

Revitalizing Entrepreneurship: The Search for New Research Opportunities

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ABSTRACT Entrepreneurship research has traditionally focused on opportunity recognition and resource formation as processes that foster the emergence of new business ventures, through both the lens of the individual entrepreneur and corporate venturing. Although we observe that research is vibrant in these traditional areas, we also argue that the continued revitalization of the field of entrepreneurship can be fostered through examining opportunities for research in areas such as industry change and competition, inter-organizational cooperation (which has proliferated more recently), university-sponsored entrepreneurship, venture finance, institutional differences that foster entrepreneurship (primarily between different countries), and appropriability regime differences (including legal and regulatory frameworks) that foster entrepreneurial activities and profit appropriation. Besides pointing scholars to new promising directions, we argue for more attention to the transformational role of entrepreneurship itself by issuing a call for more multi-level research efforts that connect the micro- and macro-foundations of entrepreneurship and explore the revitalization-related uncertainties such as the cost of creating an entrepreneurial orientation and whether there is an optimal level.

INTRODUCTION

Over the last thirty years, entrepreneurship has become established as a legitimate field of research and managerial practice. In the evolution of entrepreneurship research, a diversity of partly competitive and partly supplementary paradigms has emerged. For instance, there is the classical Schumpeterian paradigm based on the disequilibrium-generating activities of entrepreneurs who are capable of 'breaking new ground', pioneering new fields, promoting radical diversification efforts, and partially or completely transforming the organization, its products, its technology, and its markets in the process (Schumpeter, 1934). These Schumpeterian activities lead to the discovery of an inter-temporal opportunity that cannot, even in principle, be said to actually exist before the

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innovation has been created (Kirzner, 1997), and this circumstance causes disruption and transformation of the pre-existing equilibrium situation.

On the other hand, drawing upon the work of Kirzner (1973) of the neo-Austrian school, Kirznerian entrepreneurship stems from the discovery of the existence of profitable discrepancies, gaps, mismatches of knowledge, and information which others have not yet perceived and exploited. From a Kirznerian perspective, entrepreneurs seek to exploit presently available knowledge and existing opportunities, thereby increasing knowledge about the situation, reducing the general level of uncertainty over time, and promoting market processes which help to reduce or to eliminate the gap between leaders and followers.

At its very root, Schumpeterian entrepreneurship, where fresh insights and bold creativity may be required, is at odds with Kirznerian entrepreneurship, where stability, consistency, and alert planning may be essential to regular improvement (Volberda, 1998). However, more recently many scholars have asserted that the Schumpeterian and Kirznerian entrepreneurship need not be contradictory, but act more as complementary modes over time or simultaneous modes with the same firm (Raisch et al., 2009; Volberda and Cheah, 1993). In addition, these entrepreneurial processes can take place at the individual, team, unit, or firm levels as well as at the inter-organizational or network level, and even at the industry or country level.

To provide an equivocal definition of entrepreneurship would ignore the versatility of the emerging field, but broadly speaking, entrepreneurship examines activities involved in the conception (various modes of opportunity recognition), launch, development, and operation of new ventures (resource formation process) (Shane, 2003). Because entrepreneurship involves human agency, where humans act to pursue opportunities they have recognized (Baron, 2007), much research in entrepreneurship has focused on the cognitive aspects of how individual entrepreneurs recognize the opportunities noted above for new business creation (Baron, 2008; Ucbasaran et al., 2010). Likewise, because many new ventures have been initiated in established corporations, a large segment of research focused on corporate entrepreneurship (Covin and Miles, 1999; Guth and Ginsberg, 1990; Ireland et al., 2009) has emerged at the firm level. More recent research within established corporations has focused more broadly on entrepreneurship, including corporate innovation activities, and has been lately labelled as research in the 'strategic entrepreneurship' area (Ireland et al., 2003; Kuratko and Audretsch, 2009).

Many scholars have recognized the richness of the entrepreneurship field and assimilated the concept by rethinking theories, developing new conceptual models, introducing new constructs, and conducting various empirical studies. The plurality of underlying theories, constructs, and levels of analysis certainly signifies an enrichment of the field of study. However, without addressing where we are and what needs to be done, the field runs the risk of propagating a highly fractionated view of entrepreneurship while lacking appropriate focus in new, high-potential areas.

What are the promising new directions in entrepreneurship research? Are there points of convergence in the entrepreneurship field? Are the theories and empirical studies investigating distinct and salient aspects of entrepreneurship, or are they treading the same ground or missing key entrepreneurial dynamics? In what ways can entrepreneurship serve as a revitalizing force among the entities within and between which

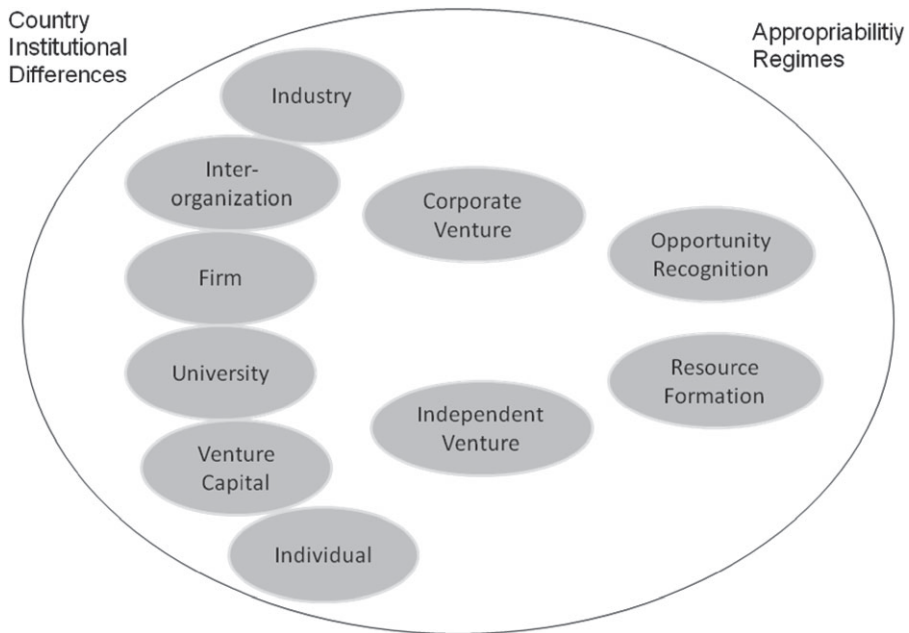


Figure 1. Areas of research opportunity in entrepreneurship

entrepreneurial processes occur? In this introductory article, we therefore focus not only on opportunities in these historical or traditional areas of research. We also seek to expand research opportunities by examining how competitive changes within an industry reveal opportunities for launching new businesses; how inter-organizational cooperative strategies (networks and alliances), university-sponsored entrepreneurial activity, venture capital and governance, as well as how country institutional change and institutional entrepreneurship within countries and across borders facilitate new opportunities; and finally, how differences in regime appropriability between countries and firms lead to opportunities for additional research in the field of entrepreneurship.

These areas of research emphasis are displayed in Figure 1, and the rest of this paper will expand on research opportunities one category at a time. Furthermore, as we provide an overview of these opportunities we will show how the papers included in this Special Issue represent the opportunities available for research in selected areas. We will first explore opportunities at the industry level followed by those listed in the model in Figure 1 (top to bottom). Finally, after those opportunities within the circle in Figure 1 have been explored, we will come back to the larger picture and explore institutional change opportunities as well as regime appropriability difference opportunities outside the circle.

INDUSTRY CHANGES AND ENTREPRENEURIAL OPPORTUNITY

As firms compete with each other in broad or narrow industry segments, new opportunities for business creation emerge (Burgelman and Grove, 2007a). There are a number

of research opportunities that exist in this area that remain unexplored. There is a large body of literature focused on transaction costs theory which suggests that firm boundaries change due to increasing or decreasing transaction costs (Coase, 1937; Williamson, 1975). For example, Jacobides (2005) examined how boundaries in the mortgage banking market changed to be less vertically integrated (vertical disintegration). As such, there were more market-oriented approaches rather than vertically integrated approaches in the mortgage banking market. This change led to the securitization of bank debt notes which back mortgages. Although there was a significant crisis associated with the mortgage industry, possibly associated with vertical disintegration, there was also an abundance of entrepreneurial activity which led to recognition and exploitation of these opportunities.

Interestingly, we are seeing changes that are the reverse of this in the professional service business associated with consulting services. Early on, large hardware firms such as IBM pursued vertical disintegration of services which allowed large accounting firms such as Arthur Anderson (Anderson Consulting and now Accenture) to emerge as major competitors in information processing and more recently into strategy consulting. Currently, however, almost all hardware firms, and likewise software firms, have been moving into the professional service and consulting businesses as a way to garner future business. This was largely led by IBM, but also more recently by Hewlett Packard, Oracle, Microsoft, and Dell. Much of this industry movement was accomplished through acquisitions (Dell's Do-Over, *Business Week*, 26 October 2009, p. 36). Also, as new innovations spring up in an industry such as biotechnology, this creates opportunities for other new start-ups. For instance, once a biotech firm creates a new protein and establishes its viability through research, additional research is necessary to encapsulate the product for ingestion into patients and to create a process for manufacturing it efficiently. This new potential product introduction therefore creates opportunities for other start-ups to facilitate these processes, perhaps for multiple products (Agarwal et al., 2007).

Research opportunities exist across the value chain as firms invent, de-vertically integrate, or re-vertically integrate, as well as pursue horizontal acquisitions (Keil, 2002; Keil et al., 2009). Investigations into how industry competition and industry boundary changes facilitate the recognition and exploitation of new business opportunities are called for in entrepreneurship research. However, in most of these research efforts, industry change is considered an exogenous variable, while many of the industry boundary changes result from coevolving interactions between entrepreneurs and well-established firms (Volberda and Lewin, 2003). In particular, the liability-of-newness problem plagues entrepreneurial firms entering well-established industries, whereas the liability of age and tradition constrains established firms from migrating into new industries (Tushman and Anderson, 1986). Incumbent firms view their organization and their industry as a closed system, embedded in an environment they largely try to control. Entrepreneurial new entrants, on the contrary, tend to perceive their organization and the industry they are operating in as open system, since they are not yet in the position to control changes in the industry. To increase their legitimacy, they create partnerships across several industries and customer types (Hensmans et al., 2001). Studying these ongoing coevolutionary dynamics between incumbent firms and entrepreneurial

entrants may explain industry boundary changes and the emergence of new entrepreneurial opportunities.

INTER-ORGANIZATIONAL COOPERATION

Research has proliferated in the inter-organizational area, often examining the impact of networks and alliances on entrepreneurial activities. In the first subsection below, we will overview network research, which is increasing significantly, followed by a short review of strategic alliance research. We will provide overviews of entrepreneurship-focused research opportunities in these areas as well as provide an example from our special issue.

Networks and Entrepreneurship Research

Networks are increasingly perceived as a key element of entrepreneurship (Stuart and Sorenson, 2007). There is significant research examining entrepreneurial activity and knowledge creation and diffusion in industrial districts (Piore and Sabel, 1984; Porter, 1998). Many small firms in industrial districts depend on the interconnection of firms in a particular organizational field for innovation and entrepreneurial activity because of the relatively atomistic nature of smaller firms in pursuing new business opportunities (Lechner and Dowling, 2003). Such activity is often found in low-technology fashion-type industries such as shoes, clothing (Richardson, 1996), and furniture, where quick design change is necessary for continual product development and entrepreneurial activity as well as in service industries such as tourism.

However, more research has been grounded in sociological-based network theory, often examining the interactions between individuals, groups, and organizations and how such interactions influence entrepreneurial activity and new venture performance. This research has been catalogued by Jack (2010) and criticized earlier by Hoang and Antoncic (2003). However, many questions concerning networks and how teams of entrepreneurs develop over time remain unexplored (Aldrich and Kim, 2007). At the group level, network research has examined the social-psychological benefits of new venture teams (Birley and Stockley, 2004) in fostering new venture activity (Carmeli and Azeriual, 2009; Jack, 2005). The empirical support for the argument is strong, with social networks shown to contribute to managers' strategic influence (Floyd and Wooldridge, 1997), help them to leverage organizational resources for innovation (Kelley et al., 2009), increase or decrease new venture performance depending on contextual factors (Stam and Elfring, 2008), and affect knowledge transfer (Hansen, 1999).

In particular, there is evidence regarding the distinction between weak and strong ties as well as bridging ties as these provide individuals with specific benefits with regard to entrepreneurial efforts. Weak ties are especially valuable in initial (seed) stages of entrepreneurial efforts, functioning as a source of new and previously unfamiliar knowledge. Strong ties provide support (in terms of resource allocation) and legitimacy (political or social acceptance), and allow captive knowledge exchange, especially when dealing with sensitive information. Strong ties also enable complex knowledge to move between

people (Hansen, 1999), ease the act of asking and offering support, while insuring that those contacted are going to respond positively (Granovetter, 1983), enable cooperation (Granovetter, 1985), and foster trust (Krackhardt, 1990). Bridging ties are important to acquire information that stretches beyond organizational boundaries, as they allow organizational actors to source relevant knowledge with respect to environmental requirements such as customer needs and market readiness. Bridging ties foster improved idea generation, providing access to better opportunities (Burt, 2005), facilitate earlier access to a broader diversity of information (Burt and Ronchi, 2007), and offer companies the option to extend their current capabilities (Floyd and Wooldridge, 1997). Recently, a few studies have attempted to consider both bridging ties and strength of the ties. Tiwana (2008) looks at bridging ties and strong ties as being separate, but complementary constructs. He argues that the former provide access to new capabilities and the latter help use them. Likewise, McFadyen et al. (2009) show that high average tie strength, in a network rich with bridging ties, benefits knowledge creation. Tortoriello and Krackhardt (2010) are among the first to bring the concepts clearly together and analyse the effect of the strength of bridging ties.

Less research, however, has examined how networks arise and develop over time where network attributes are the dependent variable. As an example of such research, Rosenkopf and Schilling (2007) compare different structural network types and investigate which types best foster entrepreneurial knowledge transfer and activity. Another paper by Grandori and Soda (1995) describes how networks first get established and how they may add to the development of corporate entrepreneurial efforts. A focus on the antecedents of networks, especially those network ties that allow organizational actors to realize entrepreneurial potential as well as to appropriate its inherent value, would allow firms to actively manage their internal and external networks.

In this special issue, Sullivan and Marvel (2011) address how knowledge acquisition is central to entrepreneurship when explaining successful venturing. However, little is known about how knowledge acquisition during early venture development affects desirable venture outcomes. The study draws on the knowledge-based view and social network theory to develop and test a conceptual model of knowledge acquisition using a sample of early-stage technology entrepreneurs operating in university-affiliated incubators. Sullivan and Marvel examine how an entrepreneur's acquisition of different types of knowledge and reliance on their network for knowledge relate to outcomes of product/service innovativeness and first-year venture sales. Results suggest that acquiring technology knowledge positively relates to the innovativeness of products/services developed by entrepreneurs. Moreover, entrepreneurs can enhance this positive relationship by relying more on networks for technology knowledge acquisition. Overall, results suggest that the extent to which and context within which technology entrepreneurs acquire knowledge have important implications for outcomes associated with innovativeness.

There is significant research about how networks among venture capitalists (labelled venture capital syndication) facilitate the formation of new venture resources (Sorenson and Stuart, 2002). In part, venture capital syndication exists because of close geographic proximity (Meuleman et al., 2010; Saxonian, 1994; Wright and Lockett, 2003). More detail on this matter will be provided in the section on Venture Capital below.

Strategic Alliances and Entrepreneurship Research

Many firms use alliances to foster new businesses and to pursue strategic entry into new markets. Firms also use alliances to learn and to accumulate resources for starting new ventures and entering new lines of business (Rothaermel and Deeds, 2006). Research opportunities exist in understanding how some firms are better at pursuing entrepreneurial activities through alliances and joint ventures. Studies focused on which firms are better at utilizing such experience in opportunity recognition and resource formation are needed.

Corporate entrepreneurship activity, in particular, has used strategic alliances to enter new businesses and compile resources in support of new ventures (Ribeiro-Soriano and Urbano, 2009; Teng, 2007). Many firms use alliances and acquisitions together as a way of managing resource gaps and to build complementarities with partners (Wiklund and Shepherd, 2009).

For example, in this special issue, Ernst et al. (2011) address how R&D alliances are used to complement internal technological portfolios for increasing the effectiveness of corporate entrepreneurship. The study uses large pharmaceutical firms as its sample and finds that 25 per cent of their R&D expenditures are focused on acquiring technologies through alliances with other firms, especially in partnerships with biotechnology firms. This study suggests that firms who are pursuing such alliances are successful, in part, because of experience accumulation with technological alliances (Draulans et al., 2003). The study also suggests that 'experience reactivation' allows firms to leverage accumulated experience in a subsequent stage through improved knowledge transfer over time. Ultimately, this paper suggests that the alliance experience, the recipients' knowledge accumulation, and experience reactivation positively affect alliance performance. Accordingly, this paper lies at the intersection of entrepreneurship and strategic management and shows how knowledge accumulation is used to effectively transfer entrepreneurial ideas from alliance partners into the parent firm who is pursuing these alliances. The real success of alliances is realized through the actual accumulation of knowledge and the ability to use that knowledge in other aspects of the pharmaceutical business.

FIRM LEVEL: CORPORATE ENTREPRENEURSHIP

As noted in the introduction, the primary levels of analysis focused on in entrepreneurship research have been the individual level (which we will explore later in the paper) as well as the firm level. Most research at the firm level is focused on corporate entrepreneurship. As Sharma and Chrisman (1999) note, corporate entrepreneurship is divided into two basic categories: new venture creation and the strategic renewal of established businesses. The firm level of analysis crosses over into research associated with strategic management (Ireland et al., 2009). There are many recent reviews of research and books associated with firm-level entrepreneurial constructs (Dess et al., 2003; Kuratko and Audretsch, 2009; Narayanan et al., 2009; Phan et al., 2009). Much of the research in this area has been carried out in international contexts (Zahra and Garvis, 2000). Likewise, research is examining how corporate entrepreneurship takes places in emerging

economies and is, thereby, differentiated from such activity in countries with more developed market institutions (Yiu and Lau, 2008). Entrepreneurship research at the firm level is relatively mature. Nonetheless, more research in this area is necessary both to foster theoretical and empirical progress and to establish improved construct validity. In the three subsections below, we will address these issues by examining some of the research that needs to be done in established firms, multinational corporations, and emerging market firms, as well as needed research on methodological and construct validity issues at the firm level.

Corporate Entrepreneurship and Strategy Research

There is a significant amount of research on the antecedents and outcomes of corporate entrepreneurship (Morris et al., 2011). Research has increasingly acknowledged that corporate venturing facilitates strategic renewal and increases organizational growth and performance (Burgelman, 1983, 1985; Zahra and Covin, 1995). Corporate entrepreneurship refers to the creation of new businesses within existing firms (Sharma and Chrisman, 1999), and involves the creation of new competencies and capabilities underlying new products and services (Block and MacMillan, 1993; Zahra et al., 1999). Despite these beneficial outcomes, scholars have argued that it is very complex and difficult to successfully manage venturing activities in incumbent firms (Burgelman and Välikangas, 2005; Hill and Birkinshaw, 2008). For example, in cases where the development of high levels of new technological knowledge as well as market knowledge is required, high levels of autonomy are also required (Burgers et al., 2008). As a consequence, venturing creates paradoxical challenges within organizations, as the explorative processes underlying venturing are often at odds with ongoing business operations. Nonetheless, corporate ventures may also benefit from leveraging knowledge and resources available within mainstream businesses (Covin and Miles, 2007).

We have covered some of the corporate entrepreneurship antecedents and outcomes in the section on industry-level research above. These antecedents include, but are not limited to, competitive intensity, technological change, product–market fragmentation, and new product–market emergence (Ireland et al., 2009). Of course, in order for corporate entrepreneurial phenomena to occur, individuals must recognize the importance of opportunities for new venture creation or the need for strategic renewal (Kuratko et al., 2005; Volberda et al., 2001). Some of the research in the corporate entrepreneurship area focuses on the entrepreneurial vision of the top executives as well as the organizational architectures needed to facilitate new ventures (Hornsby et al., 2009; Ireland et al., 2009). Research has also focused on the structures, cultures, resources, capabilities, and reward systems needed to promote corporate entrepreneurship (see Morris et al., 2011). Research in this area has shown how firms recognize entrepreneurial opportunities and exploit these opportunities through improved or otherwise new resource formation. Research has also shown how firms improve their competitive position as well as develop and exercise their dynamic capabilities and ultimately improve firm performance through entrepreneurial activity (e.g. Zahra et al.,

2006). Other research examines how governance and top management teams can influence corporate entrepreneurial activities (e.g. Burgers et al., 2009; Simsek et al., 2009).

Related to the above, Dalziel, Gentry, and Bowerman add to the special issue by examining how the corporate governance characteristics of boards of directors influence the dominant expenditures for innovation, namely R&D expenses (Dalziel et al., 2011a). In particular, they combine agency theory with resource-dependence theory by examining the human and relational capital influence of both inside and outside directors on shaping the direction of R&D spending. For instance, Dalziel et al. propose that agency theory tenets suggest that independent outside directors will be more helpful than inside directors because inside directors are more susceptible to CEO influence and less likely to monitor fellow executives and thereby control proposed R&D expenditures. However, this perspective does not incorporate both the human and relational capital of either inside or outside directors before making a prediction about their influence on important and risky expenditures such as R&D. For example, they predict that the technical experience of inside directors will be positively related to the firm's R&D expenses. However, outside directors who have strong technical skills and experience, may be more oriented towards reducing R&D spending by focusing on efficiency considerations due to the independent nature of their board representation. The bottom line of this research is that choosing the characteristics of both inside directors and outside directors can help shape the direction of spending as well as the efficiency of that spending. These are critical aspects that will lead to shaping the direction of both innovation and corporate entrepreneurship in large established firms. Future research in this area can consider relationships with other governance mechanisms such as ownership and compensation which will also likely have influences on R&D investments. Work on how these different influences might involve the possible competition between them will be important examples of process research that might be accomplished in the future.

International Corporate Entrepreneurship

Large multinational companies (MNCs) often seek to spread their research and development costs across large customer bases (Hitt et al., 2006). As they do so, they search for opportunities which allow them to expand on their existing product bases as well as enter new product–market arenas. One way MNCs do this is through giving mandates to subsidiaries and allowing them to expand from a single country base to a large, worldwide base (Birkinshaw, 1996, 1997). One expanding opportunity that many firms have been exploring is represented by the base of the pyramid (BOP) markets first identified by Prahalad and Hart (2002). Scholars are now identifying significant research opportunities associated with BOP markets (e.g. Webb et al., 2010). Additionally, more and more firms are looking to global ventures in their pursuit of corporate entrepreneurial opportunities (Callaway, 2008). The majority of this work has focused on organizational issues, such as how firm structure affects subsidiary mandates to pursue global opportunities.

In general, more process research is needed within the international corporate entrepreneurship arena. For instance, more research is warranted on the processes involved in

diffusing entrepreneurial activities among MNCs' subsidiaries. Birkinshaw's (1997) work suggests that many subsidiaries gain mandates for introducing new entrepreneurial ideas throughout the corporation; however, the processes through which entrepreneurial ideas become dispersed among subsidiaries need additional investigation. On this topic, in our special issue Williams and Lee (2011) examine how political processes and influence foster the distribution of entrepreneurial ideas among geographically distant subsidiaries. In particular, they leverage the insights of Hedlund (1986, 1993) and Stark (1999) involving the heterarchical view of the MNC. This view incorporates political processes involved in the MNC and focuses on the self-organizing mechanisms that enable subsidiary managers to enhance their power base. In particular, Williams and Lee's (2011) research examines how subsidiary managers build alliances with other subsidiaries and become involved in budgeting details at the regional or global headquarters level. Furthermore, subsidiary managers sponsor corporate initiatives within the subsidiary and use technical experts who often negotiate with the corporate headquarters over technology standards. Additionally, these subsidiary managers create centres of excellence for the whole corporation and encourage subsidiary members to participate in multidisciplinary teams. They also examine whether subsidiary managers have face-to-face meetings with managers in other subsidiaries. These are examples of political processes that subsidiary managers use to elevate the visibility of their entrepreneurial ideas and activities such that they become disbursed throughout other MNC subsidiaries.

Another example of process research in the special issue at the corporate level is provided by De Clercq et al. (2011). They studied how corporate entrepreneurship manifests itself internally through the development and championing of entrepreneurial initiatives (Burgelman, 1991). Their focus is on the internal selling of initiatives, rather than the generation or the sources of new, diverse information and knowledge that underlie them. Their study finds support for the role of entrepreneurial initiative characteristics in explaining selling effort, such that the proponents' perceptions of the initiative's organizational benefits and consistency with current organizational practices increases their reported selling effort. Moreover, though the perceived availability of extrinsic rewards raises proponents' selling effort, their dissatisfaction with the current organizational situation reduces rather than increases it. Their study develops a rich motivational framework based on the issue selling literature (Dutton et al., 1997) and contributes to research on corporate entrepreneurship; it explains what drives individuals to try to gather support for an entrepreneurial initiative by bringing it to the attention of others in the organization so that it is approved and implemented (Kuratko et al., 2005; Ocasio and Joseph, 2005).

Methods and Measurement at the Firm Level

As firm-level research focuses in particular on corporate entrepreneurship theoretical constructs, more studies on measurement and validity become necessary. Past admonitions (e.g. Chandler and Lyon, 2001; Low and MacMillan, 1988) to pursue causal-oriented research and methods rather than exploratory studies remain relevant. For example, entrepreneurial orientation (EO) is a construct that has become central to the scholarly conversation on corporate entrepreneurship and whose measurement is

attracting increased attention (Covin and Wales, forthcoming). EO refers to the strategic posture of firms as exhibited through risk taking, innovativeness, and proactiveness (Miller, 1983). Lumpkin and Dess (1996) add competitive aggressiveness and autonomy to the list of attributes that define EO. The link between entrepreneurial orientation and firm performance has been extensively researched in the past few years (e.g. Covin et al., 2006; Lumpkin and Dess, 2001; Rauch et al., 2009). Most studies find that entrepreneurial orientation enhances firm performance, but highlight the importance of boundary conditions. For example, previous research has assessed the contingent role of firm resources (Ostgaard and Birley, 1994; Wiklund and Shepherd, 2003), firm culture (Burgelman, 1984), firm structure (Green et al., 2008; Slevin and Covin, 1990), social capital (Stam and Elfring, 2008), as well as environmental attributes (Covin and Slevin, 1989; Lumpkin and Dess, 2001; Wiklund and Shepherd, 2005; Zahra and Covin, 1995).

In this special issue, George (2011) addresses both theory and measurement issues in his examination of entrepreneurial orientation through a simulation study. In early work on the formation of the EO construct, Miller and Friesen (1982) examined five items related to risk-taking and innovation to distinguish between entrepreneurial and conservative firms. Ultimately, this work evolved into three main sub-dimensions of entrepreneurial orientation – innovation, proactiveness (compared to reactivity), and risk-taking (Dess et al., 1999). In this special issue, George (2011) examines whether these three basic sub-dimensions are formative or reflective of the overall dimension of EO. In other words, do the sub-dimensions reflect or emanate from the overall dimension of EO or do the sub-dimensions derive or are formative of the entrepreneurial orientation? This is a subtle although important consideration. If the sub-dimensions are formative of the overall construct, then the sub-dimensions can have different ramifications with various dependent variables such as performance. On the other hand, if the sub-dimensions are a reflection of an overall dimension, then it is not very likely that variation in the sub-dimensions would realize a difference in a dependent variable like performance. George (2011) models this important theoretical distinction using a Monte Carlo simulation to examine how results might vary using one theoretical frame compared to the other under different sample considerations. The biggest problem illustrated by the paper is demonstrated when the sub-dimensions in relationship to a dependent variable such as performance use a reflective theoretical base versus the sub-dimensions being derived from a formative theoretical orientation. He suggests that this is a significant problem regarding research results and how they are interpreted. Accordingly, this important study adds to our knowledge about entrepreneurial orientation and helps us question the basic nature of the theory and how we measure the sub-dimensions and compare them in relationship to important dependent variables such as performance. More methodological analyses of this type should be carried out in order to help us understand the nature of our theoretical assumptions and their implications for construct measurement.

UNIVERSITY-SPONSORED ENTREPRENEURSHIP

Interest in commercialization of knowledge developed within knowledge institutes such as universities has increased significantly. Entrepreneurship in universities therefore has

come to be considered a natural stage in the evolution of the modern university, which adds economic development to its more traditional mandates of education and research (Rothaermel et al., 2007). In the United States, for example, legislation stimulating industry-relevant research in universities was fostered by the 1980 Bayh–Dole Act and the 1986 Federal Technology Transfer Act. Similar initiatives have been undertaken by European countries as well as Japan (Geuna et al., 2003). Although universities may be good at basic research, commercial opportunity recognition and resource formation for new ventures may be a distinct weakness (Ambos et al., 2008). Nonetheless, universities are creating spin-off ventures to generate future research resources and for funding ongoing educational programmes. Unlike corporate venturing, university spin-offs must be more self-reliant. As such, they must develop better opportunity refinement confidence, the ability to leverage this competency to acquire resources to build the venture, as well as leadership or championing competencies to sustain the venture through the start-up process.

For example, in our special issue, Rasmussen et al. (2011) offer novel insights regarding the competencies needed to facilitate the successful launch of high-technology university spin-offs. The authors describe their longitudinal case study of four successful spin-offs founded by academics in two UK and two Norwegian universities. The specific purpose of this research was to better understand the competencies needed among high-tech university spin-offs if they are to reach the credibility threshold, defined by the authors as the establishment of an entrepreneurial team for the venture along with securing private sector financing for venture development purposes. Rasmussen et al. point out that within ‘incubator environments’ such as university settings, certain success-facilitating resources and competencies may be abundantly available (e.g. technical expertise) while others will likely be in short supply (e.g. ties to the financial community). Unlike the case of corporate venturing, university spin-offs must generally be more self-reliant, developing or acquiring certain competencies on their own rather than counting on the parent institution (i.e. the university) to furnish them. The specific competencies identified by Rasmussen et al. as enabling university spin-offs to reach the credibility threshold include the *opportunity refinement competency* (related to ‘the discovery or enactment of an opportunity and the ability to further refine and develop the opportunity into a clearly articulated and commercially viable business concept’), the *leveraging competency* (related to ‘the development and acquisition of resources to build the venture’), and the *championing competency* (related to ‘the personal commitment or leadership role needed to sustain the venture start-up process’). The core message of the Rasmussen et al. (2011) article is that the competencies needed in the early stages of venture development among university spin-offs must be iteratively developed or acquired through interactions between founding academics and disparate actors (e.g. prospective industry partners, financial community members) internal and, especially, external to the university.

VENTURE CAPITAL AND ENTREPRENEURSHIP

Research in entrepreneurship on venture capitalists (VCs) has focused on how entrepreneurial financing and associated VC resources has contributed to entrepreneurial

activity (MacMillan et al., 1985). This research has explored the resources and capabilities that venture capitalists bring in facilitating new ventures (De Clercq and Dimov, 2008; Keil et al., 2010). There is also significant research examining how entrepreneurs respond to potential VC sponsorship (Zacharakis et al., 2010) as well as substantial research on corporate venture capital (Block and MacMillan, 1993). Although independent venture capitalists are solely in the business of financing new ventures, corporate venture capitalists, in part, are sensitive to the corporation's other lines of business in funding a venture activity. In many cases, entrepreneurs are sensitive to their ventures' overlap with other businesses in which corporate venture capitalists have invested (Dushnitsky and Shaver, 2009; Sahlman, 1990). An additional line of research examines how venture capital syndications or networks function in supporting new ventures. Cumming (2006) argues that venture capital syndication networks significantly mitigate problems of adverse selection; that is, 'reducing the risk of financing a lemon'. Other research suggests that there is a division of labour between institutional venture capital investors and more pure venture capital firms. Pure venture capital firms focus on earlier-stage funding whereas more institutional venture capital investors focus on sustaining the start-up's development (Ferrary, 2010).

Research has also examined how venture capitalists exit as ventures pursue additional financing through initial public offerings (IPOs). Notably, there may be conflicts such that venture capitalists actually reduce capital available for an IPO firm through excess under-pricing. Arthurs et al. (2008) indicate that venture capitalists increase under-pricing for IPOs, especially when venture capitalists have former financial relationships with investment banks sponsoring the IPO. More research on governance, both before and after an IPO venture, is an important consideration for future study. For example, research published in our special issue by Dalziel, White, and Arthurs shows that during the IPO period firm governance is particularly important (Dalziel et al., 2011b). This is a period when owners or principals are particularly powerful and active. During this period, there may be conflicts of interest between principals which lead to the neglect of important governance tasks. Counter-intuitively, this theoretical essay suggests that inside directors and corporate-board chair duality may reduce principal costs, which may decrease (reduce) the performance and survivability of the new venture. At the same time, greater control of insiders through such board arrangements might simultaneously increase the risk of agency costs. As such, making sure that boards have an appropriate configuration of governance mechanisms to provide checks and balances for both principals and agents is a worthy consideration. Future research on IPOs might consider the potential governance conflicts.

RESEARCH ON INDIVIDUAL ENTREPRENEURS

Significant research suggests that certain cognitive factors may differentiate entrepreneurs from non-entrepreneurs (Baron, 2004; Busenitz and Barney, 1997; Gaglio and Katz, 2001). Much of this research has been summarized and extended by Mitchell et al. (2002, 2007), who provide an important theoretical overview of the work on entrepreneurial cognition. This scholarly contribution has led to a plethora of research on cognition and social cognition – research that examines how individual entrepreneurs

make choices to start new businesses and recognize entrepreneurial opportunities. Research has not clarified whether entrepreneurs think differently (cognition) or if they are innately creative or more alert than others. Furthermore, it is not clear whether the cognitions are innate abilities of entrepreneurs or whether cognition is engaged because of the context or the demands of their entrepreneurial role. Accordingly, research on both aspects – the individual cognition and decision-making approach versus the context and role perspective – will help to decipher what determines the differences in entrepreneurial decision-making (Corbett and Hmieleski, 2007).

As noted, individual-level research has commonly focused on the characteristics of entrepreneurs in regard to opportunity recognition. More research is needed, however, on how individual characteristics lead to improved resource formation for new ventures. How do individual entrepreneurs create legitimacy for resource formation? How do knowledge acquisition processes facilitated by individual entrepreneurs lead to improved resource formation? Clarke (2011) shows in this special issue, for example, how entrepreneurs justify new ventures in such a way that they acquire institutional legitimacy and the necessary resources for growth. Neither strategic management nor institutional theories attribute much agency to the individual entrepreneur, and they are not concerned with the actions entrepreneurs take to rationalize and legitimize their ventures to relevant stakeholders. To gain and sustain support for novel ventures, however, entrepreneurs must use symbolic means to signal to resource providers that their ventures are feasible and legitimate. Previous research has generally focused on how entrepreneurs use language to symbolically represent their ventures as compatible with more widely-established sets of activities. Clarke's paper suggests that entrepreneurs' use of visual symbols also plays a direct role in achieving support for a venture. Based upon a visual ethnographic study of three entrepreneurs, this paper demonstrates how entrepreneurs use visual symbols to: present an appropriate scene to stakeholders; create professional identity and emphasize control; and regulate emotions. The types of visual symbols used by the entrepreneurs are: setting, props, dress, and expressiveness. Overall, the results suggest that more experienced entrepreneurs are more effective at using a wider range of visual symbols during interactions with stakeholders.

A companion area of research in strategy might be useful for further exploration as well. Research on the micro-foundations of resource formation in strategic management has been percolating over the past several decades (Hodgkinson and Healey, forthcoming). Foss (forthcoming) suggests, for instance, that there is no unified model of how people affect the resource formation process. The models range from the hyper-rational model offered by game theory to the stimulus–response model where people are like puppets in the behaviouralism model. One path forward is offered through the literature on human capital. Coff and Kryscynski (forthcoming), for example, identify individual and firm level components that interact to grant some firms unique capabilities in attracting, retaining, and motivating human capital. Moreover, in a bibliometric study on research on absorptive capacity, Volberda et al. (2010) show that we need more research on how the micro-antecedents and macro-antecedents jointly influence future outcomes such as competitive advantage, innovation, and firm performance. In other words, we do not know how entrepreneurship arises, exerts its influence on innovation and competitive advantage, and is subsequently transformed in terms of individual

actions and interactions (micro-foundations) which are embedded in an organizational context. More research in this area would likewise be fruitful for entrepreneurship, not only in resource formation, but also in opportunity recognition (Felin and Zenger, 2009).

COUNTRY INSTITUTIONAL DIFFERENCES IN ENTREPRENEURSHIP

Examining country institutional differences and how they affect entrepreneurial activity differentially will be an important and continuing topic of study for future research (Audretsch, 2007). Although the value of entrepreneurial entry for economic development is widely accepted, most research has focused on individual-level attributes that may not effectively inform country level phenomena. Most research on entrepreneurship has neglected the entrepreneur's institutional context. A notable exception is the study on country variation of regulatory burden and rule of law and its impact on strategic entrepreneurship by Levie and Autio (2011).

Moreover, although Zahra and Garvis (2000) have examined international corporate entrepreneurship of established firms from developed contexts, not much work has been done in institutionally-diverse contexts such as in emerging economies. Yiu and Lau (2008) suggest that emerging and, in particular, transition economies such as China, allow corporate resource formation through networks and that such networks create political, social, and reputational capital which allows special access to resources and legitimacy in emerging markets. Examining the impact of such differences requires a global approach to entrepreneurship research, allowing the researcher to systematically point out the enabling mechanisms that facilitate entrepreneurial initiatives in different institutional contexts.

Although network benefits may be greater in emerging economies, evidence suggests that other aspects, such as inefficient government bureaucracy as well as industry breadth and industry sophistication hamper entrepreneurial initiatives (Schwab, 2010). Studies examining these institutional differences, both at the individual level and corporate level, will be increasingly important as emerging economy firms pursue international strategies. Additionally, firms that are 'born global' (Zhou et al., 2007) will be an increasingly important phenomenon for small or medium enterprises, especially when implementing a network structure with high technology partners in more developed countries. As the global nature of network organizations increases, it becomes ever more interesting to determine what type of activities fit best with the institutional environment of the different home bases of the network organization. In recent years, companies are increasingly involved in the outsourcing and offshoring of key business activities, including entrepreneurial efforts (Ansari et al., 2010). Investigating the match between institutional environments and business requirements may therefore provide a rich context for future research. Moreover, such scanning may allow firms to choose institutional contexts with more accuracy, increasing the success rate of entrepreneurial efforts.

APPROPRIABILITY REGIMES AND ENTREPRENEURSHIP

Whether a country allows entrepreneurs to appropriate the profits from their new ideas and ventures through patenting laws, and how well patents are protected and the laws

enforced, will be important issues for future research to address. Some countries have intellectual property policies which are not enforced which allow imitation of entrepreneurial ideas established elsewhere to foster catch-up to global standards. Other countries have policies that foster new entrepreneurial entry and protect against such imitation. These policies, and the ability to appropriate profits from new ventures, create significantly different incentives for entrepreneurial activity.

Levie and Autio (2011), in our special issue, study to what extent entry into entrepreneurship can be a strategic choice made by individuals seeking an optimal way to exploit their human, social, and financial capital. Of course, trade-offs associated with this choice are influenced by institutional conditions. On the basis of signalling theory, employment choice theory, and theory on strategic entry, they develop hypotheses on the effect of business regulation and rule of law on strategic and non-strategic entrepreneurial entry. Analysing a six-year panel of 54 countries, they find that the lighter the burden of regulation, the higher the rate and relative prevalence of strategic entrepreneurial entry. Rule of law moderates the effect of regulation on strategic entrepreneurial entry such that regulation has a significant effect on strategic entry only when the rule of law is strong. Regulation has no significant effect on entry into non-strategic entrepreneurship except when rule of law is high. These findings are robust when different measures of regulation are specified, including entry regulations and labour regulations. Implications are drawn for prospective entrepreneurs, existing organizations, policy, and further research.

DISCUSSION AND CONCLUSION

The highly differentiated nature of entrepreneurship is a hallmark of the field and is evident in the multitude of theoretical perspectives, levels of analysis, and empirical constructs brought to bear on the topic. In spite of this diversity of theories, methods, and empirical studies, the entrepreneurship field needs accumulation of knowledge across research efforts. To facilitate accumulation of knowledge and revitalization of the field, we proposed a framework that highlights the main research opportunities in the entrepreneurship field. Of course, we do not claim that the research areas in Figure 1 are exhaustive. Instead, what we have tried to do is emphasize research opportunities in areas that need more coverage and at the same time introduce the articles found in the special issue and where they are located in our framework.

Additional high potential research questions pertaining to the focal areas shown in Figure 1 are listed in Table I. In this table, we start with the location of venture creation, corporate or independent, and then move to the level of analysis (see the left side of Figure 1), successively providing research questions at the industry, inter-organization, firm, university, venture capital, and individual entrepreneur levels. Next, we provide research questions having to do with critical entrepreneurial activity areas, opportunity recognition, and venture resource formation. Finally, we offer broad institutional oriented research questions having to do with country differences and appropriability regimes (outside the circle in Figure 1). In our brief discussion below we would like to emphasize a couple of remaining issues.

Table I. Examples of significant entrepreneurship research questions by focal area in Figure 1

<i>Focal area</i>	<i>Research questions</i>	<i>Representative research^a</i>
Corporate venture	<p>What are the implications of how ventures are structurally positioned within corporations for the performance of those ventures?</p> <p>Are there systematic relationships between the various founding motives under which corporate ventures are initiated and how those ventures are subsequently managed?</p> <p>Do the clarity and specificity of corporate ventures' initial strategic objectives influence corporate support for and expectations of those ventures?</p>	<p>Burgers et al. (2009)</p> <p>De Clercq et al. (2011)</p> <p>Hill and Birkinshaw (2008)</p> <p>Shah et al. (2008)</p>
Independent venture	<p>Are there particular business models with strong ties to venture growth and, if so, how and why do these initial founding conditions affect venture development?</p> <p>How can the boundaries of the venture's organization be defined in ways that allow the venture to retain control over its operations without needing to possess or control all essential strategic assets?</p> <p>What are some effective strategies for managing organizational complexity as ventures transition to more mature firms?</p>	<p>Andries and Debackere (2007)</p> <p>Song et al. (2010)</p> <p>Sullivan and Marvel (2011)</p> <p>Stam and Elfring (2008)</p>
Industry	<p>To what extent do the strategic recipes for revitalizing products, value chains, and markets vary across industries and what are the drivers of these differences?</p> <p>What determines how the sources of inventive activity – e.g., established (incumbent) firms, start-up ventures, industry outsiders – are distributed for an industry?</p> <p>What role do entrepreneurial processes play as possible determinants of industry convergence, fragmentation, as well as the overall structure of an industry?</p>	<p>Burgelman and Grove (2007a)</p> <p>Fernhaber et al. (2007)</p> <p>Majurndar et al. (2010)</p> <p>Rosenkopf and Schilling (2007)</p>
Inter-organization	<p>Can and should an innovative capability ever be outsourced and, if so, under what conditions?</p> <p>Are there generalizable lessons associated with the effective management of 'open innovation' practices, and are there contexts within which particular practices are most appropriate?</p> <p>What are the contextual determinants of inter-organizational cooperation in the pursuit of entrepreneurial opportunities; in particular, how does the vertical versus horizontal structure of an industry affect the practice of collaborative innovation?</p>	<p>Ernst et al. (2011)</p> <p>Burgers et al. (2008)</p> <p>Lee (2007)</p> <p>Li et al. (2010)</p> <p>Rothaermel and Deeds (2006)</p>
Firm	<p>How are the various innovation-producing 'tools' (e.g., internal corporate venturing, joint venturing, acquisition, licensing) configured into successful corporate business renewal strategies?</p> <p>Are there relationships between the attributes of corporations' venturing portfolios and the performance of those portfolios? For example, is there a size-of-portfolio effect? . . . a distribution-of-venture-stage effect? . . . a relatedness-of-ventures/ portfolio homogeneity effect?</p> <p>What are some effective 'models' for managing the innovation-to-organization challenge (e.g., continuous morphing model, structural ambidexterity model)?</p>	<p>Dalziel et al. (2011a)</p> <p>George (2011)</p> <p>Morris et al. (2006)</p> <p>Simsek et al. (2007)</p>
University	<p>How do universities reward and retain academic entrepreneurs in manners that create win-win situations for the entrepreneur and the university?</p> <p>What are the typical institutional constraints of academic settings that hinder the appropriation of value from entrepreneurial spin-outs, and how can these constraints be overcome?</p> <p>In what ways are the planning processes associated with internal venturing within a university setting similar to or different from these same processes within a corporate setting? What can universities learn from studying corporate best practices, and vice versa?</p>	<p>Clarysse et al. (2011)</p> <p>Rasmussen et al. (2011)</p> <p>Roininen and Ylinenpää (2009)</p> <p>Sherwood and Covin (2008)</p>
Venture capital	<p>Are the investment criteria stressed by independent venture capitalists significantly different from those stressed by the managers of corporate venture capital funds and, if so, how and what are the effects on investment returns?</p> <p>How strong are the specialization effects (on fund returns) associated with focused venture capital investments in known industry or technology sectors, and what does this imply about the wisdom of creating diverse investment portfolios?</p> <p>Have the objectives, expectations, and/or investment foci of venture capitalists changed as the global economy has gone through periods of expansion, then recession? If so, how?</p>	<p>Dalziel et al. (2011b)</p> <p>De Clercq and Dimov (2008)</p> <p>Dushnitsky and Shaver (2009)</p> <p>Ferrary (2010)</p>
Individual	<p>What are the conditions in the venturing context or process that allow for the development of an intuitive capability among serial entrepreneurs?</p> <p>Are there differences in the sense-making and decision-framing protocols of those who choose to start businesses versus those who don't when presented with the same opportunities?</p> <p>How are feelings of grief and loss related to entrepreneurs' abilities to learn (or not learn) from their venture failures, and what role does emotional resilience play in the learning process?</p>	<p>Baron (2007)</p> <p>Clarke (2011)</p> <p>Hornsby et al. (2009)</p> <p>Ucbasaran et al. (2010)</p>

Table I. *Continued*

<i>Focal area</i>	<i>Research questions</i>	<i>Representative research^a</i>
Opportunity recognition	How can organizational leaders expand, constrain, or otherwise control the scope of what is recognized as an entrepreneurial opportunity by their members? Are there significant differences in the management processes and performance of ventures founded on the basis of what are perceived as 'found/discovered' opportunities versus 'made/created' opportunities? What roles do particular cognitive biases and processes, such as counterfactual thinking and effectual reasoning, play in the recognition of entrepreneurial opportunities, and are there contextual considerations that moderate the linkages these factors have with the quantity or quality of opportunities recognized?	Aldrich and Kim (2007) Corbett (2007) Grégoire et al. (2010) Vaghely and Julien (2010)
Resource formation	What are the evolutionary processes associated with the emergence of dynamic capabilities in new ventures? Is resource construction through the process of entrepreneurial bricolage ^b more likely to occur in some resource-constrained environments than others and, if so, what factors predict the exhibition of this entrepreneurial process? Do entrepreneurs with constructivist views of their resource environments (resources stocks are creatable) pursue different opportunities or otherwise operate differently than those with objectivist views of their resource environments (resources stocks are 'givens')?	Baker and Nelson (2005) Keil et al. (2009) Pirollo and Presutti (2010) Teng (2007)
Country institutional differences	What are salient attributes of the government-industry relationship that differentiate between more and less successful systems of innovation in different country contexts? How do the norms that drive intra-industry competition versus cooperation differ across countries, and what effects do these norms have on firms' abilities to renew themselves through innovation? How are the vulnerabilities and challenges associated with pioneering new markets different among ventures operating in emerging versus mature economies? How is the process of establishing business legitimacy similar or different among ventures operating in these two contexts?	Busenitz et al. (2000) Stephan and Uhlaner (2010) Tonoyan et al. (2010) Williams and Lee (2011) Levie and Autio (2011)
Appropriability regimes	How should corporations structure their collaborative innovation efforts when the cultural norms and/or intellectual property environments of one or more of the participants invite opportunism? Under what conditions are stronger barriers around innovation (e.g., dense patent thickets) versus weaker barriers around innovation (e.g., porous patent thickets) conducive to the creation and appropriation of value by entrepreneurial firms? What effects do particular innovation appropriability regimes have on the innovation modes adopted by firms (e.g., internal/organic innovation, collaborative/joint innovation, external/acquisitive innovation)? Do a firm's internal innovative capability and absorptive capacity influence the appropriability regime-innovation mode relationship?	Levie and Autio (2011) Haeffliger et al. (2010) Hurmelinna-Laukkanen et al. (2008) Pisano and Teece (2007)

Notes:

^a Articles shown in *italics* are included in this Special Issue. Several of these Special Issue articles could be classified into multiple focal areas, but they are categorized here in a manner consistent with their overviews within this introductory article.

^b The behavioural theory of 'entrepreneurial bricolage' attempts to understand what entrepreneurs do when faced with resource constraints. Bricolage is defined as 'making do by applying combinations of the resources at hand to new problems and opportunities' (Baker and Nelson, 2005, p. 333).

Multi-Level Research: Interactions of Micro- and Macro-Antecedents of Entrepreneurship

Low and MacMillan (1988) suggested that entrepreneurship research needed to have a marked increase in a multi-level theory and methods. Davidsson and Wiklund (2001) suggested that a multi-level approach is a continuing need for improving the state of entrepreneurship research. Research has continued at a level and strong pace at the individual level of analysis as indicated above. Furthermore, there has been a significant increase in studies at the firm-level focused on corporate entrepreneurship. Although there has been an increase in multi-level research, more still needs to be done. In particular, we would like to stimulate research that shows how the micro- and macro-antecedents as shown in Figure 1 interact to influence future outcomes such

as improved opportunity recognition and resource formation, which ultimately lead to innovation, competitive advantage, and firm performance. Some of the studies in our special issue represent advances in this area.

The study by Clarysse et al. (2011) in this special issue is an example of multi-level research that specifically compares corporate entrepreneurship and university-sponsored entrepreneurship (see Figure 1). In this study they focus on the entrepreneurial origin (whether from a corporation or a university) of technological knowledge and how this knowledge influences spin-off companies focused on products derived from this technological knowledge. Interestingly, they find that university spin-offs are more successful when based on broad technological knowledge, which might provide a whole new platform for a variety of products or services. Alternatively, their research supports the idea that corporate spin-offs are more likely to create corporate growth opportunities when the technology is focused in a more narrowly-scoped knowledge area. However, university spin-offs do not benefit from completely novel technologies unless the university hosts a technology transfer office to facilitate marketing the novel technology. The results of this study can foster improved university policy as well as corporate policy for sorting out scientific inventions which are more suitable for licensing versus new venture development and spin-off. Likewise, knowledge derived from this research can help corporations understand which type of ventures might more likely lead to successful growth-oriented spin-off companies. Again, this study and others in this special issue represent cross-area and multi-level comparative work which advances both entrepreneurship theory and practice.

Research Opportunities and the Revitalization Role of Entrepreneurship

Entrepreneurship research has and will likely continue to produce useful knowledge for theory-building as well as managerial and policy-making purposes. Hopefully, the observations and recommendations offered in this introductory article will help to maintain the current steep trajectory of knowledge accumulation around entrepreneurial topics of recognized importance. However, the challenge of recognizing high potential research opportunities is not simply one of revitalizing established research streams by pointing scholars in the most promising directions. The revitalization role of entrepreneurship *per se* can and should be considered a focal point for the purpose of identifying research opportunities. As such, 'revitalization' as a theme for this special issue can be considered from the perspective of what might be done to entrepreneurship research to ensure its continuing value and relevance, or from the perspective of what entrepreneurial processes do. Up to this point, our focus has been on the former challenge. We now, albeit briefly, take up the latter.

Revitalization has a long-recognized but somewhat muted role in the scholarly conversation pertaining to what entrepreneurship does. Indeed, revitalization is inherent to many definitions of entrepreneurship. For example, Bird and Jelinek (1988, p. 21) define what it means to be entrepreneurial as 'the intentional creation or transformation of an organization for the purpose of creating or adding value through organization of resources'. The 'transformation of an organization for the purpose of creating or adding value' is arguably the very essence of revitalization, at least when the focal entity is an

organization. To appreciate the revitalization role of entrepreneurship, one must acknowledge that through revitalization some existing entity – whether it be a firm, a market, an industry, an economy, a network, an ecosystem, etc. – is being renewed. Accordingly, one might ask what the major revitalization challenges are for different entities or units of analysis. While some of the challenges may be entity-specific – revitalizing an economy through entrepreneurial acts entails different challenges than those associated with revitalization within a firm – some revitalization-related research opportunities remain relevant across the entities within which (or between which) entrepreneurial processes occur.

It is our contention that entrepreneurship research will continue to flourish and remain meaningful if research opportunities are pursued that explore revitalization-related uncertainties that are relevant regardless of the focal entity under investigation. Indeed, promising research opportunities might be identified by asking whether revitalization-focused challenges associated with a particular entity are also relevant for other entities within which (or between which) entrepreneurial processes occur. What might some of these research opportunities be? Three such possibilities are herein suggested.

First, theory is needed to more clearly define the applicable boundaries of the EO phenomenon as a source of entity revitalization. Stated differently, EO has traditionally been conceived of as a firm-level phenomenon through which revitalization objectives may be achieved (see Miller, 1983). Does it make sense to think of EO as a possible individual- or industry-level phenomenon, for example, or would this be stretching the EO construct beyond the scope within which it is theoretically and practically useful? If the construct of EO is judged to be applicable to other (non-firm) units of analysis, what are the specific manifestations of this phenomenon for those entities, and how do those manifestations serve the purposes of revitalization? Moreover, there is little coverage in the literature given to the costs of developing an EO. The issue of whether there is an optimal level of EO does not appear to be raised in the literature. The maximum level of EO is implicitly assumed to be desirable, although in the presence of the costs of building and maintaining high levels of EO, optimum EO is never equal to maximum EO. Research in entrepreneurship should therefore try to identify what constitutes optimum levels of EO and its determinants, taking into account the marginal costs and benefits of building an EO (Volberda et al., 2010).

Second, additional research is warranted on the topic of how the control of entrepreneurial processes can serve the purposes of revitalization for particular units of analysis. The entrepreneurship literature is replete with advice on how to make particular entities – individuals, organizations, governments, etc. – more entrepreneurial in the interests of achieving and/or sustaining effectiveness. However, being more entrepreneurial *per se* is not the key to revitalization for any unit of analysis in the sense that entrepreneurship is merely a force that needs to be channelled, directed, or otherwise controlled in order to be productive. It has been observed, for example, that in the absence of entrepreneurial control mechanisms, firms that manifest corporate entrepreneurial activity may ‘tend to generate an incoherent mass of interesting but unrelated opportunities that may have profit potential, but that don’t move [those] firms toward a desirable future’ (Getz and Tuttle, 2001, p. 277). Likewise, entrepreneurs run the risk of destroying value in their

firms if their actions are not well aligned with organizational objectives (Kuratko and Goldsby, 2004). In short, revitalization objectives are likely best accomplished at any level or unit of analysis when, to borrow Burgelman and Grove's (2007b) verbiage, 'letting chaos reign' is balanced with 'reining in chaos', and the latter is inherently a control issue. Based on the dynamic described above, constructive friction between change and preservation, adaptation, and selection, and more broadly exploration versus exploitation (March, 1991; Volberda, 1996) represents a promising research focus within the field of entrepreneurship.

As a final example of a research opportunity pertaining to entrepreneurship's revitalization role, scholars might productively focus on the question of how particular adaptive processes and capabilities contribute to the revitalization of entities. While this is a topic about which knowledge has accumulated rather quickly in recent years, what we do not know about this matter (particularly as it relates to different types of entrepreneurial entities) remains significant. For example, reflecting on decades of research, March (2006) observed that the process of adaptation is incompletely understood, in part, because the mechanisms through which exploitation and, especially, exploration are enacted have largely remained 'unexamined and unexplained' (p. 205). In particular, within the realm of adaptive theory, factors associated with the success rates of exploratory initiatives have received limited discussion (Sidhu et al., 2004). Accordingly, theory and research focused on how the adaptation of particular entities (e.g. firms, industries, alliance networks) is achieved via exploratory initiatives should be a high priority among entrepreneurship researchers.

Conclusion

Intellectual progress in fields of scholarly inquiry requires occasional reflection on current knowledge stocks as means for identifying significant knowledge voids and theoretically useful research directions. In this spirit, this introductory article has briefly reviewed focal areas of entrepreneurship research, identified research opportunities within these focal areas addressed through this Special Issue's papers, and suggested promising additional research questions whose pursuit should promote meaningful knowledge advancement within the entrepreneurship domain. We hope the insights shared within this Special Issue motivate additional scholarly conversation on both important entrepreneurship research topics as well as the important revitalization role of entrepreneurial processes.

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