TOWARDS A THEORY OF ENTREPRENEURSHIP

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EXECUTIVE SUMMARY

Over 200 years of the study of entrepreneurship have provided many definitions of the word "entrepreneur." However, no theory of entrepreneurship has been developed that would explain or predict when an entrepreneur, by any of the definitions, might appear or engage in entrepreneurship. Indeed, the search for a best definition may have impeded the development of theory.

The Schumpeter economic outcome-based concept that an entrepreneur creates value by carrying out new combinations causing discontinuity is embodied in many of the definitions offered within the last 50 years. We strongly recommend the adoption of Schumpeter's definition for academic and policy-making purposes.

We offer the following tentative entrepreneurship theory, extracted from anecdotal observations and extant literature, in the hope that it will better explain and begin to predict the phenomenon of entrepreneurship:

"A person will carry out a new combination, causing discontinuity, under conditions of:

1. *Task-related motivation,*
2. *Expertise,*
3. *Expectation of personal gain, and*
4. *A supportive environment."*

Several relevant research questions are posed in the hope that they will encourage discontinuity in further development of theory.

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INTRODUCTION

The initial draft of this paper was intended to provide some general direction for papers to be presented at the Entrepreneurship Theory conference described in the preceding preface. The tone of that draft was tentative and the content inadequate. There is little, if any, evidence that it influenced the papers that were presented.

Rather, influence flowed in the opposite direction. The content and tone of this paper has been profoundly influenced by those included in this issue; by the theoretical constructs offered by Baumol, Gartner, and Herron and Robinson; by the empirical observations of Cooper; by the powerful evidence presented by Van de Ven of the importance of the entrepreneurial infrastructure; and by Bygrave's convincing evidence that a mathematical model for entrepreneurship is unlikely, and that chaos theory is useful only in a metaphorical sense.

The objective of this paper is to provide a summary of the post-conference state of entrepreneurship theory and to serve as an introduction to the papers that follow.

TOWARDS A THEORY OF ENTREPRENEURSHIP

Despite the number of published papers that might be considered related to the theory of entrepreneurship, no generally accepted theory of entrepreneurship has emerged. Papers have been contributed to the existing body of research by a diverse set of scholars with disciplinary backgrounds in agriculture, anthropology, economics, education, finance, history, marketing, mass communications, political science, psychology, sociology, and strategy. These have appeared in at least 31 separate academic journals (Low and MacMillan 1988; Wortman 1992). Despite the potential for richness and texture that such a diverse mix of disciplines brings, a major weakness is that, in many cases, researchers from one discipline have tended to ignore entrepreneurship studies by researchers in the other disciplines (Wortman 1992).

Hornaday and Churchill (1987) express the opinion that the accumulation of past research has produced sufficient empirical data to allow some development of theoretical constructs. Low and MacMillan (1988) call for entrepreneurship researchers to pursue causality more aggressively. However, Wortman (1992) argues that the field lacks sufficient frameworks that cut across disciplines and disciplinary relationships. Definitions continue to be troublesome with "... too many individuals adopting their own definitions of entrepreneurship and ... of terms within the field."

The existing literature can be grouped into five broad categories. The first, which is not really concerned with theory, focuses on a *definition* of the word "entrepreneur." A second category might be considered the *trait approach*, i.e., the study of the psychological traits of people identified as entrepreneurs. Another is the study of *success strategies*, reasons offered to explain the success of new and existing business ventures. A fourth category of papers is the study of the *formation of new ventures*. And finally, there are papers that study the effect of *environmental factors* on entrepreneurial actions. We will consider each category in relation to a theory of entrepreneurship.

For academic purposes, we advocate the adoption of Schumpeter's definition of "entrepreneur" and an economic outcome approach to the study of entrepreneurship. These outcomes include both starting "new" ventures and adopting success strategies within existing entities. We also offer a tentative theory of entrepreneurship based on extant literature and supported by anecdotal observations.

DEFINITION OF THE ENTREPRENEUR

Writers in the field of entrepreneurship seem somewhat obsessed with defining the word "entrepreneur." Bygrave (1989a) observes that scholars are still bickering over a working definition of entrepreneurship, and suggests that the lack of precision in the definition of an entrepreneur may contribute to the lack of robust entrepreneurship models. The term has been used for more than two centuries, but we continue to extend, reinterpret, and revise the definition.

We suggest this desire to invent a better definition has misdirected research efforts away from a useful theory of entrepreneurship. Priorities may have been reversed. It is possible that a reasonable theory of entrepreneurship might resolve the definitional issue or render it somewhat irrelevant. To adopt Schumpeter-based concepts should mitigate further misdirection of effort and allow researchers to focus on the task at hand, i.e., explaining and predicting the occurrence of entrepreneurial events/phenomena.

Selective Review of Literature on Definition

Hebert and Link (1988) traced the history of the term "entrepreneur" and the evolution of its several meanings. It first appeared in the writings of Richard Cantillon in 1755 who used the term to describe "someone who exercises business judgment in the face of uncertainty." Modern nuances of the meaning have been influenced by a host of writers. A few of the more influential ones include J. B. Say (1767–1832), J. H. von Thunen (1785–1868), Leon Walras (1834–1910), Alfred Marshall (1842–1924), Frank Knight (1885–1972), Joseph Schumpeter (1883–1950), Ludwig von Mises (1881–1972), Israel Kirzner, and Harvey Leibenstein.

Amit, Glosten, and Muller (1990) attempted to interpret several twentieth century authors to explain the entrepreneur and entrepreneurship. Drucker (1985), they assert, defines entrepreneurship as an act of innovation that involves endowing existing resources with new wealth-producing capacity. Leibenstein (1968) describes the entrepreneur as one who marshals all resources necessary to produce and market a product that answers a market deficiency. Schumpeter (1942) was seen to view the entrepreneur as a leader and a contributor to the process of creative destruction. Kirzner (1985) considered the entrepreneur as one who perceived profit opportunities and initiated action to fill currently unsatisfied needs or to improve inefficiencies. Bewley (1989) claimed that Knight (1921) saw the entrepreneur as an individual with an unusually low level of uncertainty aversion.

Schumpeter (1936) argued that economic development emerged when "new combinations appear discontinuously" (p. 66). New combinations might include: (1) the introduction of a new good, or a new quality of a good, (2) the introduction of a new method of production, (3) the opening of a new market, (4) the conquest of a new source of supply of raw materials or components, or (5) the reorganization of any industry.

Schumpeter (1936) also asserted, "The carrying out of new combinations we call 'enterprise' . . . ; the individuals whose function it is to carry them out we call 'entrepreneurs' (p. 74)." Entrepreneurs are not only "independent" business people in an exchange economy but all who fulfill the functions, including "dependent" employees of a company. That definition "does not include all heads of firms . . . who merely may operate an established business, but only those who actually perform that function." A shareholder may be an entrepreneur, but "shareholders per se, however, are never entrepreneurs, but merely capitalists, who in consideration of their submitting to certain risks participate in profits (p. 75)." "Everyone is an entrepreneur when he actually 'carries out new combinations,' and loses that character as soon as he has built up his business, when he settles down to running

it as other people run their businesses (p. 78)." Schumpeter obviously makes a distinction between the entrepreneur and the owner/manager of a business.

Schumpeter (1942) reiterates "... the function of entrepreneurs is to reform or revolutionize the pattern of production by exploiting an invention or, more generally, an untried technological possibility for producing a new commodity or producing an old one in a new way, by opening up a new source of supply of materials or a new outlet for products, by reorganizing an industry and so on" (p. 132).

The Schumpeter explanation of entrepreneurial profit completes the concept:

> It [entrepreneurial profit] is expression of the value of what the entrepreneur contributes to production in exactly the same sense that wages are the value expression of what the worker 'produces.' It is not a rent like the return to differential advantages in the permanent elements of a business; nor is it a return to capital. It slips from the entrepreneur's grasp as soon as the entrepreneurial function is performed. It attaches to the creation of new things, to the realization of the future value system. It is at the same time the child and the victim of development (1936, pp. 153–154).

Selection of Definition

Researchers, teachers and policy-makers need a commonly accepted definition that distinguishes an entrepreneur from a non-entrepreneur. The term, entrepreneur, is used in academia, in commerce, by the media, and by ordinary persons in conversation. It has been used for more than two centuries. It is unlikely that an entirely new definition would be acceptable.

Schumpeter's definition is acceptably precise. An entrepreneur is the person who carries out new combinations, causing discontinuity. The role is completed when the function is completed. The person may be an employee within an existing organization or may start a new venture. An investor per se only risks capital for a return. A manager who operates an existing business, perhaps even with continuous adjustment in small steps, does not cause discontinuity and thus, by definition, is not an entrepreneur.

Recent attempts at redefinition use concepts and words like "fundamental change" (Murray 1984), "innovative, flexible, dynamic, risk taking, creative" (Stevenson and Gumpert 1985) and "alertness" (Kirzner 1985). To some extent these descriptions add insight but, upon closer examination, merely rephrase the Schumpeter definition. We argue that Schumpeter's definition is adequately descriptive and discriminatory for academic purposes and precise enough for policy-making purposes. There are no compelling reasons for modifying it. One potential criticism is that this "solution" merely shifts the definitional issue from "How do you define an entrepreneur?" to "How do you define a discontinuity?" However, discontinuity, through which value not previously available to society is created, is the essence of entrepreneurship.

TRAIT APPROACH

Successful entrepreneurs are often interesting people. Americans have long been interested in Horatio Alger type fiction, where the hero achieves success through self-reliance and hard work. It is not surprising, therefore, that the focus of much of the early work was directed towards identifying the traits or characteristics that distinguish entrepreneurs from mere mortals.

Low and MacMillan (1988) offer an insightful review of literature involving psychological theories about the entrepreneur. Their conclusion:

> being innovators and idiosyncratic, entrepreneurs tend to defy aggregation. They tend to

> reside at the tails of population distributions, and though they may be expected to differ from the mean, the nature of these differences are not predictable. It seems that any attempt to profile the typical entrepreneur is inherently futile (p. 148).

Apparently, there is no "typical" entrepreneur.

Society's primary interest in entrepreneurship seems to be fostering new combinations that improve our economic life. Understanding entrepreneurial traits would probably be useful to psychologists for analytical or therapeutic purposes, part of the domain of psychology. However, for the purposes of this paper it is assumed that, with the exception that the intensity of the motivation of the entrepreneur will inevitably affect the carrying out of any discontinuity-causing actions, the psychological traits of the entrepreneur are not a significant variable in the theory of entrepreneurship within the economic domain.

THEORY

Kerlinger (1973) defines a theory as "a set of interrelated constructs (concepts), definitions, and propositions that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting the phenomena" (p. 9). Most of the extant literature that purports to encompass some aspect of entrepreneurship theory has failed to "specify relations among variables."

Bygrave (1989a) notes that research about entrepreneurship is in its early stages, and that so far it has borrowed its methods and theories from other sciences. Those other sciences tend to have a bias that there is incremental progress where things happen for a reason, and lead to a system where everything fits. Progress can be described by smoothly changing, linear and deterministic models. But that model does not describe entrepreneurship's disjointed events that disrupt stability. Therefore, at this pre-theory stage he suggests that entrepreneurship research be directed towards empirical observations and longitudinal studies, using existing frameworks for guidance. As patterns emerge from those studies, partial theories can be built, and perhaps at some time a great theory of entrepreneurship can be built from partial theories.

In a companion article, Bygrave (1989b) examines the entrepreneurship process to see if it has characteristics that are amenable to the mathematics of catastrophe and chaos. Stevenson and Harmeling (1990) argue that entrepreneurial managers need a more chaotic theory. They argue that "much of the present theory used to explain corporate entrepreneurship is based upon an implicit assumption that we are examining a set of equilibrium-based phenomenon [*sic*]" (p. 2).

Bygrave (1993) explores the chaotic zones of several algorithms that might represent the entrepreneurial process. In some conditions, a fundamental equation for population–ecology theory exhibits chaotic behavior that resembles entrepreneurship. He concludes, however, that chaos is no more than a mathematical metaphor. The precision of measurements needed to observe true scientific chaos are unattainable in practice.

In a thought-provoking paper, Gartner (1993) argues that the words used to talk about entrepreneurship are critical to the development of a theory of entrepreneurship. He suggests the issue is larger than merely one of definition. Words evoke pictures—mental frames of reference and/or analysis—and, hence, limit the aspects of entrepreneurship we are willing for our theory to consider.

Herron and Robinson (1993) provide a model that attempts to show how entrepreneurial skill and training is affected by such factors as personality traits and motivation, resulting in entrepreneurial behavior. However, the outcome of the behavior (the entrepreneurial act), i.e., value creation performance, is further affected by the environmental context in which it is

undertaken, the structure of the external environment, and the strategy adopted by the entrepreneur. It is small wonder that existing research which fails to consider the mediating and moderating influences of motivation, environmental context, and strategy has shown little success in either explaining or predicting entrepreneurial activity.

Not all observers agree that the time is ripe for an overall entrepreneurship theory. Johannisson and Senneseth (1990) argue that the inherent character of entrepreneurship creates so much ambiguity that efforts to create a consensus model of entrepreneurship may be in vain. Rather they suggest study of five paradoxes of entrepreneurship, i.e., independence vs. dependence, process vs. personal attributes, revolution vs. evolution, vision vs. action, and social vs. business orientation. They believe that resolution or cementing of one or more of the paradoxes will add insight and understanding, important objectives of theory.

We take the approach that even a tentative theory can provide benefits. We accept that much of the innovating entrepreneur's decision process is beyond systematic calculation (Baumol 1993), and that discontinuities place it beyond quantitative models based on the use of functions that are continuous (Bygrave 1993). In the Penrose theory-classifying scheme (Bygrave 1993) it would not be classified as useful, but tentative. We believe it is tentatively useful.

Most of the remainder of the paper is devoted to providing the support from existing literature. That support is drawn from research involving the other three categories offered at the outset, i.e., success strategies for existing entities, formation of new ventures, and the effect of the environment on entrepreneurial actions.

The theory is stated as follows:

A new combination, causing discontinuity, will be created, i.e., entrepreneurship will occur, under conditions of:

1. Task-related motivation (some vision or sense of social value embedded in the basic task itself that motivates the initiator to act), and
2. Expertise (present know-how plus confidence to be able to obtain know-how needed in the future), and
3. Expectation of gain for self (economic and/or psychic benefits), and
4. A supportive environment (conditions that either provide comfort and support to the new endeavor, or that reduce discomfort from a previous endeavor).

TASK-RELATED MOTIVATION

The dedication of the entrepreneur to the task at hand typically permeates the atmosphere of the work place. It is easy to sense, but not well documented in the literature. Some may interpret this dedication as part of the drive for economic gains. Some see it as obsession. Further research is needed to better understand the entrepreneur's motivation, its source, and how it is sustained.

Although the motivations for becoming an entrepreneur (carrying out the new combinations causing the discontinuity) are likely to vary greatly, a frequently cited reason is independence, the determination *not* to work for someone else. McClelland (1961, 1962) identified three characteristics of entrepreneurs that he related to their need for achievement: (1) a desire to accept responsibility for solving problems, setting goals and reaching those goals through their own efforts; (2) a willingness to accept moderate risks, not as a function of chance, but of skill, and (3) a desire to know the outcomes of their decisions. Perhaps creating the new venture provides the pleasure and satisfaction of independence and acceptance of responsibility for outcomes.

Levenhagen and Thomas (1990) make several observations based on in-depth interviews that were conducted with 13 software entrepreneurs to attempt to determine the reasons for their leaving existing employment and starting-up new organizations. These entrepreneurs felt a conviction and dedication to the values embodied in some core task, a feeling that was in conflict with the values of their previous employer. Profit maximization goals were not primary motivations for start-ups. And, in terms of risk, the risk of not achieving some non-monetary utility embodied in the core task outweighed any potential loss of human or financial capital.

Edward H. Rockey (1986) reports that some entrepreneurs use visual imagery in the process of starting enterprises. "Entrepreneurial highs" including enthusiasm, excitement, and a sense of having fun are sometimes experienced. Visions of success can help sustain the needed energy level and provide task-related motivation.

EXPERTISE

Arguably, a new combination that causes discontinuity does not occur by chance. A mere discovery can occur as a result of observation of the unexpected, but a new combination is the result of deliberate actions, the implementation of a plan or the carrying out of a vision. A child does not program a computer without knowledge of both programming and computers. An accountant without golfing or manufacturing skills would not substitute steel for hickory or graphite for steel in the shaft of a golf club. A physicist whose life had been devoted to laser technology would not be likely to devise a leveraged buyout to acquire a business. Expertise related to the discontinuity is required, but expertise is apparently available from a variety of sources.

Cooper (1985) used the term "incubator organization" to describe the entrepreneur's place of employment immediately prior to the founding of the new venture. Cooper and Bruno (1977) found that entrepreneurs tend to start ventures similar in both market and technology to those of their incubator organizations. In addition, new ventures similar in markets and technologies had a higher rate of survival than those that differed from those of the incubator organization. Presumably, entrepreneurs can gain both expertise and relationships necessary for success from previous work experience.

Stinchcombe (1965), however, argued that technical expertise alone provides no assurance of success. In particular, the entrepreneur and his new organization face four "liabilities of newness," i.e. (1) the lack of role models, (2) the lack of standardized communication channels, (3) the lack of trust and credibility, and (4) the lack of an established clientele.

Incubators, networks, formal and informal sources of information often supplement the formal expertise of the entrepreneur. Smilor and Gill (1986) describe advantages afforded new ventures who participate in formal "incubator" programs. First, the incubator can assist the entrepreneur in developing credibility. Merely to be accepted into a successful incubator program suggests the new firm has been investigated and determined to have potential. By word-of-mouth, the incubator manager, directors, advisors, and consultants can create a perception in the business community that may help to overcome "liabilities" (3) and (4).

The incubator can also shorten the time necessary to learn the essentials of operating a successful business and to develop the communication channels required. Working through an incubator, entrepreneurs gain direct and indirect access to the business network of the community, region, and industry (Smilor and Gill 1986, p. 39).

Even without formal incubator programs, networks provide linkages or relations between the entrepreneur and opportunities critical to the success of his enterprise. Within

complex networks of relationships, entrepreneurship is facilitated or constrained by linkages between aspiring entrepreneurs, resources, and opportunities (Aldrich and Zimmer 1986). A casual acquaintance between an entrepreneur and another is often " . . . a crucial bridge between two densely knit clumps of close friends." Entrepreneurs ask both close friends and acquaintances to become customers. Then, in turn, these customers tell their close friends and acquaintances about the new venture. It is the "weak ties" (acquaintances) who can expand the pool of customers. "Strong ties" (close friends) deliver redundant information (1986, p. 19).

Birley (1985) found that entrepreneurs in her study tended to rely primarily on informal sources of information and help (business and social contacts, family and close friends) in locating new employees, lining up financing, locating the business and planning the future activities of the business. Formal sources of support (banks, accountants, lawyers, local governments and chambers of commerce, realtors, and the SBA) were also used, but only as a last resort.

EXPECTATION OF GAIN FOR SELF

Baumol (1990) observes that the types of innovation that are attributed to entrepreneurs by Schumpeter have been shown in some form by different classes of entrepreneurs over the recorded history. He points out that their behavior patterns were different in different eras, e.g., in ancient Rome, medieval China, the earlier Middle Ages, the later Middle Ages, the fourteenth century, the eighteenth century, and the modern era. He believes that entrepreneurs are always present. However, how entrepreneurs act depends heavily on the rules of the game and the reward structure in the economy. Changing the rules can modify the composition of the class and the number of entrepreneurs, but more importantly, changing the rules modifies behavior. The rules of the game that produce gain for the entrepreneur are therefore hypothesized to be an important variable in explaining variations in entrepreneurship.

Among other observations, Rumelt (1987) sees entrepreneurship related to expectation of personal gain. Entrepreneurship is encouraged when the entrepreneur can resist the appropriation of entrepreneurial rents by powerful outsiders with whom the entrepreneur must work, and when isolating mechanisms exist that provide first-mover advantages. Entrepreneurial managers have incentives to leave their employer and start new ventures when institutional myopia tends to prevent incentive contracts that tightly link future returns to the innovator's wealth and reputation.

Kirzner (1985) recognizes "the central role played by alertness of the entrepreneur" (p. 7), e.g., the discovery of possibilities hitherto overlooked, the "speculative ability to see into the future." Further, the discovered opportunities "must offer gain to the potential discoverer himself" (p. 29). Then "man acts, in the light of the future as he envisages it, to enhance his position in that future" (p. 55).

Shapero and Sokol (1982) suggest the "entrepreneurial event" is often the result of interaction between social, cultural and personal factors. Negative displacements—being fired, retired, angered, insulted, bored, divorced or widowed—can provide the immediate shock that precipitates the entrepreneurial event. But why start a business? One reason is the expectation of gain. When that expectation is reinforced by culture, family, peers and colleagues with offers of support, entrepreneurship is likely to occur.

SUPPORTIVE ENVIRONMENT

The environment undoubtedly influences entrepreneurship. It can be supportive, but it can also provides obstacles. Knight, Dowling, and Brown (1987) analyze the automobile, semiconductor, vacuum tube, and airline industries and offer the theory that new venture creation is fairly regular and predictable and that three forces potentially stimulate the growth of new firms in an industry, e.g., new technology, new markets, and deregulation or shifts in government regulation. They postulate that variables such as environmental conditions, market forces, government policy, life cycles, and innovation can play important roles in the growth of new firms. Strong evidence is presented that changes in the environment preceded and were causally related to "new combinations" and discontinuity in these industries.

Bearse (1982), Schell (1983), and Mauer (1985) consider that the culture of the community is important to entrepreneurship. Indeed, the existence of areas particularly conducive to the formation of new ventures is well documented in studies and stories of Silicon Valley, Boston's Route 128, Austin, and North Carolina's Research Triangle. Other communities are known more for their apparent lack of entrepreneurial infrastructure (Bull and Winter 1991).

Carroll and Delacroix (1982) and Delacroix and Carroll (1983) found evidence to support Stinchcombe's (1965) concept of the liability of newness. New organizations in new industries (one popular view of entrepreneurship) " . . . suffer from a double liability of newness: predecessors are rare and role information is hard to come by" (1982, p. 173).

Delacroix and Carroll (1983) observed that sometimes organizations are unfortunately launched in response to what are perceived to be currently (both politically and economically) favorable environmental conditions. "While entrepreneurs . . . engage in analysis . . . prior to beginning their venture, the environmental opportunities may not provide sufficient information to support a full analysis. . . . It is not surprising that most new ventures fail quickly" (1983, p. 289).

Tushman and Anderson (1986) suggested that growth occurs as a result of technological discontinuity. These technological discontinuities fall into two categories: competence enhancing (CETD) and competence destroying (CDTD) (p. 442). Either could give rise to entrepreneurship, using Schumpeter's definition. CETDs would intend to benefit existing firms because they build on existing know-how. But Cooper, Willard, and Woo (1986) have provided examples of entrepreneurs who exploited CETDs that existing firms were unable or unwilling to capitalize on.

CDTDs occur less frequently but may foster entire new industries. They are often " . . . initiated by new firms . . . unconstrained by prior technologies and organizational inertia" (Cooper and Schendel 1976; Tushman and Anderson 1986).

New firms attempting to exploit either CETDs or CDTDs would face liabilities of newness but existing firms would face liabilities of age and tradition. However, environments that include technological discontinuities would be expected to be supportive of entrepreneurial efforts.

Support networks are a crucial component of the entrepreneurial process. Entrepreneurs are embedded in social contexts that channel and facilitate, as well as constrain and inhibit, their activities (Aldrich 1989, p. 125). Within complex networks of relationships, entrepreneurship is facilitated or constrained by linkage between aspiring entrepreneurs, resources, and opportunities.

Glade (1967) argues that the higher incidence of entrepreneurial activities among certain cultural minorities within a wider population may be partially explained by ethnic loyalty and support mechanisms. Personnel recruitment and business patronage are often associated with

the operations of such structures. Younger members of the expatriate group are afforded a minimum base of economic security and superior employment opportunities for the acquisition of business skills, manipulating credit and finance, and so on. Additional advantages result from access to information networks, mutual assistance and other social mechanisms peculiar to the minority that are relatively less open to natives.

Cooper (1993) points out that environmental developments can hurt as well as help. Unforeseen environmental shocks can cause performance of new firms to swing widely. A number of environmental constraints have been identified that may affect efforts of a new venture to establish its legitimacy.

Van de Ven (1993) offers a social system macro-perspective framework for studying entrepreneurship. He believes that most entrepreneurial innovations are collective achievements of many people in both the public and private sectors who develop an infrastructure that supports entrepreneurship. An explanation of how innovations develop requires a theory of change that examines the temporal sequence of events by which new technologies and institutions develop over time. Environmental niches are created and constructed through the opportunistic and collective efforts of independent actors in common pursuit of a technological innovation. Entrepreneurs tend to utilize an infrastructure that is substantially developed by others. They would be less likely to create new combinations without such a supportive environment.

IMPLICATIONS OF AN ENTREPRENEURSHIP THEORY

The potential research implications of a credible entrepreneurship theory are enormous. Consider the hundreds of studies and their contributions towards the understanding (still imperfect) of financial markets that followed the efficient market theory and the capital asset pricing model. The articulation of these useful theories appears to have spurred research to an incredible extent.

Teaching and research are interrelated; these financial markets theories have significantly influenced teaching in finance, economics, accountancy, and related fields. The body of knowledge in any area grows from empirical research. The teaching of entrepreneurship-related topics would expand and improve as the frontiers of knowledge are pushed forward by research.

Public policy and practice could both lead and follow research findings. As an understanding of the relationships of the entrepreneurship variables develops, practice would change to attempt to bring about the desired creation of new ventures and the implementation of effective success strategies. The effects of the changes in practice would provide further data for study.

RELEVANT RESEARCH QUESTIONS

This paper concludes with questions that illustrate the inadequacy of the tentative theory proposed herein. We may have progressed toward developing a theory of entrepreneurship, but there is still much work to be done. Our understanding of the phenomenon is currently unable, except anecdotally, to answer the following types of questions:

1. How are entrepreneurial opportunities recognized? Why do some who recognize entrepreneurial opportunity choose not to pursue it? What role does risk preference play in the decision to pursue or decline a perceived opportunity? How does entrepreneurial vision differ, if at all, from leadership vision possessed by effective executives? When does task-related motivation attach to a vision?

2. How does the recognition process differ between "discovery–push" and "need–pull" opportunities? Does the cognitive effort to satisfy recognized needs differ from that of the recognition of a serendipitous discovery? Does task-related motivation differ between the two types of opportunities? How does formal expertise affect the recognition and pursuit of opportunities? Does informal expertise or occupational experience affect the recognition of opportunities differently than formal expertise?
3. Under what circumstances does a new combination result in a start-up business? How important are market conditions, and other environmental considerations? In cases of "new-to-the-world" innovation where no market or industry currently exists, how is the potential for success determined? What is the relative importance of the expectation of gain as compared to task-related motivation?
4. Why aren't start-up businesses distributed in a random geographical pattern? Do the expertise and supportive environment variables account for clustering? How and why does a geographic cluster initially form? Why do some geographic clusters of entrepreneurial activity "cool down" or "die out"?
5. How do entrepreneurial start-ups become successful, established businesses? Do large, successful, established businesses lose their early entrepreneurial characteristics through diminution of variables like task-related motivation or discontinuity–friendly environment? Why do some established businesses lose their entrepreneurial characteristics whereas others seem to retain theirs? Can the entrepreneurial "spark" be rekindled, if it ever dies out?

Articulation of additional questions plus the gathering and interpretation of empirical data will further develop theory and enrich the understanding of entrepreneurship. Research has only started. We hope that the papers in this edition will produce some new combination of thought that will cause the discontinuity that is needed for a breakthrough in entrepreneurship theory.

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