F., & Link, A. N. 1982. *The Entrepreneur*. New York, NY: Praeger.
- Hjorth, D., & Johannisson, B. 2007. Learning as an entrepreneurial process. In A. Fayolle (Ed.), *Handbook of Research in Entrepreneurship Education, Volume 1: A General Perspective*: 46-66. Cheltenham, UK: Edward Elgar Publishing Limited.
- Honig, B. 2004. Entrepreneurship education: toward a model of contingency-based business planning. *Academy of Management Learning and Education*, 3(3): 258-273.
- Johannisson, B., Landstrom, H., & Rosenberg, J. 1998. University training for entrepreneurship -- an action frame of reference. *European Journal of Engineering Education*, 23(4): 477-496.
- Karatas-Özkan, M., & Murphy, W. D. 2006. Venturing as a relational process. In O. Kryriakidou, & M. F. Ozbilgin (Eds.), *Relational Perspectives in Organization Studies: a Research Companion*: 112-137. Cheltenham, UK: Edward Elgar.
- Katz, J. A. 2003. The chronology and intellectual trajectory of American entrepreneurship education: 1876-1999. *Journal of Business Venturing*, 18(2): 283-300.
- Kickul, J., & Fayolle, A. 2007. Cornerstones of change: revisiting and challenging new perspectives on research in entrepreneurship education. In A. Fayolle (Ed.), *Handbook of Research in Entrepreneurship Education, Volume 1: A General Perspective*: 1-20. Cheltenham, UK: Edward Elgar Publishing Limited.
- Kolb, A. Y., & Kolb, D. 2005. Learning Styles and Learning Spaces: Enhancing Experiential Learning in Higher Education. *Academy of Management Learning and Education*, 4(2): 193-212.
- Kyrö, P. 2008. A theoretical framework for teaching and learning entrepreneurship. *International Journal of Business and Globalisation*, 2(1): 39-55.

- Liao, J., & Welsch, H. 2008. Patterns of venture gestation process: Exploring the differences between tech and non-tech nascent entrepreneurs. *The Journal of High Technology Management Research*, 19(2): 103-113.
- Lüthje, C., & Franke, N. 2003. The making of an entrepreneur: testing a model of entrepreneurial intent among engineering students at MIT. *R&D Management*, 33(2): 135-146.
- McMullan, W. E., & Long, W. A. 1987. Entrepreneurship education in the nineties. *Journal of Business Venturing*, 2(3): 261-275.
- Mwasalwiba, E. S. 2010. Entrepreneurship education: a review of its objectives, teaching methods, and impact indicators. *Education + Training*, 52(1): 20-47.
- Neck, H., & Greene, P. 2011. Entrepreneurship Education: Known Worlds and New Frontiers. *Journal of Small Business Management*, 49(1): 55-70.
- Nicolini, D., & Mesnar, M. B. 1995. The social construction of organisational learning: conceptual and practical issues in the field. *Human Relations*, 48(7): 727-747.
- Pruett, M., Shinnar, R., Toney, B., Llopis, F., & Fox, J. 2009. Explaining entrepreneurial intentions of university students: a cross-cultural study. *International Journal of Entrepreneurial Behaviour & Research*, 15(6): 571-594.
- Rae, D. 2005. Entrepreneurial learning: a narrative-based conceptual model. *Journal of Small Business and Enterprise Development*, 12(3): 323-335.
- Rae, D., & Carswell, M. 2001. Towards a conceptual understanding of entrepreneurial learning. *Journal of Small Business and Enterprise Development*, 8(2): 150-158.
- Rasmussen, E. A., & Sorheim, R. 2006. Action-based entrepreneurship education. *Technovation*, 26(2): 185-194.
- Reynolds, P. D. 2000. National panel study of US business start-ups. Background and methodology. In J. A. Katz (Ed.), *Advances in Entrepreneurship, Firm Emergence and Growth*, Vol. 4: 153-227. Stamford, CT: JAI Press.
- Reynolds, P. D. 2007. New Firm Creation in the United States: A PSED I Overview. *Foundations and Trends in Entrepreneurship*, 3(1): 1-150.
- Reynolds, P. D., Carter, N. M., Gartner, W. B., & Greene, P. G. 2004. The prevalence of nascent entrepreneurs in the United States: Evidence from the Panel Study of Entrepreneurial Dynamics. *Small Business Economics*, 23(4): 263-284.
- Reynolds, P. D., & Miller, B. 1992. New firm gestation: conception, birth and implications for research. *Journal of Business Venturing*, 7(5): 405-417.
- Rothaermel, F. T., Agung, D. S., & Jiang, L. 2007. University entrepreneurship: a taxonomy of the literature. *Industrial and Corporate Change*, 16(4): 691-791.
- Sarasvathy, S. 2008. *Effectuation: Elements of Entrepreneurial Expertise*. Cheltenham, UK: Edward Elgar.
- Schön, D. A. 1984. The Architectural Studio as an Exemplar of Education for Reflection-in-Action. *Journal of Architectural Education*, 38(1): 2-9.
- Shapiro, A., & Sokol, L. 1982. The social dimension of entrepreneurship. In C. A. Kent, D. L. Sexton, & K. H. Vesper (Eds.), *The Encyclopedia of Entrepreneurship*: 72-90. Englewood Cliffs, NJ: Prentice-Hall.
- Solomon, G. 2007. An examination of entrepreneurship education in the United States. *Journal of Small Business and Enterprise Development*, 14(2): 168-182.
- Solomon, G., Duffy, S., & Tarabishy, A. 2002. The state of entrepreneurship education in the United States: A nationwide survey and analysis. *International Journal of Entrepreneurship Education*, 1(1): 65-86.
- Souitaris, V., Zerbinati, S., & Al-Laham, A. 2007. Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business Venturing*, 22(4): 566-591.

- Stinchcombe, A. L. 1965. Social Structure and Organisations. In J. G. M. (ed.) (Ed.), ***Handbook of Organizations***. Chicago: IL: Rand McNally and Company.
- Stuart, T. E., Hoang, H., & Hybels, R. C. 1999. Interorganizational endorsements and the performance of entrepreneurial ventures. ***Administrative Science Quarterly***, 44: 315-349.
- Suchman, M. C. 1995. Managing legitimacy: Strategic and institutional approaches. ***Academy of Management Review***, 20(3): 571-610.
- West, G., & Wilson, E. V. 1995. A Simulation of Strategic Decision Making in Situational Stereotype Conditions for Entrepreneurial Companies. ***Simulation & Gaming***, 26: 307-327.
- Williams Middleton, K. 2010. ***Developing Entrepreneurial Behavior: Facilitating Nascent Entrepreneurship at the University***. Unpublished Kappa, Chalmers University of Technology, Gothenburg, Sweden.
- Vinton, G., & Alcock, S. 2004. Entrepreneurship in education. ***The International Journal of Education***, 18(2/3).
- Vygotsky, L. S. 1978. ***Mind in Society***. Cambridge, MA: MIT Press.
- Yballe, L., & O'Connor, D. 2000. Appreciative pedagogy: constructing positive models for learning. ***Journal of Management Education***, 24(4): 474-483.