

HANDBOOK OF ENTREPRENEURSHIP RESEARCH
An Interdisciplinary Survey and Introduction

International Handbook Series on Entrepreneurship

VOLUME 1

Series Editors

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SERIES FOREWORD

Interest in entrepreneurship has surged in the last decade. Scholars across a broad spectrum of fields and disciplines have responded by generating new research approaches uncovering a wealth of new findings and insights about entrepreneurship. This new research spans not just a diverse set of fields, such as management, finance, psychology, economics, sociology, and geography but also a wide range of countries reflecting the fact that entrepreneurship is a global phenomenon. The exceptionally cross-disciplinary nature of entrepreneurship has made it difficult for scholars in any one particular field to become aware of and understand the leading contributions and insights emerging in other disciplines. The purpose of this series is to compile a series of handbooks, each devoted to a particular issue in the entrepreneurship field. Each handbook will draw upon the leading international scholars from the entire range of disciplines contributing to entrepreneurship to articulate the state of knowledge about a particular topic. The contribution should identify the fundamental questions which are being posed, the methodological approaches, types of data bases used for empirical analyses, the most important empirical regularities to emerge in the literature, major policy conclusions, and the most promising research direction. Thus, each handbook will reflect the interdisciplinary nature of entrepreneurship that has proven to be elusive to discipline-based scholars. A goal of the Handbook Series is not only to provide a state-of-the-art coverage of what has been learned about entrepreneurship, but that when viewed in its entirety, entrepreneurship is emerging as a bona fide academic discipline.

The particular topics in the Series will be drawn from discussions with the leading scholars. Each handbook will be directed and compiled by a Handbook Editor. (S)he will work closely with the Series Editor to ensure that the contents and contributions are appropriate, and that there is consistency with the other volumes in the Series.

The titles published in this series are listed at the end of this volume.

HANDBOOK OF
ENTREPRENEURSHIP
RESEARCH

An Interdisciplinary Survey
and Introduction

Edited by

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and

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“Research and theory on entrepreneurial phenomena is advancing rapidly in scope and quality. The year 2003 is an excellent time for a comprehensive status report by the best scholars in the field. Acs and Audretsch have clearly organized such a statement – it will be a boon to all those seeking an authoritative overview of the current status of entrepreneurial research. The focus on advanced economies or the advanced sectors of developing countries reflects the emphasis in the extant research and theory. This new *Handbook* sets the framework for an expansion of attention to the vast majority of entrepreneurs – who are operating in the third world.”

Paul D Reynolds, London Business School, UK and Babson College, USA

“In the Kluwer *Handbook of Entrepreneurship Research*, Acs and Audretsch have compiled an impressive collection of contemporary contributions from many of the very best scholars in entrepreneurship across disciplines. It provides doctoral students with a broad yet solid introduction to the field, and established scholars with an overview that is otherwise very hard to obtain. It is a must read for every academic who is serious about entrepreneurship.”

Per Davidsson, The Jönköping International Business School, Sweden

“Acs and Audretsch have assembled a virtual who’s who list of researchers in the fledgling field of entrepreneurship. Even more usefully, the *Handbook* also includes reviews of the vast array of work closely related to entrepreneurship that has appeared primarily in economics, psychology and sociology journals; despite their relevance, locating these studies can prove difficult as their authors frequently do not focus on the implications for their research for entrepreneurship. As its ‘Handbook’ label implies, it should be a valuable reference tool for those in the area for years to come.”

Olav Sorenson, Anderson School of Business, University of California at Los Angeles (UCLA), USA

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Preface

The purpose of the *Handbook of Entrepreneurship Research* is to provide a distinctive multidisciplinary, starting point for entrepreneurship research as defined by leading scholars. The chapters are carefully written reviews of the literature focusing on current research problems and future research directions. They are written by leading disciplinary scholars that have made a major impact on entrepreneurial thinking in economics, finance, psychology, management, strategy and sociology.

The first edition of the *Handbook of Entrepreneurship Research* has been very well received. Indeed, it far exceeded our expectation. The reason for this we believe is that there was a real need for a handbook of entrepreneurship. While entrepreneurship is not a field of research in any major discipline (certainly not in economics, if judged by the JEL classification) it is, in fact, a blossoming field of study that cuts across several disciplines.

The *Handbook of Entrepreneurship Research* provides a high quality introduction to and synthesis of the field of entrepreneurship research under one cover. It is not a collection of existing articles, but a carefully crafted “roadmap” through the emerging literature on entrepreneurship. Answers to many research questions can easily be found in the Handbook. Therefore, we have achieved our main objective with this book, that is, creating a reader friendly but still, valuable resource for the entrepreneurship community.

Of course there was one problem with the original idea. While the Handbook was written primarily with graduate students in mind, it was priced for professors of entrepreneurship with endowed chairs! We hope that this paperback edition remedies that problem. Enjoy.

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The International Award for Entrepreneurship and Small Business Research

BACKGROUND

In 1996, The Swedish Foundation for Small Business Research (FSF) and NUTEK (The Swedish National Board for Industrial and Technical Development), together with the Swedish telecommunications company Telia Företag AB, founded the International Award for Entrepreneurship and Small Business Research.

The ambition behind the Award was, and still is, threefold: to highlight the importance of the research that is being produced in the areas of entrepreneurship and small business, to further stimulate and promote scholarly work within these fields of research and to spread the research among scholars, practitioners and people involved in small business development.

In line with the last of these three ambitions, the Award winner is invited to give seminars in a yearly seminar tour held in Sweden. The tour, organized jointly by FSF and Nutek, who today are the two organizations behind the award, covers 10 cities yearly and has been running since 1998. The Award winner is also invited as keynote speaker at the yearly World Congress of the International Council for Small Business (ICSB).

The Award is given annually to a person who has produced scholarly work of outstanding quality and importance, thereby giving a significant contribution to theory-building concerning entrepreneurship and small business development, and the importance of new firm formation and/or small and medium sized enterprises' role in economic development. The research results for which the Award is presented should lead to an increased understanding of the conditions under which small business operates.

The Scientific Council of FSF is responsible for the evaluation on candidates and the final selection of the annual winner.

NOMINATION PROCESS

An independent award committee appointed by the Swedish Foundation for Small Business Research annually appoints the winner. This committee reviews

nominations from 250 qualified researchers globally who are invited to nominate candidates for the Award on a yearly basis. This procedure is unique and a way of ensuring the academic quality and relevance of the Award winner.

This nomination- and decision-making process, together with its USD 50 000 prize sum, gives the Award a unique position, making it the most prestigious award of its kind. Besides the honour and the prize sum, the Award consists of the statuette “God’s Hand” created by the famous Swedish sculptor Carl Milles (1875–1955).

PREVIOUS AWARD-WINNERS:

- 2003 Dr William Baumol
- 2002 Dr Giacomo Becattini and Dr Charles Sabel
- 2001 Dr Zoltan J. Acs and Dr David B. Audretsch
- 2000 Dr Howard E. Aldrich, USA
- 1999 Dr Ian C. MacMillan, USA
- 1998 Dr David J. Storey, UK
- 1997 Dr Arnold C. Cooper, USA
- 1996 Dr David Birch

To learn more about the award and for more information on all award winners, please visit our website: www.fsf.se. For more information on ICSB, please visit: www.icsb.org

Anders Lundstrom
Swedish Foundation for Small Business Research (FSF)

PART ONE

Introduction to Entrepreneurship

1. Introduction to the Handbook of Entrepreneurship Research

The role of entrepreneurship in society has changed drastically over the last half century. During the immediate post-World War II period the importance of entrepreneurship seemed to be fading away. When J.J. Servan Schreiber (1968) warned Europeans of *Le Defi American*, or the American Challenge in 1968, it was not from small entrepreneurial firms, but exactly the opposite from the “dynamism, organizational, innovation, and boldness that characterized the giant American corporations.”

By that time, a generation of scholars had systematically documented and supported the conclusion of Joseph A. Schumpeter (1942, p. 106): “What we have got to accept is that the large-scale establishment or unit of control has come to be the most powerful engine of progress and in particular of the long-run expansion of output ...” John Kenneth Galbraith (1956, p. 86), put it this way: “There is no more pleasant fiction than that technological change is the product of the matchless ingenuity of the small man forced by competition to employ his wit to better his neighbor.”

This situation has been reversed completely in recent years (Acs and Audretsch, 2001). Entrepreneurship has come to be perceived as an engine of economic and social development throughout the world. According to Edward Lazear at Stanford University (2002, p. 1), “The entrepreneur is the single most important player in a modern economy.” David Hart at the Kennedy School of Government at Harvard University discussing the dot-com bubble in the late 1990s wrote, “The entrepreneurship fad rested on a foundation of fact. New companies made significant contributions to economic growth in the past decade, both directly and by stimulating their more established competitors, as they indeed had in the decades before that. If the fad exaggerated these contributions, its fading should not obscure them entirely. Entrepreneurship is an economic phenomenon worthy of attention from those who worry about economic growth and particularly from those charged with sustaining that growth” (Hart, 2003, p. 1).

The focus of entrepreneurship research over the past decade has also changed significantly. Today, entrepreneurship, and the impacts of entrepreneurship on society are the subject of a growing body of research primarily in the disciplines of economics, geography, management, finance, strategy, psychology and sociology. Entrepreneurship is a subfield in most of the above disciplines. While the

literature before the 1980s was mostly fragmented, during the 1980s several journals specific to entrepreneurship were started and the non disciplinary literature expanded greatly: *Journal of Business Venturing*, *Small Business Economics*, *Entrepreneurship Theory and Practice*, and *Entrepreneurship and Regional Development*.¹ However, this stream of literature has not developed the theoretical foundations to create a field of entrepreneurship research (Christensen, Carlile, and Sundahl, 2002).

In 1988 Low and MacMillan published an article in the *Journal of Management* on "Past Research and Future Challenges." Several observations were made in the article including the eclectic nature of entrepreneurship research, the need for theory driven research, and the fact that much of the research in the field was done by scholars in different disciplines. If research remained contained within the traditional discipline boundaries, how will a field of entrepreneurship be created? These questions were recently revisited in a special issue of *Entrepreneurship Theory and Practice* (Davidson et al., 2001) on Low and MacMillan Ten Years On. The field of entrepreneurship in the early 21st century is a catchall. It included such a wide-ranging set of topics that it is impossible to include them all under the umbrella of entrepreneurship (see, for example, Westhead and Wright, 2000). This has led to an exciting field where sometimes passion for the subject was sufficient for entry. According to Low (2001, p. 20), "One can argue in favor of a field that is inclusive and eclectic. In many ways, the broad range of subjects is the strength of the field. ... However, this inclusiveness and eclecticism is not free of cost ... I think this is partly because of lack of focus, and partly because entrepreneurship researchers are less steeped in the rigors of traditional disciplines." One thing is clear. There is a tension between those who would like to see entrepreneurship develop as a distinctive domain and those that think it should cast a very wide net. Of course this leads to the question, "What is the distinctive domain of entrepreneurship?"

There have been several important developments in entrepreneurship research over the past decade that call for a distinctive domain. First, while traditional research in entrepreneurship focused on the study of the entrepreneur herself, today there is a shift away from research on "traits" and personality. The study of individuals with an emphasis on behavior and cognitive issues and the recognized need to focus on the discovery and exploitation of opportunity (Shane and Venkataraman, 2000). The same is true in economics where there has been a shift to entrepreneurial choice models (Evans and Jovanovic, 1989). The focus has shifted from the study of firms to the study of individual

¹Most of the early literature appeared in two places. First, the *Frontiers of Entrepreneurship Research* collected the papers from the Babson Conferences starting in 1980. Second, for twenty years Donald Sexton has been a keen observer and expert synthesizer of the latest scholarship and emerging trends. Sexton's determination to periodically bring together influential scholars in the field to take stock of the "state-of-art" of entrepreneurship and package the outcome of those meetings has done much for advancing the distinctiveness and legitimacy of the entrepreneurship domain (Powers and McDougall, 2000).

entrepreneurs as agents of change (Audretsch, 1995). This renewed focus on the individual brings into sharp focus the need to examine the environment and environmental factors that affect firm formation (Thornton, 1999).

The second development involves the study of the nascent entrepreneur. The concept of the nascent entrepreneur captures the flavor of the chaotic and disorderly founding process. A nascent entrepreneur is defined as someone who initiates serious activities that are intended to culminate in a viable business start-up (Reynolds, 1994). Each year between four and six percent of the working age population in the United States takes action to start a new venture, and about 40 percent of American adults experience bouts of self employment in their lifetime. The relationship between nascent entrepreneurs, organization/firm births, and economic growth is a vital area of research.

The third development is that research on economic growth has shifted to the study of the new growth theory with an emphasis on endogenous technical change (Romer, 1990). In technological change and economic growth, there has been a shift towards the importance of space, especially at the regional level with a focus on R&D spillovers (Acs, 2002). There is a recognition to study the impact of new firm formation, and firm dynamics on economic and social variables, for example, economic development, technological change, economic growth, productivity, wealth creation and inequality.

Finally, it is important to keep in mind that much of the best research in entrepreneurship has been, and continues to be, in the disciplinary journals, like *the American Economic Review*, *American Sociological Review*, *Administrative Science Quarterly*, *Journal of Financial Economics*, *Strategic Management Journal*. This brings us back to the issue of a distinctive domain of entrepreneurship research or discipline based research. We believe that this distinction is not as valid as one might think. While discipline based research is needed to advance the field of entrepreneurship, a community of scholars is also needed with a common interest. One cannot advance without the other. Without a community of scholars, research in one field will not become familiar with other researchers and entrepreneurship will not develop as a field of study. An example of this kind of cross-fertilization is a recent article by Paul Geroski (2001) that compares the literature in Organizational Ecology and Industrial Economics, and Barnett and Sorenson (2002) look at the difference between Organizational Ecology and Organizational Sociology.

We would suggest at this juncture that there are many research questions that are discussed in the disciplines that are marginal to the discipline but are central to entrepreneurship research. Bringing these topics into entrepreneurship would greatly strengthen the field. There are many examples. In the discipline of Economics the field of Industrial Organization offers an excellent example. Industrial organization economists have for years studied the role of entry and the determinants of entry (Acs and Audretsch, chapter 5, 1990). Their conclusion was that entry was not very important. (This is in part because they only looked at manufacturing.) So the study of entry has received less and less attention over the years. In entrepreneurship research, the topic of entry

(entering an industry with a new venture) plays a central role. It is one of the vehicles by which opportunity is exploited. Therefore, borrowing from this literature, would build a bridge between the two fields and strengthen both of them.

This refocusing of entrepreneurship research involves a parallel process of both broadening and narrowing down. In a fashion we suggest a pruning of the branches. The narrowing of the field involves less of an emphasis on different samples of small firms, for example, small business, family business, self employed, international entrepreneurship etc. Our definition of entrepreneurship embraces all businesses that are new and dynamic, regardless of size or line of business, while excluding businesses that are neither new nor dynamic as well as all non-business organizations. This leaves the entrepreneurial process, opportunity and the nature of exploitation, the emergence of new ventures, and entrepreneurship and organizational interaction as core topics. The broadening brings in questions of entrepreneurial dynamics. The issues of economic growth, economic development, regional growth bring into sharp focus both economics and sociology research, evolutionary economics and population ecology. According to Schoonhoven and Romanelli (2002, p. 401), "We begin with contexts, communities and populations as the settings from which the entrepreneurship dynamic emerges. For scholars of entrepreneurship, to stop short of addressing the impact of new firms on the evolution of industries is to miss what we argue is one of the most important questions to be resolved among the mass effects of the entrepreneurship dynamic."

The current developments in entrepreneurship research suggest the need for a handbook of entrepreneurship. While entrepreneurship is not a field of research in any discipline, it is, in fact, a blossoming field that cuts across several disciplines. In fact, some of the most interesting fields of research today are those that cut across several or many fields (de Solla Price, 1986). Herein lies the need for a handbook. In anticipation of this need, over the last few years, several authors have edited collections of existing articles in an attempt to pull together research on the subject. These collections have been useful in that they pull together a literature that is spread out over many journals and books some of them difficult to find. They also pointed to an interesting problem. That is, the subject matter of these collections has very little overlap. In other words, one does not know where to go for a comprehensive overview of the subject matter on entrepreneurship research.

An early attempt was *Entrepreneurship* by Mark Casson (1990) concentrating on the entrepreneurial process, empirical studies, and culture and development. This was an excellent start. *Small Business and Economic Growth* by Zoltan J. Acs (1996) focused on a broader set of topics including theories of the firm, finance, technological change, self-employment, clusters, job creation and industrial districts. The focus was more on samples of small firms and less on entrepreneurship but the question that motivated the collection was, "Do small firms and entrepreneurship have any relationship to economic growth?" David Storey (2000), in *Small Business: Critical Perspectives on Business and*

Management, also took a broad approach with an emphasis on the process of firm formation, firm exit, firm survival and firm growth. In the above collections, the topic selections were more economic and there was less of a focus on management and organization processes.

Two more collections followed. *Advances in Entrepreneurship* (2000) by Paul Westhead and Mike Wright, as the title indicates, pulled together a very large collection of articles from entrepreneurship and management with a focus on the literature from entrepreneurship journals over the past decade. This clearly accepted the broadening view of entrepreneurship research as the excellent introduction by the authors tried to cover most of the advances in the literature. Finally, Scott Shane (2000) in *The Foundations of Entrepreneurship*, pulled together the foundations of entrepreneurship research with a focus on the major disciplines. Clearly here the focus was on the foundations with an emphasis on narrowing the field. The topics covered the entrepreneurial process, technology, opportunity and finance with a call for focusing entrepreneurship on the exploitation of opportunity.

These collections of the literature raise two important questions. First, since the coverage in these different collections does not significantly overlap, which literature reflects the field of entrepreneurship? Second, how is one to interpret the different collections about where the field of entrepreneurship is going? In order to understand how the field is evolving we need a handbook that can serve as a reference source for current and future researchers.

At this juncture, it is fair to offer our vision of the field that in part guides this volume. We view entrepreneurship as what happens at the intersection of history and technology. History is the written record of everything that has happened in the past, and technology is a way we view the future. This leads to two concepts. First, is the stock of knowledge or the technology set. This is a part of history, the codification of language and knowledge (van Doren, 1991). Second, is the technology opportunity set. It consists of all the opportunities that have not been exploited. Investment in new knowledge increases the technology opportunity set and sharpens our ability to gaze into the future. It is this intersection of history as a guide, and technology as a way to look forward at a point in time that creates the window of opportunities. Recently, Olsson and Frey (2002) building on Schumpeter (1934) formally examine this intersection and discuss the constraints on economic growth. It is here that entrepreneurship resides, and where individuals play a crucial role. As G.L.S. Shackle wrote, "*The entrepreneur is a maker of history, but his guide in making it is his judgement of possibilities and not a calculation of certainties*" (Hebert and Link, 1982, p. viii.). Finally, the intersection of history and technology exists in space. This spatial dimension has institutional and structural characteristics that influence social and economic outcomes (Oinas and Malecki, 2002). As Baumol (1990) pointed out, entrepreneurship has always existed and its outcomes can be productive, unproductive or destructive depending on the incentive that exists in the system. How those structures and institutions interact is crucial. For example, in his book *Against the Gods*, Peter L. Bernstein, asks

the question “What distinguished the thousands of years of history from what we think of as modern times? The answer goes way beyond the progress of science, technology, capitalism, and democracy ... The revolutionary idea that defines the boundary between modern times and the past is the mastery of risk: the notion that the future is more than a whim of the gods and that men and women are not passive before nature” (Bernstein, 1996, p. 1).

The purpose of the *Handbook of Entrepreneurship Research* is to provide a distinctive, multidisciplinary, starting point for entrepreneurship research as defined by leading scholars. It is not a practical guide for practitioners. We focus on entrepreneurship from a disciplinary perspective. The papers are carefully written reviews of the literature focusing on current research and future research directions. They are written by leading disciplinary scholars that have made a major impact on entrepreneurial thinking in economics, finance, psychology, management, and sociology. Five are recipients of the International Award for Entrepreneurship and Small Business Research, awarded on behalf of the *Swedish Foundation for Small Business Research* and *The Swedish National Board of Industrial and Technical Development*. Arnold Cooper the author of Chapter 2 was the recipient in 1997. David Storey the author of Chapter 18 was the recipient in 1998. Howard Aldrich the author of Chapter 15 was the recipient in 2000. Zoltan J. Acs and David B. Audretsch were the recipients in 2001. Four have edited previous handbooks. Most are distinguished research professors at major research universities. They are also members of a community of scholars that have tried to translate that research into the field of entrepreneurship through specialty journals. In fact, one of the reasons for creating this volume is to strengthen the community of scholarship in entrepreneurship.

The 19 chapters, including this introduction, are organized into eight sections with several papers in each section including two introductory chapters and an epilogue. The topics are organized by three units of analysis, the individual, the firm and the larger society and economy. The material is organized in such a way as to make it easy to follow by building up from the individual to the firm and finally to larger social units.

Part One, “Introduction to Entrepreneurship,” has two chapters. These two chapters – “Editors’ Introduction,” by Zoltan J. Acs and David B. Audretsch and “The Past, the Present, the Future,” by Arnold Cooper – present an introduction to this volume by discussing the need for the present project and putting that need into a larger context in the development of entrepreneurship research.

Chapter 1 provides an introduction to the Handbook. The editors discuss the current state of entrepreneurship research, they examine recent developments in the field of entrepreneurship, discuss the justification for the Handbook of Entrepreneurship Research, and reasons for the selections included and omitted. In Chapter 2, Cooper reviews the past, present and future of entrepreneurship research mostly in the United States. *The purpose of his chapter is to reflect on half a century of teaching research and community building in the field*

of entrepreneurship. In some sense it is from this background that advances in the 1990s were made in the budding field. Cooper documents the early development of small firms and entrepreneurship teaching, the role of the U.S. Small Business Administration, the role of Babson College, and the community of scholars that laid the early foundations for the field. Cooper, one of the giants in both strategy and entrepreneurship, is optimistic about the future developments of a field of study. While entrepreneurship is as old as human history, entrepreneurship research is relatively new, and the field of entrepreneurship is only in its infancy.

Part Two, "The Entrepreneurial Process," discusses the topic of risk and uncertainty, innovation and technological change and market processes as they relate to entrepreneurship. While these topics are not necessarily only about entrepreneurship, they all have something to offer in understanding the entrepreneurial process. These traditional economic topics are identified at least to some extent in the literature with the works of Frank Knight (1921), Joseph Schumpeter (1911 [1934]) and Frederick Hayek (1937) respectively.

For Knight profit is defined as the surplus, which remains once wages of labor, the rent of land and the interest on capital have been paid out of revenue. In a static competitive economy anyone can purchase factors and combine them to generate output. With free entry and exit, and no economies of scale, competition between producers maintains long run economic profit at zero. There is simply no need for an entrepreneur. If we relax the assumption of a static environment and the environment is unpredictable, we introduce the element of risk and uncertainty. Knight refined this idea by distinguishing between risk and uncertainty. Risk, according to Knight, relates to recurrent situations in which, by repeated observation, it is possible to estimate the relative frequencies with which different outcomes will arise. Knight argued that it is not measurable risk but unmeasurable uncertainty that constitutes the basis for pure profit.

Schumpeter's view of the entrepreneur as innovator has widespread appeal. His early work, which highlighted the romantic and visionary aspects of business, appeals to artists and individuals (Schumpeter, 1934 [1911]), whilst his later work appeals to scientists and collectivists because of his claim that innovation can be effectively programmed and coordinated within large organizations (Schumpeter, 1942). Because of its visionary nature it is difficult to model. Several writers have attempted this within an evolutionary perspective. From a Darwinian perspective, innovation is a source of potential diversity analogous to genetic variation. In one version of this analogy, the variation occurs within a population of firms when one of them adopts a new technology. The innovative firm then competes with established firms in a competitive survival (Nelson and Winter, 1982).

The three chapters in Part Two – "Risk and Uncertainty," by Sharon Gifford, "Innovation and Technological Change," by Zoltan J. Acs and David B. Audretsch, and "Market Processes and Entrepreneurial Studies," by Roger

Koppl and Maria Minniti – all directly address aspects of the entrepreneurial process. All three chapters are written from an economic perspective.

In Chapter 3, Gifford illustrates an elementary element of most economic theories of the entrepreneur, uncertainty and the accompanying risk. The entrepreneur functions in the economic environment only if the environment is uncertain. If all individuals in the economy had perfect information, then all profitable opportunities would be exploited instantaneously and there would be no further entrepreneurial role. Equilibrium is a set of prices at which there are no profit opportunities. Thus, uncertainty and risk, as well as a disequilibrium economy, as opposed to equilibrium, are necessary elements for any economic analysis that explicitly addresses the role of the entrepreneur. *The purpose of her chapter is to propose an approach to decision making under uncertainty that, instead of assuming that individuals are risk averse, derives risk averse behavior as a result of limited attention.* If we understand the sources of risk averse behavior, we would be better able to predict entrepreneurial behavior. According to Gifford there is no need to rely on assumptions about unavoidable risk behavior or animal spirits. The question of how entrepreneurs overcome the problem of asymmetric information about their experiences, knowledge and skills and subsequent effort can be advanced by the implications of the economics of asymmetric information.

In Chapter 4, Acs and Audretsch show that the innovative potential of small firms was burdened with the view that large firms had the innovative advantage. *The purpose of this chapter is to suggest that a much wider spectrum of enterprises contributing to innovative activity, and that, in particular, small entrepreneurial firms as well as large established incumbents play an important role in the innovation and technological change process* (Acs and Audretsch, 1990). These studies comprise a new understanding about the links between the individual entrepreneur, firm size and innovative activity. The chapter begins with the knowledge production function where the firm is exogenous and technology is endogenous. A key finding is that the conventional wisdom regarding the process of innovation and technological change is generally inconsistent with the new understanding about the role of entrepreneurship and innovative activity. The empirical evidence strongly suggests that small entrepreneurial firms play a key role in generating innovations, at least in some industries. Recent evidence suggests that scale economies bestowed through geographic proximity facilitated by spatial clusters seem to be more important than those for large enterprises in producing innovative output. Because of the appropriability problem they propose shifting the unit of observation away from exogenously assumed firms to individuals, agents with endowments of new economic knowledge. When the lens is shifted away from the firm to the individual as the relevant unit of observation, the knowledge is exogenous and embodied in a worker. The firm is created endogenously in the agents' effort to appropriate the value of her knowledge through innovative activity (Audretsch, 1995).

Koppl and Minniti, in Chapter 5, examine the role of entrepreneurship from an Austrian perspective. *The purpose of this chapter is to show how the Austrian*

approach helps to integrate and organize much of the entrepreneurship literature and how it may be used to create a common theoretical framework for entrepreneurial studies in a disequilibrium analysis. Their concern is the lack of a definition for entrepreneurship that captures both aspects of entrepreneurship and the entrepreneur. For them entrepreneurship is alertness to new opportunities. Second, entrepreneurship is seizing an opportunity by taking innovative action. Alertness leads to the discovery of new opportunities. The chapter explains Kirzner's theory and the contribution of more recent Austrians in their proper context. They suggest an Austrian definition of entrepreneurship that addresses the concerns of Shane and Venkataraman (2000).

Part Three, "Opportunity and the Nature of Exploitation," examines opportunity from a psychological and management perspective. These chapters build on some of the issues discussed in the previous section including disequilibrium and uncertainty. While opportunity recognition and information search are often considered to be the first critical steps in the entrepreneurial process, limited empirical research has been conducted about this process. Venkataraman (1997) argues that one of the most neglected questions in entrepreneurship research is where opportunities come from. Why, when and how certain individuals exploit opportunities appear to be a function of the joint characteristics of the opportunity and the nature of the individual. There are three main areas where certain individuals recognize opportunities while others do not: knowledge differences, cognition differences and behavioral differences.

The three chapters in this Part – "The Cognitive Psychology of Entrepreneurship," by Norris Krueger, Jr. "Three Views of Entrepreneurial Opportunity," by Saras Sarasvathy, Nick Dew, Sankaran Venkataraman and Ramakrishna Velamuri, and "The Individual-Opportunity Nexus" by Scott Shane and Jonathan Eckhardt – all address the question of opportunity in entrepreneurship research: existence, discovery and exploitation. These chapters are written from the perspective of psychology and management.

In Chapter 6, Krueger examines entrepreneurial cognition. *The purpose of this chapter is to focus on a key issue, "What cognitive phenomenon is associated with seeing and acting on opportunities?"* According to Krueger, understanding entrepreneurial cognition is imperative to understanding the essence of entrepreneurship. This is especially true if we wish to move from descriptive research to theory-driven research. Cognition research offers rich theory and well-developed methods. What is unique about entrepreneurial thinking? Krueger focuses on the most critical distinction between entrepreneurs and non-entrepreneurs, the intentional pursuit of opportunity. As Stevenson and Gumpert (1985) pointed out long ago, the "heart" of entrepreneurship is the seeking of and acting upon opportunities. To understand entrepreneurship requires understanding of how we learn to see opportunity and decide to pursue them.

In Chapter 7, Dew, Sarasvathy, Velamuri and Venkataraman present three views of entrepreneurial opportunity. *The purpose of this chapter is to challenge the assumption underlying current theories of innovation that if a market can be*

created it will. Instead, the chapter focuses on Arrow's exhortation to researchers to tackle one of the central problems in economics today, uncertainty. They begin with a definition of entrepreneurial opportunity. Then they delineate its elements and examine it within three views of the market process: the market as an allocative process; as a discovery process; and as a creative process. Within each literature they examine the assumptions about the knowledge of the decision maker regarding the future, and the implications of those assumptions for strategies to recognize, discover, and create entrepreneurial opportunities. The chapter concludes with a set of conjectures that challenge the inevitability of technological commercialization and argue for a more contingent approach to the study of the central phenomenon of entrepreneurship.

Shane and Eckhardt, in Chapter 8, examine the relationship between the individual agent and opportunity. *The purpose of this chapter is to build on Shane and Venkataraman (2000), first by broadening the treatment of the topic, second, by clarifying the dimensions of the organizing framework and third by updating the research with the latest findings.* They start with a discussion of disequilibrium to show why it is necessary for entrepreneurship. Their model consists of a two by two matrix that identifies entrepreneurial discovery and exploitation. The four possibilities are, first, independent discovery and startup. The second possibility is individual discovery with corporate exploitation resulting in an acquisition. Third is a corporate discovery and individual exploitation, which calls forth a spin-off. Finally, a corporate discovery and exploitation is corporate venturing. The chapter discusses what modes of exploitation will be used to exploit entrepreneurial opportunities. Because only individuals are capable of discovering opportunities, the locus of decision making about exploitation of discovered opportunities lies with people. Two dimensions of this choice appear to be important. First, can the opportunity be effectively pursued through markets? Second, are new or established firms better entities for undertaking the opportunity exploitation process?

Part Four, "The Emergence of New Ventures" follows from the previous section. If new firms are important in the mix of market exploitation how firms emerge, how we think about them from a theoretical perspective and what strategies they pursue are important questions. Perhaps one of the most important developments in entrepreneurship research over the past decade has been the concept of nascency by Reynolds, as we mentioned above. This concept has opened up several research areas and greatly increased our understanding of where firms come from and how opportunities are pursued.

The three chapters – "Entrepreneurial Behavior and Firm Organizing Processes," by William B. Gartner and Nancy M. Carter, "Entrepreneurship, Business Culture and the Theory of the Firm," by Mark Casson and "Resources and Hierarchies: Intersections between Entrepreneurship and Business Strategy," by Sharon A. Alvarez – all directly address the question of the role of the firm as a unit of analysis in entrepreneurship research. These chapters

are written from the perspectives of organization theorists, economists and business strategists.

In Chapter 9, Gartner and Carter offer some insights and evidence about the process of organization formation. They examine the founding of independent for profit business for insights into the nature of organization formation. *The purpose of this chapter is to focus research on entrepreneurial behavior that involves activities of individuals who are creating new organizations, rather than the activities of individuals who are involved with maintaining or changing the operations of on-going established organizations.* They view entrepreneurship as an organizational phenomenon and as an organizing process and posit that the roots of entrepreneurship are embedded in social processes and consider the process of organizational formation to be the core characteristic of entrepreneurship. They also view entrepreneurial behavior as an individual level phenomenon, which occurs over time, and results in an organization as the primary outcome of these activities by drawing a sharp distinction between new organizations and emerging organizations. The study of a new organization is not the same as the study of emerging organizations.

In Chapter 10, Casson examines the relationship between entrepreneurship and the theory of the firm. According to Casson, there is a gulf between economic theories of entrepreneurship, which tend to be abstract, and studies of entrepreneurial behavior, which tend to be more about individual behavior. *The purpose of this chapter is to bridge this gap by developing a mutually consistent set of hypotheses about entrepreneurial behavior from a parsimonious set of assumptions.* The key to bridging the gap according to Casson is to relax some of the very restrictive assumptions about human motivation and decision making that underpin conventional economic theory. The main assumptions that need to be relaxed concern the objectivity of information, autonomy of preferences and cost-less optimization. Relaxing these assumptions makes it possible to accommodate theoretical insights derived from other social sciences. Once these assumptions are relaxed, it becomes evident that theories of entrepreneurship are closely related to modern theories of the firm, such as transaction cost theories and resource-based theories. The theory of entrepreneurship emerges as a powerful mechanism for synthesizing the insights of these modern theories of the firm.

Alvarez, in Chapter 11, examines the relationship between entrepreneurship and strategy. *The purpose of this chapter is to examine the intersection of entrepreneurship and strategic management as rent seeking behavior through entrepreneurship in either established firms or in newly forming firms with the recognition that entrepreneurship is intimately connected with the appearance and adjustment of unique and idiosyncratic resources.* For years there has been a cozy relationship between these two fields of research. In fact many have viewed entrepreneurship as simply an extension of strategy, and have called for closer work between the two. These two fields developed independently of each other and strategy has focused on helping existing firms develop alternatives for competitive advantage. Alvarez defines strategic management as the

process an existing firm goes through to achieve competitive advantage. Strategy and entrepreneurship come into close contact when we are dealing with an innovation that the firm is trying to develop internally, or corporate venturing. It builds on the previous chapters in this section and integrates ideas about entrepreneurship, the firm and strategy.

Section Five, “Financing the New Venture,” is included because finance is such an important function in new firm formation that leaving it out would leave our understanding of the subject incomplete. Moreover, research on the financing of the emerging organizations has made great strides in the past decade in the field of finance. While we do not discuss other issues of resource acquisition, for example, team building, etc., the financial acquisition question is important, in part, because venture capital is central to the management of risk and the financing of high growth firms. Finally, venture capital is also part of the networking of regional growth and development.

Finally, equity financing cannot be fully understood without a discussion of debt. The research on small business debt is older and more firmly established in the banking literature (Berger and Udell, 1998). The research on equity is newer and is part of an active research agenda in the field of finance. This literature is important for several reasons. First, much of venture capital is used to finance new technology-based firms. Second, this is a good example of research on entrepreneurship at the highest level in peer reviewed disciplinary journals. It sets an example for how disciplinary research and community building can progress hand in hand. However, much of this research has not filtered down to the entrepreneurship journals.

The two papers in Part Five – “Equity Financing,” by Paul Gompers and Joshua Lerner and “Small Business and Debt Finance,” by Allen Berger and Gregory Udell – present a comprehensive survey of the subject of financing small and emerging organizations. This section does not cover a related topic on whether small and emerging organizations are debt rationed (Evans and Jovanovic, 1989). While entrepreneurship scholars have written much about venture capital, both of these chapters are written from the discipline of finance.

In Chapter 12, Gompers and Lerner explore venture capital and private equity. *The purpose of this chapter is to summarize and synthesize what we know about equity finance from recent research, and to indicate the important questions that we cannot yet answer.* The starting point of their chapter is what constitutes venture capital and angel financing. They define venture capital as independently managed, dedicated pools of capital that focus on equity or equity-linked investments in privately held, high growth companies. The primary focus of the chapter is on drawing together the empirical academic research on venture capital and angel financing. The chapter is also important because it raises important public policy issues about what is and should be the role of government in the financing of new ventures. Has venture capital and a robust IPO market been a source of U.S. competitive advantage? This institutional arrangement is unavailable in countries dominated by banks like

Germany and Japan. It is often unclear at what point countries should start duplicating the United States.

In Chapter 13, Berger and Udell examine the role of debt, the less glamorous side of entrepreneurial finance. *The purpose of this chapter is to put into perspective the vital role played by debt in entrepreneurial finance.* The proportion of debt in the capital structure of small business in the U.S. is similar to the 50 percent overall proportion of debt in the capital structure of all U.S. business. This holds true for the youngest firms and even high growth firms before initial public offering has a debt equity ratio of 33 percent. While the proportion of debt in the capital structure of small firms is similar to that of large firms, the debt financing itself is quite different in terms of type of debt issued, the contracting tools used, the lending technologies employed, and the role of intermediaries in the process. For large firms the majority of debt is in the form of traded instruments, such as commercial paper, syndicated bank loans and public bond issues. For small firms, in contrast, virtually all of the debt is non-traded – the biggest portion of which is in non-syndicated commercial loans. Moreover, the typical terms of small firm debt contracts are significantly different than those in large firm's debt contracts because of informational opacity often associated with small businesses. Another striking difference between small and large firms is found in their governance. The chapter concludes with some of the key factors that affect the supply of small business credit, including global consolidation of the banking industry, credit crunches, discrimination in lending, and the impact of technological innovation.

Part Six, "The Social Context," looks at social outcomes that are larger than individuals: organizations, populations and communities. If entrepreneurship is important, and one of the outcomes of entrepreneurial behavior is new organization, then how these organizations relate to each other in the formation of larger social groups is important to study. These larger organizations also have an impact on firm formation.

The three papers in this section – "The Social Psychology of Entrepreneurial Behavior," by Kelly G. Shaver, "Entrepreneurship as Social Construction: A Multi-level Evolutionary Approach," by Howard Aldrich and Martha Martinez and "Entrepreneurship, Networks and Geographies," by Patricia Thornton and Katherine Flynn – all directly address issues of larger units of analysis and the simultaneous interaction between the impact of new organization on this environment and the impact of the environment on organization creation. A social psychologist and four sociologists wrote the chapters.

In Chapter 14, Shaver suggests that social psychology is important for the study of entrepreneurship because the creation of a new venture is a truly social enterprise. Social psychology is the scientific study of the personal and situational factors that affect individual social behavior. As psychology concentrates on dependent variables smaller than the individual person, sociology concentrates on structures and processes that are larger than any particular individual. Social psychology investigates the socially meaningful actions of individuals. *The purpose of this chapter is to examine four major areas of theory*

and research in social psychology and indicates how each has found its place in the study of entrepreneurial activity: cognition, attribution, attitudes and the self. These specific topics are included because they are traditional concerns of social psychologists and have all been the subject of numerous articles in entrepreneurship. The self, “who are you?” and “how did you get that way?,” both “is’ and “does”. In the development of our social selves, we must often choose between accuracy and distortion. We need to know our capabilities, but we would like them to be more extensive than they are. This has application when considering if we have the right stuff to start new venture, and in networking from the standpoint of social comparison, among others. Specifically, self-efficacy in the entrepreneurial domain is a replacement for the “perceived behavioral control” that is part of the theory of planned behavior.

In Chapter 15, Aldrich and Martinez review and analyze the multi-level selection processes that apply across three different levels of entrepreneurial social construction: organizations, populations and communities. *The purpose of this chapter is to emphasize the inexorable tension between selection forces at the three levels that affect variations generated by entrepreneurs.* Sometimes these forces work in concert and sometimes they do not. Two concepts are important in their analysis. First, the concept of a “nascent entrepreneur” captures the flavor of the chaotic and disorderly process driving the creation of new firms, and second the distinction between an innovator and a replicator. Most new ventures are replications. Reproducing organizational forms constitutes the norm, rather than the exception. A franchise is a classic example of a replication, because from the very beginning new establishments are intended to be identical. Their main goal is to describe the entrepreneurial process as a form of social construction that goes beyond the firm itself to the creation of populations and communities. In contrast to the view that the best companies will prevail in the economy, they present evidence that collective action early in the life of a population affects which firms prosper and which do not. Following an evolutionary argument, the survival of a firm, population or community depends as much on the existence of favorable environmental forces as on the effectiveness of individual entrepreneurs. This is especially important for entrepreneurs that are innovators creating new organizations, populations and communities. They emphasize the importance of collective action, which depends on social psychology, in providing entrepreneurs with the capacity to shape their environments.

Thornton and Flynn in Chapter 16, build on the previous chapter by examining entrepreneurship and networks, as an example of a population. However, their theoretical perspective is not so much population ecology as geography, economics and sociology. *The purpose of this chapter is to argue that entrepreneurship is increasingly the domain of organizations and regions, not individuals.* These organizations and regions are environments rich in entrepreneurial opportunities and resources and they have been increasing in numbers and in varieties. These environments influence individuals and they also influence new ventures. However, how these environments spawn new entrepreneurs

and create new business remains relatively understudied. Although these organizations and regional environments have been described as network structures and geographic clusters, research that links the spatial and relational aspects of these larger contexts to the micro process of entrepreneurship is relatively underdeveloped. They review the literatures on networks and geographies to examine how these environments affect the ability of entrepreneurs to garner scarce resources. They seek to address questions of how individuals are likely to become entrepreneurs within the context of why and where entrepreneurship is likely to occur. They define entrepreneurship as both the discovery and exploitation of entrepreneurial opportunities, and the creation of new organizations, which occur as a context-dependent social and economic process.

Part Seven, “Entrepreneurship, Economic Growth and Policy,” examines the question, “What are the consequences of entrepreneurial activity for economic growth and can public policy affect the outcome?” These are important questions, and, as we have hinted in the opening paragraphs of this introduction, the conventional wisdom today is that the formation of new organizations does lead to economic growth and public policies aimed at individuals may increase the flow of new organizations in societies. Lundstrom and Stevenson (2002a, 2002b) make a distinction between small business policies and entrepreneurship policies. They view small business policies as focused upon existing enterprises, whereas entrepreneurship policies are directed towards individuals. These individuals are considering, or have recently started a new business. However, they only play a modest role in the policy armory of developed economies.

The two papers in this section – “The Impact of Entrepreneurship on Economic Growth,” by Martin Carree and Roy Thurik and “Entrepreneurship, Small and Medium Sized Enterprises and Public Policies” by David J. Storey – both address the relationship between entrepreneurial activity and economic growth. The paper by Storey while acknowledging the difference between entrepreneurship policy and SME policy is more about the latter and less about the former. This is because SME policy aimed at small and medium-sized firms is now a well-established area of study and experimentation. Entrepreneurial policy directed at individuals is more or less new. Economists have written both of these chapters.²

In Chapter 17, Carree and Thurik observe that the last two decades have witnessed a wealth of studies analyzing the determinants of entrepreneurship, and the decision to go into business. The consequences of this behavior have also been studied extensively in the literature, for example, there is a large literature on firm survival. However, this literature has generally been restricted to two units of observation – that of the firm and the region. When it comes

²For those interested in the subject we refer you to the forthcoming book by David M. Hart, ed., *The Emergence of Entrepreneurship Policy: Governance, Start-ups, and Growth in the Knowledge Economy*. Two volumes on the subject are also available from Anders Lundstrom and Lois Stevenson (2002a, 2002b).

to linking entrepreneurship to growth at the national level, there is a relative void despite the recent efforts of the Global Entrepreneurship Monitor (GEM) research program (Reynolds et al., 2001). *The purpose of this chapter is to review the theoretical and empirical literature linking entrepreneurship and economic growth.* Explanations for economic growth have generally been restricted to the realm of macroeconomics. A different scholarly tradition linking growth to industrial organization dates back to at least Schumpeter (1934[1911]). According to this tradition, performance measured in terms of economic growth, is shaped by the degree to which the industry structure utilize scarce resources most efficiently (Schoonhoven and Romanelli, 2001).

Storey, in Chapter 18 reviews the rational and the consequences of small business policy in OECD countries. *The purpose of this chapter is to review the contribution that such policies and programs have made in those countries with a key focus on methodologies for assessing the impact of policies.* Storey starts out by pointing out that over the past forty years there has been a striking change in the perception of small firms, especially in the United States and in the United Kingdom. In the 1960s small-scale enterprise was equated with technological backwardness, managerial conservatism and modest economic contribution. This contrasts with the current view that, whilst many small firms do fit the 1960s stereotype, the sector also contains dynamic and innovative enterprises that collectively make a considerable contribution to economic well-being (Acs, Karlsson, Carlsson, 1999). Governments can facilitate or impede this contribution, and this chapter reviews public policies towards small firms in OECD countries.

Part Eight, "Epilogue," provides a roadmap for a future research direction. The purpose of the *Handbook* is to provide a starting point for entrepreneurship research. Given the many different directions and approaches, there is a need to provide a reference work for this emerging field. Each chapter offers a carefully presented summary of the field and discusses future research needs for different topics. While we do not summarize these, the final chapter offers a perspective on future research needs.

In Chapter 19, "Connecting the Study of Entrepreneurship and Theories of Capitalist Progress. An Epilogue," Rita McGrath discusses future research needs of the field. *The purpose of the chapter is to argue that there is now a significant body of research on entrepreneurship, as is evident in this Handbook, and now we should reach out to other fields and tackle even bigger questions.* The field of entrepreneurship offers a useful vantage point from which to tackle some of the more pressing issues of today's business organizations and the institutions in which they exist. McGrath concludes that the insights gained by entrepreneurship scholars through their study of often small, fragile, new entities can be a powerfully leverage to improve our understandings of the workings of the capitalism system.