



From latent to emergent entrepreneurship: the knowledge spillover construction circle

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Abstract

The process that turns knowledge into innovation is highly ambiguous and complex. This study merges economic and management perspectives to extend the knowledge spillover theory of entrepreneurship in explaining how the knowledge spillover construction circle works. At this aim it introduces the model of ‘latent and emergent entrepreneurship’ evidencing the strategic role of the entrepreneur in each step of the process that goes from the research of new knowledge to its commercialization.

Keywords Entrepreneurship · Knowledge spillover · Construction circle · System of innovation

JEL Classification: M10 · M15

1 Introduction

Economic theories provide a theoretical framework for analyzing the factors driving firm performance and regional economic development. While classical, neoclassical and Keynesian perspectives are focused on capital and labor, Schumpeter (1934) argues that innovation is a driver of economic growth. With the concept of creative destruction, Schumpeter (1934) suggests that an innovation could replace obsolete products driving the development of the whole economy by increasing the competitiveness of new entrants and incumbent firms (Fritsch and Mueller 2008). The value created by innovators exceeds that contributed by incumbents, generating a ‘darwinian-type’ process by which new products replace the previous ones (Audretsch and Fritsch 1996; Fritsch and Mueller 2004). While Schumpeter (1934) recognized the role of the innovator in taking opportunities for starting the process of creative destruction of obsolete products, he is silent on describing where these opportunities come from and how they are turned in innovations.

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Entrepreneurship activity plays an important role in the commercialization of newly-available knowledge in the market, for example via spin-offs (Markuerkiaga et al. 2016; Caiazza 2016a). It serves as an endogenous response to opportunities created by investments in knowledge that have not yet commercialized, as the value of new product is often uncertain (Agarwal et al. 2004, 2007, 2010; Caiazza 2017). However, entrepreneurship does not occur in a vacuum; it is an activity which transfers identified knowledge into realized and practical market action under high uncertainty (Kirzner 1999).

This study extends the knowledge spillover theory of entrepreneurship in explaining how the knowledge spillover construction circle works. It demonstrates that latent entrepreneurship, based on knowledge generated by some economic actors creates entrepreneurial opportunities for some others. Such latent opportunities can be turned into emergent entrepreneurship by actors able to take the risk to create a new firm to develop innovations (Agarwal et al. 2007). Such firms, in turn, create new knowledge able to create other forms of entrepreneurial opportunities on which are based firms and regions development. In describing the process by which the knowledge spillover of strategic entrepreneurship turns different forms of intended or latent entrepreneurship in realized one this study stresses the strategic role of the entrepreneur in the process of creative construction for economic growth. In this way it extend the creative construction literature (Schumpeter 1934), as well as the knowledge spillover of strategic entrepreneurship literature (Agarwal et al. 2007, 2010), by focusing on the role of entrepreneur in the process by which entrepreneurship emerges (Audretsch and Keilbach, 2007) from its latent form to the emergent one (Caiazza et al. 2016).

Moreover, in recognizing several forms of entrepreneurship, this study contributes to the managerial literature by offering a 'four-step process theoretical framework' where latent entrepreneurship emerges through the active action of entrepreneur that become the central driver of growth in exercising judgment under uncertainty for pursuing opportunities to start a new firm (Caiazza et al. 2015; Caiazza 2014). In creating a dis-equilibrium in the market, the entrepreneur (not more the inventor in a Schumpeterian view) represents the real driver of economic growth (Kirzner 1999).

Our findings demonstrate that the latent and emergent forms of entrepreneurship are closely connected and may be used by scholars, policy makers and firms to facilitate the process of creative construction. The remainder of the paper is as follows. Section 2 examines economic and management theories on entrepreneurship. Section 3 discusses the process of the knowledge spillover construction circle based on latent-emergent entrepreneurship framework. It illustrates the mechanism behind the four-step process. Having discussed the model of latent and emergent entrepreneurship, we go on to describe how these types of entrepreneurship contribute to creative construction and destruction in Sect. 4. Section 5 concludes with a discussion of this new framework.

2 From economic to management theories of entrepreneurship

The knowledge spillover theory of entrepreneurship (KSTE) argues that entrepreneurial opportunities consist of a set of ideas endogenously created by investments in new knowledge that enable the creation of future products absent on the market. Such investments contribute to the technological advancement of firms that invest in research while also creating opportunities for both incumbents already operating in the market and for startups that aim to develop new markets. Investments in new knowledge create innovative

opportunities for three kinds of economic agents: firms that invest in research, incumbent firms, and new entrants. The ability of one company to develop such opportunities allows it to assume the role of innovator.

Existing firms that invest in research of new knowledge do not automatically become innovators because the process of commercializing original knowledge can be uncertain (Alvarez and Barney 2005). Knowledge asymmetries and frictions impose costs which Audretsch and Keilbach (2007) and Acs et al. (1994) call the 'knowledge filter'. The knowledge filter depends on basic conditions of knowledge and represents the gap between new knowledge and its commercialization. Firms that invest in research become able to develop new knowledge's commercial potential, and so become innovators. Meanwhile, if the knowledge filter makes firms that invest in research unable to commercialize their knowledge, it can create innovative opportunities for incumbents or new entrants. Innovators are economic agents able to recognize such opportunities, overcome the knowledge filter and take the risks needed to turn new knowledge into innovations. The exploitation of opportunities created by other firms gives rise to innovative activity of incumbents that develop innovations. Such innovations depend on the ability of incumbents to take advantage of the economic benefits of knowledge-spillover (Cohen and Levinthal 1990; George and Zahra 2002). If even incumbents are unable to commercialize knowledge, this creates an opportunity for knowledge commercialization through new business activities and spin-offs. The exploitation of new opportunities created by incumbents gives rise to entrepreneurial activity among new entrants that create start-ups to develop innovations (Acs et al. 1994).

The knowledge spillover theory of entrepreneurship evidences the role of *entrepreneurship* as a catalyst that turns knowledge spillovers into creativity (Audretsch and Keilbach 2007; Audretsch and Belitski 2013) and innovation (Audretsch and Caiazza 2016). It evidences the role of entrepreneurship in bringing innovation to market and facilitating economic growth (Caiazza 2015).

Thus, entrepreneurship becomes the main drivers of innovation and economic growth. However, what is the role of entrepreneur? To address this question in the next section we merge economic and managerial theories on entrepreneur.

3 From latent to emergent entrepreneurship: an extension of knowledge spillover construction circle

Combining the assumptions of Audretsch and Keilbach (2007) on the knowledge spillover theory of entrepreneurship with the managerial perspectives of Porter (1996) and Mintzberg (1978) concerning strategy, we introduce the model of latent and emergent entrepreneurship. This model aims to explain the process of the creation of new firms from knowledge developed by other companies because of the strategic action of entrepreneurs. In this way, we stress the managerial role of entrepreneur in assuming strategic decision aimed to create a new firm for commercializing knowledge. Consequently, we shift the focus from the macro-level to individual-level focusing not only on the fact that entrepreneurship turns knowledge in innovation but on the role of entrepreneur and his ability in identifying opportunities from knowledge spillovers and taking the risk to implement a firm for commercializing them.

We started from the managerial concept of strategic entrepreneurship that highlights the complementarities between entrepreneurship and strategy (Kuratko and Audretsch 2009; Ireland et al. 2003). Entrepreneurship is the process of designing, launching and

running a new business with the aim to offer a new product, process or service (Bruton et al. 2010). Entrepreneurship thus revolves around the recognition of innovative opportunities that have to be developed in a strategic way (Bhide 1994). The strategy concerns the most relevant managerial decisions that influence the firm's ability to create value. The managerial literature classifies strategies as either deliberate or emergent. A strategy can be described as *deliberate* where the collective vision, goals and intention of a firm is articulated as broadly as possible in order to realize a given outcome. On the other hand, a strategy can be described as *emergent* where consistencies arise in the actions of a firm over a period of time, even though the adoption of such actions was never explicitly intended.

According to such definitions, a deliberate form of entrepreneurship is fully implemented when the realized entrepreneurship is equal to the intended entrepreneurship. In this case, an entrepreneur is an economic actor that belong to a firm in which he realizes research activity aimed to develop innovations to commercialize through a spin-off (Caiazza 2016b). When intentions are realized exactly as intended, this process of deliberate entrepreneurship leads to the creation of a new firm aimed to commercialized knowledge (Shane and Venkataraman 2000). This process requires that the entrepreneur belongs to the focal firm and uses knowledge produced within its original firm for creating a new firm with the explicit aim of commercializing knowledge.

Differently, when knowledge is generated in a company in which no one has entrepreneurial capabilities to create a new firm for commercializing it, some entrepreneurial opportunities driven from knowledge can be stay in their latent form. Such form of latent entrepreneurship if recognized by an entrepreneur that doesn't work for the original company can lead to a form of emergent entrepreneurship non-programmed when the knowledge was realized.

Thus, the process of commercialization of new knowledge requires the strategic and entrepreneurial capabilities of entrepreneur. The mechanism of transformation of entrepreneurship from latent to emergent involves a number of steps. Firstly, an entrepreneur realizes that investing in knowledge may bring a considerable pay-off, and considers the expected value of a new idea. While the value may not be sufficiently attractive for firm that realize knowledge, it is attractive enough for the entrepreneur. The knowledge filter in incumbent firms prevents them from pursuing their aim of commercializing new knowledge. The inability of incumbent firms to penetrate the knowledge filter (Audretsch et al. 2006) creates entrepreneurial opportunities for entrepreneurs able to exploit knowledge spillovers. A latent form of entrepreneurship exists until no-one is able to use knowledge spilling out of its original source to implement entrepreneurial projects and introduce an innovation into the market. However, when an entrepreneur exploits knowledge spillovers to start a new firm, it emerges from its latent form and is known as emergent entrepreneurship. This may not be the end of the emergent entrepreneurship journey as efforts should be made to sustain and develop the idea, which is further operationalized by establishing a new venture.

As such, a realized opportunity is not a deliberate project based on knowledge, but an emerging process where an emergent entrepreneur is a conduit of knowledge-spillovers to customers. The process that leads latent entrepreneurship, based on knowledge generated by others, to emerge for commercializing such knowledge is known as the knowledge spillover of strategic entrepreneurship (Agarwal et al. 2007, 2010). It is not an automatic process but requires that an entrepreneur is able to let the latent form of entrepreneurship develop into the exploitation of opportunities and the emergence of the knowledge spillover. Figure 1 illustrates the knowledge spillover of strategic entrepreneurship.

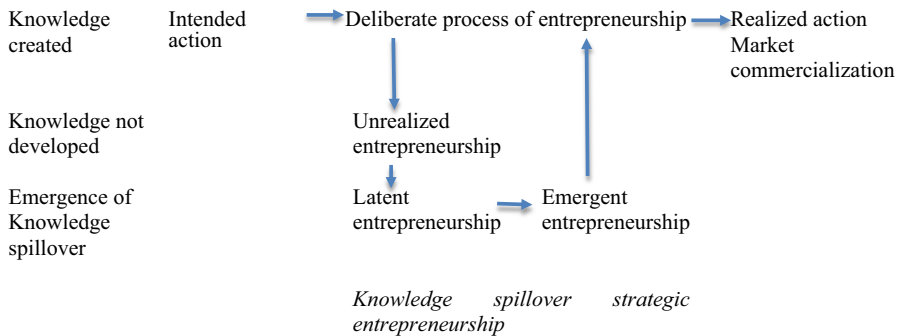


Fig. 1 The knowledge spillover creative construction circle: from intended to realized action. *Source:* Authors

Our model starts with an intended action by a would-be entrepreneur, who considers a plan to launch a new business in order to introduce new knowledge to market. A plan consisting of four steps must be implemented. At step one the knowledge may remain uncommercialized as a result of market uncertainty, high risks and the entrepreneur's lack of skills and abilities. Thus, entrepreneurship stays in its unrealized form.

Step two marks the transition between unrealized and latent entrepreneurship, where entrepreneur identified opportunities but not marketed them.

Step three is emergent entrepreneurship, when the entrepreneur takes to bring the knowledge to the market in the form of a product or service. At this stage it is likely that entrepreneurs will apply for finance, build partnerships and enhance the product development process along with making market adjustments. This is the most important stage of the knowledge spillover strategy.

Step four, new firms is crated to turn knowledge into new product or service to introduce on the market (realized entrepreneurship).

Given market uncertainty when first implementing a product, the strategic approach to knowledge spillovers may become the dominant model (Audretsch and Lehmann 2016). Knowledge is constantly improving and firms cannot stop analyzing, assessing and planning to keep up with new knowledge. Firms involved in research activities and introducing new knowledge generally are not able to implement a deliberate process of entrepreneurship to commercialize new products (Oldroyd et al. 2010). However, new knowledge still creates an abundance of potential innovative opportunities leading to knowledge spillover to other economic agents even if does not support a deliberate process of entrepreneurship and leads to the further exploitation of latent opportunities created by the fact of knowledge presence.

Entrepreneurs perceiving unexploited opportunities created by the knowledge of other firms can transfer the latent form of entrepreneurship into starting-up and growing new business (emerging form). Economic agents that successfully engage in entrepreneurial activity turn latent entrepreneurship into emergent entrepreneurship (Caiazza and Stanton 2016; Caiazza 2016b). Through the process of emergent entrepreneurship, knowledge spillovers are used to create new firms able to introduce innovation to market (Parker 2009,

2010). The entrepreneurs that will most likely fare the best will be those that learn how to use new knowledge creating new firms for commercializing innovations (Wennekers et al. 2005). Thus, while the innovator is the catalyst of disruptive creation for Schumpeter, the entrepreneur is the catalyst of constructive creation. Knowledge search becomes an important boundary condition for entrepreneurs and other entrepreneurship ecosystem agents wishing to pursue their individual interests while creating the collective conditions (Wennekers and Thurik 1999 Wiklund et al. 2011) needed to support the entire entrepreneurship ecosystem (Stam 2018) as well as create a process of knowledge transformation (Spigel and Harrison 2018). Consequently managerial literature on behavioral characteristics of entrepreneurs and cultural factors to diffuse entrepreneurial ability among a population are strictly connected to macroeconomic factors that supports economic growth.

Latent and emergent entrepreneurial activities can contribute positively or negatively to societal outcome (Davidsson and Wiklund 2001). Successful emergent entrepreneurial increase the societal outcome (for example GDP), while failing emergent entrepreneurial destroys value. Latent activities such as doing business without registering a firm can negatively affect value, whereas lobbying and corruption (Sobel 2008) can become the second-best solution for imperfect social and economic interactions and for entry in markets with high corruption (Belitski et al. 2016). Thereby Latent and emergent entrepreneurial activities may provide a second-best yet positive contribution to societal outcome. For instance, latent entrepreneurship is less detrimental in countries where institutions are extremely deficient and can even be associated positively with efficiency. In the same vein, recent empirical evidence indicates that in the presence of inefficient and/or excessive regulations is associated with a relatively higher level of latent and lower level of emergent entrepreneurship firm entry (Dreher and Gassebner 2013). Dreher and Gassebner (2013) put forward a “greasethe-wheel” effect of corruption on entrepreneurship, and emphasize that many “latent” entrepreneurs will never become emergent if institutions are not improved.

We suggest that in a context of institutional failures that materialize into trade and business impediments, bribing can provide some benefits to the latent entrepreneurs in countries with weak institutions (Belitski et al. 2016), while emergent entrepreneurs will if it helps to remove or mitigate these obstacles.

4 From creative destruction to creative construction

Regions that support firms’ investments in knowledge are likely to have an abundance of knowledge (Gambardella and Giarratana 2010) and ability to spillover new knowledge (Agarwal et al. 2007). Knowledge creates entrepreneurial opportunities that give rise to new idea generation and some pre-mature forms of latent opportunities. However only, the exploitation of knowledge spillovers allows the latent form of entrepreneurship to emerge. Consequently, regions with high knowledge investments have also high levels of knowledge spillovers, but to realize more start-ups that introduce innovations on the markets it is likely to invest in policies aimed to improve entrepreneurs’ attitude to take the risk (Acs and Storey 2004). Cultural propensity to entrepreneurship serves as an important source of economic growth that provides new resources to invest in research, innovation and entrepreneurship (Autio et al. 2014). This creative construction circle is based on the idea that knowledge creates opportunities that can lead to innovation but only the diffusion of the entrepreneurial culture supports the economic development of the local innovation system (Agarwal et al. 2007). This circle is reinforced if

innovations introduced in the market are diffused from the first innovator to different adopters (Almeida and Kogut 1999). Without the diffusion of new knowledge, an innovation will have no economic impact. How does this happen?

Entrepreneurs can push and pull new-to-market products in many ways (Stuart and Sorenson 2003). For example, they can develop products that are complementary to the product innovations and invest in making information concerning those products and their uses more transparent and easy to adapt (Liu et al. 2010). Adopters can have entrepreneurial ability to adopt innovation creating a new firm able to reduce the costs and risks incurred in switching and adopting innovations (Romer 1990). Specifically, they can modify their existing supplier networks along with the procedures they have developed to adopt (Cohen and Levinthal 1990). Over time, the diffusion of innovation among several new entrepreneurs allows for efficient reutilization of knowledge processes and reduces uncertainty and risk (Fleming 2001). A new technological path can come out of a system reinforcing the virtuous circle of creative construction that supports both economic growth (Acs and Varga 2005) and the knowledge spillover of strategic entrepreneurship mechanism (Agarwal et al. 2007).

Policy-makers and companies can support the process of creative construction through public and private measures (Ahuja and Katila 2001). The role of public policy is to facilitate entrepreneurial culture in order to encourage agents of change to introduce innovations and start new firms (Audretsch 1995). The relationship between new businesses and market development is complex. Analyzing this relationship requires a comprehensive approach that should include how the development of new knowledge is related to both creation of jobs and growth while also delving into the related supply-side effects.

Innovation represents the introduction of novel ideas. In this sense, the new ideas underlying innovative activity reflect the underlying motivation and also potential value of emergent entrepreneurship. Firstly, the lack of competitiveness characterizing some entrepreneurial entrants compels them to exit within a relatively short time period. In addition, the entrepreneurial entrants can displace existing firms. Creative construction will be followed by creative destruction, while the intensified competition provides a catalyst for knowledge spillovers. As Fritsch and Mueller (2004) point, such knowledge spillovers provide a vehicle for entrepreneurial entry and influences the supply side of the market. If this virtuous circle is supported by all the actors and institutions of a region a local innovation system can emerge (Van Stel et al. 2005) and create the efficient framework conditions for the entrepreneurship ecosystem.

Underdeveloped and inefficient institutions may impede or slow down the process of creative construction and create difficulties, uncertainty, and excessive costs for both latent entrepreneurs to enter the markets and discourage potential business registration, while limit latent entrepreneurs from investing in innovation, and other emergent entrepreneurial activities (Bruton et al. 2010; Desai and Acs 2007; Belitski and Desai 2016). This raises an entrepreneur's likelihood of locking into latent entrepreneurship for a longer time. For example, when obtaining business authorization requires going through a multitude of bureaucratic authorities and complying with long and complex administrative procedures (i.e., the "red tape"), paying bribes can increase incentives for public officials and bureaucrats to serve the enterprises and transfer latent to emergent entrepreneurs. The institutional embeddedness of latent and emergent entrepreneurs will change the speed and efficiency at which business permits, licenses, and authorizations are delivered (Méon and Sekkat 2005). This form of activity may also enable a latent entrepreneur to navigate more swiftly through inefficient bureaucracies and spend less time with bureaucrats (Gohmann 2012).

Similarly, in front of excessive and arbitrary business taxes, licenses, establishment fees, and inspection costs levied by national and local authorities, emergent entrepreneurs will be prone to adjust to regulation (Audretsch et al. 2018) to obtain reductions which may offset the effect of taxation has on transferring latent to emergent entrepreneur (Belitski et al. 2016).

5 Discussion and conclusions

This study reconciles the economic and managerial perspectives on knowledge, innovation, entrepreneurship and economic growth. It offers a theoretical framework for the knowledge spillover construction circle, enabling the deliberate process of entrepreneurship and knowledge exploitation from latent to emergent types of entrepreneurship. The framework fully supports the knowledge spillover of strategic entrepreneurship (Agarwal et al. 2010) and the Schumpeterian vision of an entrepreneur (Schumpeter 1934).

Schumpeter described the tension between new firm innovations and selection pressures on existing firms (Schumpeter 1934). However, Schumpeter is silent with regard to the source of innovative opportunities (Kirzner 1999) and the role of entrepreneur. The knowledge spillover construction circle framework demonstrates that entrepreneurial opportunities consist of a set of ideas endogenously created by investments and realized in the market, while incumbent firms are likely to share the market with new emergent entrepreneurs. As new knowledge spills out, the original sources of knowledge enable entrepreneurs to introduce innovations that create a new market destroying the previous one. Entrepreneurs thus create change from an unrealized opportunity through their entrepreneurial actions under condition of uncertainty (Fritsch 1997 Audretsch et al. 2006 Fritsch and Mueller 2004, 2008).

While more and more individual agents are exposed to the same new knowledge, only a few have the capability to let latent forms of entrepreneurship. Accordingly, entrepreneurs are conceptualized in terms of their strategic and entrepreneurial ability to use knowledge spillovers to create new firms. In this way, the model of latent and emergent entrepreneurship overcomes Schumpeterian considerations of innovation as driver of economic growth because it recognizes the role of the entrepreneur as an individual agent that starts this process. In the knowledge spillover construction circle perspective, the entrepreneur is the driving force of innovation that lead to economic growth.

In the theory of creative destruction, Schumpeter (1934) was silent about the strategic capabilities of entrepreneurs. New firms infused with entrepreneurial spirit would displace the tired old incumbents, ultimately leading to vigorous innovative activity that in turn would generate a higher degree of economic growth. Strategic capabilities synthesize the intuition and creativity of entrepreneurs into a vision for the future that is required to complete the four steps needed to finally realize the entrepreneurial action.

The managerial perspective thus extends and completes the economic assumptions made by the knowledge spillover construction circle on the role of the entrepreneur in the process that leads knowledge to be turned into innovation for economic growth.

Creative construction is thus a process through which entrepreneurs benefit from the knowledge created by existing firms to realize innovation that does not lead to the destruction of incumbent firms. This type of process has been put forward by Schumpeter (1934) who devised the concept of 'creative destruction', and can be seen in Marshall's (1920) analogy of a forest in which the old trees must fall to give way to new ones. In this process,

knowledge management and strategic entrepreneurship have been identified as critical for firms, industries, regions and economic growth. Managerial and strategic skills are required to facilitate action by entrepreneurs when knowledge is further diffused and also developed with incumbents and other entrepreneurs. This cycle of creative construction is based on the strategic ability of entrepreneurs to use knowledge spillovers to introduce innovations to the markets (Audretsch and Fritsch 1996).

The economic perspective can thus be extended by managerial perspectives on entrepreneurship able to push creative destruction versus a creative construction circle. The theoretical framework we offer here explains the transition process from latent to emergent entrepreneurship that combines the macroeconomic literature with managerial perspectives on knowledge spillover. It evidences the role of entrepreneurship as a conduit of change in turning knowledge spillovers in economic knowledge according to the knowledge spillover theory of entrepreneurship. This work also recognizes the role of the entrepreneur as an agent that uses its strategic capabilities to implement activities able to turn latent entrepreneurship into its emergent form.

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