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THE SOCIOLOGY OF ENTREPRENEURSHIP

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ABSTRACT

Recent research on entrepreneurship by sociologists has focused on subsectors of the discipline rather than on entrepreneurship as a class. This review draws insights from diverse literatures to develop a sociological perspective on entrepreneurship as a whole. Until recently, the supply-side perspective, which focuses on the individual traits of entrepreneurs, has been the dominant school of research. Newer work from the demand-side perspective has focused on rates, or the context in which entrepreneurship occurs. This review emphasizes this less developed demand-side perspective—in particular, the influence of firms and markets on how, where, and why new enterprises are founded. I take stock of the differences and separation in the two perspectives and argue that sociological frameworks, an embeddedness perspective, institutional and ecological theory, and multilevel models can be used to integrate the two schools and extend their research implications.

INTRODUCTION

Entrepreneurship occurs at significantly higher rates than at any time in the last 100 years (Gartner & Shane 1995). Recent survey evidence suggests that entrepreneurship is a meaningful lifestyle and career identity for many, with 4% of all adults, 1 in 25, trying to start a new firm at any given time (Reynolds & White 1997:7).

Along with the increase in entrepreneurship has come growth in the number of endowed chairs in business schools; positions in research institutions, foun-

dations, professional organizations; and journals in the field of entrepreneurship (Katz 1991, Robinson & Haynes 1991, Sandberg & Gatewood 1991). Yet in spite of these developments, entrepreneurship researchers complain that the field lacks a distinct professional identity, one defined by a unified body of knowledge based on generally accepted social science theories (Bull & Willard 1993). Surveys describe the field as organized by camps, where the lack of cross-level and cross-disciplinary interaction tends to obscure the overall picture of what gives rise to entrepreneurship (Wortman 1987, Herron et al 1992, Gartner & Shane 1995). Many commentaries on the field have called for an increase in the quality, interdisciplinary nature, and development of unifying schemes to integrate diverse pieces of research on entrepreneurship (e.g., Bygrave & Hofer 1991). The purpose of this review is to examine sociological research on entrepreneurship and draw selectively from other specialized literatures to create an agenda for further development of a sociological perspective on entrepreneurship.

I define entrepreneurship as the creation of new organizations (Gartner 1988), which occurs as a context-dependent, social and economic process (Reynolds 1991, Low & Abrahamson 1997). I draw from diverse literatures to take stock of what we know about how, where, and why new enterprise is founded. A central problem with answering this question is that despite the large and eclectic literature on entrepreneurship, relatively little is known about the specific contexts of organizational founding (Reynolds & White 1997). For example, ecologists have systematically studied founding rates, but they have focused on the development of universal concepts rather than on the particular context (Amburgey & Rao 1996). As Baum & Haveman (1997:304) note: "research has treated foundings as identical additions to homogeneous populations.... Organizational attributes cannot be used as explanatory variables in analyses of founding because they cannot be observed for organizations that do not yet exist."

The entrepreneurship literature can be classified into two schools: one taking the supply-side perspective and the other, the demand-side perspective. The supply-side school focuses on the availability of suitable individuals to occupy entrepreneurial roles; the demand-side, on the number and nature of the entrepreneurial roles that need to be filled. The demand-side perspective suggests a number of ways to examine the context of organizational founding, such as the generation of new ventures by organizational hierarchies (Freeman 1986), the activity of the professions (Wholey et al 1993), the policy of nation-states (Dobbin & Doud 1997), the development of markets (White 1981, King & Levine 1993), and the advent of technological change (Shane 1996). This review focuses on the following contexts for the development of entrepreneurship: the influences of two types of firms—organizational hierarchies and venture capital firms—and the influences of two types of markets—initial public

offerings (IPOs) and corporate acquisitions. I suggest that integrative frameworks from sociology, a social embeddedness perspective, ecological and institution theories, and multilevel models be used to link supply and demand perspectives. Last, I discuss sources of heterogeneity according to four different levels of analysis: individual, organizational, market, and environmental.

I have chosen to examine the contextual analysis of organizational founding in terms of firms and markets because they are both highly organized institutions in the United States and are also relatively underexamined as engines of entrepreneurship. Preliminary results from the Entrepreneurship Research Consortium indicate that a significant proportion of new start-ups are sponsored by existing organizations. Over one quarter of the people who say they were involved in trying to start new ventures were doing it for their current employer, rather than starting out on their own (Reynolds & Rong 1997). Second, a focus on firms and markets is appropriate given the maturity of many US industries. Third, the sociological aspects of how venture capital firms and initial public offering (IPO) and acquisition markets affect the founding of critical high-growth and high-technology organizations are underexamined (Florida & Kenney 1988b:35). Finally, data from the last five years shows that start-ups backed by venture capital are increasing as a percentage of all new business incorporations (VentureOne Corporation 1997, Statistical Abstract of the United States 1997).

The supply-side school examines entrepreneurship by focusing on the individual characteristics of entrepreneurs, specifying potential mechanisms for agency and change, whereas the demand-side emphasizes the push and pull of context. Clearly, the founding of a firm may be dependent on the individual entrepreneur, as supply-side analysts suggest, but it is also clear that an individual cannot mobilize without an infrastructure. I suggest that multilevel models be used to examine the influence of both these forces (DiPrete & Forristal 1994).

The idea that individuals and organizations affect and are affected by their social context is a seminal argument in both classic and contemporary sociology and has been applied to the study of entrepreneurship at different levels of analysis. For example, Weber's (1904) research illustrated how religious doctrine provided the cultural legitimation needed to shape the economic behavior of individuals in ways that, in the aggregate, led to the rise of capitalism. Weber's metatheory catalyzed the supply-side perspective and led psychologists to develop research programs on culture and personality as the ushers of entrepreneurship (McClelland 1961). Similarly, Burt (1992) has shown how entrepreneurs' chances of success are determined by the structure of their networks. Individual entrepreneurs with deep "structural holes" in their networks—that is, an absence of contact redundancy and substitution increase their chances of successfully identifying and optimizing entrepreneurial opportunities because

they are central to and well positioned to manipulate a structure that is more likely to produce higher levels of information.

DEFINING SUPPLY AND DEMAND PERSPECTIVES

The categorization of the supply and demand perspectives stems both from Weber and from the economic concept that there is a supply and demand for entrepreneurship (Casson 1995). The supply perspective has been criticized for its single-cause logic and its lack of rigorous and appropriate research methods; the demand perspective has been attacked for its lack of a theory of action. Moreover, these two perspectives represent different methodological assumptions and levels of analysis—micro and macro, respectively. I consider the two perspectives together here, however, because both advance causal theories. It has been argued that individual traits tend to be enduring, whereas social structures tend to be context- and time-dependent (Scott 1995). For example, the findings on individuals' "need for achievement" (McClelland 1975) change very little within society over short periods of time, but Gartner & Shane (1995) have shown that the measure changes considerably at the societal level over time periods greater than ten years. Considering both supply and demand perspectives promises to advance thorny questions about which explanatory factors are universal across time and contexts and which factors are particular to time and context.

Supply-Side Perspective

The central argument of the supply-side perspective and its traits-oriented approach is that special types of individuals create entrepreneurship. To advance economically, societies need an adequate supply of these special individuals. In this perspective, differences in the rate, form, and location of entrepreneurs and entrepreneurship are attributed to differences in psychological, social, cultural, and ethnic characteristics of individuals. Thus, supply-side psychologists have asked whether entrepreneurs have psychological traits and backgrounds that differentiate them from other populations such as managers. Such research has examined individuals' need for achievement, locus of control, risk-taking propensity, problem-solving style and innovativeness, leadership style, values, and socialization experience. This line of inquiry has yielded mixed results (Brockhaus & Horwitz 1986). While individuals are a key ingredient in how and why new organizations are founded, the idea that psychological traits alone account for entrepreneurship has been largely abandoned. See Shaver and Scott (1991) for a review of the substantial research based on the psychological perspective.

Sociological supply-side approaches have examined how attributes of culture (Weber 1904, Shane 1993), social class, and ethnic group (Aldrich &

Waldinger 1990, Light & Rosenstein 1995) produce entrepreneurial behavior. Following the supply-side logic, such research holds that differences in entrepreneurship can be predicted by differences in individuals—that is, that if one can accurately describe the personality or social group of an individual entrepreneur, one can then infer how, why, and where new businesses are founded.

While the majority of entrepreneurship research has been conducted from the supply-side perspective, considerable evidence underscores the causal logic critique of the supply-side perspective. For example, Baumol (1986) has illustrated that differences in the rates of development across diverse cultures are declining, and Gereffi & Hempel (1996) have shown that entrepreneurial institutions are spreading globally. IPO markets are developing in countries previously thought to have nonentrepreneurial cultures (Edmundson et al 1996), and policy documents in Third World countries are beginning to use the concept of entrepreneur in describing the role of women in economic development (Chin & Brauchi 1995). These examples imply that in addition to individual and cultural differences, entrepreneurs and entrepreneurship are determined by forces operating within other, larger contexts.

Both sociologists and psychologists have criticized supply-side studies for their lack of rigorous and appropriate research methods (Frey 1984, Brockhaus & Horwitz 1986, Aldrich 1990). A common research design flaw is sampling on the dependent variable—that is, successful entrepreneurs and firms. Such studies leave unanswered the question of whether an entrepreneurial person created a successful business or a successful business created an entrepreneurial person. Other criticisms focus on the lack of controls for important variables such as age, education, gender, and work experience, which makes the generalizability of findings problematic. Another criticism of supply-side research centers on the use of cross-sectional methods, which disregard important temporal and contextual events and processes. This is problematic because recent empirical studies illustrate that entrepreneurship is a dynamic phenomenon that exists across time and space (Gartner & Shane 1995), with the definition of an entrepreneur and what is defined as entrepreneurship changing over the life course of individuals and industrial contexts (Brockhaus & Horwitz 1986, Vesper 1990). In sum, supply-side perspectives by themselves are too simple, making economic activity too much a function of individuals and underplaying the role of external structural influences (Martinelli 1994).

While much has been learned about the personal attributes, behaviors, and other characteristics associated with entrepreneurs, there has been little progress in relating types of entrepreneurs to the formation of new ventures. Because the challenges of founding new organizations vary by context, different types of enterprises are likely to require different types of entrepreneurs. Unless context is taken into account, the links between the actions of individu-

als in founding new organizations and the founding rate are likely to remain elusive (Low & Abrahamson 1997).

Demand-Side Perspective

The demand-side perspective was first developed by Marxists, economists, and geographers (Light & Rosenstein 1995). Glade (1967:251) defined the demand perspective as an “opportunity structure, an ‘objective’ structure of economic opportunity and a structure of differential advantage in the capacity of the system’s participants to perceive and act upon such opportunities.” In contrast to the supply-side emphasis on stasis and individuals, the demand-side perspective advances the study of entrepreneurship by asking what entrepreneurs actually do—the decisions they make within social settings that are changing over time. However, Glade’s contextual approach misses the micro-macro link; as Martinelli (1994:486) notes, “he cannot go from behavior of the individual to the higher-social phenomena, other than by claiming that growth stems from the capability of the actor to take advantage of the situation.”

Newer work from a demand-side perspective, which is gaining popularity in business schools and among economic sociologists, draws from ecological and institutional theories in organizational sociology (Gartner 1989, Aldrich 1990, Aldrich & Wiedenmayer 1993, Bull & Willard 1993). Romanelli (1989) characterizes this approach with her idea that the availability of resources encourages founders to emerge. Similarly, in case studies Freeman (1986) found that semiconductor organizations create entrepreneurs that spin off new organizations because they give knowledge and resources to employees and identify models of organization, market niches, and entrepreneurial opportunities. High employee turnover may be coupled with cultures that support and revere those who leave to found new ventures. The ecological perspective, while methodologically rigorous, has been criticized by entrepreneurship scholars as lacking a theory of agency and context because it aggregates events at the population level of analysis. Institutional theory has also been criticized for having an underdeveloped theory of agency (DiMaggio 1988). However, both perspectives are developing in directions that promise to address both the issue of agency and the micro-macro link.

INFLUENCES OF FIRMS There is debate on whether it is the internal core or the periphery of organizations—that is, the hierarchy or the market—that provides the greatest source of new ventures for the economy. Aldrich & Zimmer (1986) argue for the peripheral view, noting that the majority of new small businesses are funded informally by the owner’s personal savings, family, and network of friends. Similarly, Birch’s analyses (1987) support the peripheral view that small new firms are the primary source of new ventures. Reynolds & White (1997) present an overview of both sides of this debate. Harrison (1994)

argues that the aggregate importance of new independent ventures has been exaggerated and that entrepreneurship by new ventures is largely under the control of large corporations. Arrow (1983) states that because of the increasing cost of innovation, large firms play a greater role in innovation and economic growth than do small firms. However, because there is a market for research outcomes, small firms have become less inhibited about research for which large development expenditures are necessary.

Organization theorists in sociology and economics have done considerable research on the rise of the large corporation as a central mechanism for resource allocation and market control in the United States during the later half of the twentieth century (Chandler 1962, 1977, Rumelt 1974, Armour & Teece 1978, Williamson 1985, Fligstein 1985, 1990, Palmer et al 1987, 1993, Roy 1997). Fligstein (1985) found that by 1979 the multidivisional firm (M-form) had become the dominant form of industrial enterprise. Ingram & Baum (1997:70) have documented the increasing prevalence of multiunit establishments in the service sector, accounting for 25% of all service revenue in 1955 and 40% in 1987, with this trend continuing upward. Chandler (1980:11) makes clear the distinction between M-form and unitary-form firms:

The traditional firm was a single-unit enterprise, with an individual or a small number of owners operating a shop, store, factory, and a bank or transportation line out of a single office. Normally, this type of firm undertook to fulfill only a single economic function, produce or sell a single line of products, and operated in one geographic region. Before the rise of the modern firm, the activities of these small, personally owned and managed enterprises were coordinated and monitored primarily by market and price mechanisms. The modern multiunit enterprise, in contrast, has come to operate in different locations, often carrying out a number of economic activities and producing or selling several lines of goods and services. The operation of its units and the transactions among them have been internalized within the firm. The activities of these units have come to be monitored and coordinated by the decisions of salaried managers rather than by market mechanisms.

While we know a considerable amount about the conditions that give rise to organizational hierarchies, we know very little about their effects on innovation—that is, on the creation of entrepreneurs and the founding of new ventures.

To gain insights, I turn to the interdisciplinary literatures on organization theory and more specifically on corporate venturing for guiding propositions on the role of large organizations in founding new ventures. Some of these views state that large organizations suppress entrepreneurship, while others argue that they promote it. There is evidence to support both arguments; however, no systematic studies exist that compare these two competing perspectives (Rumelt 1987).

According to one variant of the institutional perspective, organizations have remarkable inertia that reflects the historical conditions at the time of their founding. However, new forms arise and surviving organizations reinvent themselves by an entrepreneurial response to the institutional changes in their environments. Classic case histories support these arguments (Selznick 1949, Kimberly 1975, Zald & Denton 1963). This pattern of adaptational organizational change is driven by the distribution of resources in the environment such as increasing urbanization and literacy, changes in state policies, political revolution, and the development of a market economy (Stinchcombe 1965). The institutional perspective points to potential independent variables concerning how the environment may influence entrepreneurial activity in existing organizations.

The structural inertia thesis (Hannan & Freeman 1984) emphasizes that selection processes favor organizations that have stable structures because they are more reliable and accountable than organizations that experiment with change. The inertia thesis is a useful concept to draw upon in understanding which organizations are likely contexts for innovation and the founding of new ventures. However, Freeman's (1986) case studies of the semiconductor industry indicate a positive relationship between inertia and the organizational production of entrepreneurs. The effect of slowness in transferring technology and reallocating funding among divisions creates frustration that actually pushes potential entrepreneurs out the door faster. Freeman's findings are consistent with psychological studies on the push effect of previous work experience (Brockhaus & Horwitz 1986).

Agency theory argues that governance forms in which the principal and agent are integrated provide greater incentive for entrepreneurship (Jensen & Meckling 1976). In this view, individuals are less likely to create new ventures if they are employees in professionally managed corporations than if they are independent entrepreneurs. This is because employees have divergent goals from principals and because managers act to promote the security of their own position rather than risk strategies of new venturing. Shane (1995) found support for this agency argument by performing time-series regression analysis of rates of entrepreneurship versus real rates of economic growth. These findings suggest that ownership form is an important context variable.

The key idea of transaction cost theory that is central to entrepreneurship is that exchange is not costless and that sometimes it is less costly to use the market to govern exchanges and at other times it is less costly to use the firm (Swedberg 1994). Rumelt (1987) argues that firms are centers of sustained resources and that they engage in explicit strategies to spawn new enterprises because functions once attributed to capital markets have been transferred to the hierarchy. However, transaction cost theory does not focus per se on the means or processes that an entrepreneur employs in a large organization but

instead focuses on what determines the payoff for entrepreneurial activity. Payoff incentives can be blunted by an owner who exerts strong control over residual returns. For example, the manipulation of transfer pricing and cost accounting rules can obfuscate the rise of and results of innovation; hence, causal ambiguity and general office intrusion blunt payoff incentives for entrepreneurship in large organizations (Williamson 1985). While seldom applied to the study of entrepreneurship, the transaction cost theory can be useful in framing intraorganizational differences concerning employee incentives, which in turn can form the basis for hypotheses about which firms are more likely to engage in corporate venturing.

In the corporate venturing literature, Burgelman (1983:1349) defines corporate entrepreneurship as "the process whereby firms engage in diversification through internal development, which requires new resource combinations to extend the firm's activities in areas unrelated or marginally related to its current domain of competence." Hornsby et al (1993) argue that corporate entrepreneurship is a means by which firms enhance the entrepreneurial abilities of their employees. Trends such as the increasing prevalence of M-form firms, the maturation of industries, and increasing competition have given rise to corporate venturing as a means for firms to remain competitive (Merrifield 1993). In Galunic's 1996 inductive case study of ten divisions within a large high-technology corporation, he observed that the creation of new divisions and the recreation of existing ones occurred in response to industry and divisional life cycles.

Zahra (1993) found that a company's good financial performance is associated positively with corporate entrepreneurship. However, it is not clear whether it is corporate entrepreneurship that induces positive financial performance. In a review of Du Pont's 85 "new-direction" businesses, several determinants for success were identified: the possession of proprietary technology, heavy investment, conservative financial management, patient development, and outstanding people. Other lessons learned from venturing activities were the importance of the following: tolerance of failure, separation of venture and established businesses, corporate sponsorship, flexible planning to manage uncertainty, training of entrepreneurial leaders, and recognition and rewards for intrapreneurial individuals. For further reviews of corporate venturing, see Block & MacMillan (1993).

The central findings of those investigating corporate venturing indicate that the types of entrepreneurship best suited to large organizations may be (a) ventures based on the redeployment of the firm's resources and the extension of its competitive positions and (b) ventures that require large project administration and longer term resources. Ventures more attractive to individuals and small firms may be ones based on opportunities created by new and emerging markets (Rumelt 1987). Other variables that strongly influence whether organiza-

tions start new ventures are the characteristics of the organizational culture in which corporate employees operate and the reaction of organizational participants to changes in social and economic environments.

In general, the research on corporate venturing is atheoretical and poorly designed, and definitions of success are inadequately described. However, this work does illustrate that there is considerable intraorganizational heterogeneity. Here, advances can be gained by borrowing ethnographic and interpretive approaches (Smircich 1983) and organization theory and quantitative methods in sociology to guide studies of entrepreneurship. With respect to the latter, Krackhardt's (1995) application of Burt's structural hole theory to explain differences in entrepreneurial opportunity within corporations is a step in that direction.

Venture Capital Firms Venture capital firms control a type of financing that addresses a variety of barriers to innovation: the inertia of large corporations, the risk aversion of traditional financial markets, and the liability of newness inherent in business start-ups (Florida & Kenney 1988a). Because there has been little sociological study of venture capital firms and financial markets (Adler & Adler 1984), I first describe these organizations and institutions and then suggest avenues for using a sociological perspective in future research.

Venture capital firms provide seed, start-up, mezzanine, and bridge-stage funding for new ventures. The economic logic underpinning the business of professionally managed risk capital is the assumption that investment in entrepreneurial companies, while carrying higher risk, can provide higher returns than conventional investments. New ventures that are well suited to venture capital financing include high-technology and high-growth businesses with a fast "burn-rate" of capital in a variety of industries, including communications, electronics, health care, and retailing and consumer products, among others.

Venture capitalists form partnerships and syndications to share expertise, spread risk, and raise pools of money from sources such as university endowments, pension funds, and previously successful entrepreneurs, known as "angels." Institutional investors that participate in venture capital have tended to spread their risk by participating as limited partners in a varied portfolio of venture capital investment pools (Brophy & Guthner 1988). The organization of venture capital firms more closely resembles network than hierarchical forms of organization (Powell 1990). While the first venture capital firm began in the 1930s, venture capital did not become a highly organized form of financing until a change in federal legislation in the late 1970s, which for the first time allowed typically risk-averse pension funds to invest in venture capital funds.

Venture capital differs from debt capital because venture capitalists are actively involved in helping set up, manage, and oversee the founding and de-

velopment of new firms. Florida & Kenney (1988b:43) provide data showing that venture capital is “spatially fixed” around high concentrations of financial institutions and technology-intensive enterprises. They note that a growing body of literature recognizes a dynamic complementarity existing between large companies, universities, and small companies. Venture capitalists enhance such environments by acting as both catalyst and capitalist, providing the resources and the contacts to facilitate new business start-ups, spinoffs, and expansions. Because they sit at the center of extended networks linking financiers, entrepreneurs, corporate executives, headhunters and consultants, venture capitalists have a propulsive effect on the rates of business formations.

The use of venture capital has been on the rise. From 1992 to 1997, available venture capital funds increased by 158% , from \$4.1 billion to \$10.4 billion. These funds supported 952 ventures in 1992 and 2429 ventures in 1997, an increase of 155%. The median age of companies financed by venture capital in 1996 was two years and ten months. Early-stage venture capital is the most expensive to raise, and its abundance varies with market cycles. The number of firms receiving initial venture capital rose from 327 in 1992 to 628 in 1996. In 1996, 39% of all venture capital funded early-stage start-up companies (VentureOne Corporation 1996, 1997).

INFLUENCES OF MARKETS Markets for initial public offerings (IPOs) are linked to venture capital firms because an IPO is a sequentially planned exit strategy for founding entrepreneurs and venture capitalists. Venture capital firms “harvest” their successful investment in firms that have shown solid results and high growth potential through their relationships with stock underwriters, who can take the fledgling firms public. An IPO allows a company to access public capital markets to reduce its debt, provide greater liquidity for investors, commit to expansion, and therefore be more attractive to lenders. An IPO provides a publicly traded share price, which gives both management and shareholders outside information about the company’s value. The share price at which the owners of the company agree to trade their ownership for cash depends on the overall market conditions, the characteristics of the company, and the policies of investment bankers. In 1996, 275 companies went public, raising a total of \$11.2 billion, compared with approximately 140 companies that raised \$5.8 billion in 1992. The average age of companies going public in the decade of the 1990s is approximately 7.9 years, and the average pre-offering valuation in 1996 was over \$125 million (VentureOne Corporation 1997).

Acquisition markets An alternative to an IPO, an acquisition is another form of second-stage financing that also provides an exit strategy for founding entrepreneurs and venture capitalists. The lateral entry of the large corporation

via acquisition provides the acquired firm with immediate access to sources of capital and other resources, thus increasing the rapidity with which the newer firm becomes established. Arguing that the market for corporate control is an important context in which to examine innovation and entrepreneurship, Hitt et al (1996) found that firms that grow by acquisition tend to invest less in internal venturing. Because there is a market for research outcomes, there is a symbiotic relationship between large firms that seek to externalize the risk of research and development by acquiring new firms and new firms that seek acquisition in order to gain access to the distribution and financial muscle of large organizations (Arrow 1983). This empirically underexamined form of entrepreneurship is prevalent in industries such as biotechnology and pharmaceuticals. In 1996, 155 venture-backed companies were acquired. This tally does not include acquisitions of companies that had already gone public, because an IPO is also considered a liquidity event. The market for acquisitions has been growing steadily and in 1996 accounted for \$21.3 billion in assets.

SOCIOLOGICAL EMBEDDEDNESS PERSPECTIVE An important perspective for understanding social and economic environments is the embeddedness approach (Granovetter 1985, Lie 1997). In his seminal 1985 essay, Granovetter argues that economic environments are embedded in social and structural relationships that modify neoclassical predictions of atomistic economic behavior. Contrasting his argument to Williamson's (1975) classic dichotomy of "markets and hierarchies," Granovetter illustrates how economic processes, whether governed by market or hierarchy, are affected by their embeddedness in social and structural relations. The character of venture capital firms and IPO and acquisition markets exemplifies both relational and spatial embeddedness.

With respect to relational embeddedness, Eisenhardt & Forbes (1984) describe how in venture-backed Silicon Valley companies, one cohort of successful companies seeds successive generations. This phenomenon makes the market for venture capital "regenerative" in relation to successful ventures, because such ventures create "angels" and "serial entrepreneurs" who provide the financial, human, and social capital to start new ventures. Working this same vein, Florida & Kenney (1988a,b) develop a formal model of the types of firms in the network that are catalysts, and they document the regional clustering of venture capital resource flows.

Both IPO and acquisition markets are also relationally embedded with venture capital firms because they are tied to their "harvest cycle," being the main liquidation mechanisms of successful founding entrepreneurs and venture capital investors. Venture-backed firms seeking placement on the IPO or acquisition market are also subject to status-ordering processes controlled by opinion leaders such as industry analysts and leading bankers (Podolny 1993, Haunschild 1994). As Podolny's work with established firms indicates, choos-

ing the most prestigious investment bank as an underwriter sends a favorable signal to the market. The case of IPOs is interesting since most venture-backed firms have yet to turn a profit, and their status is shaky and dependent on inside knowledge and networks within a particular industrial context. These characteristics raise a new line of questioning about what we know about the status ordering and embeddedness of markets. For example, does the salience of status ordering still hold in a context in which there are young markets and firms that have had little opportunity to establish a reputation? Also, how do status relations affect IPO markets and the rate of foundings with respect to the liability of adolescence?

Spatial factors such as the density and proximity of venture capital firms have an effect on the founding of new ventures. While Florida & Kenney identified the spatial clustering of venture capital resources, Schoonhoven & Eisenhardt (1992) used the concept of clustering, or what they termed incubator regions, to predict the comparative birth rate of new organizations in a cross-regional analysis. Also taking a spatial approach, Reynolds et al (1995) used two types of independent variables to predict regional differences in the birth of new firms in the United States between 1976 and 1988: regional features such as economic diversity, volatile industries, employment policy flexibility; and features that reflected the population itself, such as career opportunity and personal wealth.

In sum, the work on incubator regions provides solid evidence that geographic areas that have higher concentrations of resources, such as a large number of venture capital firms and relevant specialized service companies, have higher birth rates of new ventures. First introduced in work on geographic areas (Pennings 1982), the gist of this explanation is that density and proximity are determinants of the entrepreneurial behavior, organizing capacity, and competitive advantages of regions. This argument is pervasive, used initially in classic organizational sociology (Stinchcombe 1965) and later in the business strategy literature (Porter 1990).

While the regional-factors work predicts the context in which certain forms of new enterprise are likely to be founded, it is not regions that start new businesses. To predict how and why new ventures are founded, we must ask other questions. At the individual level, are the entrepreneurs who are making use of resources in incubator regions—the ones whom supply-side psychologists claim have a high need for achievement (McClelland 1961) and a high internal locus of control (Rotter 1966)? How do the entrepreneurs' backgrounds—their prior start-up experience and social ties (Eisenhardt & Schoonhoven 1990)—affect the new businesses they found? At the organizational level, what type of organizational structures and cultures produce which forms of genealogical progeny—those that are “integrated” and have flat hierarchies or those that are “fragmented” with deep hierarchies (Martin 1992, Saxenian 1994)? At the

environmental level, do such start-ups happen during periods of resource competition, resource munificence, or technological discontinuity (Tushman & Anderson 1986)?

Additional research should link the work on regional variation with the role of individuals and firms in starting new ventures. This integrated approach can also address a number of important theoretical questions of interest to sociologists who study the origin and change of institutions, because it provides a setting for observing both interest and agency effects and universal versus particular effects. Future studies should also advance beyond the level of anecdote and descriptive analysis.

The work on regional variation heralds the need to reconcile the anomalous findings of research on incubator regions and research on density dependence based on population ecology theory. The findings of Schoonhoven & Eisenhardt imply that the effects of competition, the backbone of ecology, are less important than the effects of cooperation and spatial proximity, features that facilitate organizational learning (Ingram & Baum 1997)—that is, the easy transmission of technical and managerial know-how from one generation of entrepreneurs and firms to the next.

In response to these anomalies, the ecological literature has shifted toward an emphasis on contextual analysis. (See Baum & Oliver 1996 for a review of the ecological perspective and level of analysis.) The spatial effects of legitimation and competition are beginning to be examined according to political boundaries such as cities, states, regions, and nation-states; such studies have been made in the context of US and German breweries (Carroll & Wade 1991), Italian cooperative banks (Freeman & Lomi 1994), and automobile manufacturers (Hannan et al 1995). While too early to be definitive, preliminary evidence indicates that organizations compete locally but organizational populations evolve globally. This evidence, however, further confuses how different levels of action might be linked (Lomi & Larsen 1996).

The commodity-chains perspective offers an alternative explanation for where new enterprise is likely to locate. In shifting global markets, resource dependencies and transaction-cost exchange relations among leading and subservient firms drive the processes and location of new venture formation. Contrary to ecological work, this perspective suggests that cultural and political (nation-state) boundaries—as distinct from firm, market, and industry boundaries—are increasingly inconsequential in enterprise formation (Gereffi 1994).

Aldrich (1990) offers another explanation for where enterprise is likely to be founded by focusing on the relationship between spatial proximity and information transmission. Because venture capitalists fund “ideas,” an asset that bankers cannot easily value, they assure control of these abstract assets by requiring board seats and boilerplate management agreements. Suchman (1995) found that venture capital financing agreements in Silicon Valley became

more routinized over time and that routinization declined with geographical distance. These findings provide systematic evidence of the mechanisms that venture capitalists use in spreading knowledge that leads to founding new organizations.

The limited sociological literature on acquisition activity presents several research implications. While both economists and sociologists have observed that the market for acquisitions occurs in waves (Golbe & White 1988, Thornton 1995, Stearns & Allan 1996), sociologists have empirically examined the collective properties of acquisition activity. On the basis of an industry case study, Thornton (1995) has argued that the market for acquisitions is contingent on the competitive and cooperative structure of the particular industry as well as on universal models in the larger business environment. In an organizational field of the largest US firms, Stearns & Allan (1996) found that mimicry of new innovations in corporate financing led to the 1980s merger wave. Using a sample of large industrial firms, Amburgey & Miner (1992) showed how acquisition activity has momentum effects. Also sampling large industrial firms, Haunschild (1993) was able to predict the pattern of acquisition activity on the basis of corporate board networks. Based on a sample of the 100 largest firms in the United States, Fligstein (1990) illustrated that the state influences the market for acquisitions because antitrust policies tend to give rise to new innovations in integration. For example, the prohibition against horizontal and vertical integration gave rise to diversified integration as a new form of enterprise.

All these sociological attributes—local industry and global cross-industry pressures, networks, mimicry, momentum, and the activities of the state—are likely to affect the market for acquisitions and therefore, second-stage funding for fledgling new ventures. Because acquisitions occur in waves, one would expect this pattern to affect opportunity structures for entrepreneurs and the liabilities of the adolescence of organizations. Moreover, the advent of investor capitalism (Useem 1996), coupled with the rise of the market for acquisitions, has made an acquisition an established option for entrepreneurs. Historically, such changes in business practices are likely to accompany a shift in logic—in this case, a shift from thinking of a business as a relatively permanent lifestyle to considering it a time-limited, successive endeavor. Such a shift implies a change in an entrepreneur's identity and career path (i.e., to that of serial entrepreneur) and, concomitantly, an increased chance of new ventures (Gartner & Shane 1995). These conjectures await formal testing.

INTEGRATING FRAMEWORKS

The knowledge base of entrepreneurship research has been generated by three founding disciplines: psychology (McClelland 1961), economics (Schumpeter

1934), and sociology (Weber 1904). Each of these disciplines asks different questions, employs different metatheories, and focuses at different levels of analysis (Martinelli 1994). While the social embeddedness of firms and markets is a useful concept to suggest ways to contextualize organizational founding, other approaches relevant to a sociological perspective are ecological and institutional theories and multilevel models (DiPrete & Forristal 1994).

Ecological and Institutional Perspectives

Greenfield & Strickon (1981) were the first to suggest a population perspective as a new paradigm for entrepreneurship. However, it is Aldrich's (1990) work on population ecology that has migrated from sociology to propel demand-side research on entrepreneurship. Aldrich argues for a refocus on "rates," because studying individual traits of entrepreneurs fails to provide information on the environmental context within which entrepreneurs interpret and make sense of their actions (Aldrich & Wiedenmayer 1993). Reynolds (1992) suggests that population and organizational ecology is a productive paradigm in which to develop research on the societal context of entrepreneurship.

The strength of population ecology's formal theory and methods lends clarity to generating falsifiable hypotheses and to advancing understanding of organizational founding at the population level. As Aldrich (1999) notes, one sign of population ecology theory's sophistication is the developing use of computer simulations for hypothesis testing. Population ecology has developed useful concepts such as the liabilities of newness and adolescence that are applicable to framing organizational and environmental effects on new ventures. However, the current theory does not provide any explanation for the role of individual action in influencing founding conditions (Hannan & Carroll 1992, Hofer & Bygrave 1992). Ecological data sets do not contain information on such microprocesses. Population ecology theory has emphasized the importance of outside forces or unconscious action as causal forces, rather than individuals' goals and intents. It has generally adhered to the important goal of developing and testing general theory on the patterns of founding and disbanding of organizational populations.

However, ecological research is beginning to advance a contextual focus. In studying the founding rate of baseball teams and leagues, Land et al (1994) demonstrate that, in addition to the conventional density-dependent effects, spatial and relational embeddedness also affect founding rates. Using the concept of structural mutualism, they show that league foundings have a positive impact on team foundings. Linking entrepreneurs' choices to a founding rate analysis of the structure of the Manhattan hotel industry, Baum & Haveman (1997) show that entrepreneurs located new hotels geographically close to established hotels that were similar in price but different in size. Barnett & Car-

roll (1995), pacesetters in use of the ecological paradigm, suggested a focus on content and adaptation, and this invitation is encouraging the participation of new scholars and perspectives (Amburgey & Rao 1996).

The strength of the institutional perspective is that it does not have restrictive scope conditions with respect to the rationality of actors, historical time, and level of analysis. It has breadth in the sense that the socially constructed nature of “actors” can be rational individuals or seemingly irrational organizations and their environments (Scott 1995, Scott 1997). This theoretical flexibility provides the ability to link the micro supply-side and macro demand-side perspectives. For example, Van de Ven & Garud (1989), using a case study of the cochlear implants industry, made the first theoretical statement encompassing both micro and macro levels. Using a recursive, emergent social systems model (Romanelli 1991), Van de Ven & Garud argue that the odds of a firm successfully developing an innovation are largely a function of the extant infrastructure at the industrial level. This community infrastructure facilitates and constrains entrepreneurs, but it is entrepreneurs who construct and change the infrastructure. This infrastructure emerges and changes through the accretion of numerous institutional, resource, and proprietary events that co-produce each other through the actions of many public- and private-sector actors over an extended period (Ventresca & Lacey, forthcoming, Whitley 1996).

While such institutionally oriented research reflects “thick descriptions” of the context of human networks that enact the emergence of new ventures, it needs to advance beyond the case-study stage to include large-sample studies and formal models. Ingram & Inman’s (1996) study of hotel foundings in the Niagara Falls market is one example that integrates historical description with quantitative modeling of how institutional structure increased the founding rate (in this case, how the development of parks influenced the development of nearby hotels). Further advances hinge on the use of longitudinal quantitative methods and attention to historical detail to capture important time-dependent relationships, such as the life cycles of individuals and organizations in relation to population life cycles. The study by Van de Ven & Grazman (1994) on a genealogy of the Twin Cities’ health care organizations is a step in that direction.

Multilevel Models

If we build on ecological and institutional approaches, future entrepreneurship research should address the effects of individual-level traits, organizational and market-level variables, and population-level characteristics in models of the founding of new ventures. However, as Aldrich (1992) states, to generalize about entrepreneurs, individuals need to be studied; to generalize about new ventures, organizations need to be studied. While an integrative approach

promises to advance our understanding of who becomes an entrepreneur and how, why, and where organizations are founded, it is not an easy task. One potential solution is to use multilevel models.

DiPrete & Forristal (1994) provide a useful review of recent advances in the application of multilevel models to substantive problems in sociology. They take as their starting point Blalock's (1984) definition: "The essential feature of all contextual-effects models is an allowance for macro processes that are presumed to have an impact on the individual actor over and above the effects of any individual-level variables that may be operating" (quoted in DiPrete & Forristal 1994:354). They then note, "If we generalize his use of the term 'individual' to apply to any unit that is micro relative to some other macro level in the analysis, his definition is still quite serviceable" (333). In other words, if we extrapolate, the idea of context can include individual contexts (e.g., psychological traits, background characteristics, cognitive schemas), spatial contexts, (countries, states, regions, communities), temporal contexts (history), organizational contexts (U-form, M-form, network form), and social/cultural/economic contexts (ethnic groups, social classes, economic sectors, cultural logics). We can also identify precedents, such as Fligstein's 1987 work using the functional backgrounds of CEOs to predict shifts in conceptions of control prevailing in an organizational field of Fortune 500 firms.

While DiPrete & Forristal (1994) review the assumptions of various multilevel models, they also caution that there is no general theory of multilevel relationships. They point out that many researchers theorize at multiple levels of analysis but use data at only one level, or use data at multiple levels but theorize at one level, both of which can raise issues of the ecological fallacy (see Blalock 1984 for a summary). Because of such obstacles, it is important to identify sources of heterogeneity at different levels of analysis.

Sources of Heterogeneity

INDIVIDUALS Due to space limitations, I have not elaborated on literature reviewed elsewhere that examines the psychological traits, individual backgrounds, and behavioral characteristics of entrepreneurs. However, I do want to emphasize that new insights can be gleaned by building on the classic variables highlighted in psychology (the need for achievement, risk-taking propensity, and locus of control) and by integrating advances from the literatures in cognitive psychology and decision biases (March 1988). For example, Dosi & Lovallo (1997:42) use an eclectic mix of experimental evidence and literature review to argue that decision-making biases have important ramifications for the nature of entrepreneurship and for how and why entrepreneurs found new ventures. Such integration introduces to the study of entrepreneurship concepts such as organizational learning, allocation of attention, decision-making under uncertainty, unrealistic optimism, competitive blind spots, and

competitive groups (March 1991, Lant & Baum 1995). These concepts provide a theoretical bridge from the rational models that underlie the psychological work on entrepreneurs to sociological interest in individual irrationalities and collectivism. Moreover, melding the insights from cognitive psychology and decision bias work with those from institutional theory affords a focus on both the signal the environment delivers and the way internal representations of the world are constructed. It provides one way of perceiving how individuals' actions scale up to organizational outcomes, how new ventures and industries are spawned, and a way to treat sticky metatheoretical issues of individualism versus structuralism (Mayhew 1980).

ORGANIZATIONS We understand more about how interorganizational differences affect organizational founding than we do about how intraorganizational differences matter. Hannan & Freeman (1987) showed that the relationships among different types of organizational forms in a population affect the emergence and the diversity of new ventures—for example, that the growth of industrial unions restrained the founding rate of craft unions. Studies on resource partitioning and organizational size and mutualism also illustrate that diversity among types and forms of organizations has important consequences for founding rates (Carroll 1985, Barnett & Carroll 1987). Similarly, Baum & Oliver (1996) showed that nonprofit forms proliferated over for-profit forms of organizations.

However, an important and unexplored form of heterogeneity is the influence of large, diversified, M-form organizations. The multidivisional (M-form) represents a now-established sea change in organizational populations, and we have no studies of its effects on founding rates. The M-form organization presents a problematic context to study because M-forms span industries and different resource pools, thereby violating theoretical assumptions of homogeneous population boundaries (Thornton & Tuma 1995). Van de Ven & Grazman (1994) have approached this problem using event histories to study how existing organizations may be recombined or new organizations developed from the resources and ancestral forms in a population of organizations.

According to resource partitioning theory, interorganizational heterogeneity evolves endogenously as industries mature over time because a few generalist firms that exploit mass markets come to dominate the industry. This in turn should increase the founding rate of new businesses because entrepreneurs take advantage of the opportunity to found specialist organizations as demand rises in areas that have been neglected by generalists, creating new niche markets. However, it may be unrealistic to assume that generalists (M-forms) will not attempt to exploit these new niche markets and compete with the entrepreneurs starting new ventures. There are numerous examples of large firms that have relatively autonomous divisions organized to stratify the

marketplace. For example, retailing firms like the Gap use a divisionalized parent-firm structure as a strategy to avoid diluting the status of its low- and high-prestige brands (Podolny 1993). These observations warrant research to further develop resource partitioning theory.

The M-form also is an appreciable source of intraorganizational heterogeneity, which has psychological, sociological, and economic dimensions for entrepreneurship (Arrow 1983:16). Reviewing the literature on corporate hierarchies and venturing reveals that intraorganizational differences—that is, differences in internal structure within similar organizational forms—do affect the founding of new ventures. Studies of differences in organizational culture, identities, and managerial ideologies and styles within corporate hierarchies align well with attempts by economic sociologists to understand the autonomy of cultural effects in economic environments (Zukin & DiMaggio 1990). Direct measures of internal organizational structure also promise to advance ecological research on foundings, which so far has relied on gross measures of industrial concentration and organization size to understand how internal differentiation of organizational forms influences founding rates.

The description of venture capital firms suggests that their social organization has important effects on organizational founding. Advancing our understanding of this influence hinges on finding ways of quantifying the social embeddedness of relationships among entrepreneurs, angels, law firms, venture capital firms, and other financial institutions. Venture capital presents an interesting sociological topic because its social organization defies the neoclassical economic principles of financial markets, in which, under conditions of perfect information, investments flow freely across organizational and spatial boundaries to enterprises that offer the highest rate of return. With respect to venture capital—backed firms, however, the free flow of investments is controlled instead by the organizational and spatial networks characteristic of the venture capital industry.

MARKETS Using case studies, Freeman (1986) illustrated that foundings occur in waves that correspond with market cycles. Also, the reciprocal effects of markets and firms (Fligstein 1996) are one way to examine what determines the timing of when new ventures are founded. Because of the coupling of markets and firms, the timing of market cycles in relation to organizational founding raises several lines of inquiry. How does a shock in one market affect another—for example, in the relationship between IPO and acquisition markets? When IPO and acquisition markets are in a down cycle, they decrease liquidation options for venture capital firms. How do venture capital firms influence the patterns of IPO markets, and vice versa, with respect to organizational founding? In what context do acquisition waves produce waves of organizational founding or disbanding? How does the collective nature of the market

for acquisitions, in terms of momentum and mimicry, affect liabilities of newness and adolescence of firms? How do status-ordering processes mediate how venture capital firms and the IPO market affect the founding of new ventures (White 1987)?

ENVIRONMENTS Because the potential for founding new ventures depends on entrepreneurs' finding and utilizing opportunities in the environment, examining sources of environmental heterogeneity is one way to understand how and where new ventures are founded. Here, there are several issues to advance that hinge on the level of analysis employed and on endogenous and exogenous effects. Reconciling the effects of density dependence with the findings on incubator regions is one way to advance the research on organizational founding. Does the increasing density in maturing industries make the plight of entrepreneurs more difficult, as ecological theory would imply? Or, does it translate into increasing resource munificence, thereby increasing the ability of entrepreneurs in a particular space to garner resources for founding new ventures? So far the work on incubator regions would lead us to believe that environments with higher density—because they offer greater opportunities for mutualism and resource exchanges among firms—are more prone to learning, imitation, and collective action, all elements necessary to building infrastructure. However, not all organizations in a population benefit equally from any set of available resources. Baum & Singh (1994) have shown that founding rates were depressed when organizations had niche overlap—that is, when organizations competed for the same resources.

The contradictions in the predictions generated by studies of incubator regions vs. those of population ecology theory may be related to differences in the level of analysis. That is, the way organizations are selected for inclusion in empirical research may determine whether or not an analysis captures most of the competition effects (Singh 1993, Thornton & Tuma 1995). In population ecology theory, populations refer to entire industries, regardless of geographical dispersion. In contrast, studies of incubator regions focus on the geographical distribution of firms and largely ignore the variables of industry size, maturity, and concentration—all variables related to the distribution of resources and, most likely, to the founding rate.

Another potential explanation for these discrepant findings involves technological innovations that introduce competence-destroying discontinuities into an environment (Tushman & Anderson 1986). Entrepreneurial ventures that take advantage of competence-destroying technologies would no longer be in direct competition with established firms. Nevertheless, it might still be in the best interests of a start-up firm to locate in the region of established firms, due to the proximity of other firms in the industry, suppliers, and an existing skilled workforce. A further explanation for the discrepancies in the

findings is that the populations of organizations of ecological studies are largely located in low technology or diminishing returns sectors. However, the work on incubator regions focuses on high technology of increasing return sectors (Arthur 1990, Bygrave 1995).

Conceptual frameworks are needed both to move research beyond the descriptive level, as in the case of incubator regional analysis, and to contextualize ecological effects. In trying to determine the best environmental context for successful foundings, Low & Abrahamson (1997) have developed a model that groups different organizational and competitive challenges into three stages of industry evolution: emerging, growth, and mature. This typology has two axes: one details transmission mechanisms, movements, bandwagons, and clones; the other axis contains context characteristics, entrepreneur networks, behaviors, stakeholders, and strategy/structure. In sum, answering the question of how and where new enterprises are founded requires conducting more research aimed at discovering which resources, in which industries, at which stage of industry evolution are more significant than others.

Modeling Contextual Heterogeneity

Sociological methodology is progressing rapidly in its use of multilevel models (DiPrete & Forristal 1994). Strang & Tuma (1993), for example, have developed a heterogeneous diffusion model that incorporates individual- and contextual-level variables into an event-history framework to represent the social structural relationships that are thought to channel diffusion. Such models can combine individual-, organizational-, and environmental-level variables to understand how individual behavior is influenced by individual factors and by the social structure of inter-actor influences (Davis & Greve 1997). Extending the application of these models to explore the issues highlighted in this review—for example, to create a model of the influences of corporate hierarchies or venture capital firm networks on organizational foundings—would represent a significant advance in entrepreneurship research.

This new class of models addresses the methodological problem of how to incorporate population heterogeneity, time nonstationarity, and varying degrees of interdependence among members of the population in the same modeling framework. These models decompose noncontagious and contagious influences, separating the contagious influence in terms of the susceptibility of the focal individual or organization to influence by other individuals and organizations, the infectiousness of previous individuals and organizations, and the social proximity of the focal individual and organization to previous individuals and organizations. This review has highlighted sociological perspectives in the founding of new ventures, such as embeddedness, imitation, and momentum effects, in which the previous occurrence of one event or prac-

tice by one actor affects the rate for the population. These methods can advance what we know about the conditions under which individual entrepreneurs are networked, and the genealogy of the firms and the characteristics of the resource environments from which they diffuse, in predicting the founding of new ventures. These models are not a simple solution because there is caution about their use with incomplete populations, making the data collection requirements appear daunting. However, ongoing research is examining the consequences of less complete data and the implications of less costly sampling for obtaining valid results (Greve et al 1993).

CONCLUSION

Over the last thirty years, Weber's theory on the origin of the entrepreneurial spirit as a cultural account of individualism has been the metatheory underlying the dominant supply-side perspectives in entrepreneurship research. Theory development and empirical research from a demand-side perspective are currently underdeveloped but on the rise. This review boosts the demand perspective by focusing on the influences exerted by firms and markets. It suggests that sociological frameworks, an embeddedness perspective, ecological and institutional theories, and multilevel models could be used to integrate analyses of individual, organizational, market, and environmental characteristics in explaining how, where, and why new ventures are founded. In sociology, there have been recurrent reminders of the importance of the totality of interpretation, as evidenced by periodic essays to "bring back" men (Homans 1964), firms (Baron & Bielby 1980), states (Skocpol 1985), society (Friedland & Alford 1991), and work (Barley 1996). Rapid advances in theoretical and empirical work in sociology are now providing avenues for "bringing back" the study of entrepreneurship into sociological research.

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