



The Promise of Entrepreneurship as a Field of Research

Author(s): Scott Shane and S. Venkataraman

Source: *The Academy of Management Review*, Vol. 25, No. 1 (Jan., 2000), pp. 217-226

Published by: Academy of Management

Stable URL: <http://www.jstor.org/stable/259271>

Accessed: 15/03/2010 17:11

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at <http://www.jstor.org/action/showPublisher?publisherCode=aom>.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



Academy of Management is collaborating with JSTOR to digitize, preserve and extend access to *The Academy of Management Review*.

<http://www.jstor.org>

NOTE

THE PROMISE OF ENTREPRENEURSHIP AS A FIELD OF RESEARCH

SCOTT SHANE
University of Maryland

S. VENKATARAMAN
University of Virginia

To date, the phenomenon of entrepreneurship has lacked a conceptual framework. In this note we draw upon previous research conducted in the different social science disciplines and applied fields of business to create a conceptual framework for the field. With this framework we explain a set of empirical phenomena and predict a set of outcomes not explained or predicted by conceptual frameworks already in existence in other fields.

For a field of social science to have usefulness, it must have a conceptual framework that explains and predicts a set of empirical phenomena not explained or predicted by conceptual frameworks already in existence in other fields. To date, the phenomenon of entrepreneurship has lacked such a conceptual framework. Rather than explaining and predicting a unique set of empirical phenomena, *entrepreneurship* has become a broad label under which a hodgepodge of research is housed. What appears to constitute entrepreneurship research today is some aspect of the setting (e.g., small businesses or new firms), rather than a unique conceptual domain. As a result, many people have had trouble identifying the distinctive contribution of the field to the broader domain of business studies, undermining the field's legitimacy. Researchers in other fields ask why entrepreneurship research is necessary if it does not explain or predict empirical phenomena beyond what is known from work in other fields. Moreover, the lack of a conceptual framework has precluded the development of an understanding of many important phenomena not adequately explained by other fields.

One example of this problem is the focus in the entrepreneurship literature on the relative

performance of individuals or firms in the context of small or new businesses. Since strategic management scholars examine the differences in and sustainability of relative performance between competitive firms, this approach is not unique (Venkataraman, 1997). Moreover, the approach does not provide an adequate test of entrepreneurship, since entrepreneurship is concerned with the discovery and exploitation of profitable opportunities. A performance advantage over other firms is not a sufficient measure of entrepreneurial performance, because a performance advantage may be insufficient to compensate for the opportunity cost of other alternatives, a liquidity premium for time and capital, and a premium for uncertainty bearing. Therefore, although a conceptual framework to explain and predict relative performance between firms is useful to strategic management, it is not sufficient for entrepreneurship.

We attempt an integrating framework for the entrepreneurship field in the form of this note. We believe that this framework will help entrepreneurship researchers recognize the relationship among the multitude of necessary, but not sufficient, factors that compose entrepreneurship, and thereby advance the quality of empirical and theoretical work in the field. By providing a framework that both sheds light on unexplained phenomena and enhances the quality of research, we seek to enhance the field's legitimacy and prevent its marginaliza-

We acknowledge the helpful comments of Ed Roberts on an earlier draft of this note. The authors contributed equally and are listed alphabetically.

tion as only "a research setting" or "teaching application."

The note proceeds as follows. First, we define the domain of the field. Second, we explain why organizational researchers should study entrepreneurship. Third, we describe why entrepreneurial opportunities exist and why some people, and not others, discover and exploit those opportunities. Fourth, we consider the different modes of exploitation of entrepreneurial opportunities. Finally, we conclude with brief reflections on the potential value of the framework presented here.

DEFINITION OF ENTREPRENEURSHIP

Perhaps the largest obstacle in creating a conceptual framework for the entrepreneurship field has been its definition. To date, most researchers have defined the field *solely* in terms of who the entrepreneur is and what he or she does (Venkataraman, 1997). The problem with this approach is that entrepreneurship involves the nexus of two phenomena: the presence of lucrative opportunities and the presence of enterprising individuals (Venkataraman, 1997). By defining the field in terms of the individual alone, entrepreneurship researchers have generated incomplete definitions that do not withstand the scrutiny of other scholars (Gartner, 1988).

The definition of an entrepreneur as a person who establishes a new organization is an example of this problem. Because this definition does not include consideration of the variation in the quality of opportunities that different people identify, it leads researchers to neglect to measure opportunities. Consequently, empirical support (or lack of support) for attributes that differentiate entrepreneurs from other members of society is often questionable, because these attributes confound the influence of opportunities and individuals.

In contrast to previous research, we define the field of entrepreneurship as the scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited (Venkataraman, 1997). Consequently, the field involves the study of *sources* of opportunities; the *processes* of discovery, evaluation, and ex-

ploitation of opportunities; and the set of *individuals* who discover, evaluate, and exploit them.

Although the phenomenon of entrepreneurship provides research questions for many different scholarly fields,¹ organization scholars are fundamentally concerned with three sets of research questions about entrepreneurship: (1) why, when, and how opportunities for the creation of goods and services come into existence; (2) why, when, and how some people and not others discover and exploit these opportunities; and (3) why, when, and how different modes of action are used to exploit entrepreneurial opportunities.

Before reviewing existing research to answer these questions, we provide several caveats about our approach. First, we take a disequilibrium approach, which differs from equilibrium approaches in economics (Khilstrom & Laffont, 1979) and social psychology (McClelland, 1961). In equilibrium models, entrepreneurial opportunities either do not exist or are assumed to be randomly distributed across the population. Because people in equilibrium models cannot discover opportunities that differ in value from those discovered by others, who becomes an entrepreneur in these models depends solely on the attributes of people. For example, in Khilstrom and Laffont's (1979) equilibrium model, entrepreneurs are people who prefer uncertainty.

Although we believe that some dimensions of equilibrium models are useful for understanding entrepreneurship, we argue that these models are necessarily incomplete. Entrepreneurial behavior is transitory (Carroll & Mosakowski, 1987). Moreover, estimates of the number of people who engage in entrepreneurial behavior range from 20 percent of the population (Reynolds & White, 1997) to over 50 percent (Aldrich & Zimmer, 1986). Since a large and diverse group of people engage in the transitory process of entrepreneurship, it is improbable that entrepreneurship can be explained *solely* by reference to a characteristic of certain people independent of the situations in which they find themselves. Therefore, when we argue that some people and

¹ For example, economists are interested in the distribution of entrepreneurial talent across productive and unproductive activities (Baumol, 1996).

not others engage in entrepreneurial behavior, we are describing the tendency of certain people to respond to the situational cues of opportunities—not a stable characteristic that differentiates some people from others across all situations.²

Second, we argue that entrepreneurship does not require, but can include, the creation of new organizations. As Amit, Glosten, and Mueller (1993) and Casson (1982) explain, entrepreneurship can also occur within an existing organization. Moreover, opportunities can be sold to other individuals or to existing organizations. In this note we do not examine the creation of new organizations per se but, rather, refer interested readers to excellent reviews on firm creation in organizational ecology (Aldrich, 1990; Singh & Lumsden, 1990), economics (Caves, 1998; Geroski, 1995), and organizational theory (Gartner, 1985; Katz & Gartner, 1988; Low & MacMillan, 1988).³

Third, our framework complements sociological and economic work in which researchers have examined the population-level factors that influence firm creation. Stinchcombe (1965) identified societal factors that enhance incentives to organize and organizing ability. Aldrich (1990) and Singh and Lumsden (1990) have provided reviews of factors enhancing firm foundings and have described the effects of such factors as environmental carrying capacity, interpopulation processes, and institutional factors. Similarly, Baumol (1996) has related the institutional environment to the supply of people who are willing to create firms.

Although these other frameworks are valuable to entrepreneurship scholars, they involve a set of issues different from those with which we are concerned. Our framework differs from these in that (1) we focus on the existence, discovery, and exploitation of opportunities; (2) we examine the influence of individuals and opportunities, rather than environmental antecedents and consequences; and (3) we consider a framework broader than firm creation.

Fourth, our framework also complements research on the process of firm creation (e.g., Gartner, 1985; Katz & Gartner, 1988; Katz, 1993). Explaining this process is important, but research on it involves examining a different set of issues from those we explore. Firm creation process researchers examine resource mobilization, firm organizing, and market making, starting with the assumption that opportunities exist, have been discovered, and will be exploited through the creation of new firms. Since we lack the space to review both the processes of entrepreneurship through market mechanisms and through firm creation, we limit our discussion to the conditions under which entrepreneurial opportunities are exploited through firms and markets, and we refer readers to these other frameworks for information on the process of firm creation.

WHY STUDY ENTREPRENEURSHIP?

Many scholars ask, either implicitly or explicitly, why anyone should study entrepreneurship. Data are difficult to obtain, theory is underdeveloped, and many findings to date are the same as those obtained in other areas of business. In response, we offer three reasons for studying the topic. First, much technical information is ultimately embodied in products and services (Arrow, 1962), and entrepreneurship is a mechanism by which society converts technical information into these products and services. Second, entrepreneurship is a mechanism through which temporal and spatial inefficiencies in an economy are discovered and mitigated (Kirzner, 1997). Finally, of the different sources of change in a capitalist society, Schumpeter (1934) isolated entrepreneurially driven innovation in products and processes as the crucial engine driving the change process. Therefore, the absence of entrepreneurship from our collective theories of markets, firms, organizations, and change makes our understanding of the business landscape incomplete. As Baumol eloquently remarks, the study of business without an understanding of entrepreneurship is like the study of Shakespeare in which "the Prince of Denmark has been expunged from the discussion of Hamlet" (1989: 66).

² We also argue that entrepreneurship can be undertaken by a single individual or a set of people who undertake the steps of the process collectively or independently.

³ Many researchers argue that entrepreneurship occurs for reasons other than for profit (see Roberts, 1991, for a review), but we discuss only for-profit entrepreneurship.

THE EXISTENCE, DISCOVERY, AND EXPLOITATION OF ENTREPRENEURIAL OPPORTUNITIES

The Existence of Entrepreneurial Opportunities

To have entrepreneurship, you must first have entrepreneurial opportunities. Entrepreneurial opportunities are those situations in which new goods, services, raw materials, and organizing methods can be introduced and sold at greater than their cost of production (Casson, 1982). Although recognition of entrepreneurial opportunities is a subjective process, the opportunities themselves are objective phenomena that are not known to all parties at all times. For example, the discovery of the telephone created new opportunities for communication, whether or not people discovered those opportunities.

Entrepreneurial opportunities differ from the larger set of all opportunities for profit, particularly opportunities to enhance the efficiency of existing goods, services, raw materials, and organizing methods, because the former require the discovery of new means-ends relationships, whereas the latter involve optimization within existing means-ends frameworks (Kirzner, 1997). Because the range of options and the consequences of exploiting new things are unknown, entrepreneurial decisions cannot be made through an optimization process in which mechanical calculations are made in response to a given set of alternatives (Baumol, 1993).

Entrepreneurial opportunities come in a variety of forms. Although the focus in most prior research has been on opportunities in product markets (Venkataraman, 1997), opportunities also exist in factor markets, as in the case of the discovery of new materials (Schumpeter, 1934). Moreover, within product market entrepreneurship, Drucker (1985) has described three different categories of opportunities: (1) the creation of new information, as occurs with the invention of new technologies; (2) the exploitation of market inefficiencies that result from information asymmetry, as occurs across time and geography; and (3) the reaction to shifts in the relative costs and benefits of alternative uses for resources, as occurs with political, regulatory, or demographic changes.

Previous researchers have argued that entrepreneurial opportunities exist primarily because different members of society have different beliefs about the relative value of resources,

given the potential to transform them into a different state (Kirzner, 1997). Because people possess different beliefs (because of a lucky hunch, superior intuition, or private information), they make different conjectures about the price at which markets should clear or about what possible new markets could be created in the future. When buyers and sellers have different beliefs about the value of resources, both today and in the future, goods and services can sell above or below their marginal cost of production (Schumpeter, 1934). An entrepreneurial discovery occurs when someone makes the conjecture that a set of resources is not put to its "best use" (i.e., the resources are priced "too low," given a belief about the price at which the output from their combination could be sold in another location, at another time, or in another form). If the conjecture is acted upon and is correct, the individual will earn an entrepreneurial profit. If the conjecture is acted upon and is incorrect, the individual will incur an entrepreneurial loss (Casson, 1982).

Entrepreneurship requires that people hold different beliefs about the value of resources for two reasons. First, entrepreneurship involves joint production, where several different resources have to be brought together to create the new product or service. For the entrepreneur to obtain control over these resources in a way that makes the opportunity profitable, his or her conjecture about the accuracy of resource prices must differ from those of resource owners and other potential entrepreneurs (Casson, 1982). If resource owners had the same conjectures as the entrepreneur, they would seek to appropriate the profit from the opportunity by pricing the resources so that the entrepreneur's profit approached zero. Therefore, for entrepreneurship to occur, the resource owners must not share completely the entrepreneur's conjectures. Second, if all people (potential entrepreneurs) possessed the same entrepreneurial conjectures, they would compete to capture the same entrepreneurial profit, dividing it to the point that the incentive to pursue the opportunity was eliminated (Schumpeter, 1934).

But why should people possess different beliefs about the prices at which markets should clear? Two answers have been offered. First, as Kirzner (1973) has observed, the process of discovery in a market setting requires the participants to guess each other's expectations about a

wide variety of things. People make decisions on the basis of hunches, intuition, heuristics, and accurate and inaccurate information, causing their decisions to be incorrect some of the time. Since decisions are not always correct, this process leads to "errors" that create shortages, surpluses, and misallocated resources. An individual alert to the presence of an "error" may buy resources where prices are "too low," recombine them, and sell the outputs where prices are "too high."

Second, as Schumpeter (1934) explained, economies operate in a constant state of disequilibrium. Technological, political, social, regulatory, and other types of change offer a continuous supply of new information about different ways to use resources to enhance wealth. By making it possible to transform resources into a more valuable form, the new information alters the value of resources and, therefore, the resources' proper equilibrium price. Because information is imperfectly distributed, all economic actors do not receive new information at the same time. Consequently, some people obtain information before others about resources lying fallow, new discoveries being made, or new markets opening up. If economic actors obtain new information before others, they can purchase resources at below their equilibrium value and earn an entrepreneurial profit by recombining the resources and then selling them (Schumpeter, 1934).

The informational sources of opportunity may be easier to see in the case of new technology, but they need not be restricted to technological developments. For example, the production of the movie *Titanic* generated new information about who was a desirable teen idol. An entrepreneur could respond to this new information by acting on the conjecture that posters of Leonardo DeCaprio would sell for greater than their cost of production.

Because entrepreneurial opportunities depend on asymmetries of information and beliefs, eventually, entrepreneurial opportunities become cost inefficient to pursue. First, the opportunity to earn entrepreneurial profit will provide an incentive to many economic actors. As opportunities are exploited, information diffuses to other members of society who can imitate the innovator and appropriate some of the innovator's entrepreneurial profit. Although the entry of imitating entrepreneurs initially may validate

the opportunity and increase overall demand, competition eventually begins to dominate (Hannan & Freeman, 1984). When the entry of additional entrepreneurs reaches a rate at which the benefits from new entrants exceeds the costs, the incentive for people to pursue the opportunity is reduced, because the entrepreneurial profit becomes divided among more and more actors (Schumpeter, 1934).

Second, the exploitation of opportunity provides information to resource providers about the value of the resources that they possess and leads them to raise resource prices over time, in order to capture some of the entrepreneur's profit for themselves (Kirzner, 1997). In short, the diffusion of information and learning about the accuracy of decisions over time, combined with the lure of profit, will reduce the incentive for people to pursue any given opportunity.

The duration of any given opportunity depends on a variety of factors. The provision of monopoly rights, as occurs with patent protection or an exclusive contract, increases the duration. Similarly, the slowness of information diffusion or the lags in the timeliness with which others recognize information also increase the duration, particularly if time provides reinforcing advantages, such as occur with the adoption of technical standards or learning curves. Finally, the "inability of others (due to various isolating mechanisms) to imitate, substitute, trade for or acquire the rare resources required to drive down the surplus" (Venkataraman, 1997: 133) increases the duration.

The Discovery of Entrepreneurial Opportunities

Although an opportunity for entrepreneurial profit might exist, an individual can earn this profit only if he or she recognizes that the opportunity exists and has value. Given that an asymmetry of beliefs is a precondition for the existence of entrepreneurial opportunities, all opportunities must not be obvious to everyone all of the time (Hayek, 1945). At any point in time, only some subset of the population will discover a given opportunity (Kirzner, 1973).

Why do some people and not others discover particular entrepreneurial opportunities? Although the null hypothesis is blind luck, research has suggested two broad categories of factors that influence the probability that particular people will discover particular opportuni-

ties: (1) the possession of the prior information necessary to identify an opportunity and (2) the cognitive properties necessary to value it.

Information corridors. Human beings all possess different stocks of information, and these stocks of information influence their ability to recognize particular opportunities. Stocks of information create mental schemas, which provide a framework for recognizing new information. To recognize an opportunity, an entrepreneur has to have prior information that is complementary with the new information, which triggers an entrepreneurial conjecture (Kaish & Gilad, 1987). This prior information might be about user needs (Von Hippel, 1986) or specific aspects of the production function (Bruderl, Preisendorfer, & Ziegler, 1992).

The information necessary to recognize any given opportunity is not widely distributed across the population because of the specialization of information in society (Hayek, 1945). People specialize in information because specialized information is more useful than general information for most activities (Becker & Murphy, 1992). As a result, no two people share all of the same information at the same time. Rather, information about underutilized resources, new technology, unsated demand, and political and regulatory shifts is distributed according to the idiosyncratic life circumstances of each person in the population (Venkataraman, 1997).

The development of the Internet provides a useful example. Only a subset of the population has had entrepreneurial conjectures in response to the development of this technology. Some people still do not know what the Internet is or that profitable opportunities exist to exploit it.

Cognitive properties. Since the discovery of entrepreneurial opportunities is not an optimization process by which people make mechanical calculations in response to a given a set of alternatives imposed upon them (Baumol, 1993), people must be able to identify new means-ends relationships that are generated by a given change in order to discover entrepreneurial opportunities. Even if a person possesses the prior information necessary to discover an opportunity, he or she may fail to do so because of an inability to see new means-ends relationships. Unfortunately, visualizing these relationships is difficult. Rosenberg (1994) points out that history is rife with examples in which inventors failed to see commercial opportunities (new means-ends relationships) that resulted from the inven-

tion of important technologies—from the telegraph to the laser.

Prior research has shown that people differ in their ability to identify such relationships. For example, research in the field of cognitive science has shown that people vary in their abilities to combine existing concepts and information into new ideas (see Ward, Smith, & Vaid, 1997, for several review articles). Recently, a few researchers have begun to evaluate empirically the role that cognitive properties play in the discovery of entrepreneurial opportunities (see Busenitz & Barney, 1996; Kaish & Gilad, 1991; Shaver & Scott, 1991). For example, Sarasvathy, Simon, and Lave (1998) have shown that successful entrepreneurs see opportunities in situations in which other people tend to see risks, whereas Baron (in press) has found that entrepreneurs may be more likely than other persons to discover opportunities because they are less likely to engage in counterfactual thinking (i.e., less likely to invest time and effort imagining what "might have been" in a given situation), less likely to experience regret over missed opportunities, and are less susceptible to inaction inertia.

The Decision to Exploit Entrepreneurial Opportunities

Although the discovery of an opportunity is a necessary condition for entrepreneurship, it is not sufficient. Subsequent to the discovery of an opportunity, a potential entrepreneur must decide to exploit the opportunity. We do not have precise figures on the aborting of discovered opportunities, but we do know that not all discovered opportunities are brought to fruition. Why, when, and how do some people and not others exploit the opportunities that they discover? The answer again appears to be a function of the joint characteristics of the opportunity and the nature of the individual (Venkataraman, 1997).

Nature of the opportunity. The characteristics of opportunities themselves influence the willingness of people to exploit them. Entrepreneurial opportunities vary on several dimensions, which influences their expected value. For example, a cure for lung cancer has greater expected value than does a solution to students' need for snacks at a local high school. The exploitation of an entrepreneurial opportunity re-

quires the entrepreneur to believe that the expected value of the entrepreneurial profit will be large enough to compensate for the opportunity cost of other alternatives (including the loss of leisure), the lack of liquidity of the investment of time and money, and a premium for bearing uncertainty (Kirzner, 1973; Schumpeter, 1934).

To date, research has shown that, on average, entrepreneurs exploit opportunities having higher expected value. In particular, exploitation is more common when expected demand is large (Schmookler, 1966; Schumpeter, 1934), industry profit margins are high (Dunne, Roberts, & Samuelson, 1988), the technology life cycle is young (Utterback, 1994), the density of competition in a particular opportunity space is neither too low nor too high (Hannan & Freeman, 1984), the cost of capital is low (Shane, 1996), and population-level learning from other entrants is available (Aldrich & Wiedenmeyer, 1993).

Individual differences. Not all potential entrepreneurs will exploit opportunities with the same expected value. The decision to exploit an opportunity involves weighing the value of the opportunity against the costs to generate that value and the costs to generate value in other ways. Thus, people consider the opportunity cost of pursuing alternative activities in making the decision whether or not to exploit opportunities and pursue opportunities when their opportunity cost is lower (Amit, Mueller, & Cockburn, 1995; Reynolds, 1987). In addition, people consider their costs for obtaining the resources necessary to exploit the opportunity. For example, Evans and Leighton (1991) showed that the exploitation of opportunities is more common when people have greater financial capital. Similarly, Aldrich and Zimmer (1986) reviewed research findings that showed that stronger social ties to resource providers facilitate the acquisition of resources and enhance the probability of opportunity exploitation. Furthermore, Cooper, Woo, and Dunkelberg (1989) found that people are more likely to exploit opportunities if they have developed useful information for entrepreneurship from their previous employment, presumably because such information reduces the cost of opportunity exploitation. Finally, the transferability of information from the prior experience to the opportunity (Cooper et al., 1989), as well as prior entrepreneurial experience (Carroll & Mosakowski, 1987), increases the

probability of exploitation of entrepreneurial opportunity because learning reduces its cost.

The decision to exploit an entrepreneurial opportunity is also influenced by individual differences in perceptions. The creation of new products and markets involves downside risk, because time, effort, and money must be invested before the distribution of the returns is known (Knight, 1921; Venkataraman, 1997). Several researchers have argued that individual differences in the willingness to bear this risk influence the decision to exploit entrepreneurial opportunities (Khilstrom & Laffont, 1979; Knight, 1921). For example, people who exploit opportunities tend to frame information more positively and then respond to these positive perceptions (Palich & Bagby, 1995).

The decision to exploit entrepreneurial opportunities is also influenced by individual differences in optimism. People who exploit opportunities typically perceive their chances of success as much higher than they really are—and much higher than those of others in their industry (Cooper, Woo, & Dunkelberg, 1988). Moreover, when these people create new firms, they often enter industries in which scale economies play an important role at less than minimum efficient scale (Audretsch, 1991), and they enter industries at rates exceeding the equilibrium number of firms (Gort & Klepper, 1982).⁴

However, in most industries, at most points in time, most new firms fail (Dunne et al., 1988), and few firms ever displace incumbents (Audretsch, 1991), suggesting that people who exploit opportunities, on average, are overly optimistic about the value of the opportunities they discover. This overoptimism motivates the exploitation of opportunity by limiting information, stimulating rosy forecasts of the future (Kahneman & Lovallo, 1994), triggering the search for relatively small amounts of information (Kaish & Gilad, 1991), and leading people to act first and analyze later (Busenitz & Barney, 1997).

Other individual differences may be important in explaining the willingness to exploit opportunities. Researchers have argued that people with greater self-efficacy and more internal locus of control are more likely to exploit opportunities, because exploitation requires people to

⁴ The information signals generated by the entrepreneurial process are weak.

act in the face of skepticism of others (Chen, Greene, & Crick, 1998). Similarly, opportunity exploitation involves ambiguity, and people who have a greater tolerance for ambiguity may be more likely to exploit opportunities (Begley & Boyd, 1987). Finally, the exploitation of opportunity is a setting in which people can achieve, providing a valuable cue for those who possess a high need for achievement (McClelland, 1961). Consequently, those who are high in need for achievement may be more likely than other members of society to exploit opportunities.

Readers should note that the attributes that increase the probability of opportunity exploitation do not necessarily increase the probability of success. For example, overoptimism might be associated with a higher probability of both exploitation and failure. Of the population of individuals who discover opportunities in a given industry, those who are pessimistic may choose not to exploit discovered opportunities because they more accurately estimate what it will take to compete and how many other people will try to do similar things. Overoptimistic individuals do not stop themselves from exploiting these opportunities, because their overoptimism limits information and motivates rosy forecasts of the future.

MODES OF EXPLOITATION

Another critical question concerns how the exploitation of entrepreneurial opportunities is organized in the economy. Two major institutional arrangements for the exploitation of these opportunities exist—the creation of new firms (hierarchies) and the sale of opportunities to existing firms (markets)—but the common assumption is that most entrepreneurial activity occurs through *de novo* startups. However, people within organizations who discover opportunities sometimes pursue those opportunities on behalf of their existing organizations and sometimes establish new organizations, whereas independent actors sometimes sell their opportunities to existing organizations and sometimes establish new organizations to pursue the opportunities.

Research shows that the choice of mode depends on the nature of the industrial organization, the opportunity, and the appropriability regime. Research in industrial organization has

shown that entrepreneurship is less likely to take the form of *de novo* startups when capital market imperfections make it difficult for independent entrepreneurs to secure financing (Cohen & Levin, 1989). Entrepreneurship is more likely when the pursuit of entrepreneurial opportunity requires the effort of individuals who lack incentives to do so in large organizations; when scale economies, first mover advantages, and learning curves do not provide advantages to existing firms (Cohen & Levin, 1989); and when industries have low barriers to entry (Acs & Audretsch, 1987). Research on the appropriability of information has shown that entrepreneurship is more likely to take the form of *de novo* startups when information cannot be protected well by intellectual property laws, inhibiting the sale of entrepreneurial opportunities (Cohen & Levin, 1989). Finally, research on the nature of opportunities has shown that entrepreneurship is more likely to take the form of *de novo* startups when opportunities are more uncertain (Casson, 1982), when opportunities do not require complementary assets (Teece, 1986), and when opportunities destroy competence (Tushman & Anderson, 1986).

CONCLUSION

Entrepreneurship is an important and relevant field of study. Although those in the field face many difficult questions, we have presented a framework for exploring them. We recognize that we may have offered some uncertain assumptions, potentially flawed logical arguments, or have made statements that will prove, ultimately, to be inconsistent with data yet to be collected. Nevertheless, this framework provides a starting point. Since it incorporates information gained from many disciplinary vantage points and explored through many different methodologies, we hope that it will prod scholars from many different fields to join us in the quest to create a systematic body of information about entrepreneurship. Many skeptics claim that the creation of such a body of theory and the subsequent assembly of empirical support for it are impossible. We hope that other scholars will join our effort to prove those skeptics wrong.

REFERENCES

- Acs, Z., & Audretsch, D. 1987. Innovation, market structure, and firm size. *Review of Economics and Statistics*, 71: 567-574.
- Aldrich, H. 1990. Using an ecological perspective to study organizational founding rates. *Entrepreneurship Theory and Practice*, Spring: 7-24.
- Aldrich, H., & Wiedenmeyer, G. 1993. From traits to rates: An ecological perspective on organizational foundings. *Advances in Entrepreneurship, Firm Emergence, and Growth*, 1: 145-195.
- Aldrich, H., & Zimmer, C. 1986. Entrepreneurship through social networks. In D. Sexton & R. Smilor (Eds.), *The art and science of entrepreneurship*. 3-23. Cambridge, MA: Ballinger.
- Amit, R., Glosten, L., & Mueller, E. 1993. Challenges to theory development in entrepreneurship research. *Journal of Management Studies*, 30: 815-834.
- Amit, R., Mueller, E., & Cockburn, I. 1995. Opportunity costs and entrepreneurial activity. *Journal of Business Venturing*, 10: 95-106.
- Arrow, K. 1962. Economic welfare and the allocation of resources for invention. In R. Nelson (Ed.), *The rate and direction of inventive activity: Economic and social factors*: 609-626. Princeton, NJ: Princeton University Press.
- Audretsch, D. 1991. New firm survival and the technological regime. *Review of Economics and Statistics*, 68: 520-526.
- Baron, R. In press. Counterfactual thinking and venture formation: The potential effects of thinking about "what might have been." *Journal of Business Venturing*.
- Baumol, W. J. 1989. Entrepreneurship in economic theory. *American Economic Review Papers and Proceedings*: 64-71.
- Baumol, W. 1993. Formal entrepreneurship theory in economics: Existence and bounds. *Journal of Business Venturing*, 8: 197-210.
- Baumol, W. 1996. *Entrepreneurship, management, and the structure of payoffs*. Cambridge, MA: MIT Press.
- Becker, G., & Murphy, K. 1992. The division of labor, coordination costs, and knowledge. *Quarterly Journal of Economics*, 107: 1137-1160.
- Begley, T., & Boyd, D. 1987. Psychological characteristics associated with performance in entrepreneurial firms and smaller businesses. *Journal of Business Venturing*, 2: 79-93.
- Bruderl, J., Preisendorfer, P., & Ziegler, R. 1992. Survival chances of newly founded business organizations. *American Sociological Review*, 57: 227-242.
- Busenitz, L., & Barney, J. 1997. Differences between entrepreneurs and managers in large organizations: Biases and heuristics in strategic decision-making. *Journal of Business Venturing*, 12: 9-30.
- Carroll, G., & Mosakowski, E. 1987. The career dynamics of self-employment. *Administrative Science Quarterly*, 32: 570-589.
- Casson, M. 1982. *The entrepreneur*. Totowa, NJ: Barnes & Noble Books.
- Caves, R. 1998. Industrial organization and new findings on the turnover and mobility of firms. *Journal of Economic Literature*, 36: 1947-1982.
- Chen, C., Greene, P., & Crick, A. 1998. Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? *Journal of Business Venturing*, 13: 295-316.
- Cohen, W., & Levin, R. 1989. Empirical studies of innovation and market structure. In R. Schmalensee & R. Willig (Eds.), *Handbook of industrial organization*, vol. II: 1060-1107. New York: Elsevier.
- Cooper, A., Woo, C., & Dunkelberg, W. 1988. Entrepreneurs' perceived chances for success. *Journal of Business Venturing*, 3: 97-108.
- Cooper, A., Woo, C., & Dunkelberg, W. 1989. Entrepreneurship and the initial size of firms. *Journal of Business Venturing*, 4: 317-332.
- Drucker, P. 1985. *Innovation and entrepreneurship*. New York: Harper & Row.
- Dunne, T., Roberts, M., & Samuelson, L. 1988. Patterns of firm entry and exit in U.S. manufacturing industries. *Rand Journal of Economics*, 19: 495-515.
- Evans, D., & Leighton, L. 1989. Some empirical aspects of entrepreneurship. *American Economic Review*, 79: 519-535.
- Gartner, W. 1985. A conceptual framework for describing the phenomenon of new venture creation. *Academy of Management Review*, 10: 696-706.
- Gartner, W. B. 1988. Who is the entrepreneur? is the wrong question. *American Journal of Small Business*, 12: 11-32.
- Geroski, P. 1995. What do we know about entry? *International Journal of Industrial Organization*, 13: 421-440.
- Gort, M., & Klepper, S. 1982. Time paths in the diffusion of product innovations. *Economic Journal*, 92: 630-653.
- Hannan, M., & Freeman, J. 1984. Structural inertia and organizational change. *American Sociological Review*, 49: 149-164.
- Hayek, F. 1945. The use of knowledge in society. *American Economic Review*, 35: 519-530.
- Kahneman, D., & Lovallo, D. 1994. Timid choices and bold forecasts: A cognitive perspective on risk taking. In R. P. Rumelt, D. E. Schendel, & D. Teece (Eds.), *Fundamental issues in strategy: A research agenda*: 71-96. Boston: Ballinger.
- Kaish, S., & Gilad, B. 1991. Characteristics of opportunities search of entrepreneurs versus executives: Sources, interests, and general alertness. *Journal of Business Venturing*, 6: 45-61.
- Katz, J., & Gartner, W. 1988. Properties of emerging organizations. *Academy of Management Review*, 13: 429-441.
- Khilstrom, R., & Laffont, J. 1979. A general equilibrium entrepreneurial theory of firm formation based on risk aversion. *Journal of Political Economy*, 87: 719-748.
- Kirzner, I. 1973. *Competition and entrepreneurship*. Chicago: University of Chicago Press.

- Kirzner, I. 1997. Entrepreneurial discovery and the competitive market process: An Austrian approach. *Journal of Economic Literature*, 35: 60–85.
- Knight, F. 1921. *Risk, uncertainty and profit*. New York: Augustus Kelley.
- Low, M., & MacMillan, I. 1988. Entrepreneurship: Past research and future challenges. *Journal of Management*, 14: 139–161.
- McClelland, D. 1961. *The achieving society*. Princeton, NJ: Van Nostrand.
- Palich, L., & Bagby, R. 1995. Using cognitive theory to explain entrepreneurial risk-taking: Challenging conventional wisdom. *Journal of Business Venturing*, 10: 425–438.
- Reynolds, P. 1987. New firms: Societal contribution versus survival potential. *Journal of Business Venturing*, 2: 231–246.
- Reynolds, P., & White, S. 1997. *The entrepreneurial process*. Greenwich, CT: Greenwood Press.
- Roberts, E. 1991. *Entrepreneurs in high technology: Lessons from MIT and beyond*. New York: Oxford University Press.
- Rosenberg, N. 1994. Uncertainty and technological change. *Conference on growth and development: The economics of the 21st century*. Stanford, CA: Stanford University, Center for Economic Policy Research.
- Sarasvathy, D., Simon, H., & Lave, L. 1998. Perceiving and managing business risks: Differences between entrepreneurs and bankers. *Journal of Economic Behavior and Organization*, 33: 207–225.
- Schmookler, J. 1966. *Invention and economic growth*. Cambridge, MA: Harvard University Press.
- Schumpeter, J. 1934. *Capitalism, socialism, and democracy*. New York: Harper & Row.
- Shane, S. 1996. Explaining variation in rates of entrepreneurship in the United States: 1899–1988. *Journal of Management*, 22: 747–781.
- Shaver, K. G., & Scott, L. R. 1991. Person, process, and choice: The psychology of new venture creation. *Entrepreneurship Theory and Practice*, Winter: 23–42.
- Singh, J., & Lumsden, C. 1990. Theory and research in organizational ecology. *Annual Review of Sociology*, 16: 161–195.
- Stinchcombe, A. 1965. Social structure and organizations. In J. March (Ed.), *Handbook of organizations*: 260–290. Chicago: Rand McNally.
- Teece, D. 1986. Profiting from technological innovation: Implications for integration, collaboration, licensing, and public policy. *Research Policy*, 15: 286–305.
- Tushman, M., & Anderson, P. 1986. Technological discontinuities and organizational environments. *Administrative Science Quarterly*, 31: 439–465.
- Utterback, J. 1994. *Mastering the dynamics of innovation*. Cambridge, MA: Harvard Business School Press.
- Venkataraman, S. 1997. The distinctive domain of entrepreneurship research: An editor's perspective. In J. Katz & R. Brockhaus (Eds.), *Advances in entrepreneurship, firm emergence, and growth*, vol. 3: 119–138. Greenwich, CT: JAI Press.
- Von Hippel, E. 1986. Lead users: A source of novel product concepts. *Management Science*, 32: 791–805.
- Ward, T., Smith, S., & Vaid, J. (Eds.). 1997. *Creative thought*. Washington, DC: American Psychological Association.

Scott Shane is associate professor of entrepreneurship in the Robert H. Smith School of Business and director of research at the Dingman Center for Entrepreneurship at the University of Maryland. He received his Ph.D. from the University of Pennsylvania. His current research focuses on entrepreneurship in high-technology settings.

S. Venkataraman is the Samuel L. Slover Associate Professor of Business Administration and director of research at the Batten Center for Entrepreneurial Leadership in the Darden Graduate School of Business Administration at the University of Virginia. He received his Ph.D. from the University of Minnesota. His current research focuses on entrepreneurship theory.