

A Cross-Disciplinary Exploration of Entrepreneurship Research

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The eclectic and pervasive benefits of entrepreneurship are generating research questions that interest scholars in a variety of disciplines. These questions have been primarily examined within the context of a scholar's home discipline while ignoring insights from other disciplines. This approach has left entrepreneurship research as a widely dispersed, loosely connected domain of issues. In this review, the authors explore entrepreneurship research in accounting, anthropology, economics, finance, management, marketing, operations management, political science, psychology, and sociology. They seek to identify common interests that can serve as a bridge for scholars interested in using a multitheoretic and multimethodological lens to design and complete entrepreneurship studies.

Keywords: *entrepreneurship; theory; cross-disciplinary review; survey*

Entrepreneurship is widely viewed as an important stimulus of positive outcomes at both the firm level and the society level. At the firm level, entrepreneurial actions manifest in product, process, and administrative innovations (Covin & Miles, 1999; Schumpeter, 1934). Collectively, these actions facilitate strategic renewal (Hitt, Nixon, Hoskisson, & Kochhar, 1999) and the creation of value for customers and wealth for shareholders (Hitt, Ireland, Camp, & Sexton, 2001). With respect to the societal level, entrepreneurship contributes to

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(a) job creation (Birley, 1986), (b) technological progress and the revitalization of economies (Birley, 1986; Zahra, 2005), and (c) the shaping of global cultures (Gudeman, 1992; Inglehart & Baker, 2000).

Increasingly, entrepreneurship's eclectic and pervasive benefits are generating questions that are of interest to researchers from a variety of scholarly disciplines or academic areas. Indeed, evidence suggests that scholars from multiple disciplines (e.g., anthropology, economics, psychology, sociology, and strategic management, to name a few) form and subsequently examine questions concerning individual-, firm-, and society-level effects of entrepreneurship.

Typically, though, these questions are studied within the context of the scholar's home discipline and the entrepreneurship-related insights included in that discipline's literature. An outcome of these highly and tightly focused yet contextually specific research designs is that scholars tend to ignore theoretical and methodological insights that are embedded in other disciplines when completing their entrepreneurship-related work. In turn, this approach has created a domain of entrepreneurship research that has been described as loosely connected and with "a mosaic of issues to be explored" (Zahra, 2005: 254).

Our position is that integrating various theoretical and methodological insights from multiple academic disciplines has the potential to serve as a useful bridge for scholars interested in studying issues associated with the entrepreneurship phenomenon. Previous reviews of entrepreneurship research focus on work that is published primarily in core entrepreneurship and management journals (Aldrich & Baker, 1997; Dess, Ireland, Zahra, Floyd, Janney, & Lane, 2003; Low & MacMillan, 1988; Shane, 1997). In contrast to these valuable contributions, we survey entrepreneurship-related research that is published in top-tier journals in a range of disciplines in which scholars are dealing with questions related to entrepreneurship. Accounting, anthropology, economics, finance, management, marketing, operations management, political science, psychology, and sociology are the disciplines we explore. Our review is an exploration in the sense of March (1991) in that we emphasize search, variation, and discovery of new ideas. In doing so, our objective is to stimulate theoretical and methodological innovations as the foundation for reconciling (to some extent) the "critical mess" of entrepreneurship research (Gartner, 2007) and to encourage collaborations among researchers from different disciplines. Consistent with exploratory work, breadth, rather than depth, is our focus. In this context, our desire is to survey all relevant disciplines instead of extensively examining a few disciplines.

Review of Entrepreneurship Research

Different foci are used when defining entrepreneurship. Lumpkin and Dess (1996) and Ireland, Hitt, and Sirmon (2003), for example, see entrepreneurship as processes through which newness is created. In these instances, newness is viewed in the context of Schumpeter's (1934) conceptualization—new products, new processes, and new markets that are the engine of wealth creation. Others (e.g., Dobrev & Barnett, 2005; Thornton, 1999) see newness in the form of firms, defining entrepreneurship as the creation of new organizations.

Speaking with greater depth about the processes through which newness is created, Shane and Venkataraman (2000: 218) see entrepreneurship as “processes of discovery, evaluation, and exploitation of opportunities.” After analyzing multiple definitions, Sharma and Chrisman (1999: 17) defined entrepreneurship as “acts of organizational creation, renewal, or innovation that occur within or outside an existing organization.”

Still another perspective views entrepreneurship as a process that intermingles with other processes or events in organizations and society in general. Proponents of this perspective suggest that processes or events should be examined in terms of entrepreneurial intensity (Morris, 1998) or the degree of entrepreneurship that is associated with general organizational processes. For example, a merger represents a strategic action by at least two firms to combine assets on a coequal basis. However, from an entrepreneurial intensity perspective, mergers entail the creation of new (and the dismantling of existing) processes, interorganizational relationships, administrative schemas, and so on. As a second example, entrepreneurship at the government level manifests through individual actions aimed at establishing new policy. Although not necessarily creating *market* value as explicitly required by some definitions of entrepreneurship, these actions follow the general path of opportunity discovery, evaluation, and exploitation to create value at other levels of analysis.

The different definitions of entrepreneurship challenge researchers to cast a wide net when using terms to search for published entrepreneurship work (Ireland, Reutzel, & Webb, 2005). This challenge exists for us as well, meaning that the set of terms we used to locate published entrepreneurship work is comprehensive.¹ However, to increase the likelihood of locating the most influential work, we chose to limit the scope of our search to each discipline’s top-tier journals. Our sampling time frame is from 1980 through the last volume of each journal that was published in 2005.

Scholars outside our disciplines (entrepreneurship and strategic management) helped us identify the top-tier journals in their area. In Table 1, we present both the journals we surveyed and the number of entrepreneurship articles published in each one during the period of our analysis. To verify that a study’s research question concerned entrepreneurship, we carefully examined each article before deciding to include it in the respective journal counts. Following this preliminary examination, a random sample of at least 20 articles from each field was read and studied to gain further insights about the theoretical and methodological insights associated with each published work.

Our article proceeds as follows. First, we highlight general trends in entrepreneurship research that we identified in our survey. We then begin to more specifically describe the results of our survey, discussing each discipline in alphabetical order. Identifying major trends concerning entrepreneurship research in each discipline and suggesting opportunities for future collaborative research efforts are the purposes of our analysis. Following the focused examination of each field, we synthesize a framework for future entrepreneurship studies. We conclude by discussing our work’s limitations while simultaneously proposing that the outcomes of our effort can effectively serve as a platform for initiating collaborative research between entrepreneurship scholars and others desiring to pursue questions in the entrepreneurship research domain.

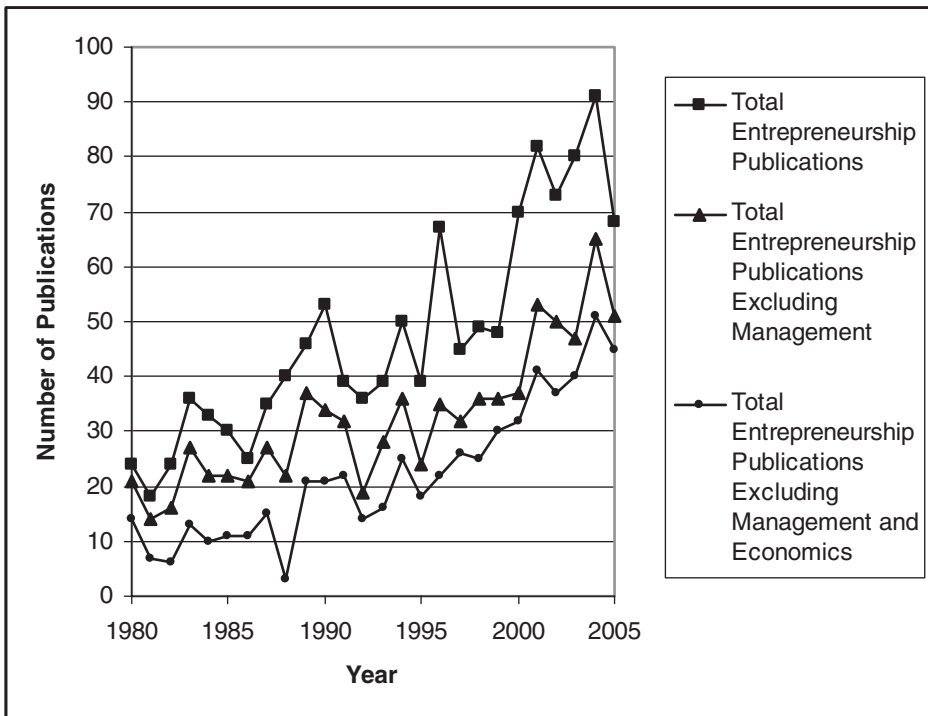
Table 1
Number of Entrepreneurship Articles Published Per Top-Tier Journal, 1980 to 2005

Scholarly Domain	Journal	Number of Entrepreneurship Articles Published
Accounting	<i>Journal of Accounting & Economics</i>	15
	<i>Journal of Accounting Research</i>	21
	<i>Accounting Review</i>	14
Anthropology	<i>American Anthropologist</i>	11
	<i>American Ethnologist</i>	17
	<i>Current Anthropology</i>	13
	<i>Ethnology</i>	4
	<i>Human Organization</i>	17
Economics	<i>Journal of Political Economy</i>	45
	<i>American Economic Review</i>	178
	<i>Quarterly Journal of Economics</i>	45
Finance	<i>Journal of Finance</i>	66
	<i>Journal of Financial Economics</i>	57
	<i>Journal of Financial and Quantitative Analysis</i>	17
Management	<i>Academy of Management Journal</i>	102
	<i>Academy of Management Review</i>	45
	<i>Administrative Science Quarterly</i>	43
	<i>Journal of Management</i>	53
	<i>Strategic Management Journal</i>	153
Marketing	<i>Journal of the Academy of Marketing Science</i>	7
	<i>Journal of Consumer Research</i>	19
	<i>Journal of Marketing</i>	52
	<i>Journal of Marketing Research</i>	20
	<i>Marketing Science</i>	24
Operations Management	<i>Decision Sciences</i>	20
	<i>Journal of Operations Management</i>	36
	<i>Operations Research</i>	14
Political Science	<i>American Journal of Political Science</i>	13
	<i>American Political Science Review</i>	22
	<i>Journal of Politics</i>	12
Psychology	<i>Journal of Applied Psychology</i>	20
	<i>Journal of Experimental Social Psychology</i>	0
	<i>Journal of Personality and Social Psychology</i>	1
	<i>Personality and Social Psychology Bulletin</i>	2
	<i>Personnel Psychology</i>	8
Sociology	<i>American Journal of Sociology</i>	28
	<i>American Sociological Review</i>	16
	<i>Annual Review of Sociology</i>	10

General Trends

The number of entrepreneurship-related articles published in top-tier journals in the related academic disciplines we sampled continues to grow. Indeed, our survey indicates

Figure 1
Overall Trend of Publications in Entrepreneurship Research, 1980 to 2005



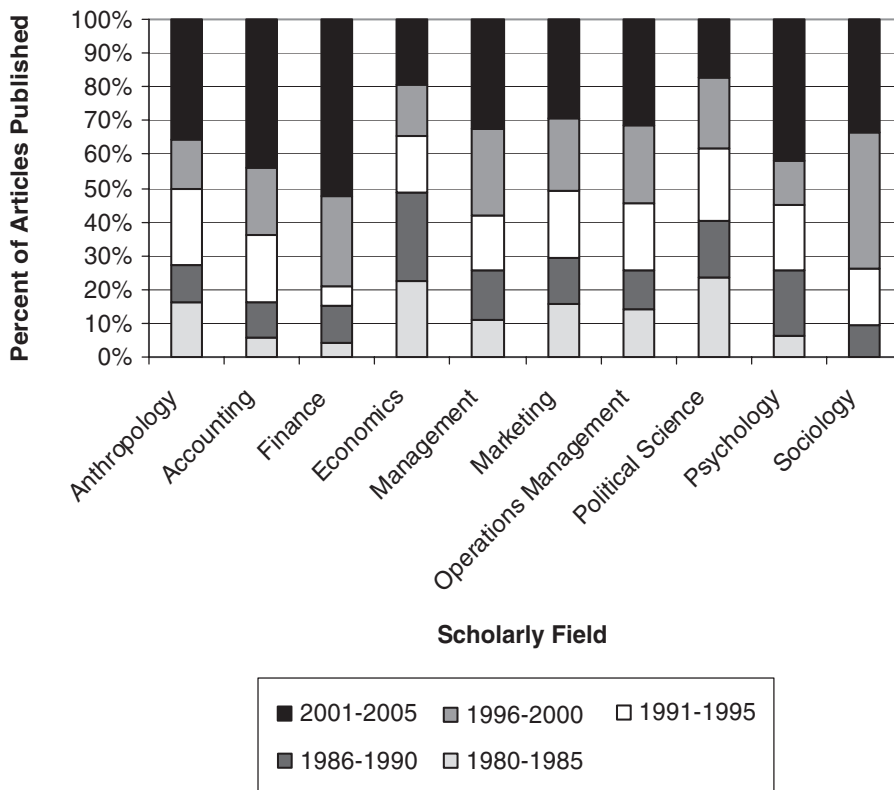
that as a research phenomenon, entrepreneurship received increasing attention from scholars working in related disciplines from 1980 to 2005.

In Figure 1, we show the year-to-year trends in the publication of entrepreneurship articles in related disciplines' top-tier journals. Also presented in this figure is the total number of entrepreneurship-related articles absent those published in economics and management journals. The data are presented this way because of the skewness the dominance of economics and management publications as sources of entrepreneurship research creates in the data.

As the data in Figure 1 show, the increasing trend in publishing entrepreneurship work is fairly consistent across disciplines. Given our argument that disciplinary collaborations hold great promise for conducting important and impactful entrepreneurship studies, we find this trend promising.

In Figure 2, we illustrate the proportion of articles published in each scholarly discipline from 1980 to 2005 in 5-year increments, except for the first increment of 6 years from 1980

Figure 2
Proportion of Articles Published Within Each Associated
Discipline, 5-Year Increments



to 1985. These data, which are generated using our sampling parameters, suggest interesting insights, such as the fact that except for economics, political science, and sociology, the largest quantity of entrepreneurship research in each discipline was published between 2001 and 2005. Although economics experienced a decline in entrepreneurship research since the period from 1986 to 1990, this discipline remains the third-largest contributor (with 52 top-tier journal publications) of entrepreneurship research from 2001 to 2005, lagging only finance and management. Finance enjoyed the largest growth in entrepreneurship research in the most recent period (2001 to 2005); this growth may be because of the increased interest in initial public offerings (IPOs).

Disciplinary Approaches to Entrepreneurship Research

The widespread growth of entrepreneurship research may partially reflect scholars' recognition of the broad impact entrepreneurial activities have on individual, firm, and societal outcomes. Although scholars across disciplines have come to recognize the importance of entrepreneurship, the development of entrepreneurship research has seen scholars primarily focused on issues specific to their discipline's domain. In the following sections, we summarize the major streams of research within individual disciplines. In doing so, we also identify prominent conceptual and methodological insights that may be gleaned from the research contributions appearing in specific disciplines.

Accounting. We identified three entrepreneurship-related streams of accounting research. The first stream concerns a firm's information disclosure to existing or potential owners and other stakeholders (Guo, Lev, & Zhou, 2004; Hand, 2005; Hughes & Pae, 2004; Titman & Trueman, 1986), usually in the context of IPOs. A second stream deals with auditors' roles in qualifying the firm's communicated information (Beatty, 1993; Hogan, 1997; Menon & Williams, 1994; Weber & Willenborg, 2003), also usually framed in the context of IPOs. These two research streams are largely focused on the communication side of accounting. The third, smallest stream examines the processes through which firms measure cost-related information and subsequently use that information internally to promote entrepreneurship (Davila & Foster, 2005; Drake, Haka, & Ravenscroft, 1999; Fleischman & Parker, 1991; Kaplan, 1984).

Many entrepreneurial firms seek to accelerate their growth by accessing funds through public offerings. An IPO is a strategic action taken by management to sell a percentage of the firm's ownership with the intent of using the proceeds to pursue and support future growth efforts. To access these funds, however, the firm must disclose to investors adequate information regarding its growth prospects. In an appropriation context though, the firm must be careful not to publicly release information that provides too many competitively relevant insights to competitors. Accordingly, much of the entrepreneurship-related research in accounting has focused on determining the types and quantities of information that potential investors value. Hand (2005), for example, found that appropriately detailed and quality financial statement information (e.g., in terms of return on assets, return on investments, and cash flow) increases the valuation of mature biotech IPO firms. However, valuation of younger biotech IPO firms is based more strongly on nonfinancial statement information such as strategic alliances and the number and scope of patents. Complementing Hand's (2005) work is the Guo et al. (2004) finding that IPO firms disclose information when there is patent protection, when the firm is in later stages of product development (competitors will be unlikely to gain technological parity), and when the firm has venture capital (VC) backing (which increases the firm's ability to combat competitors' efforts to enter their market).

Auditors' various roles are the focus of the second stream of entrepreneurship-related research in accounting. On one hand, accounting scholars have discussed the auditor's role in qualifying the information firms provide to external stakeholders. An example of this line of research is Weber and Willenborg's (2003) finding that larger "higher-quality" auditors (which were known as the "Big Six" at that time and were national auditing firms) provide

more accurate audit reports for small, non-venture-backed U.S. IPOs. On the other hand, scholars also posit an insurance role for auditors. In this capacity, auditors serve as a potential source of recovery for investors who have experienced losses because of misrepresentations in audited financial statements (Menon & Williams, 1994; Willenborg, 1999). Interestingly, auditors charge higher audit fees to IPO firms that have a higher risk of failure (delisting, filing for bankruptcy, or subject of a securities-based lawsuit; Beatty, 1993). Using a Canadian sample, Clarkson and Simunic (1994) examine both the qualifying and insurance roles of auditors. Canada provides a special context in which auditors are more legally protected from major lawsuits. Clarkson and Simunic find that IPO firms with riskier future cash flows choose higher-quality auditors but retain less ownership (riskier U.S. IPOs usually choose lesser-quality auditors). In the Canadian context, high auditor quality (and perhaps more lenient audits) acts as a positive (although inaccurate) signal to investors of the quality of the IPO, resulting in larger accruals of financial capital for the firm experiencing the IPO event (Clarkson & Simunic, 1994).

The third stream of accounting research that is relevant for our purposes concerns how firms collect and measure cost-related information to facilitate entrepreneurial activities. Here, scholars are interested in when and why entrepreneurial firms adopt accounting systems and what types of accounting systems are relevant to a particular type of firm. Although commonly attributed to the scientific management movement, the advent of cost management may actually have occurred with earlier British industrial entrepreneurs (Fleischman & Parker, 1991). Techniques have evolved over time as firms have sought to increase efficiency while maintaining competitive levels of innovation. Activity-based costing (ABC) represents one such advancement in cost management. ABC focuses on activities and resources under the control of multiple individuals. In doing so, ABC is able to identify more specific sources of efficiency improvements (i.e., process innovation) than volume-based costing (VBC). Examining contingent effects of ABC implementation, Drake et al. (1999) found that ABC led to desired process innovations and profitability outcomes when coupled with group incentives. However, when firms couple ABC with tournament incentive structures (i.e., incentives for individual employees based on performance relative to fellow employees), process innovations and profits were even less than with VBC.

Significant research opportunities remain for scholars pursuing interests that integrate accounting and entrepreneurship. As firms increasingly pursue cooperative strategies such as strategic alliances to strengthen entrepreneurial efforts, decisions must be made regarding information disclosure. The objective in these instances is to disclose information that is sufficient to elicit commitment from a potential partner while preventing disclosure of too many competitively relevant insights about the firm's practices. The high failure rate of strategic alliances possibly reflects the fact that firms have been largely unsuccessful in reaching this balance.

How firms can collect and measure cost-related information concerning intangible assets (e.g., the value of social capital and the knowledge possessed by human capital) is another fruitful line of inquiry. How can firms measure the value generated by innovative employees when much of this value is a function of intangible knowledge and future innovations that may result from its application?

Anthropology. Broadly, anthropological research examines how unique cultural attributes lead to variants in the general form of the entrepreneurial process and how entrepreneurship has affected cultures. As shown in Table 1, the total number of anthropology studies dealing with entrepreneurship topics is relatively small compared to the total number of contributions from other disciplines we examined. Nonetheless, the rate of publishing the kind of work that is of interest to our survey is increasing continuously. Important, too, is the fact that anthropological studies provide numerous theoretical and methodological insights for general entrepreneurship research.

We identified three interrelated conceptual themes as a result of examining anthropological entrepreneurship studies: (a) identity (Bletzer, 2003; Flynn, 1997; Pessar, 1995), (b) cultural or ethnic nuances of entrepreneurship (Greenhalgh, 1994; Pessar, 1995; Siu, 1989), and (c) entrepreneurial activity outside of institutional boundaries (Bornstein, 2001; Konstantinov, 1996; Villar, 1994). We also identified a general stream of research that concerns cultural innovation (Endter-Wada & Keenan, 2005; Gudeman, 1992; Lepowsky, 1991; Smith, 1982). Perhaps the greatest value-creating contribution to entrepreneurship research, though, is the commonly used ethnographic approach to examining phenomena.

Anthropological studies have examined ethnic identity as a form of social capital that facilitates minority entrepreneurs in their efforts to gather resources and create markets for their products. Interestingly, how one draws the lines of identity plays a major role in defining the value of the entrepreneur's identity. For example, Pessar (1995) asserts that there is not a Latin American identity among entrepreneurs in Washington, D.C. Rather, entrepreneurs in this locale identify more strongly with their national identity (i.e., Colombian, Venezuelan, Chilean, etc.), cooperating with others who share their identity and competing intensely with those of a different national background, even when a common Latin American identity has the potential to exist. Although the majority of entrepreneurship research focuses on entrepreneurship within institutions, anthropological (and sociological) studies have shown that minority entrepreneurs leverage a common identity to be successful outside of overarching regulatory institutions. In fact, an extensive reliance on their identities that is associated with some ethnic enclaves has been shown to result in a formation of quasi-institutions within the enclave. These quasi-institutions substitute for overarching regulatory institutions (Portes & Sensenbrenner, 1993). An additional finding is McDonald's (2005) discovery that entrepreneurs acting outside of regulatory institutions recognize their business's lack of legitimacy (with respect to formal institutions) and seek to enter the formal institutional boundary after achieving financial stability. Jointly, these contributions from anthropology bring new perspectives to our knowledge of institutions, highlighting their imperfections in regulating behaviors and the dynamic, sieve-like characteristics of their boundaries.

Sociocultural innovation (defined as changes in a society or culture resulting from external stimuli or internal changes) is another stream of anthropological research with potential insights for entrepreneurship scholars. For example, Endter-Wada and Keenan (2005) examined the relationships between adaptations (e.g., gear changes, collective political action, household adaptation strategies, etc.) by commercial fishermen and their families to numerous ecological, political, and social changes in Southern California. The ethnographic approach utilized to examine the commercial fishermen provides rich detail concerning the

entrepreneurial adaptations (viewed as the creation of new means, ends, or means–ends relationships) that are pursued with business survival as the core objective. As the results of these studies and as a host of others indicate (e.g., Lepowsky, 1991; Smith, 1982), societies and cultures tend to greet change with a mix of adaptation and resistance.

There are a number of opportunities for future research integrating anthropology and entrepreneurship. The richness provided through the ethnographic studies of anthropology establishes a platform through which entrepreneurship scholars can begin to develop stronger theory. Interestingly, however, none of the articles we surveyed used an ethnographic approach to examine entrepreneurship within major corporations. This gap offers a unique opportunity for anthropology and entrepreneurship scholars to jointly conduct interdisciplinary research. Also, anthropology research provides numerous theoretical insights concerning institutions and identity with the potential to inform the design of entrepreneurship studies. Entrepreneurship outside of institutional boundaries accounts for, on average, approximately 17% of developed economies' gross domestic product (GDP) but nearly 40% of GDP in developing economies (F. Schneider, 2002). Determining how these entrepreneurs identify and exploit opportunities (possibly by leveraging a common identity) outside of formal institutional boundaries appears to be a fertile ground for interdisciplinary research (Webb, Tihanyi, Ireland, & Sirmon, 2007).

Economics. Our work shows that economics scholars have been consistently strong contributors to entrepreneurship research during the period we examined. The entrepreneurship-related work published in the top-tier economics journals informs the broader entrepreneurship research in numerous ways. Three research themes we identified include (a) the relationship between characteristics of various institutions and entrepreneurship (Gentry & Hubbard, 2000; Huang & Xu, 1999; Johnson, McMillan, & Woodruff, 2002; Paulson, Townsend, & Karaivanov, 2006), (b) the relationship between entrepreneurship and economic growth (Castro, Clementi, & MacDonald, 2004; Francois & Lloyd-Ellis, 2003; Grossman & Helpman, 1990; Howitt, 1999; Young, 1998), and (c) the use of econometrics to describe and quantify theoretically specified relationships.²

Economics scholars have examined a broad range of institutional factors influencing entrepreneurship, including monetary and tax policies (Gentry & Hubbard, 2000; Kanbur, 1982), property rights (Johnson et al., 2002; Khan & Sokoloff, 2004), and the availability of capital (Caballero & Hammour, 1996; Paulson et al., 2006). Much of this research examines institutional arrangements that promote entrepreneurship by increasing the potential for entrepreneurs to appropriate gains their efforts produce. Pro-entrepreneurship changes in institutional arrangements have the ability to transform ideas into opportunities (where opportunities are ideas judged to be commercially viable). For example, Gentry and Hubbard (2000) find that progressive taxation (i.e., redistributing wealth from those better off to those worse off) decreases entrepreneurial entry. These researchers suggest that individuals considering entrepreneurial action may perceive less value in pursuing an idea related to newness (e.g., creating a new product, service, or venture) when tax policies are perceived to be hindrances to entrepreneurs' efforts to appropriate an acceptable amount of value from their efforts.

Not surprisingly, economics scholars have long been interested in economic growth. The fact that entrepreneurs are responsible for bringing to market the technological advances that

drive the development and growth of economies finds economics scholars placing entrepreneurship centrally in their theories of growth (Romer, 1990; Schmitz, 1989). Much of this research has focused on building econometrics models to describe economic growth and the various parameters that may facilitate entrepreneurship (Jones, 1995; Romer, 1990; Schmitz, 1989; Young, 1998). Scholars have examined a number of entrepreneurship-related influences on economic growth, including the type of entrepreneurship (Schmitz, 1989; Young, 1998), entrepreneurs' human capital and specialization (Holmes & Schmitz, 1990; Iyigun & Owen, 1998), scale or population growth effects (Howitt, 1999; Young, 1998), and investor protection (Castro et al., 2004).

Economics scholars largely rely on econometrics and analytical models to test or illustrate their hypotheses. Econometrics uses mathematical and statistical methods to analyze empirical data and to inform and shape theory (Coleman, 2006). Employing econometrics models to quantify relationships and to extend implications of empirical evidence may serve as an invaluable tool to entrepreneurship scholars. Other analytical modeling tools similarly seek to build mathematical models to describe theoretical relationships. However, rather than testing actual empirical data, analytical models are based on preexisting assumptions and evidence of economic theory. Although clearly a tool with potential value to push theoretical boundaries, developing analytical models without data to support implications has the potential to misinform theory and to lead researchers to examine spurious relationships.

The theoretical and methodological implications of entrepreneurship for economics are strong, and vice versa. With respect to theory, we identified the influence of economic institutions on levels of entrepreneurship as a key theme. However, our analysis suggests that researchers have not focused on efforts to determine how supporting apparatuses of economic institutions facilitate entrepreneurial efforts. For example, within the context of agglomeration economics, additional work could be completed to assess the impact of an economic development group's strategy, products, and services on a region's level of entrepreneurship. Research opportunities also exist to understand both economic influences on international entrepreneurship and the effects of international entrepreneurship on economic growth. How do tariffs and other trade barriers affect entrepreneurs' decisions to internationalize, and do entrepreneurs proactively circumvent these barriers?

Finance. Finance scholars' analyses of phenomena such as money markets, capital markets, and investments have the potential to inform the work of entrepreneurship scholars. The complementary areas of finance research include how individual entrepreneurs or firms manage financial resources to develop new means or ends (Chemmanur & Paeglis, 2005; Krigman, Shaw, & Womack, 2001; Lowry & Shu, 2002; Ravid & Spiegel, 1997) and characteristics of financial institutions supporting and institutional forces surrounding entrepreneurial firms (Datta, Iskandar-Datta, & Patel, 1999; Gompers, 1996; P. M. Lee & Wahal, 2004; Mello & Parsons, 1998; Schultz & Zaman, 2001). Interestingly, most of finance's contribution to entrepreneurship research has manifested in the past decade. Perhaps this research has been sparked by broader media interest in IPOs and VC.

Finance scholars have examined a broad range of issues related to how firms allocate and manage resources to support entrepreneurial activities. For example, scholars have studied internal capital markets (Almeida & Wolfenzon, 2006; Gertner, Powers, & Scharfstein, 2002)

and financial characteristics and outcomes of restructuring actions (Allen, Lummer, McConnell, & Reed, 1995; Denning & Shastri, 1993; Johns, 1993). However, the majority of finance research that intersects with entrepreneurship work examines characteristics of IPOs and the actual acquisition of financial resources as opposed to the bundling and leveraging of resources. The IPO is characterized by information asymmetry in that the firm is privately held prior to the IPO and minimal, readily available indicators exist to determine the firm's potential to successfully achieve its intended growth prospects. Schenone (2004) investigated how pre-IPO banking relationships with prospective underwriters reduced the information asymmetry between the firm and potential investors. She found that lending relationships, in which banks have self-interested motives to monitor the firm, lead to 17% lower underpricing of the IPO than when underwriting relationships (in which there is less motivation for monitoring) exist alone. Similarly, Chemmanur and Paeglis (2005) examined a firm's management quality in the IPO context (measured as educational and experiential knowledge, management heterogeneity, and reputation outside of the business community), finding that management's quality and reputation are positively related with IPO offer size and negatively related to IPO underpricing. The authors suggest that management quality and reputation are some of the only available indicators that may signal future growth prospects for the IPO firm.

A second stream of research examines characteristics of financial institutions (banks, investment firms, VC firms, and other supporting apparatuses). In these studies, various questions are studied including those related to attempts to explain institutional-level and cross-level (firm-institution) effects. Some of this research addresses why an entrepreneur may choose the services of a particular financial institution over another. For example, Ueda (2004) developed a model to compare entrepreneurs who raised funds through banks to those using VCs. In the model, VCs have greater access in evaluating the entrepreneur's firm but also have the ability to appropriate the entrepreneur's knowledge. Ueda asserts that firms pursuing the support of VCs have less collateral but higher growth, risk, and profitability. In a similar study, Ljungqvist and Wilhelm (2005) examine why firms choose to switch from using their IPO underwriter to a different underwriter when there are subsequent securities offerings. Using prospect theory, the authors argue that the firm's decision makers will choose the same underwriter if they perceive the personal gains of their retained shares to make up for any perceived losses because of IPO underpricing. Other IPO-related studies seek to understand institutional factors with respect to IPO timing (Benninga, Helmantel, & Sarig, 2005; Gompers, 1996), pricing (Derrien, 2005; Lowry & Shu, 2002), and distribution of funds (Aggarwal, Prabhala, & Puri, 2002; P. M. Lee & Wahal, 2004).

The narrow focus of finance research contributing to entrepreneurship (primarily IPOs and VCs) creates numerous opportunities for future entrepreneurship-related work concerning (a) how entrepreneurial firms allocate and manage financial resources (financial management) and (b) how firms develop financial innovations and gather support from institutional apparatuses. Plaguing most if not all organizational sciences is the inability to examine the internal operations of firms, such as internal capital markets. Despite difficulties in examining related questions, perhaps collaborative research between finance and entrepreneurship (and possibly anthropology) scholars could provide the insights required to address these intriguing questions. Another research opportunity concerns the fact that financial innovations (Grinblatt &

Longstaff, 2000; Hillion & Vermaelen, 2004; Lerner, 2006) represent an entrepreneurial opportunity for firms competing in the financial services industry. Financial innovations are, in a general sense, wholly new securities or modifications of these investment devices. Financial innovations also have clearly defined, contractual specifications and targeted purposes. Assessing these characteristics may contribute to our understanding of the opportunity side of the individual–opportunity nexus framework (Shane, 2003).

Management. Management is the largest, and perhaps most diverse, contributor to entrepreneurship research of the disciplines we surveyed. The similarities of entrepreneurship and management reflect parallels in the disciplines' paths of development. Both have steadily emerged as legitimate fields on their own, yet entrepreneurship and management owe much of their early (and continuing) progress to contributions from economics, psychology, and sociology. Entrepreneurship and management scholars share interests in understanding how, why, and when processes (a) originate when no guiding template exists, (b) grow and evolve over time, and (c) decline and fail.

Categorizing entrepreneurship-related research in management publications is challenging in light of its diversity. For our purposes, we grouped management research dealing with entrepreneurship into the following categories: (a) entrepreneurs, (b) new ventures, (c) corporate entrepreneurship, (d) entrepreneurial orientation (EO), (e) institutional entrepreneurship, and (f) IPOs. Numerous reviews of entrepreneurship research published in management journals are available. Because of this, our analysis of management research concerned with entrepreneurship topics is less in depth than our reviews of the other relationships included in our framework.³

Entrepreneurship manifests at the intersection of individuals and opportunities (Shane, 2003). Because of this, a great deal of the discipline's research concerns how individuals differentially recognize and exploit opportunities and how these differences influence performance (in which performance is commonly measured in terms of survival and growth). For entrepreneurs operating their own ventures, scholars have examined cognitive mechanisms they use to deal with uncertainty and organizing (R. C. Hill & Levenhagen, 1995; Sarasvathy, 2001), acquisition and organization of resources (Alvarez & Barney, 2005; Lounsbury & Glynn, 2001), and the decision to exploit opportunities (Choi & Shepherd, 2004; Shane & Venkataraman, 2000).

Scholars have defined new ventures as firms that are less than 6 years old (e.g., Zahra, Ireland, & Hitt, 2000), although this parameter varies somewhat across studies. Gartner (1985) provided an early framework for studying new ventures, including the following four areas of interest: the individual entrepreneur, the process of creating the new venture, organizational characteristics (e.g., strategy, interorganizational relationships, etc.), and the environment surrounding the new venture. The majority of new venture research published in the top-tier management journals deals with these interests. Having previously highlighted research on the individual entrepreneurs and entrepreneurial processes, we briefly discuss new venture research with respect to organizational and environmental characteristics.

Part of the new venture research stream is devoted to new ventures that operate internationally from inception, facilitated by technological advances that allow both opportunity

recognition and exploitation in foreign markets (McDougall & Oviatt, 2000). International new ventures gain learning benefits from high-control entry modes, translating into increased financial performance (Zahra et al., 2000). Moreover, entrepreneurs operating new ventures trade off risks associated with internationalization. For example, new ventures enter less risky countries when their entry mode commitment or revenue exposure is high (Shrader, Oviatt, & McDougall, 2000). Besides technological advances and international opportunities, industry growth also provides entrepreneurial opportunities to new ventures. McDougall, Covin, Robinson, and Herron (1994) find that those leading new ventures prefer broad (focused) strategies in high (low) growth industries. Perhaps this reflects the desire of new venture leaders to tap multiple potential opportunities in high-growth industries but the need for quality yet efficiency in low-growth industries. Finally, on the relational side of new venture research, scholars have identified the need for supporting internal resources when implementing cooperative strategies (McGee, Dowling, & Megginson, 1995) and the stronger influence of an entrepreneur's social versus administrative orientation in accessing external resources (Starr & MacMillan, 1990).

The concern of corporate entrepreneurship is entrepreneurship taking place within established firms. Guth and Ginsberg (1990) provide a corporate entrepreneurship model similar to Gartner's (1985) new venture model, describing corporate entrepreneurship as influenced by the environment (Meyer, Brooks, & Goes, 1990; Sheremata, 2004), strategic leaders (Burgelman, 1983; Daily, McDougall, Covin, & Dalton, 2002), organizational form (C. W. L. Hill & Rothaermel, 2003; Russell & Russell, 1992), and current performance (Hoskisson, Hitt, Johnson, & Grossman, 2002; Zahra, 1996). In turn, corporate entrepreneurship manifests as actions of strategic renewal, new product development, and other forms of innovation (Guth & Ginsberg, 1990).

With respect to internal modes of corporate entrepreneurship, scholars have discussed the need to experiment with new, emerging, and distant technologies (Ahuja & Lampert, 2001), to accept failure and use it as an opportunity to learn (McGrath, 1999), and to balance exploration and exploitation in addressing change (Benner & Tushman, 2003). As the environment has become increasingly dynamic and complex, however, firms have complemented internal innovation with external modes. As such, management scholars have examined corporate entrepreneurship through mergers/acquisitions (Hitt, Hoskisson, & Ireland, 1990), strategic alliances and networks (Brown & Eisenhardt, 1997; Powell, Koput, & Smith-Doerr, 1996), investments in independent new ventures, and corporate VC (Dushnitsky & Lenox, 2005).

EO refers to an overarching construct used to describe entrepreneurial processes (Lumpkin & Dess, 1996).⁴ EO is composed of five dimensions—autonomy, innovativeness, risk taking, competitive aggressiveness, and proactiveness (Lumpkin & Dess, 1996)—although scholars have regularly measured only innovativeness, risk taking, and proactiveness (e.g., Covin & Slevin, 1989; Miller, 1983; Wiklund & Shepherd, 2003). EO is a significant construct in entrepreneurship research. The management perspective provides a narrow yet important contribution to research concerning EO. Specifically, management scholars have examined EO as a capability that may enhance a firm's performance (Covin & Slevin, 1989; C. Lee, Lee, & Pennings, 2001) and characteristics of a process (as a moderator) through which to leverage other resources to create firm value (Richard, Barnett, Dwyer, & Chadwick, 2004; Wiklund & Shepherd, 2003). In addition, scholars have studied strategic

management practices, such as scanning intensity, planning flexibility, and the use of strategic controls that enhance a firm's EO (Barringer & Bluedorn, 1999). This research highlights the need to examine complementary processes, strategies, and structures that enhance or reduce the benefits of EO.

Institutional entrepreneurship refers to the actions of individuals or organizational actors to alter existing institutions or to establish wholly new institutions (Maguire, Hardy, & Lawrence, 2004). Much of this research focuses on institutions that define boundaries of organizational fields, rules and practices of membership, technology standards, and organizational forms (Garud, Jain, & Kumaraswamy, 2002; Greenwood & Suddaby, 2006). Aldrich and Fiol (1994) describe numerous entrepreneurial strategies (e.g., at the interindustry level, new industry firms may require cooperative relationships with competing established industry firms to reduce the established firms' efforts to induce regulatory action) for firms to gain cognitive and sociopolitical legitimacy in new industries. Interestingly, though, institutional entrepreneurship does not always emerge from the periphery of existing institutions. Greenwood and Suddaby's (2006) qualitative study focuses on institutional entrepreneurship by the Big Five accounting firms (i.e., providing services beyond accounting) in the increasingly global market. The Big Five, as central organizational actors, were highly embedded in the existing institutional framework. However, a number of factors led to the Big Five's actions aimed at institutional change, including the firms' limited growth opportunities with providing accounting services alone, exposure to alternative institutional arrangements in the global environment, and ample resources to influence institutional supporting apparatuses to allow such change (Greenwood & Suddaby, 2006).

As in finance, much of the IPO research in management concerns how firms intending to go through an IPO signal their value to potential investors. Numerous signals have been examined, including interorganizational relationships with VCs and strategic alliances (Gulati & Higgins, 2003), top management team legitimacy (Cohen & Dean, 2005), board characteristics and ownership structure (Filatochev & Bishop, 2002), CEO founder status (Certo, Covin, Daily, & Dalton, 2001), and management incentives (Certo, Daily, Cannella, & Dalton, 2003).

Despite the large contribution of entrepreneurship-related research by management scholars, vast opportunities remain. Management scholars have been instrumental in laying the foundation for an individual–opportunity nexus theoretical framework. However, our analysis shows that much of this research focuses on the individual entrepreneur. Despite a few notable exceptions (Eckhardt & Shane, 2003; Shane & Venkataraman, 2000), opportunity-focused research is not published with any degree of frequency in top-tier management journals. A second void in management-related entrepreneurship research concerns how firms balance entrepreneurial efforts to effectively create both short- and long-term value. Strategic entrepreneurship (Ireland et al., 2003; Ireland, Hitt, Camp, & Sexton, 2001) is a lens that is emerging to examine actions taken to consistently create short- and long-term value. Part of the focus of strategic entrepreneurship is to determine the strategic, structural, and operational elements that characterize firms that are able to consistently create streams of innovation over time (Ireland & Webb, 2007b).

Marketing. We identified four research streams in marketing with the potential to inform entrepreneurship research: (a) innovation (Atuahene-Gima, 2005; Chandy & Tellis, 2000; Cooper, 2000; Kotabe, 1990; Sood & Tellis, 2005; Sorescu, Chandy, & Prabhu, 2003), (b)

innovation diffusion (Bass, Krishnan, & Jain, 1994; Bemmaor & Lee, 2002; Chandrashekar & Sinha, 1996; Gatignon, Eliashberg, & Robertson, 1989; Gatignon & Robertson, 1985; Givon, Mahajan, & Muller, 1995; Van den Bulte & Stremersch, 2004), (c) market or strategic orientation (Gatignon & Xuereb, 1997; Hurley & Hult, 1998; Matsuno, Mentzer, & Ozsomer, 2002; Zhou, Yim, & Tse, 2005), and (d) franchising (Dahlstrom & Nygaard, 1999; Kalnins, 2004; Lal, 1990; Nault & Dexter, 1994).

Marketing's contributions with respect to innovation are similar to those of the management discipline, except perhaps for a stronger emphasis on radical (rather than incremental) innovation. A number of conceptual insights can be gleaned from marketing scholars' contributions to innovation (new product development) research. First, the product development process is marred by failure, yet new products commercialized in the past 5 years on average account for more than 30% of a firm's sales and profits (Hauser, Tellis, & Griffin, 2005). Henard and Szymanski's (2001) meta-analysis identifies a number of success factors for new product development, including the possession of a differentiated product meeting customer needs, dedicated resources that fit the needs for leveraging the new product, formalized processes and capabilities, and the market potential for the product. Interestingly, cross-functional integration and communication were not statistically significant predictors of new product performance, although findings in operations management research suggest that they are.

Marketing scholars have also contributed significantly to our understanding of radical innovation. Sorescu et al. (2003), for example, show that radical innovations create more firm value than do innovations that are characterized by a technological or market breakthrough alone. Second, although some may consider smaller entrepreneurial firms to have advantages in creating radical innovation because of their flexibility and lack of inertial constraints, results from numerous marketing studies suggest that large, dominant firms have been the primary drivers of radical innovation since World War II (Chandy, Prabhu, & Antia, 2003; Chandy & Tellis, 2000; Sorescu et al., 2003).

Studies concerned with innovation diffusion among consumers represent another stream of marketing research with implications for entrepreneurship. The introduction of new goods and services is a highly uncertain process for entrepreneurial firms. These firms face the trade-off of heavily investing in a new product that never becomes accepted by consumers versus waiting too long to invest and missing a surge in sales enjoyed by competitors. Diffusion research attempts to model the pattern of individual adoptions of new goods or services. The adoption decision is based on several variables, including personal characteristics of the consumer, attributes of the innovation, and marketing and competitive actions (Gatignon & Robertson, 1985).

As a parallel to EO, scholars in marketing have examined market orientation. Compared to EO, market orientation is grounded in slightly different theoretical perspectives and is assessed through different measures. Matsuno et al. (2002) define market orientation as a set of behaviors and processes in which firms continuously survey the external environment. These researchers find entrepreneurial proclivity to positively predict market orientation. Zhou et al. (2005) define market orientation as an emphasis on creating superior customer value by appropriately managing market intelligence related to target buyers and competitors. Zhou et al. view market orientation as a form of strategic orientation alongside a technology (i.e., strong emphasis on leading technologies) and an EO (i.e., proactiveness, risk

taking, and innovativeness). Interestingly, Zhou et al. find market orientations to be positively related to technology-based innovations within existing markets but negatively related to innovations in emerging markets. Hurley and Hult (1998) take yet another slightly different approach, viewing market orientation as a cultural attribute of an organization focused on transforming learned knowledge into innovations. Here, market orientation is found to be an important antecedent to the strategy on which a firm relies as a stimulus of innovation.

A fourth stream of entrepreneurship-oriented marketing research focuses on franchising. Franchising is an entrepreneurial growth strategy in which “one firm (the franchisor) allows a second (the franchisee) to market goods or services under the franchisor’s brand name and to use its business practices” (Combs, Ketchen, & Hoover, 2004: 878). Two perspectives are used to study franchising—one focusing on growth through franchising versus company-owned outlets and the second analyzing the use of controls and incentives in the franchising relationship (Agrawal & Lal, 1995). The franchising research we examined predominantly emphasized the latter approach. Interestingly, opportunistic behaviors of both franchisors (i.e., failing to promote the franchise brand or encroachment; Kalnins, 2004) and franchisees (i.e., shirking service responsibilities) are described in this research. Along these lines, Agrawal and Lal (1995) found that the royalty rate imposed on the franchisee increases the franchisor’s investments in the chain’s brand but decreases the service level offered by the franchisee. These results suggest that there is an optimal royalty rate to promote investments by both the franchisor and franchisees.

Numerous opportunities exist for further studies combining marketing and entrepreneurship. Interestingly, our survey found us reviewing marketing articles extensively with respect to opportunity exploitation. In the process of doing this, we failed to identify articles concerned with opportunity identification or recognition. Admittedly, our constrained list of search terms could be the cause of this failure. Additional research might be completed to determine the specific mechanisms entrepreneurial firms use to accurately identify future market opportunities. A second avenue for interdisciplinary efforts may be to reorient marketing studies of franchising. Franchising remains an emerging research interest for scholars. Although governance issues in franchisee–franchisor relationships warrant attention, examining the resources that make franchises successful and the patterns underlying diffusion of franchise brands also represent future research opportunities. Finally, much of the existing research integrating marketing and entrepreneurship deals with firms producing physical goods. However, increasing the stream of research focusing on services marketing may yield future insights for entrepreneurship, especially because many entrepreneurial firms are established as service providers.

Operations management. Operations management research is concerned with understanding a firm’s internal processes. In doing so, operations management scholars enhance our understanding of the internal means through which entrepreneurial firms efficiently and effectively identify and exploit opportunities. As previously noted, some marketing research that is concerned with entrepreneurship focuses on product innovation; equally valuable is the focus on process innovations that is a part of some operations management research. The outcomes of process innovation can benefit firms and their customers. For example, Honda was able to reduce manufacturing costs of the Accord by nearly 25% through process

innovations. These cost savings allowed Honda to develop a product with more features that create value for customers (Liker & Choi, 2004). As a further benefit, process innovations are embedded within a firm's routines, making it more difficult for competitors to reverse engineer and imitate these value-creating innovations (Kotabe, 1990).

We identified two relevant streams of operations management research. We label the first stream internal systems or process design (Choi & Krause, 2006; Hyer & Brown, 1999; Koufteros, Vonderembse, & Jayaram, 2005; Nahm, Vonderembse, & Koufteros, 2003; Singhal & Singhal, 2002; Tatikonda & Rosenthal, 2000). Here, scholars advance knowledge concerning how organizations integrate activities into value-creating means that satisfy environmental and market demands. A second stream of research in operations management concerns the adoption or transfer of innovations (Agarwal & Prasad, 1999; Grover, 1993; Jarvenpaa & Ives, 1993; Kumar & Swaminathan, 2003; Ravichandran, 2000; Stock & Tatikonda, 2000). Here, scholars examine factors that predict the likelihood of adopting innovations or facilitating the transfer of innovations within and across firms.

The body of work in operations management journals concerning process design clearly informs how entrepreneurial firms may create value by reorganizing the internal means through which goods and services are developed. Reorganizing processes may involve creating new relational patterns among individuals within firms, across firms, or between individuals within firms and individual customers. Using insights gained from a case study of more than 50 firms during 12 years, Hyer and Brown (1999) set forth a framework of real cells, proposing a set of rules for distinguishing real cells from other cellular forms, assembly lines, and job shops. Real cells are characterized by (a) dedication of equipment and employees (usually no more than 10) to produce a family of parts and products and (b) a close interconnectedness of equipment and employees with respect to time, space, and information. Real cells are structured for small lot production and offer numerous advantages such as enhanced quality, flexibility, and decreased throughput time. Conversely, assembly lines are characterized by dedicated resources but fail to meet the linkage criteria of time, space, and information. In job shops, resources are dedicated to a process but not a parts or product family, and even with small batches job shops can become disconnected in terms of time, space, and information (Hyer & Brown, 1999).

Another stream of research dealing with process design considers aspects of concurrent engineering, or internal integration to involve cross-functional teams in new product development from the early stages (Koufteros et al., 2005). Concurrent engineering reduces uncertainty (lack of information) and equivocality (lack of agreement on interpreting available information) by facilitating the flow of information quickly and efficiently throughout the organization (Koufteros, Vonderembse, & Doll, 2001). Interestingly, Koufteros et al. (2005) found internal integration to be positively related to external integration (integrating customers and suppliers in new product development), suggesting that external integration may force firms to integrate internally. Customer integration was positively related to product innovation, which was in turn positively related to quality and profitability. Surprisingly, supplier integration was negatively related to product innovation, which calls into question whether too much supplier integration offsets the informational benefits with rigidity in new product development (Koufteros et al., 2005).

Various forms of interfirm networks, such as supply chains or supply networks, are yet another substream of process design research in operations management with implications for entrepreneurship. For example, scholars have examined the innovativeness of a comprehensive versus a flexible network (Choi & Krause, 2006), the need to maintain a balance of trust and power to facilitate long-term entrepreneurial efforts in strategic supply chains (Ireland & Webb, 2007a), and compatibility issues among partners during the innovation process (Singhal & Singhal, 2002).

In addition to process design, operations management scholars have examined innovation adoption or transfer within both intra- and interorganizational contexts. More specifically, this research stream seeks to understand why and how organizations decide to adopt innovations created elsewhere. In this line of inquiry, scholars have used the technology acceptance model to explain adoption. Within the model, the perceived usefulness and ease of use of the focal innovation drive attitudes and behavioral intentions to adopt. Agarwal and Prasad (1999) found evidence to support the technology acceptance model in their survey of 230 users who had the opportunity to adopt a new operating system interface package. Similarly, Ravichandran (2000) found that firms more quickly and intensely adopt total quality management in the information systems department when (a) a firm has an overall orientation toward quality, (b) the information systems being used strongly support quality initiatives, and (c) a separate quality function exists within the firm. Each of these factors potentially indicate the perception of the innovation's usefulness in achieving the firm's objectives.

Grounded in the insights of their respective disciplines, there are significant opportunities for collaborations between operations management and entrepreneurship scholars. Results from our analysis indicate that operations management scholars have primarily studied processes within established organizations. One notable exception is work describing the evolution of ventures' capabilities when experiencing the positive outcomes associated with sudden, dramatic innovation success (Corbett & Campbell-Hunt, 2002). Clearly, the processes that lead to success in a firm's early years change with market and environmental conditions. Therefore, future studies may seek to address the emergence of processes in new ventures and the transformation of these processes as the ventures grow or encounter changing external environments. On a similar note, the example of Honda mentioned above demonstrates the benefits a firm may expect to accrue from successful efforts to continuously develop process innovations. What practices should entrepreneurial ventures have in place to support efforts to achieve this desirable outcome?

Political science. Research in political science may inform entrepreneurship in two ways. First, to a certain degree, the political process that policy makers use can be thought of as entrepreneurial in nature. In an entrepreneurial context, we note that policy makers follow the same general path as market entrepreneurs, identifying opportunities (for the economy, health care, education, etc.) and then gathering resources (e.g., political support) to exploit the opportunities. A second way in which political science informs entrepreneurship is from the perspective that public policies define the formal institutional boundaries within which entrepreneurial ventures compete.

Initially, it seems that the political science discipline contributes a smaller proportion of articles to entrepreneurship research. We reviewed three top-tier journals in political science (*American Journal of Political Science*, *American Political Science Review*, and *Journal of Politics*). We arbitrarily placed the *Journal of Political Economy* within the “economics” category, although the journal may be a leading outlet for political science scholars seeking to publish their entrepreneurship-related work. The categorization decision we made about this journal surfaces the possibility that contributions from political science to entrepreneurship research may be greater than Table 1’s contents suggests.

We identified several interesting research streams in political science with potential insights for entrepreneurship including (a) the role and behaviors of policy entrepreneurs (Ainsworth & Sened, 1993; Krutz, 2005; Schiller, 1995; M. Schneider & Teske, 1992), (b) policy innovation or diffusion (Berry & Berry, 1992; Glick & Hays, 1991; Mintrom, 1997; Mintrom & Vergari, 1998), and (c) founding effects on the development of governing bodies (Dienstag, 1996; Fatovic, 2004; Kessler, 1992; Runge & von Witzke, 1990).

Policy entrepreneurs are individuals acting in the political arena who identify and help define problems and then seek to shape policy through coalition-building efforts (Mintrom, 1997). In taking these actions, policy entrepreneurs “change the direction and flow of politics” (M. Schneider & Teske, 1992: 737). Research dealing with policy entrepreneurs highlights both important parallels and differences between policy and market forms of entrepreneurship. Similar to market forms of entrepreneurship, M. Schneider and Teske (1992) describe policy entrepreneurship along the lines of Kirzner (1979) and Schumpeter (1934) in that opportunities exist because of a disequilibrium of tastes. Policy makers seek to introduce new policies that can drive the disequilibrium back to a level of stability. Also, policy entrepreneurs seek to reallocate resources in a more efficient and effective manner to exploit opportunities. Differences surface, though, in that policy entrepreneurs rely to a greater extent on being able to build coalitions and mobilize collective action, and policy entrepreneurs are not usually residual claimants to the profits stemming from their ideas (M. Schneider & Teske, 1992).⁵

Similar to marketing, a significant amount of political science research examines the determinants and diffusion of innovation. Consistent with arguments appearing in published entrepreneurship work, the adoption of policy innovation may occur because of internal determinants or external influences (i.e., individual–opportunity nexus theory versus institutional theory explanations, respectively). For example, Berry and Berry (1992) found the characteristics of the opportunity, such as the fiscal health of the economy and length of time until the next election, to predict the adoption of tax innovation. These researchers also found evidence of regional diffusion and suggested that states sometimes mimic neighboring states in adopting innovations after the uncertainty of consequences declines and as a way to decrease the perception that the tax is unfair (Berry & Berry, 1992).

Other articles we identified through our survey addressed the persistence of founding conditions on policy making. An ongoing debate appears to consider whether American political thought is driven by the religious influences of the Puritans or the philosophical musings of John Locke (Kessler, 1992) or perhaps both. Although some of the religious overtones have decreased over time, the founders’ values concerning freedom and equality have left a lasting imprint on policy making. In a different context, Runge and von Witzke (1990) discuss the rigidities within the European community (EC) that are a product of founding

effects and changes in the EC's membership. When formed in 1957, the EC was composed of six homogeneous countries. Important decisions with national implications were made using a unanimity rule so that no country would consistently lose in the EC rulings. With the increasing heterogeneity of the EC that results from membership growth, the efficiency of the unanimity rule with respect to making decisions with national importance became an issue (Runge & von Witzke, 1990).

Numerous opportunities exist for interdisciplinary research between political science and entrepreneurship. Interestingly, of the research we found that jointly considers political science and entrepreneurship themes, none examined differences across national governments. For example, how do differences in public policy affect entrepreneurship in multiple countries? How do conditions during the time of the founding of nation-states affect the growth and development of those states? Finally, the success of policy entrepreneurs depends on their ability to enact policies that are important to their diverse set of constituencies. Sometimes policies favor economic growth, whereas other times policies seek to promote other agendas, such as health care or education. What factors influence policy entrepreneurs' decisions regarding weights assigned to various policies at different points in time? And might public governance policies positively affect the governance of entrepreneurial ventures (Benz & Frey, 2007)?

Psychology. A major finding from our survey of psychology journals is that, until recently, little entrepreneurship-related research has been published in top-tier psychology journals. Nevertheless, psychology is a discipline with which entrepreneurship scholars (e.g., Begley & Boyd, 1987; Busenitz & Barney, 1997; Gartner, 1988; Simon, Houghton, & Aquino, 1999) have been actively involved, and vice versa. In fact, some describe psychology as representing the second largest contributing discipline to entrepreneurship research (Baum, Frese, Baron, & Katz, 2007).⁶ The void of entrepreneurship-related work in psychology's top journals may suggest that (a) journals dedicated to publishing entrepreneurship research (e.g., *Journal of Business Venturing* and *Entrepreneurship Theory and Practice*) react more positively to this work and (b) management journals may be competing outlets for psychology–entrepreneurship work (e.g., Baum, Locke, & Smith, 2001; Mitchell, Smith, Seawright, & Morse, 2000; Sapienza & Korsgaard, 1996).

The entrepreneurship-related work that has been published in top-tier psychology journals primarily deals with questions related to personality (Miner & Raju, 2004; Stewart & Roth, 2001, 2004; Zhao & Seibert, 2006). In the main, this work seeks to identify the unique traits that cause certain individuals to pursue entrepreneurship. An interesting exchange of results obtained by competing meta-analyses highlights this research. Stewart and Roth (2001) found risk propensity to be higher in high-growth entrepreneurs than in low-growth entrepreneurs, who have a higher risk propensity than managers. To complete their meta-analysis, Miner and Raju (2004) included additional studies in their sample that used a different instrument measuring risk propensity. These researchers found no difference between entrepreneurs and managers in terms of risk propensity. In subsequent work, Stewart and Roth (2004) refuted Miner and Raju's findings, claiming that the additional studies did not focus on the same research question and challenging the construct validity for some of the measurement instrumentation. Invigorating exchanges such as these have the potential to meaningfully inform the literature about variances in traits between entrepreneurs and nonentrepreneurs.

Our survey strongly suggests that there are numerous opportunities for productive collaborations between psychology and entrepreneurship scholars. In terms of personality, for example, the possibility of meaningful and perhaps stable differences between entrepreneurs and nonentrepreneurs with respect to personality generates a number of intriguing contextual questions (e.g., Are these differences stable across time and across industry settings?). Additional evidence suggests that high-growth entrepreneurs differ from low-growth entrepreneurs (Stewart & Roth, 2001). Differences in personality and growth orientation are examples of characteristics that may lead to systematic variances in how the entrepreneurial process is used. This line of questioning complements earlier work (e.g., efforts to determine if traits influence the decision to become an entrepreneur) by seeking to assess how differences in traits affect entrepreneurial processes, such as those used to acquire, bundle, and leverage resources.

Scholars have pursued some entrepreneurship research in the industrial/organizational (I/O) psychology domain. However, I/O psychology covers a large range of research interests, and, perhaps not surprisingly, this set of articles has not been as focused as the personality-based research. Topics range from isolating the motivational influences of entrepreneurship (Miner, Smith, & Bracker, 1989; Zhao, Seibert, & Hills, 2005) to efforts to isolate factors contributing to venture growth (Baum, Locke, & Kirkpatrick, 1998) to adopting organizational practices (Johns, 1993). Our survey of this stream of psychology literature did not suggest that any of these topics dominate the others in terms of prominence of contributions.

Social influences on entrepreneurs' decisions may be another promising avenue for future research. An example of this type of work is West and Anderson's (1998) call for enhancements of our understanding regarding the composition and structure of teams that facilitate innovative interactions. Shifting contexts to independent new ventures, scholars might also seek to determine how entrepreneurs structure their top management teams to facilitate innovation and long-term survival. Another intriguing question is the degree to which the quality of the external labor market affects the quality of teams entrepreneurs can organize. Finally, studies using a cognitive psychology lens have emerged in mainstream entrepreneurship journals (e.g., Busenitz & Barney, 1997; Keh, Foo, & Lim, 2002) but remain absent from psychology's top-tier journals. In our view, this suggests that there are opportunities for interdisciplinary collaboration.

Sociology. Our review of entrepreneurship research finds that sociologists examine several themes from an entrepreneurship perspective. Specifically, we identified the following themes: (a) entrepreneurship within ethnic minorities (Aldrich & Waldinger, 1990; Evans, 1989; Portes, Guarnizo, & Haller, 2002), (b) organizational networks and entrepreneurship (Davis & Greve, 1997; Peng, 2004; Podolny, 2001), (c) innovation diffusion (Chang & Harrington, 2005; Podolny & Stuart, 1995; Wejnert, 2002),⁷ and (d) the effect of broader institutional forces on entrepreneurship (Clemens & Cook, 1999; Kogut & Zander, 2000; Rona-Tas, 1994). As research streams, these themes suggest that sociological perspectives address the context within which entrepreneurship develops. In contrast, the historical focus of entrepreneurship scholars' work is on the behavior of individual entrepreneurs or entrepreneurial firms (Reynolds, 1991).

Sociology scholars have increased our understanding of the entrepreneurial actions ethnic minorities take. These contributions complement the work completed by anthropology scholars sharing this interest. Research evidence shows that even when facing substantial obstacles, immigrant entrepreneurs are able to overcome these obstacles by relying on family, friends, and neighbors as factor, labor, and product markets (Wilson & Portes, 1980). Evans (1989) notes that immigrant entrepreneurs benefit when the community of immigrants with the same national background reaches a critical mass. In a fascinating study of "transnational" entrepreneurs, Portes et al. (2002) examine a specific form of entrepreneurship in which immigrant entrepreneurs take advantage of opportunities that cross national borders. Opportunities exist in the form of providing goods and services from the immigrant's country of origin to his or her current country of residence, or vice versa. Although representing a small portion of the overall immigrant population in their U.S. sample, transnational entrepreneurs actually compose more than half of the identified immigrant entrepreneurs. Portes et al. find that differences across individuals, networks, and the broader social context influence transnational forms of entrepreneurship. More specifically, transnational entrepreneurs have lived longer in the United States, have a college education and professional experience, possess a larger network with contacts in both the United States and their country of origin, and come from a country with sociopolitical stability.

The network research of sociology scholars is spread across a number of subthemes. Lopes (1992) investigated music conglomerates' use of ties with autonomous producers to balance the need for economies of scale with the diversity of consumer demand. Although some network ties seek to increase innovativeness and diversity, others increase homogeneity through the diffusion of innovations. Davis and Greve (1997) examined the diffusion of two policy innovations (poison pills and golden parachutes), finding that board interlocks aid the diffusion of poison pills but not golden parachutes. Rather, golden parachutes diffused within geographic localities and at a slower overall rate. Davis and Greve suggested that this evidence reflects the presence of less formal networks that led to the diffusion of golden parachutes and that had to overcome normative pressures. Finally, Peng's (2004) work suggests another network perspective. He finds that kinship networks establish important informal norms that reduce transaction costs for entrepreneurs in China, where formal institutions remain underdeveloped.

Besides the network level, sociology scholars have examined various institutional effects on entrepreneurship. These studies examine the influences of political, legal, and economic institutions on how entrepreneurs decide to organize and act. In Clemens and Cook's (1999: 445) words, "Institutions may negatively constrain action, define opportunity, and facilitate patterns of interaction." More specifically, institutions confine the realm of entrepreneurial opportunities, both ends and means, to a set of socially acceptable opportunities. Although durable, institutions do change and reconstruct the set of opportunities for entrepreneurs at the firm and policy levels.

Our survey suggests that the work of entrepreneurship scholars has the potential to inform sociological perspectives. As previously mentioned, sociology scholars are largely concerned with the effects that social forces and change have on entrepreneurial behaviors of individuals and firms. What is largely absent from sociology research, however, are examinations of the effects that entrepreneurial behaviors have on the overarching social context. Interestingly, as discussed previously, entrepreneurship research within the management

domain is beginning to address this void within the context of institutional entrepreneurship. Beyond institutional entrepreneurship, however, a further line of inquiry integrating research from sociology and entrepreneurship may be the emergence of various network forms in emerging and transition economies that are aimed at overcoming institutional voids. For example, what are the particular conditions that facilitate the development of these network forms (e.g., business groups in South America, *guanxi* in China, etc.), what are their growth limitations, and how do these networks facilitate entrepreneurial efforts of their member firms?

Common Themes

Each academic discipline we surveyed is unique. In general, the “tools of each trade or discipline” (in terms of theories and methodologies) provide the context through which discipline-specific research has been completed to examine entrepreneurship-related questions. Despite the differences in theories and methods, we assert that making significant progress toward the objective of more fully understanding the entire entrepreneurial process requires an integration of the knowledge unique to disciplines such as those in our sample. Insightful differences in how related academic disciplines frame and study entrepreneurship questions can create valuable knowledge for developing (theoretically) and designing (methodologically) future entrepreneurship research studies. Various conceptual lenses and different methodologies allow scholars not only to “think outside the box” but also to “create entirely new boxes.”

In our view, any attempt to unify the entire body of diverse entrepreneurship work within a single common framework would inevitably omit certain disciplinary contributions and questions of interest. Because of this, we will specify and discuss what we believe are common themes throughout the disciplines we surveyed instead of offering a unifying framework. Moreover, we propose that these themes are the foundation on which disciplinary scholars can integrate their work to address significant entrepreneurship questions. We now turn our attention to discussing individual–opportunity nexus, entrepreneurial risks, and identity construction as themes with the potential to be the foci for entrepreneurship theory.

Individual–opportunity nexus. Scholars are making efforts to elucidate theory concerning the nexus of individuals and opportunities. This theory takes a process approach to understanding entrepreneurship. In essence, this process finds entrepreneurial alertness leading to opportunity recognition, then to opportunity exploitation with the creation of a new venture, and finally to the growth and survival of the venture (Bygrave & Hofer, 1991; Shane, 2003; Webb et al., 2007). As Shane (2003) noted, significant progress has been made with respect to the individual’s actions within the entrepreneurial process (i.e., the psychology of the entrepreneur, how entrepreneurs make decisions to exploit opportunities, etc.). With a few exceptions, less research has focused on understanding opportunities. Here, we describe how the disciplines we surveyed may inform future research opportunities. Calling for and suggesting this focus does not imply a reduction in the importance of individuals as the other part of the nexus between individuals and opportunities.

Several perspectives exist regarding the origin of opportunities. Kirzner (1979) argues that alert entrepreneurs discover opportunities that always existed. The details of the structuration process complement the Kirzner argument. Here, the logic advanced is that rather than opportunities being discovered in a single flash of insight, individuals have ideas that develop into opportunities through enactment of a recursive process over time (Sarason, Dean, & Dillard, 2006). A third, perhaps complementary, perspective is that opportunities originate with changes in the external environment and present themselves to specific individuals (Drucker, 1993). For example, a shift in the institutional boundary may present opportunities to a broad segment of society, irrespective of any one individual's unique knowledge. Indeed, this perspective may explain why multiple entrepreneurs pursue similar opportunities at the same time. Our review of sociology research suggests that sociologists may have valuable insights into institutional shifts and their outcomes that may inform our understanding of how opportunities originate.

Some of the sampling frames finance scholars employ can be used to further study opportunities. Consider the case of financial innovations, which, in the context of opportunities, can be viewed as wholly new or modified securities. Financial innovations are very specific innovations that can be easily compared to existing securities on a number of characteristics. Furthermore, scholars may be able to identify the locus of change, the initiator of change, and source of the opportunity (Eckhardt & Shane, 2003) and how the opportunity has evolved over time.

Returning to the nexus of individuals and opportunities, however, a true understanding may require scholars to adopt ethnography, a method that is widely used by anthropology scholars. Many characteristics that make opportunities valuable to entrepreneurs may go unnoticed without in-depth, qualitative examinations of entrepreneurs as they recognize and exploit opportunities. A number of important insights could be gleaned by analyzing the conversations of entrepreneurs as they take actions to recognize and/or exploit opportunities.

Entrepreneurial risks. Entrepreneurial risks are a second theme around which scholars from multiple disciplines may work to develop entrepreneurial theory. Completing additional work to understand the types of risks entrepreneurs believe are the most critical to assess during different stages of the entrepreneurial process (including opportunity recognition and opportunity exploitation) and the effects of those assessments on entrepreneurs' decisions are examples of questions that could be pursued through scholarly collaborations.

Das and Teng (1997) refer to risk as a variance in outcomes that entrepreneurs deem to be significant. Entrepreneurs face numerous risks with financial, familial, reputational, and career risks being well-known examples. Depending on characteristics of the individual and the entrepreneurial context (i.e., opportunity characteristics, institutional environment, social ties, family structure, etc.), the relative importance of each type of risk may vary. For example, the performance of policy entrepreneurs largely depends on their ability to satisfy constituents by working to pass desired legislation (i.e., the policy opportunity). Although financial risks may be present, policy entrepreneurs (relative to market entrepreneurs) are likely to face greater career and reputational risks if they are unable to exploit policy opportunities.

Evidence in psychology suggests that the perception of risks and risk-taking propensity differ across individual entrepreneurs. Although entrepreneurs possess a higher risk-taking propensity than nonentrepreneurs, entrepreneurs may actually be risk averse in how they

choose to exploit an opportunity (Wu & Knott, 2006). Taking this into consideration, perhaps the decision processes of independent entrepreneurs differ from those of top management teams in established firms that are incentivized to pursue risk-oriented strategies. Subsequently, insights from studies completed to examine this possibility might influence the continuing development of theory regarding entrepreneurial risks.

The magnitude of risks also depends on sociological influences originating in the entrepreneurial venture's internal (e.g., entrepreneurial teams, culture) and external environments (e.g., interfirm networks, institutions, etc.). For example, S.-H. Lee, Peng, and Barney (2007) discuss institutional effects on entrepreneurs' willingness to undertake entrepreneurship. These researchers suggest that bankruptcy laws can be structured to minimize the negative consequences of entrepreneurial failure (e.g., by allowing reorganization as an additional option to liquidation and out-of-court settlement). Because of this, some societies are better able to encourage entrepreneurship by decreasing the perceived associated risks.

Accounting and finance are concerned with understanding risks associated with entrepreneurial ventures and communicating those risks to potential investors and other stakeholders. Indeed, an entrepreneurial venture's risks are likely as important to investors (and the entrepreneurs themselves) as the venture's growth potential. From an internal perspective, entrepreneurs may also be more effective in avoiding risks if they are aware of the timeframe, magnitude, salience, and diversity of risks.

Identity construction. Identity may serve as a third broad concept around which multilevel entrepreneurship theory can develop. At the individual level, identity refers to how one defines oneself. Self-identities serve as a means or motivational mechanism to attain desired outcomes (Cropanzano, James, & Citera, 1992). As individuals compare themselves to others, they may place themselves and others into categories characterized by certain traits, values, norms, or other defining attributes (Turner, 1975). In doing so, individuals become defined within group-level social identities. Members of a group gain distinctiveness through their membership and are motivated to preserve the qualities of distinctiveness.

In many ways, entrepreneurship is a process of identity construction. Entrepreneurs establish ventures based on and driven by self-identities. Nevertheless, potential investors, employees, and customers become attracted to the venture only when its identity fulfills their own identity needs (Lounsbury & Glynn, 2001). As such, a venture's growth and survival depends on the entrepreneurs' ability to construct a social identity or tap into a preexisting social identity surrounding the venture (Webb et al., 2007). Numerous disciplines may inform this process of identity construction (i.e., moving from the entrepreneur's self-identity to a social identity that supports the venture).

Psychology scholars may inform an identity construction theory by examining how self-identities motivate entrepreneurs to complete tasks. Do these self-identities exist prior to undertaking entrepreneurship, or do they emerge and transform as the individual engages in the entrepreneurial process? Do entrepreneurs share particular salient identity characteristics? Finally, what mechanisms (e.g., discourse) do entrepreneurs use to expand their self-identity when creating a social identity for their venture?

Anthropology and sociology scholars have examined social identities in the form of ethnic enclaves as supporting ethnic minority entrepreneurs (e.g., Evans, 1989; Flynn, 1997;

Pessar, 1995). Having grown up within ethnic enclaves, many minority entrepreneurs understand the specific needs of their social identity and wield certain advantages over larger firms serving the broader market (Bletzer, 2003). Portes and Sensenbrenner (1993) note that certain groups have such strong social identities that they develop infrastructural elements to complement or substitute for broader institutions.

Lounsbury and Glynn (2001) provide a foundation for management and perhaps finance scholars. They describe how identity may facilitate entrepreneurial efforts to attract investors, employees, and customers. More specifically, the identity of the entrepreneur and the venture as perceived by external stakeholders may benefit from both certain similarities to established organizations that provide legitimacy and certain distinctive features that may lead to a competitive advantage.

Finally, marketing research may inform an identity construction theory of entrepreneurship. Customers are attracted to firms not only because of distinctive technologies but also by other desirable qualities, such as commitment to environmental sustainability, moral practices, and so on. For new ventures, what aspects of identity are most important for gaining customers? What mechanisms help form customer identification with a new venture?

A Collaborative View of Future Entrepreneurship Research

Entrepreneurship is an eclectic phenomenon. Because of this, scholars examining entrepreneurship-related questions draw from multiple disciplines, theories, and methods. However, the results of our survey suggest that scholars seeking to study entrepreneurship can (and should) take additional steps to form cross-disciplinary collaborations. Indeed, we believe that collaborative engagements among scholars are the foundation on which promising research can be completed with the purpose of creating additional knowledge about entrepreneurship.

A recent argument about entrepreneurs yields a framework to use to describe a potential stimulus of collaborations among scholars to study entrepreneurship. McMullen and Shepherd (2006) argue that entrepreneurial action is driven by knowledge and motivation. Viewing scholars as entrepreneurs in an academic context permits the suggestion that scholars are intrinsically motivated to answer significant research questions and to create knowledge in the process of doing so. With the survey we have completed, our interest is to (a) increase scholars' awareness of primarily the breadth of work characterizing entrepreneurship research, (b) identify the types of research questions scholars from related academic disciplines are examining, and (c) offer questions scholars may wish to take to fill the knowledge voids within individual scholarly domains and between related domains. We believe that these contributions could help to spawn future collaborative, interdisciplinary research with the purpose of addressing the multifaceted nature of entrepreneurship as the pathway to creating knowledge.

Our interdisciplinary review of entrepreneurship research is not without limitations. First, from a design perspective, we chose to conduct a broad exploratory survey of entrepreneurship research in disciplines in which entrepreneurship questions are examined. More comprehensive surveys of related academic disciplines may surface richer avenues for collaborative and interdisciplinary research among entrepreneurship scholars and those from one or more of the associated disciplines. The framework we used to conduct the survey and to interpret our

results is a second limitation. Our academic training and experience with all disciplines we surveyed influence our analyses and conclusions. Other researchers completing the survey might reach conclusions that differ from ours regarding the nature of collaborations scholars can pursue and topics that seem highly appropriate as the focus of those collaborative efforts. Because of this, we encourage others to replicate and/or extend our results. Finally, we constrained our survey to academic disciplines that we believe are meaningfully involved with entrepreneurship-related questions. Others might construct a different sample. We encourage this effort and, subsequently, comparisons of the results reported herein with others' results.

Notes

1. The search terms we used were *corporate renewal*, *entrepreneurial orientation*, *entrepreneur(s)*, *entrepreneurship*, *family business(es)*, *founder(s)*, *franchise*, *franchising*, *initial public offering(s)*, *innovation(s)*, *intrapreneur(s)*, *intrapreneurship*, *IPO(s)*, *new technology venture(s)*, *new venture(s)*, *spin-off(s)*, *start-up(s)*, *venture capital*, *venture capitalist(s)*, and *venture initiation*.

2. Econometrics is a methodological tool also often used by finance scholars. To avoid redundancies, we focus on its use only in economics.

3. Dess, Ireland, Zahra, Floyd, Janney, and Lane (2003), Gilbert, McDougall, and Audretsch (2006), and Shook, Priem, and McGee (2003) are examples of surveys examining entrepreneurship research that have management interests.

4. In referring to entrepreneurial orientation, we include similar constructs, such as entrepreneurial strategic posture (Covin & Slevin, 1989) and corporate entrepreneurship intensity (Barringer & Bluedorn, 1999).

5. Policy entrepreneurs gain political profits, however, in the forms of policy success and status (M. Schneider & Teske, 1992).

6. As we have taken an "exploratory" approach, the parameters of our review have caused us to overlook much of the psychology-related entrepreneurship research published outside of top-tier psychology journals. A number of sources provide excellent reviews of this literature, including Baum, Frese, and Baron (2007), Gartner (1988), and Shane (2003).

7. The innovation diffusion research in sociology strongly overlaps the diffusion research in marketing and political science. Therefore, considering space limitations, we chose not to discuss this again here.

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